

## Hicom 100 E

Hicom 108

Hicom 112

Hicom 118

Hicom 118-2

Service manual

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Hicom 100 E

Hicom 108

Hicom 112

Service manual

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# 1 Important Information

## 1.1 Safety information

The following information is aimed at service personnel and authorized specialists. **Only** these persons are permitted to work on the installation.

Read through all information on the equipment carefully, and follow all safety information. Also obtain information concerning the emergency numbers.

Always contact your manager before starting any work where the necessary safety does not appear to be present (e.g. hazards due to gas explosion or humidity).

### Safety symbols

Potential sources of danger in this description are identified by means of the following symbols:



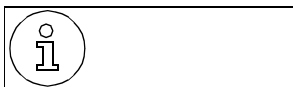
This symbol calls attention to a situation that could cause serious injury or death to a person.



This symbol calls attention to a situation that could cause serious injury to a person.



This symbol calls attention to a situation that could damage or destroy hardware or software.



This symbol identifies useful informations.

### Further symbols for defining the source of danger in greater detail<sup>1</sup>:



Electricity



Weight



Heat



Fire



Chemicals



ESD\*



Laser

\* Electrostatic discharge

1. These symbols are not usually used in the manual. They're an explanation of the symbols that can be depicted on the systems.

## Important Information

### *Safety information*

#### 1.1.1 Safety information: Danger

- Do not open the power supply. The device may only be repaired by authorized personnel. Opening the device and tampering with it can endanger your life.
- Before applying power to the system or connecting extensions, ensure that the system is correctly earthed.  
Never operate the equipment with protective earthing conductor disconnected!
- Voltages above 30 V AC (alternating current) or 60 V DC (direct current) are dangerous.
- If the power cable appears to be damaged, replace it immediately.
- Immediately replace any damaged safety equipment (covers, labels and protective cables).
- If the maintenance work requires the power supply of the system to be shut down:
  - Use the shut-off switch to disconnect the system from the power supply circuit, and secure the shut-off device mechanically so that it cannot be used by other persons.
  - Affix the information "DO NOT OPERATE" to the disconnect device.  
A disconnect device can be a shut-off switch (main switch) or protective switch (fuse/automatic cut out).
  - Before starting any work on the installation, establish the location of the disconnect device.
- If you are performing work on circuits with hazardous voltages, always work together with a partner who is familiar with the location of the switch for the power supply.
- Always ensure adequate insulation when touching powered circuits.
- Ensure that the installation is not powered by an additional power supply, or that it is protected via an additional fuse or an additional main switch.
- Before starting any work, check whether the corresponding circuits are still on power. Never take it for granted that all circuits have reliably been disconnected from the power supply when a fuse or a main switch has been switched off.
- During a thunderstorm, you should not connect or remove telephone lines and PCB boards.
- Expect to encounter leakage current from the telecommunication network.
- Ensure that, whenever work is carried out on an open installation, the installation is never left unsupervised.

### **1.1.2 Safety information: Warning**

- There is the risk of an explosion if the Nickel Cadmium Battery is not replaced correctly. The lithium battery must be replaced only by the same or equivalent types recommended by the manufacturer.
- Be aware of additional dangers with low voltages and large cross-sections. Cables with a large cross-section generally have lower voltages, although the current strengths are higher. This results in particular risks, e.g. in the event of short circuits.
- When working on the installations, never wear loose clothing and always tie back long hair.
- Never wear jewellery, metal watch straps or for instance metal fittings and rivets on items of clothing. There is a risk of injury and short circuit.
- The surface of a mirror is conductive! Never touch powered circuits with a mirror; you might injure yourself and/or at least cause short-circuit damage.
- Always wear the necessary eye protection whenever appropriate.
- Always wear a protective helmet where falling objects might injure you.
- Always disconnect the power supply when you are working directly next to a power supply unit or direct current converter, unless the work instructions expressly permit you to work without having to shut off the power.
- Never try to lift heavy objects without assistance.
- In case of laser radiation: do not stare into the beam.

## Important Information

### *Safety information*

#### **1.1.3 Safety information: Caution**

- Check the set nominal voltage of the installation (operating instructions and type plate).
- As long as the power supply is switched on, always observe the greatest caution when performing measurements on powered components and maintenance work on plug-in cards, PC boards and covers.
- To protect against the electrostatic discharge (ESD):
  - Always wear the wristband before performing any work on PCB boards and modules.
  - Only transport PC boards in suitable protective packaging.
  - Always place PC boards on a grounded conducting base, and do not process the PC boards anywhere else.
  - Only use grounded soldering irons.
- Only use tools and testers suitable for the job. Do not use broken tools and testers, inspect them regularly.
- Find out the location of the main switch for the power supply of the system. Follow the appropriate instructions.
- Install cables in such a way that they do not pose an accident risk (i.e. so that they do not trip anybody up) and also so that they are not damaged.

### **1.1.4 General information**

- If the installation is brought into the operating premises from a cold environment, condensation may occur. Wait until the temperature of the installation has adjusted to the ambient temperature and until the installation is absolutely dry before you start it up.
- Before starting wall assembly, check whether the load-bearing capacity of the wall is adequate, e.g. in the event of plasterboard walls.
- When maintenance work has been completed, always re-install all safety equipment in the right place.
- Check your tools regularly. Only use intact tools.
- Close the doors after test and maintenance work has been completed.
- All cables and lines which leave a system cabinet must be screened at least between the connection point in the cabinet and the point at which the cable leaves the cabinet. Use a clip and pressure screw to contact all screen fabric to the cabinet outlet. This is also applicable for permanently connected service equipment.
- Connect all cables only to the specified connection points.
- Do not install any external modems in the installation cabinets.
- Do not allow readily flammable materials to be stored near the installation or in the installation room.
- Ensure good lighting at the workplace.
- Untidiness at the workplace involves the risk of injuries.

## **Important Information**

### *Safety information*

#### **1.1.5 Behaviour in emergencies**

- In the event of accidents, remain calm and considered.
- Always switch off the power supply before you touch an accident victim.
- If you are not able to immediately switch off the power supply, only touch the victim with non-conducting materials (e.g. a broom handle made of wood), and first of all try to isolate the victim from the power supply.
- You must be familiar with first-aid principles in the event of electricity injuries. An urgent need in such emergencies is fundamental knowledge of the various methods of resuscitation if the victim has stopped breathing or if the victim's heart is no longer beating, as well as first aid for treating burns.
- If the victim is not breathing, immediately perform mouth-to-mouth or mouth-to-nose resuscitation.
- If you have appropriate training, immediately perform heart massage if the victim's heart is not beating.
- Immediately call an ambulance or the emergency doctor. Provide the following information in the following sequence:
  - Where did the accident take place?
  - What has happened?
  - How many injured?
  - What type of injuries?
  - Wait for queries.

#### **1.1.6 Accident reporting**

- Immediately report all accidents, "near accidents" and potential sources of danger to your manager.
- Report all electrical shocks, no matter how small.

## **1.2 Data protection and data security**

This system also processes and uses personal data, e.g. for call charge metering purposes, the displays and for recording user data.

In Germany, the processing and use of such personal data are subject to various regulations, including the regulations of the Federal Data Protection Law (Bundesdatenschutzgesetz = BDSG). For other countries, please follow the appropriate national laws.

The aim of data protection is to protect the rights of individuals being affected by use of his personal data.

In addition, the aim of data protection is to ensure that data are not corrupted when processed and that one's own interests and the interests of other parties which need to be protected are not affected.

Members of Siemens and Siemens Rolm staff are required to observe business and data secrecy as a result of the company's work rules.

In order to ensure that the statutory requirements during service - whether during "on-site service" or during "tele service" - are consistently met, you should always observe the following rules. You will not only maintain the interests of your/our customers, you will also avoid personal consequences.

Contribute to maintain data protection and data security with your conscious action:

- Ensure that only appropriately authorized persons have access to customer data.
- Take full advantage of all options of allocating passwords; do not inform unauthorized persons of passwords, e.g. by means of a written note.
- Ensure that no unauthorized person is able to process (store, modify, transmit, disable, delete) or use customer data in any way.
- Prevent unauthorized persons from gaining access to data media, e.g. on backup disks or protocol printouts. This is applicable for service calls as well as for storage and transport.
- Ensure that data media which are no longer required are completely destroyed. Ensure that no papers remain generally available.

Work together with your contacts of the customer: This creates mutual confidence and reduces your own workload.



## **Important Information**

*Data protection and data security*

## **2            System data**

### **2.1          General system description**

The Hicom 108/112/118 systems belonging to the Hicom 100 E product family are compact, digital, Euro-ISDN-compatible telephone systems suitable for analogue and digital network access and for analogue and digital terminals. The basic configuration of each system can be expanded and supplemented in different ways. See [Figure 2-2](#) (Hicom 108), [Figure 2-3](#) (Hicom 112), [Figure 2-4](#) (Hicom 118).

The Hicom 108/112/118 systems are of flatpack design, i.e. without a backplane. All basic functions are incorporated on the motherboard (see [Figure 3-4](#)). The systems have plastic housings consisting of base, intermediate section, and cover. The Hicom 118 has an additional intermediate frame to accommodate system expansions. The housing sections are held together by easily released latches.

The system expansions are of the plug-in type. The Hicom 108 has 1 slot (for analogue trunk or S<sub>0</sub> line modules), the Hicom 112 has 2 slots (for analogue trunk and S<sub>0</sub> line modules), and the Hicom 118 has 4 slots for further system expansions with line and subscriber modules.

The function expansions (optional) are attached with their own housings to the basic housing.

The power supply (PSU/UPS) is also attached mechanically and electrically to the basic housing and is additionally secured by screws.

The integral main distribution frame is part of the basic housing. Plug-in connectors (terminal blocks) render the line network easily separable from the system cards.

## 2.2 Hardware overview

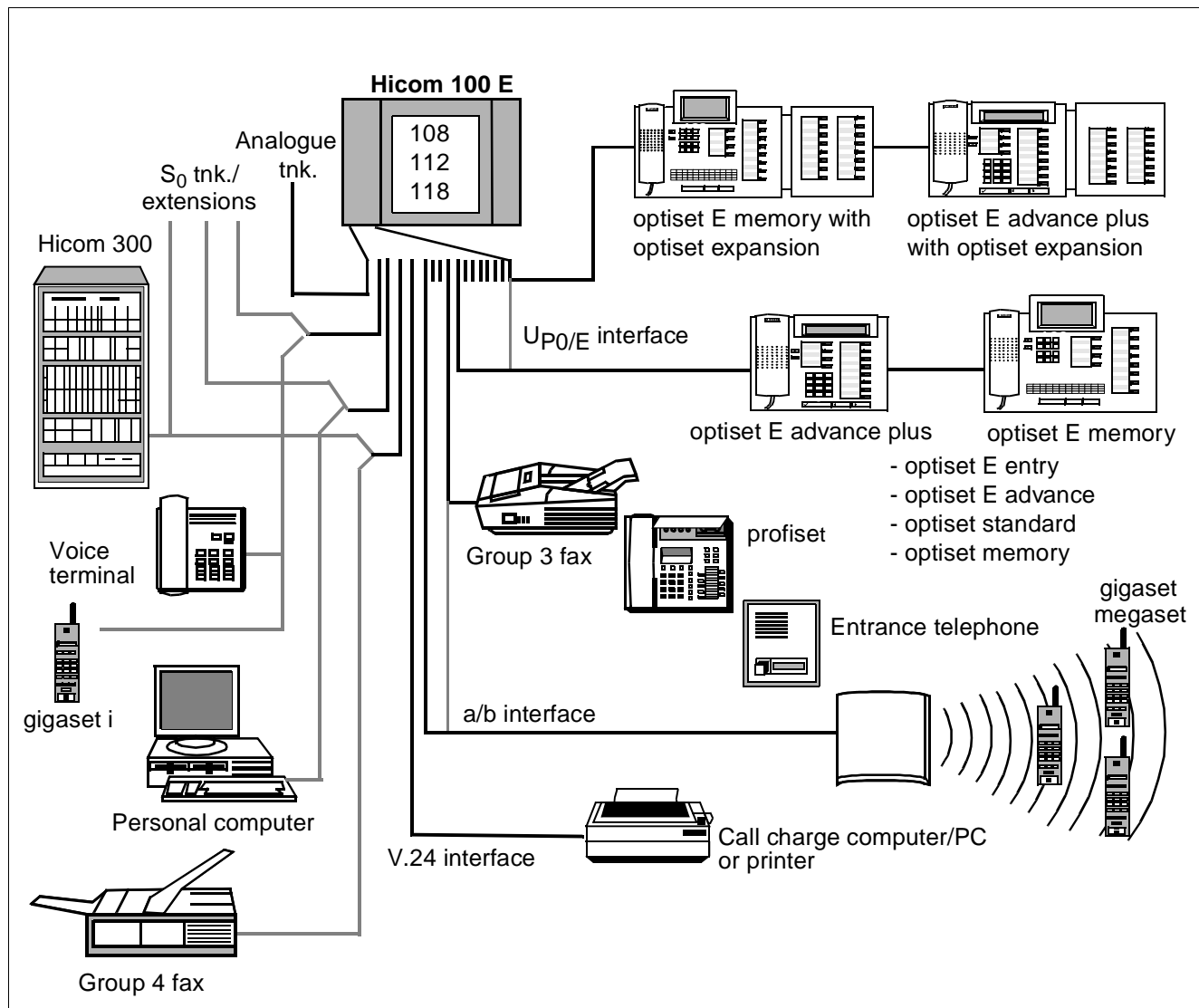


Figure 2-1 Connection options supported within system environment

## 2.3 Documentation

Designation	Item code number
Hicom 100 E Service Manual (German)	A31003-K16-X-*-20 (up to SW 2.0.1+)
Hicom 100 E Service Manual (Dutch)	A31003-K16-X-*-5420
Hicom 100 E Service Manual (Italian)	A31003-K16-X-*-7220
Hicom 100 E Service Manual (Finnish)	A31003-K16-X-*-7320
Hicom 100 E Service Manual (English)	A31003-K16-X-*-7620
Hicom 100 E Service Manual (French)	A31003-K16-X-*-7720
Hicom 100 E Service Manual (Spanish)	A31003-K16-X-*-7820
Hicom 100 E Service Manual (Portuguese)	A31003-K16-X-*-7920
Hicom 100 E Electronic Service Manual	P31003-K16-X001-*-20 (up to SW 2.1) German and other languages
Hicom 100 E Customer Datasheets	A31003-K16-X-*-K6 German and other languages
Service Instructions for telephones, adapters, add-on units: optiset E entry optiset E basic optiset E standard optiset E advance optiset E advance plus optiset E memory optiset E key module (add-on units) optiset E analogue adapter optiset E data adapter optiset E ISDN adapter optiset E phone adapter optiset E acoustic adapter optiset E distance adapter S optiset E distance adapter M	A31003-E8000-A100-*-20 German and other languages (see above)
User Manual (SW 2.0.1+): System Support/Administration	A31003-K3000-B341-*-19 German and other languages (see above)
User Manual (SW 2.0.2): System Support/Administration	A31003-K16-B455-*-19 German and other languages (see above)

Table 2-1 Documentation

## System data

### System types

Designation	Item code number
User Manual (SW 2.1) System Support/Administration	A31003-K16-B546-* -19 German and other languages (see above)

Table 2-1 Documentation

Documentation is available from your Dealer.

## 2.4 System types

The systems are available in the following configurations:

Hicom 108 with one slot, 2  $U_{P0/E}$  and 4 a/b extension interfaces (see [Figure 2-2](#))

Hicom 112 with two slots, 4  $U_{P0/E}$  and 4 a/b extension interfaces (see [Figure 2-3](#))

Hicom 118 with four slots, 6  $U_{P0/E}$  and 4 a/b extension interfaces (see [Figure 2-4](#))

Nameplate on the housing base near the main distribution frame

A distinction is made between the following components:

- Basic system, motherboard with V.24 interface via mini-DIN connector and optional EXM/MPPI (external music on hold)
- PSU1 power supply unit for Hicom 108 and 112 (see [Section 3.8](#))  
UPS1 uninterruptible power supply for Hicom 112 (see [Section 3.8](#))  
PSU2 power supply unit for Hicom 118 (see [Section 3.8](#))  
UPS2 uninterruptible power supply for Hicom 118 (see [Section 3.8](#))
- System expansions  
The modular design permits almost any slot assignments (see [Table 3-12](#)).  
SLAS subscriber line analogue with 4, 8 or 16 a/b interfaces  
SLU 8 subscriber line  $U_{P0/E}$  with 8  $U_{P0/E}$  interfaces  
STLS subscriber/trunk line  $S_0$  with 4  $S_0$  interfaces or 2  $S_0$  interfaces  
TLA trunk line analogue with 2, 4 or 8 analogue trunk interfaces
- Function expansions (see [Section 3.6](#))  
ALUM power failure transfer with 4 transfer options for analogue lines  
Fax/DDI with announcement (DTMF)  
GEE call-charge pulse recognition for 4 analogue trunk interfaces  
SIB serial interface board (optional V.24 interface)  
STRB control relay module with 4 control inputs and 4 control outputs  
STBG4 current limiting module for France  
WS48/ÜFS analogue DDI trunk for Austria  
EXM/MPPI - module for MOH

The MDF (main distribution frame) (see [Section 3.9](#)) expands automatically with the system, since each expansion provides the necessary interfaces. Any space that may be required for future function expansions must be taken into account in the initial plans.

## 2.5 Hicom 108 system overview

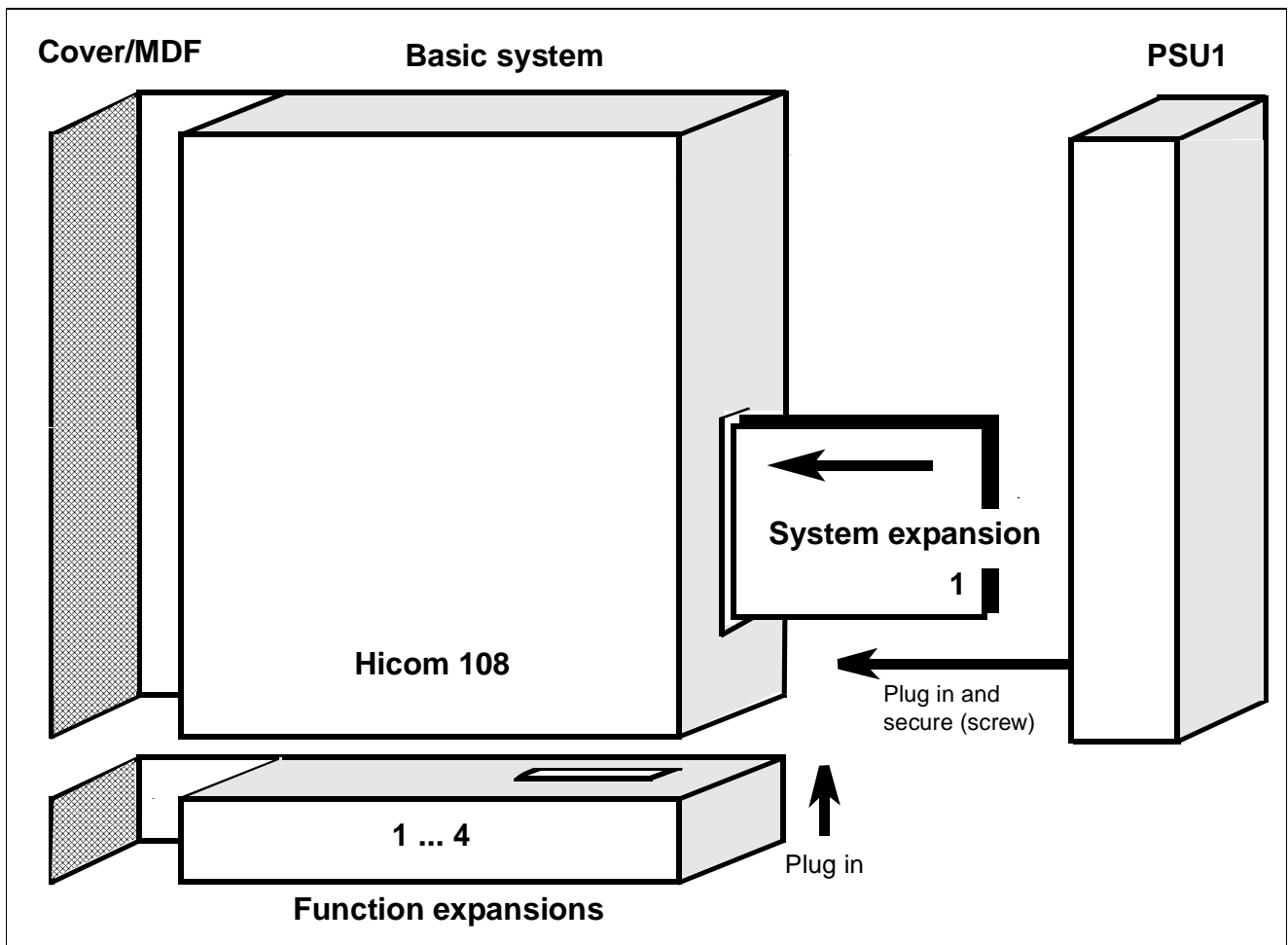


Figure 2-2 Hicom 108 structural concept

### Slot 1 for system expansions:

Analogue (TLA2) or  $S_0$  (STLS2) trunk module (see [Table 3-12](#))

## 2.6 Hicom 112 system overview

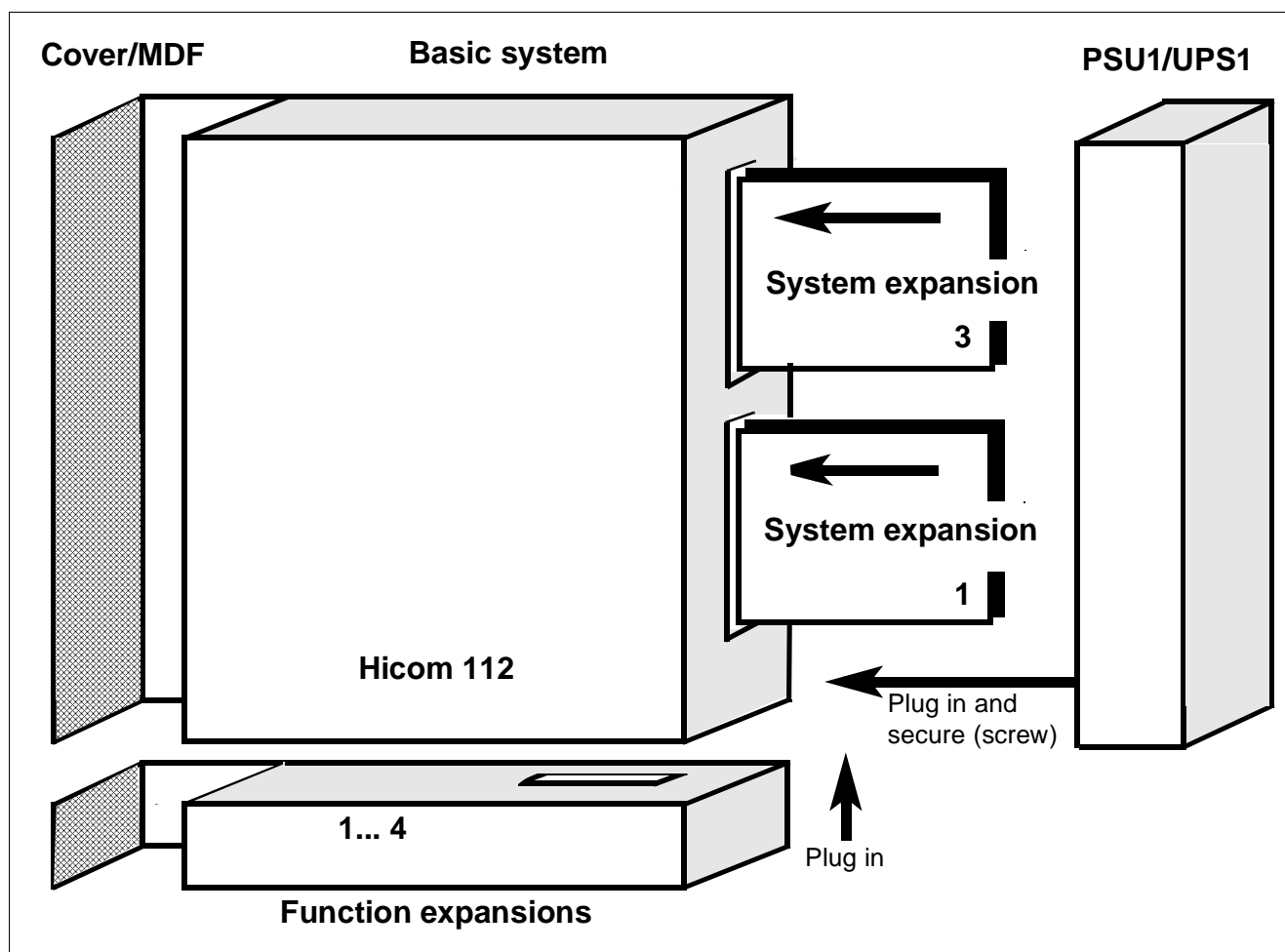


Figure 2-3 Hicom 112 structural concept

### Slots 1 and 3 for system expansions:

Freely assignable with line modules (see [Table 3-12](#))

## 2.7 Hicom 118 system overview

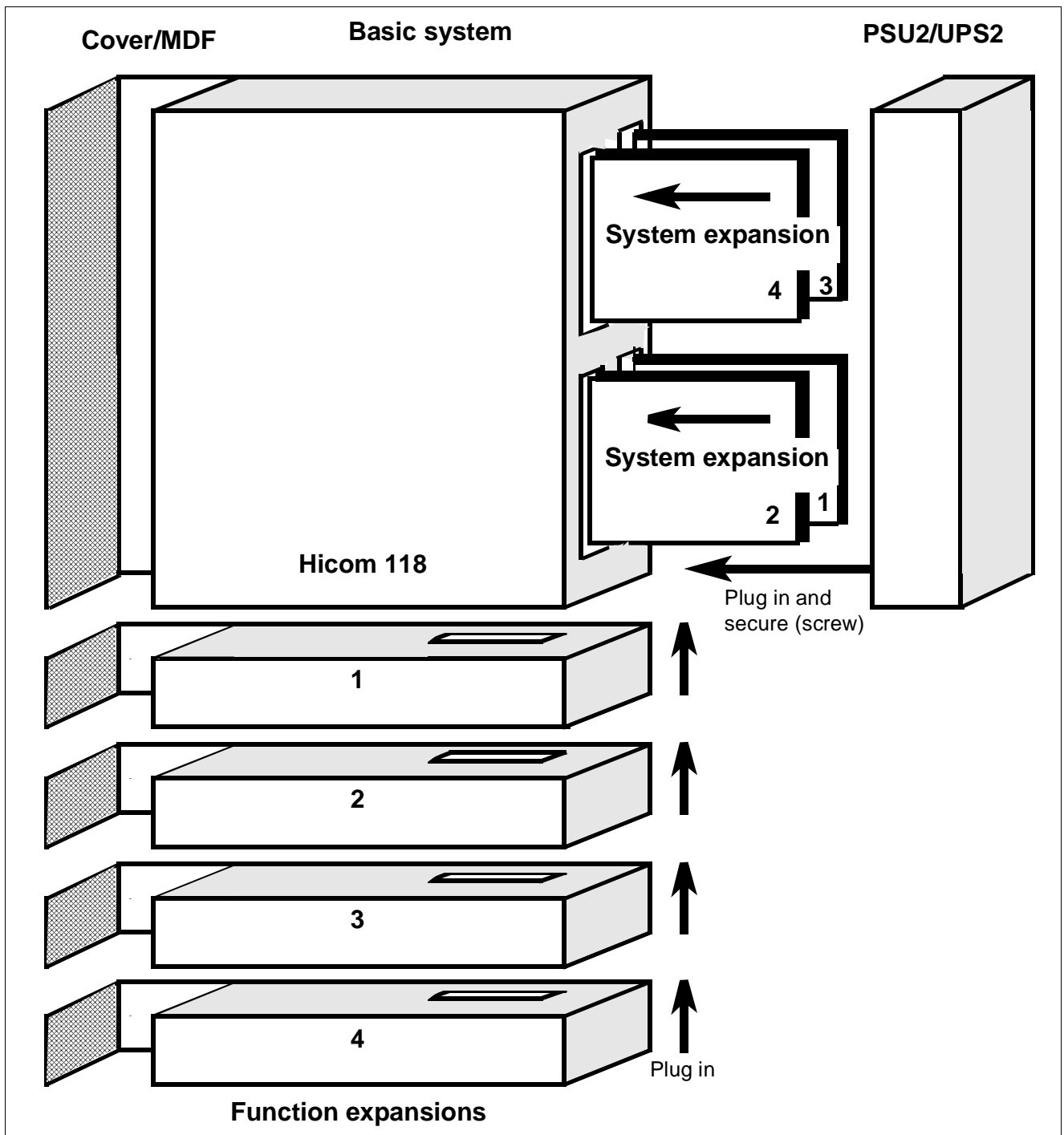


Figure 2-4 Hicom 118 structural concept

### Slots 1 to 4 for system extensions:

Freely assignable with line and/or subscriber modules (see [Table 3-12](#))



2.8            Technical data

System	Width	Height	Depth
Hicom 108 basic configuration	470	370	80
Hicom 108 with max. expansions	470	630	80
Hicom 112 basic configuration	470	370	80
Hicom 112 with max. expansions	470	630	80
Hicom 118 basic configuration	470	370	110
Hicom 118 with max. expansions	470	630	110

Table 2-2            System dimensions in mm

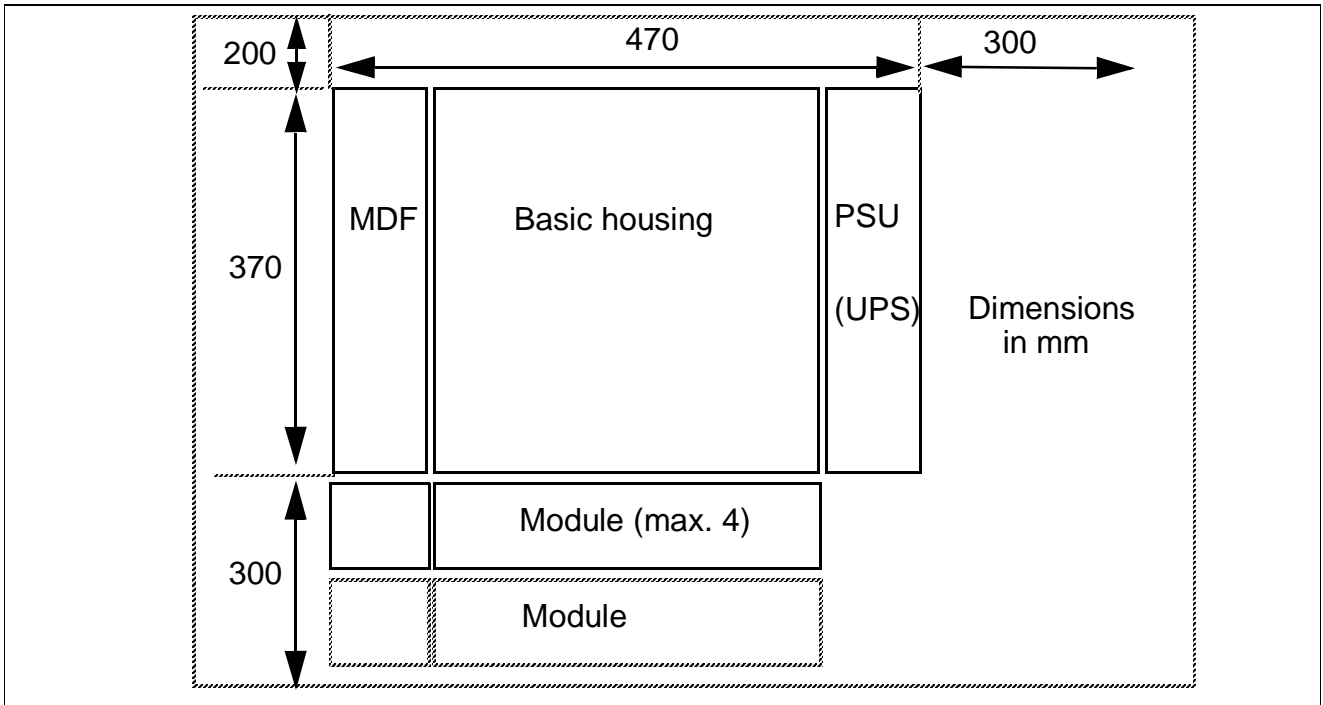


Figure 2-5            System dimensions and minimum clearances

<b>Terminal interfaces</b>	<b>Range in m</b>
ISDN S <sub>0</sub> point-to-point connection	< 600
ISDN S <sub>0</sub> point-to-multipoint connection	< 150
ISDN S <sub>0</sub> terminal box to terminal	< 10
a/b extensions	< 2000
U <sub>P0/E</sub> console to master	< 1000
U <sub>P0/E</sub> master to slave	< 100

Table 2-3 Ranges (with J-Y(ST) 2x2x0.6) for terminal interfaces

	<b>Operation</b>	<b>Transport</b>	<b>Storage</b>
Ambient temperature in °C	+5 to +40	-40 to +70	-5 to +45
Relative humidity in %	85	95	95

Table 2-4 Climatic conditions



**Caution**

Do not expose to direct sunlight and keep appliance away from heaters to avoid of the danger of localised overheating.  
 If condensation forms, allow the appliance to dry before operation.  
 It is essential to ensure that condensation cannot form while the appliance is in operation.

## System data

### Basic configuration and system expansions

## 2.9 Basic configuration and system expansions

	Hicom 108	Hicom 112	Hicom 118
U <sub>P0/E</sub> interfaces - MB	2	4	6
a/b interfaces - MB	4	4	4
Slots for expansions	1	2	4

Table 2-5 Basic configuration and system expansions

## 2.10 System interfaces

### Trunk interface with analogue trunk

- DTMF, DP without earth recall
- Tone detector (dial-tone interpreter) for automatic dialling
- Analogue pseudo direct dialling in using DTMF signalling with announcement (DDI option)
- Call-charge pulse recognition per trunk (GEE option)
- Fax option
- Mixed fax/DDI operation (option)

### Trunk interface with direct dialling in for Austria

- WS48 and ÜFS methods

### Trunk interface and extension interface S<sub>0</sub>

- System synchronisation to trunk clock with selection circuit

### Extension interface for normal telephone

- Bilingual: DP or DTMF (12-key keyboard)
- Range 2000 m using cable with 0.6 mm dia
- Flash detection with DTMF
- One or more entrance telephone adaptors can be connected

### Extension interface for U<sub>P0/E</sub>

- Only in-house cabling permitted

## 3 Overview of modules

### 3.1 Table of item code numbers

Module/component	Item code number	Remarks
<u>MB 6/4</u> <u>MB 4/4</u> <u>MB 2/4</u>	S30817-Q920-A501 S30817-Q920-B501 S30817-Q920-C501	SW 2.0.1+
<u>MB 6/4</u> <u>MB 4/4</u> <u>MB 2/4</u>	S30817-Q920-A601 S30817-Q920-B601 S30817-Q920-C601	SW 2.0.2
<u>MB 6/4</u> <u>MB 4/4</u> <u>MB 2/4</u>	S30817-Q920-A701 S30817-Q920-B701 S30817-Q920-C701	SW 2.1
<u>MB 6/4</u> <u>MB 4/4</u>	S30817-Q920-A711 S30817-Q920-B711	POR
<u>MB 6/4</u>	S30817-Q920-K701	Hicom 118-2 (two-box system)
<u>EB118-2</u>	S30817-Q952-A601	Expansion module for Hicom 118-2
<u>MB 2/4</u>	S30817-Q920-H601	Hicom 108 NDL
<u>SLAS16</u> <u>SLAS8</u> <u>SLAS4</u>	S30817-Q925-A301 S30817-Q921-C301 S30817-Q921-D301	
<u>SLU8</u>	S30817-Q922-A301	
<u>STLS4</u> <u>STLS2</u>	S30817-Q924-A313 S30817-Q924-B313	
<u>TLA8</u>	S30817-Q926-A301	GER, CHN, AUS, CIS, CRE, LUX, FIN, AST
	S30817-Q926-A308	GBR, IND
	S30817-Q926-A311	POR
	S30817-Q926-A312	SPA
	S30817-Q926-A314	BEL, IM, IRL, ITL, POL, TRK
	S30817-Q926-A315	NDL
	S30817-Q926-A316	FRA

Table 3-1 Item code numbers with national versions

## Overview of modules

### Table of item code numbers

Module/component	Item code number	Remarks
<u>TLA4</u>	S30817-Q923-A308	GBR, IND, RSA
	S30817-Q923-A311	POR
	S30817-Q923-A312	SPA
	S30817-Q923-A313	GER, CHN, FIN, AUS
	S30817-Q923-A314	ARG, BEL, DEN, GRE, IDS, IM, ITL, MAL, PHI, POL, CIS, SIN, SWZ, THA, HNG
	S30817-Q923-A315	BRA, NDL
	S30817-Q923-A316	FRA
<u>TLA2</u>	S30817-Q923-B308	GBR, IND, RSA
	S30817-Q923-B311	POR
	S30817-Q923-B312	SPA
	S30817-Q923-B313	GER, CHN, FIN, AUS
	S30817-Q923-B314	ARG, BEL, DEN, GRE, IDS, IM, ITL, MAL, PHI, POL, POR, CIS, SIN, SWZ, THA, HNG
	S30817-Q923-B315	BRA, NDL
	S30817-Q923-B316	FRA
<u>GEE16</u>	S30817-Q951-A313	BEL, GER, IM, LUX, CIS, HNG
	S30817-Q951-A317	FIN, RSA
<u>GEE12</u>	S30817-Q931-A301	FRA, IDS, IM, IRL, MAL, PHI, CIS, SIN, SWZ, THA, HNG
	S30817-Q931-A302	AUS
	S30817-Q931-A311	POR
	S30817-Q931-A312	SPA
	S30817-Q931-A314	ITL
<u>GEE50</u>	S30817-Q931-B315	FRA, GBR, NDL
<u>SIB</u>	S30122-K5685-X	
<u>STRB</u>	S30817-Q932-A	
<u>Fax/DDI</u>	S30817-Q933-A301	
<u>STBG4</u>	S30817-Q934-A	FRA
<u>ALUM4</u>	S30817-Q935-A	
<u>Door opener</u>	S30817-Q930-A100	As of 04/96: S30817-Q930-A200
<u>TFE/V</u>	S30817-Q936-A313	

Table 3-1 Item code numbers with national versions

<b>Module/component</b>	<b>Item code number</b>	<b>Remarks</b>
<u>EXM</u>	S30817-H902-A401	Without coding, with screw terminals
	S30817-H902-B401	With coding, without screw terminals
<u>MPPI</u>	S30122-H5380-X	
<u>OPA (options adapter)</u>	S30122-K5525-X	
<u>PSU1</u>	S30122-K5448-X312	
<u>PSU2</u>	S30122-K5449-X312	
<u>UPS1</u>	S30122-K5450-X312	
<u>UPS2</u>	S30122-K5451-X312	
<u>Battery box</u>	S30122-K5403-X	
<u>V.24 adapter cable</u>	S30122-X5468-X	MB only
<u>V.24 adapter cable</u>	C39195-Z7267-C5	SIB only
<u>V.24 printer adapter</u>	S30122-K5597-X	
<u>V.24 adapter modem</u>	S30122-K5597-X100	
108/112 ribbon cable	C39195-A7001-B83	MB <-> system expansions
118 ribbon cable	C39195-A7018-B82	MB <-> system expansions
<u>Plug connector</u>	C39334-Z7089-C14	4-pin
<u>Plug connector</u>	C39334-Z7089-C13	8-pin
EXM/MPPI cable	C39195-A7001-B88	Uncoded
EXM/MPPI cable	C39195-A7001-B111	Coded
GEE cable	C39165-A7001-B87	Uncoded
GEE cable	C39165-A7001-B110	Coded
PSU connecting cable	C39195-A7001-B85	Up to SW 2.0.1+
PSU connecting cable	C39195-A7001-B112	As of SW 2.0.2

Table 3-1 Item code numbers with national versions

<b>Abbrev.</b>	<b>Country</b>	<b>Abbrev.</b>	<b>Country</b>
ARG	Argentina	IND	India
AST	Australia	IRL	Ireland
AUS	Austria	ITL	Italy
BEL	Belgium	LUX	Luxembourg
BRA	Brazil	MAL	Malaysia
CHN	China	NDL	Netherlands

Table 3-2 Country codes

## Overview of modules

*Table of item code numbers*

<b>Abbrev.</b>	<b>Country</b>	<b>Abbrev.</b>	<b>Country</b>
CIS	Commonwealth of Independent States	NOR	Norway
CRE	Czech Republic	PHI	Philippines
DEN	Denmark	POL	Poland
FIN	Finland	POR	Portugal
FRA	France	RSA	Republic of South Africa
GBR	Great Britain	SIN	Singapore
GER	Germany	SPA	Spain
GRE	Greece	SWD	Sweden
HNG	Hungary	SWZ	Switzerland
IDS	Indonesia	THA	Thailand
IM	International Markets	TRK	Turkey

Table 3-2      Country codes

## 3.2 Overview of configurations

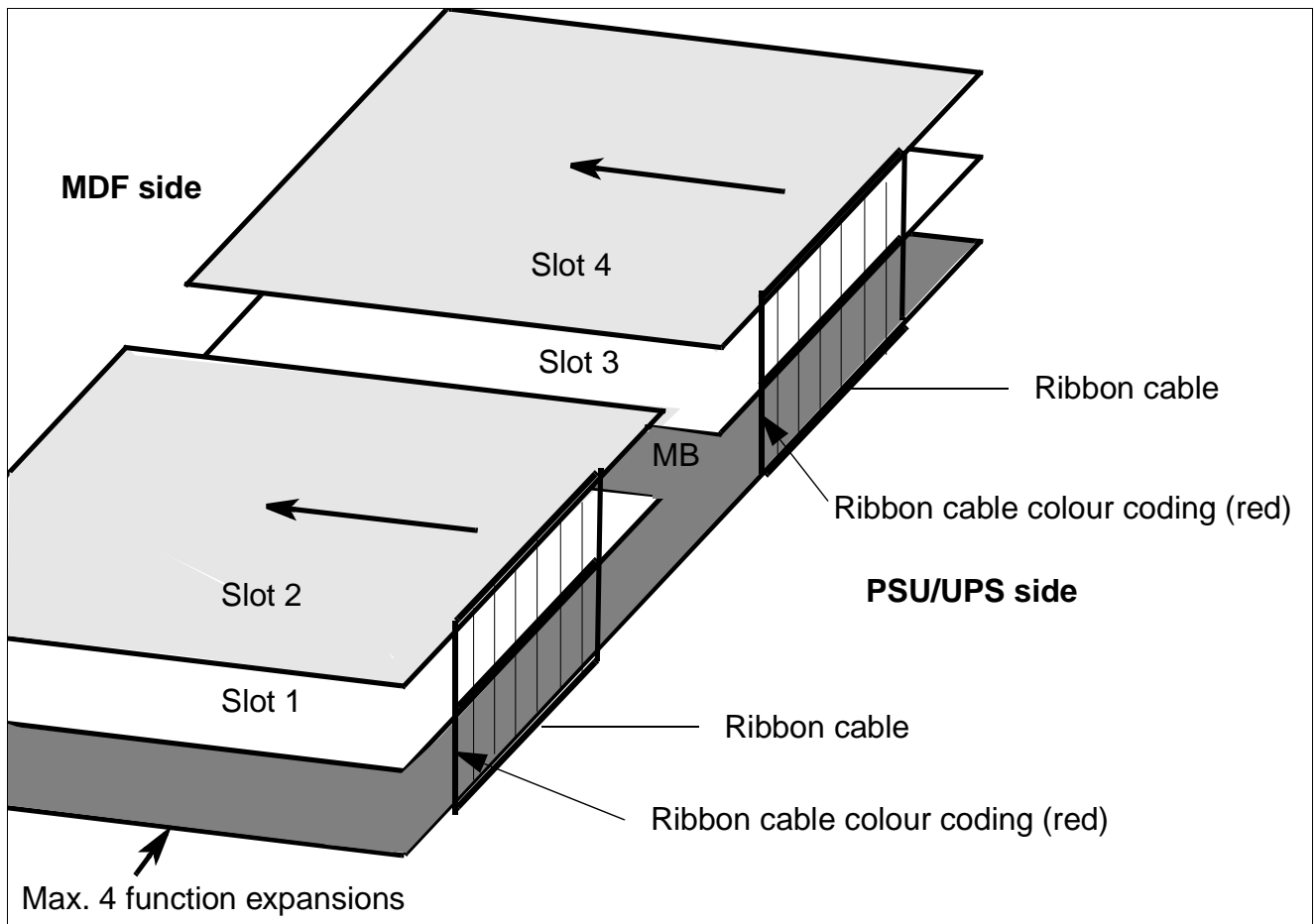


Figure 3-1 System expansions - slot numbers

The overview shows the variety of possible combinations for the systems (see also [Section 3.5](#)).

Hicom 108 has one slot that is used only for line modules (analogue trunk or  $S_0$ ). A combination of ISDN and analogue trunk connections is not possible.

Hicom 112 has two slots that are used for line modules (analogue trunk,  $S_0$ ). A combination of ISDN and analogue trunk connections is possible.



## Overview of modules

### Standard extension number plans

Hicom 118 has four slots for continuing system expansion with line modules and/or extension modules. A combination of ISDN and analogue trunk connections is possible.

System	System expansions	Function expansions
Hicom 108	1 > slot 1	4
Hicom 112	2 > slots 1 and 3	4
Hicom 118	4 > slots 1 to 4	4

Table 3-3 Possible expansions

## 3.3 Standard extension number plans

### 3.3.1 Standard numbering of the MB modules

Hicom 108	Ext. no.	Int. ext. no.	DDI no.	Port numbering	Type	
MB U <sub>P0/E</sub>	11	11	11	1	U <sub>P0/E</sub> M	U <sub>P0/E</sub> master
	12	12	12	2	U <sub>P0/E</sub> M	
	17	17	17	1	U <sub>P0/E</sub> S	U <sub>P0/E</sub> slave
	18	18	18	2	U <sub>P0/E</sub> S	
a/b	23	23	23	1	a/b	
	24	24	24	2	a/b	
	25	25	25	3	a/b	
	26	26	26	4	a/b	

Table 3-4 Standard numbering, MB 2/4 Hicom 108 (SW 2.0.1)

Hicom 108	Ext. no.	Int. ext. no.	DDI no.	Port numbering	Type	
MB U <sub>P0/E</sub>	11	11	11	1	U <sub>P0/E</sub> M	U <sub>P0/E</sub> master
	12	12	12	2	U <sub>P0/E</sub> M	
	13	13	13	1	U <sub>P0/E</sub> S	U <sub>P0/E</sub> slave
	14	14	14	2	U <sub>P0/E</sub> S	
a/b	15	15	15	1	a/b	
	16	16	16	2	a/b	
	17	17	17	3	a/b	
	18	18	18	4	a/b	

Table 3-5 Standard numbering, MB 2/4 Hicom 108 (as of SW 2.0.1+)

Hicom 112	Ext. no.	Int. ext. no.	DDI no.	Port numbering	Type	
<b>MB</b>  U <sub>P0/E</sub>	11	11	11	1	U <sub>P0/E</sub> M	U <sub>P0/E</sub> master
	12	12	12	2	U <sub>P0/E</sub> M	
	13	13	13	3	U <sub>P0/E</sub> M	
	14	14	14	4	U <sub>P0/E</sub> M	
	17	17	17	1	U <sub>P0/E</sub> S	U <sub>P0/E</sub> slave
	18	18	18	2	U <sub>P0/E</sub> S	
	19	19	19	3	U <sub>P0/E</sub> S	
	20	20	20	4	U <sub>P0/E</sub> S	
a/b	23	23	23	1	a/b	
	24	24	24	2	a/b	
	25	25	25	3	a/b	
	26	26	26	4	a/b	

Table 3-6 Standard numbering, MB 4/4 Hicom 112 (SW 2.0.1)

Hicom 112	Ext. no.	Int. ext. no.	DDI no.	Port numbering	Type	
<b>MB</b>  U <sub>P0/E</sub>	11	11	11	1	U <sub>P0/E</sub> M	U <sub>P0/E</sub> master
	12	12	12	2	U <sub>P0/E</sub> M	
	13	13	13	3	U <sub>P0/E</sub> M	
	14	14	14	4	U <sub>P0/E</sub> M	
	15	15	15	1	U <sub>P0/E</sub> S	U <sub>P0/E</sub> slave
	16	16	16	2	U <sub>P0/E</sub> S	
	17	17	17	3	U <sub>P0/E</sub> S	
	18	18	18	4	U <sub>P0/E</sub> S	
a/b	19	19	19	1	a/b	
	20	20	20	2	a/b	
	21	21	21	3	a/b	
	22	22	22	4	a/b	

Table 3-7 Standard numbering, MB 4/4 Hicom 112 (as of SW 2.0.1+)

## Overview of modules

### Standard extension number plans

Hicom 118	Ext. no.	Int. ext. no.	DDI no.	Port numbering	Type	
<b>MB</b>  U <sub>P0/E</sub>	11	11	11	1	U <sub>P0/E</sub> M	U <sub>P0/E</sub> master
	12	12	12	2	U <sub>P0/E</sub> M	
	13	13	13	3	U <sub>P0/E</sub> M	
	14	14	14	4	U <sub>P0/E</sub> M	
	15	15	15	5	U <sub>P0/E</sub> M	
	16	16	16	6	U <sub>P0/E</sub> M	
	17	17	17	1	U <sub>P0/E</sub> S	U <sub>P0/E</sub> slave
	18	18	18	2	U <sub>P0/E</sub> S	
	19	19	19	3	U <sub>P0/E</sub> S	
	20	20	20	4	U <sub>P0/E</sub> S	
	21	21	21	5	U <sub>P0/E</sub> S	
	22	22	22	6	U <sub>P0/E</sub> S	
a/b	23	23	23	1	a/b	
	24	24	24	2	a/b	
	25	25	25	3	a/b	
	26	26	26	4	a/b	

Table 3-8 Standard numbering, MB 6/4 Hicom 118 (as of SW 2.0.1+)

### 3.3.2 Extension number plans of the add-on modules

The extension number plans of the add-on modules have been changed relative to that of SW 2.0.1. The new assignment of the extension numbers and line numbers ensures consistent numbering at all times whenever the system is expanded. Attention must be paid to the new equipping sequence for extension and trunk modules.

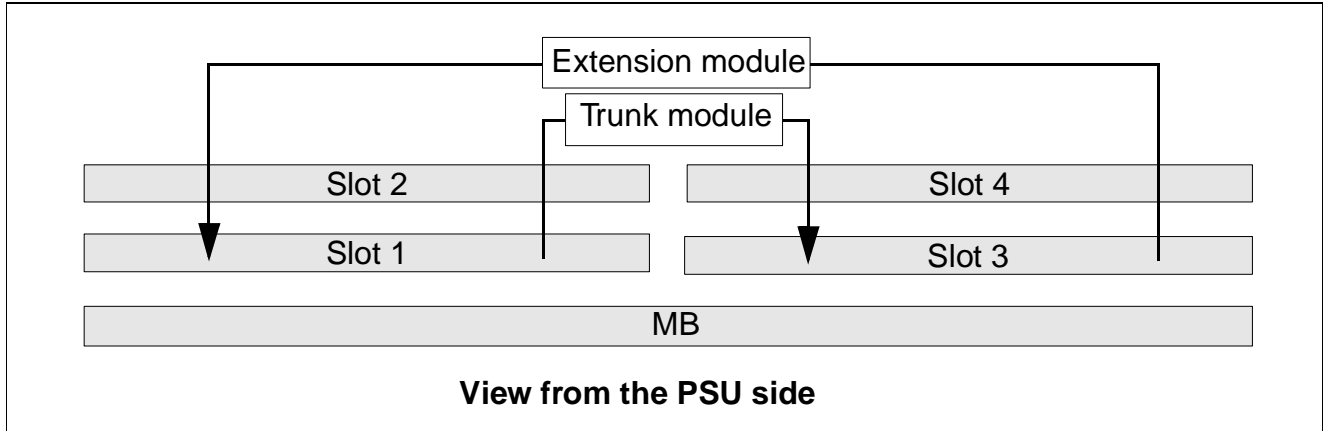
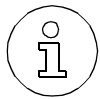


Figure 3-2 Equipping sequence for extension and trunk modules



The structure of the extension number plans is described in more detail in Chapter 5, Installation of the Service Manual (see [Section 5.5](#)).

## Overview of modules

### Main module - motherboard

## 3.4 Main module - motherboard

The MB 6/4 motherboard is the main board and accommodates 6 digital extension interfaces ( $U_{P0/E}$ ), 4 analogue extension interfaces (a/b), the V.24 interface (SIC – serial interface cable), an integrated digital modem, the signalling unit (SIU), a real-time clock with NC battery, and a PCM highway controller and conference circuit.

Hicom 108 MB 2/4 - motherboard with 2 x  $U_{P0/E}$ , 4 x a/b (see [Table 3-9](#))

Hicom 112 MB 4/4 - motherboard with 4 x  $U_{P0/E}$ , 4 x a/b (see [Table 3-10](#))

Hicom 118 MB 6/4 - motherboard with 6 x  $U_{P0/E}$ , 4 x a/b (see [Table 3-11](#))

An EXM or MPPI module can be connected to the MB for external music on hold. The module also has a V.24 interface with a mini-DIN connector that can be used for outputting or editing call charge data or customer data. Teleservice is possible via both the V.24 interface and the digital modem (in connection with a digital trunk of the STLS module).

$U_{P0/E}$  / a/b extensions are connected by means of screw terminals. These terminals can be removed from the module for installation or maintenance purposes.

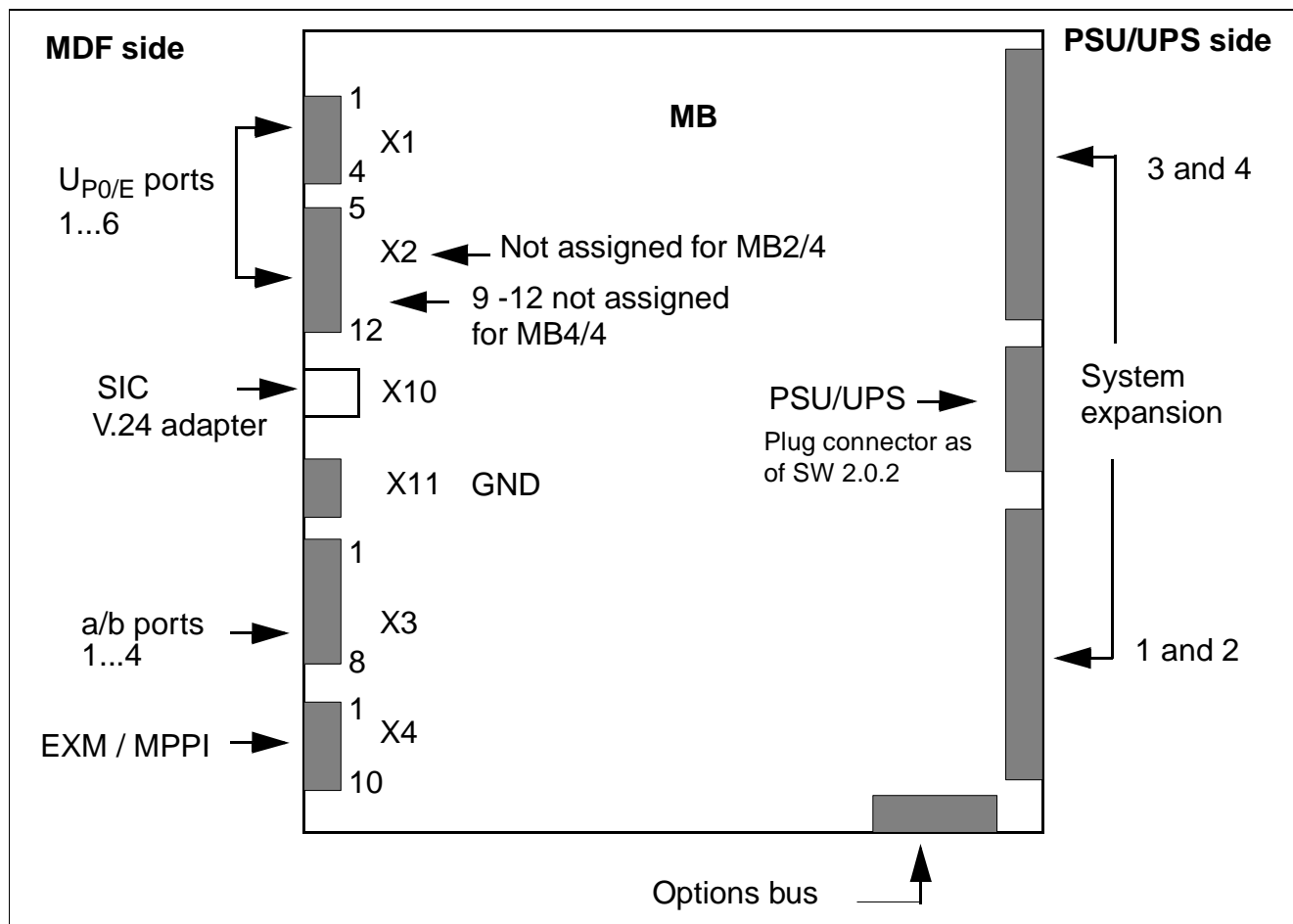


Figure 3-3 Motherboard interfaces (SW 2.0.1+)

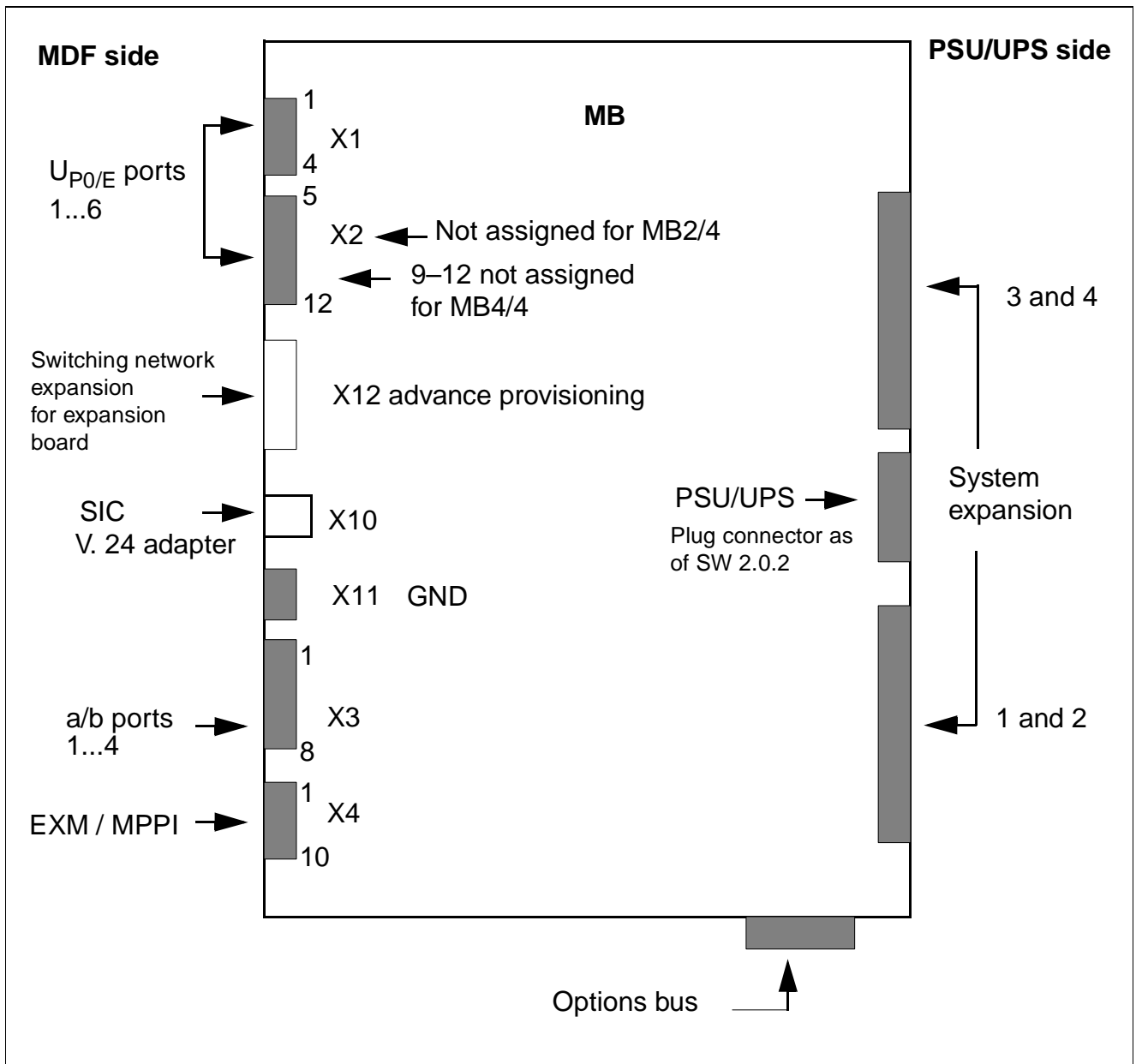


Figure 3-4 Motherboard interfaces (as of SW 2.0.2)

## Overview of modules

### Main module - motherboard

Contact	Port X1	Port X2	Port X3	Port X4
1	a1 - port 1		a 1 - port 1	GND
2	b1 - port 1		b 1 - port 1	not assigned
3	a2 - port 2		a 2 - port 2	not assigned
4	b2 - port 2		b 2 - port 2	EXMCL
5			a 3 - port 3	EXMDIR
6			b 3 - port 3	HRES
7			a 4 - port 4	EXMD
8			b 4 - port 4	EXMDET
9				+5V
10				not assigned
11				
12				

Table 3-9 Contact assignment of the MB interfaces 2/4 Hicom 108

Contact	Port X1	Port X2	Port X3	Port X4
1	a1 - port 1		a 1 - port 1	GND
2	b1 - port 1		b 1 - port 1	not assigned
3	a2 - port 2		a 2 - port 2	not assigned
4	b2 - port 2		b 2 - port 2	EXMCL
5		a3 - port 3	a 3 - port 3	EXMDIR
6		b3 - port 3	b 3 - port 3	HRES
7		a4 - port 4	a 4 - port 4	EXMD
8		b4 - port 4	b 4 - port 4	EXMDET
9				+5V
10				not assigned
11				
12				

Table 3-10 Contact assignment of the MB interfaces 4/4 Hicom 112

Contact	Port X1	Port X2	Port X3	Port X4
1	a1 - port 1		a 1 - port 1	GND
2	b1 - port 1		b 1 - port 1	not assigned
3	a2 - port 2		a 2 - port 2	not assigned
4	b2 - port 2		b 2 - port 2	EXMCL
5		a3 - port 3	a 3 - port 3	EXMDIR
6		b3 - port 3	b 3 - port 3	HRES
7		a4 - port 4	a 4 - port 4	EXMD
8		b4 - port 4	b 4 - port 4	EXMDET
9		a5 - port 5		+5V
10		b5 - port 5		not assigned

Table 3-11 Contact assignment of the MB interfaces 6/4 Hicom 118

Contact	Port X1	Port X2	Port X3	Port X4
11		a6 - port 6		
12		b6 - port 6		

Table 3-11 Contact assignment of the MB interfaces 6/4 Hicom 118

### 3.5 Add-on modules for system expansions

The Hicom 108 has one slot for the TLA2 (analogue trunk) or STLS2 (S<sub>0</sub>) module.

The Hicom 112 has two slots (1 and 3) for system expansions.

The Hicom 118 has 4 slots for expanded system configurations. The modules can be inserted in any of these slots. Refer to the relevant module descriptions for details of any restrictions.

Subsequent expansions carried out on the Hicom 118 should be installed following the new equipping sequence for extension and trunk modules.

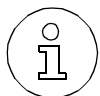
If slot 1 is assigned with an SLU8 (U<sub>P0/E</sub> extension) or an SLAS16 (a/b extensions), slot 2 is deactivated.

Module	Hicom 108	Hicom 108 NDL	Hicom 112	Hicom 118	Hicom 118-2*
	slot				
SLAS16	--	--	1, 3	3, 4	3, 4, 6, 7, 8
SLAS8	--	3	--	1 - 4	1 - 8
SLAS4	--	--	--	1 - 4	1 - 8
SLU8	--	--	--	3, 4	3, 4
STLS4	--	--	1, 3	1 - 4	1, 2, 3, 4
STLS2	1	--	1, 3	1 - 4	1, 2, 3, 4
TLA8	--	--	1, 3	1 - 4	1 - 8
TLA4	--	1	1, 3	1 - 4	1 - 8
TLA2	1	1	1, 3	1 - 4	1 - 8

\*= see [Section 12.3.2](#)

Table 3-12 Add-on modules for system expansions

The above table only shows the possible slots. It does not illustrate the maximum configuration possible or authorization-related restrictions.



Only SLAS8 modules can be inserted in slots 1 and 2. SLU modules must not be inserted in slot 1.



## Overview of modules

*Add-on modules for system expansions*



For Hicom 108, module cutover is dependent on the system code, i.e. unauthorised modules are detected and are not put into operation.

### 3.5.1 SLAS8/4 (subscriber line analogue)

The SLAS8/4 subscriber line module for 8/4 analogue a/b interfaces is used for connecting standard telephones and for additional devices (such as group 3 fax machines and door opener adapters) (see [Section 5.13](#)).

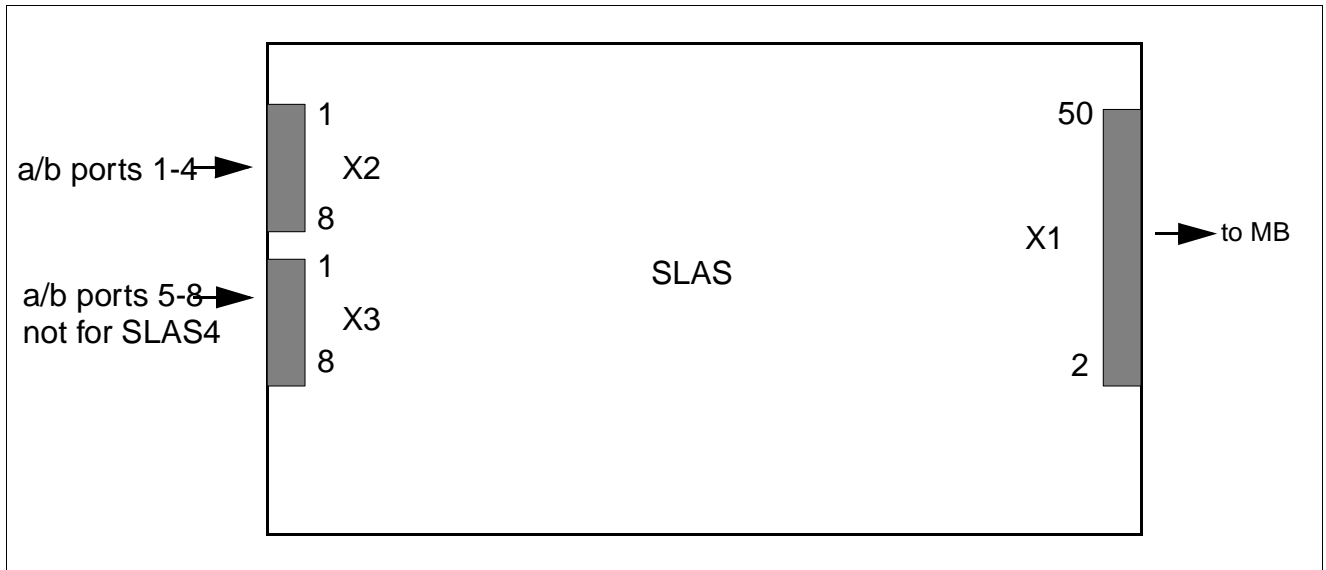


Figure 3-5 SLAS interfaces

Contact	X2 (a/b ports 1-4)	X3 (a/b ports 5-8)
1	a 1	a 5
2	b 1	b 5
3	a 2	a 6
4	b 2	b 6
5	a 3	a 7
6	b 3	b 7
7	a 4	a 8
8	b 4	b 8

Table 3-13 Contact assignment of the SLAS interfaces

## Overview of modules

Add-on modules for system expansions

### 3.5.2 SLAS16 (subscriber line analogue)

The SLAS16 subscriber line module for 16 analogue a/b interfaces is used for connecting standard telephones and for additional devices (such as group 3 fax machines and door opener adapters) (see [Section 5.13](#)).

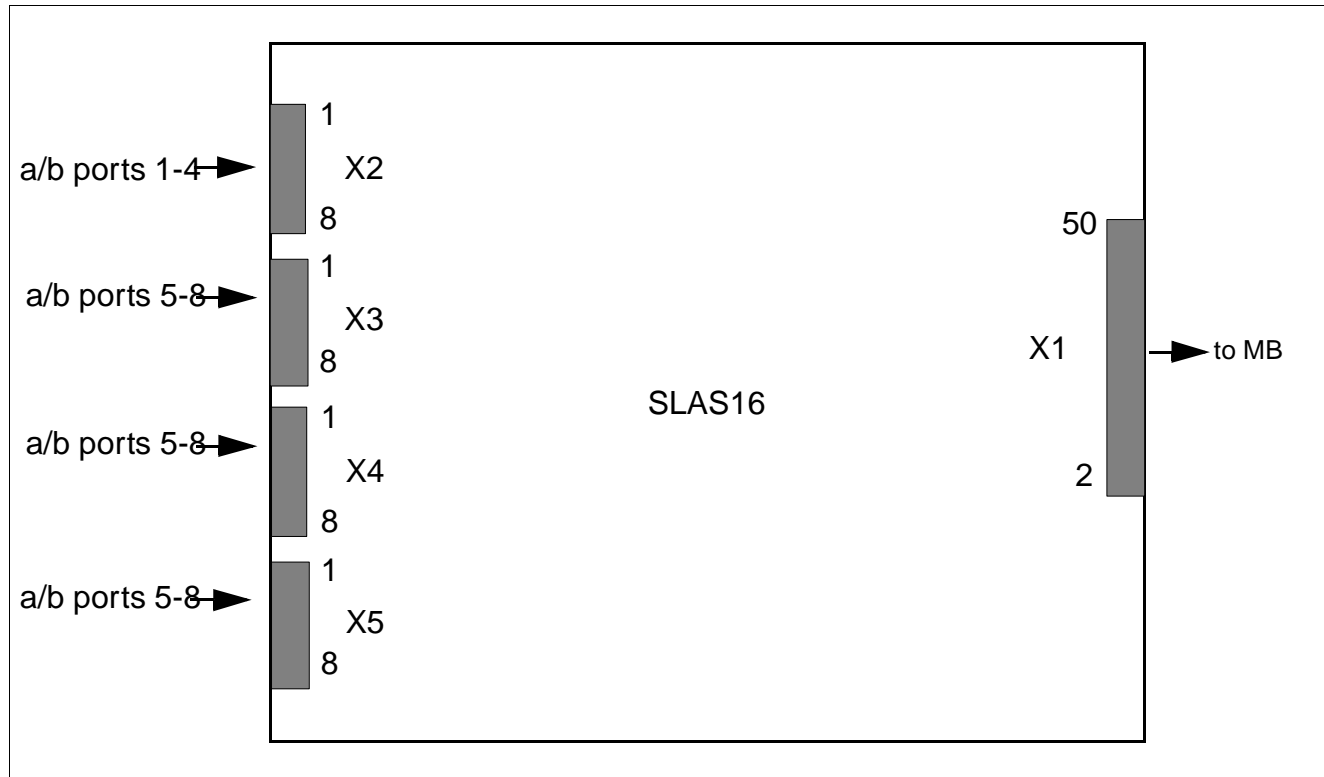


Figure 3-6 SLAS interfaces

Contact	X2 (a/b ports 1-4)	X3 (a/b ports 5-8)	X4 (a/b ports 9-12)	X5 (a/b ports 13-16)
1	a 1	a 5	a 9	a 13
2	b 1	b 5	b 9	b 13
3	a 2	a 6	a 10	a 14
4	b 2	b 6	b 10	b 14
5	a 3	a 7	a 11	a 15
6	b 3	b 7	b 11	b 15
7	a 4	a 8	a 12	a 16
8	b 4	b 8	b 12	b 16

Table 3-14 Contact assignment of the SLAS interfaces

### 3.5.3 SLU8 (subscriber line U<sub>P0/E</sub>)

The SLU8 module with 8 digital extension interfaces permits the connection of up to 16 digital terminals in master/slave configurations. A combination of Optiset and Optiset E is not possible in master/slave configuration.

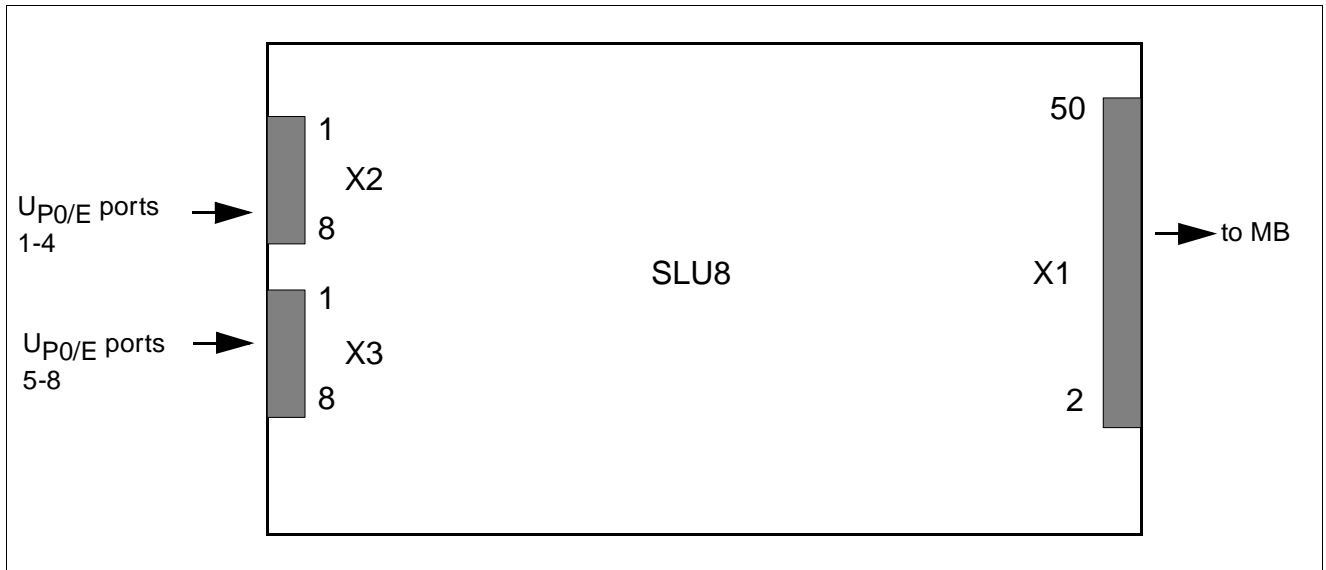
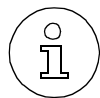


Figure 3-7 SLU8 interfaces



#### Caution

After the power supply has been disconnected, at least 2 minutes must elapse before the SLU can be removed or plugged in.  
Failure to adhere to this requirement could result in damage to the MB.



Slot 2 is deactivated if the SLU8 or SLAS16 card is plugged into slot 1.

Contact	X2 (U <sub>P0/E</sub> ports 1-4)	X3 (U <sub>P0/E</sub> ports 5-8)
1	a 1	a 5
2	b 1	b 5
3	a 2	a 6
4	b 2	b 6
5	a 3	a 7
6	b 3	b 7
7	a 4	a 8
8	b 4	b 8

Table 3-15 Contact assignment of the SLU interfaces

## Overview of modules


### Add-on modules for system expansions

#### 3.5.4 STLS (subscriber trunk line S<sub>0</sub>)

The STLS4 module has 4 S<sub>0</sub> ports. The ports can be operated either as external trunk interfaces in subscriber unit mode or as an internal S<sub>0</sub> interface (PMP bus) in network terminal (NT) mode (with cross-connected RX TX lines) (see [Figure 5-6](#)).

STLS2 is a subequipped version with 2 S<sub>0</sub> ports.

This module is also required for using the digital modem in the MB.



**No** provision is made for supplying power to mains-powered terminal devices. Devices of this type must be powered locally, e.g. using a plug-in mains adapter or bus PSU.

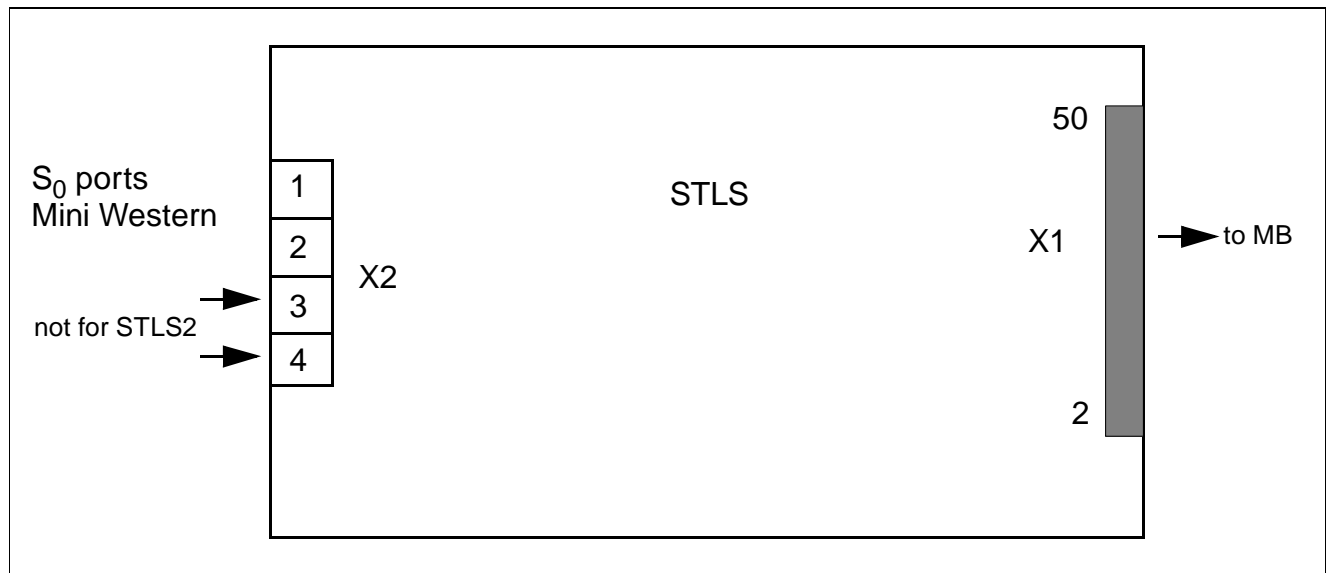


Figure 3-8 STLS interfaces

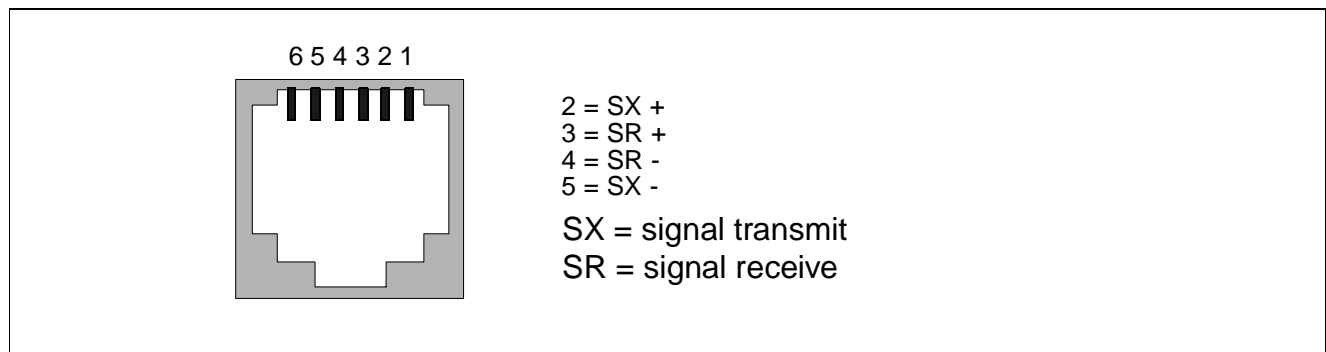


Figure 3-9 Contact assignment of the S<sub>0</sub> Mini Western socket

### 3.5.5 TLA 4/2 (trunk line analogue)

The TLA 4/2 is an MSI module with 4/2 analogue trunk lines for dial pulsing (DP) and DTMF signalling methods.

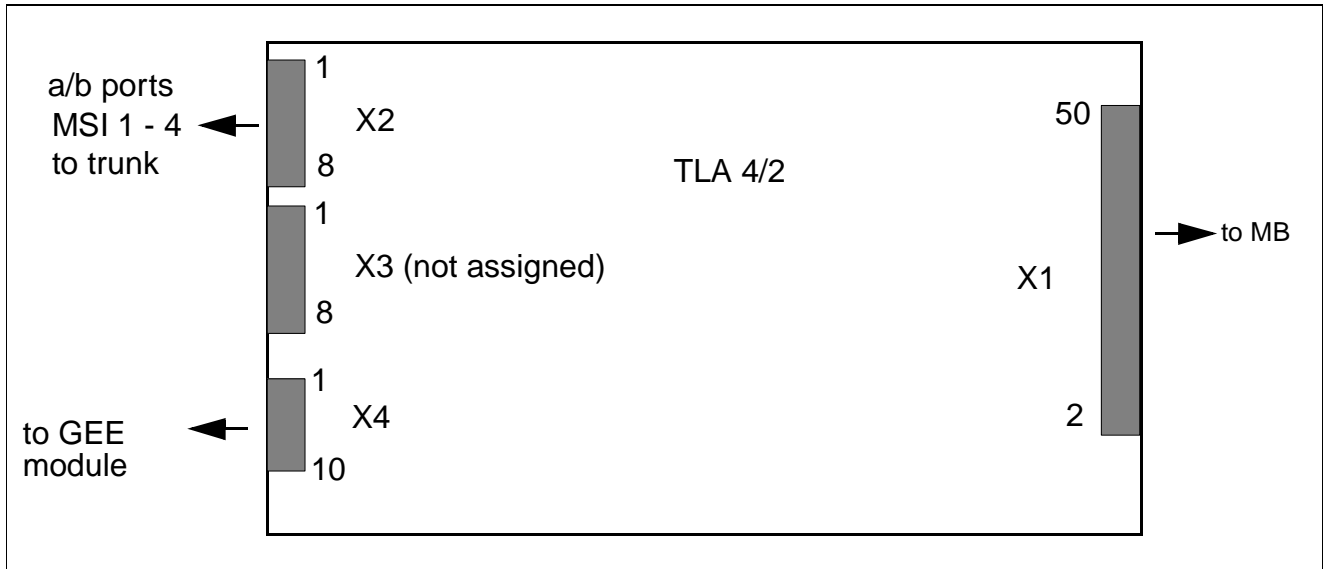


Figure 3-10 TLA 4/2 interfaces

Contact	Port X2	Port X4
1	a trunk 1	GND with GEE50 FRA, otherwise not assigned
2	b trunk 1	b trunk 1
3	a trunk 2	a trunk 1
4	b trunk 2	b trunk 2
5	a trunk 3	a trunk 2
6	b trunk 3	b trunk 3
7	a trunk 4	a trunk 3
8	b trunk 4	b trunk 4
9		a trunk 4
10		Call charging module assignment
	Trunks 1 and 2 only with TLA2	

Table 3-16 Contact assignment of the TLA 4/2 interfaces

3.5.6 TLA 8 (trunk line analogue)

The TLA 8 is an MSI module with 8 analogue trunk lines for dial pulsing (DP) and DTMF signalling methods.

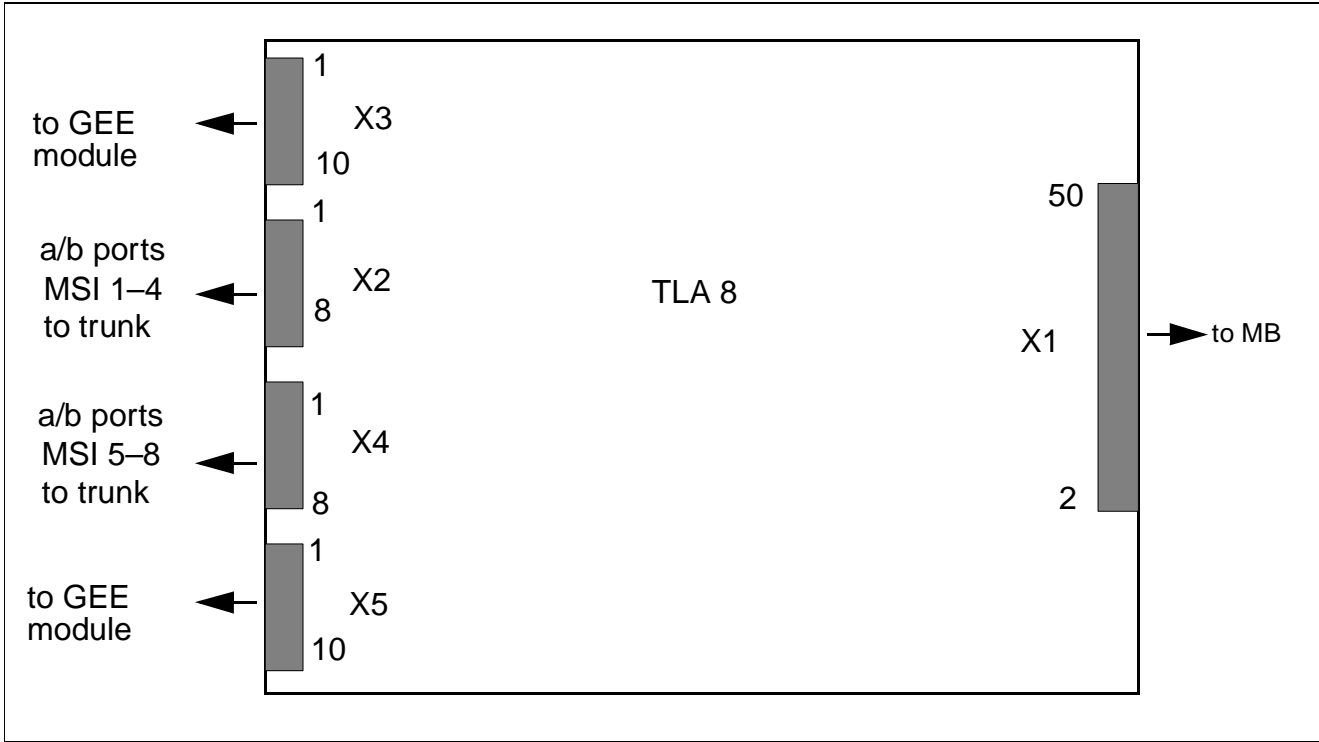


Figure 3-11 TLA 8 interfaces

Contact	Port X3	Port X2	Port X4	Port X5
1	GND	a trunk 1	a trunk 5	GND
2	b trunk 1	b trunk 1	b trunk 5	b trunk 5
3	a trunk 1	a trunk 2	a trunk 6	a trunk 5
4	b trunk 2	b trunk 2	b trunk 6	b trunk 6
5	a trunk 2	a trunk 3	a trunk 7	a trunk 6
6	b trunk 3	b trunk 3	b trunk 7	b trunk 7
7	a trunk 3	a trunk 4	a trunk 8	a trunk 7
8	b trunk 4	b trunk 4	b trunk 8	b trunk 8
9	a trunk 4			a trunk 8
10	GMZ 1			GMZ 2

GMZ= Call charging module assignment  
GND = GND with GEE50 FRA, otherwise not assigned

Table 3-17 Contact assignment of the TLA 8 interfaces

## 3.6 Function expansions with options bus

Function expansions can be connected to the O-bus (options bus) interface as required. No major hardware adaptations are necessary. The central processor recognises the connected modules when the system is booted and supplies them with the requisite parameters for initialisation. All modules are of the plug-in type. Up to four of a given module can be inserted (exception: only one STRB), or different modules can be combined as required.

### 3.6.1 Options adapter

The options bus adapter (OPA) is a mechanical and electrical adapter between the first options module and the system motherboard.

### 3.6.2 GEE module

There are 4 call metering receivers in each of the modules listed below. These receivers register the call charge pulses and perform initial processing functions:

Module	Frequency	Configurable for
GEE 12	12kHz	ITL, POR, SWZ, SPA, IM, FRA, AUS
GEE 16	16kHz	BEL, GER without blocking circuit
GEE 16	16kHz	FIN, RSA with blocking circuit
GEE 50	50Hz	NDL, GBR

Table 3-18 GEE module, national versions

- The channel for call charge recognition is looped into the trunk and then routed to the TLA.

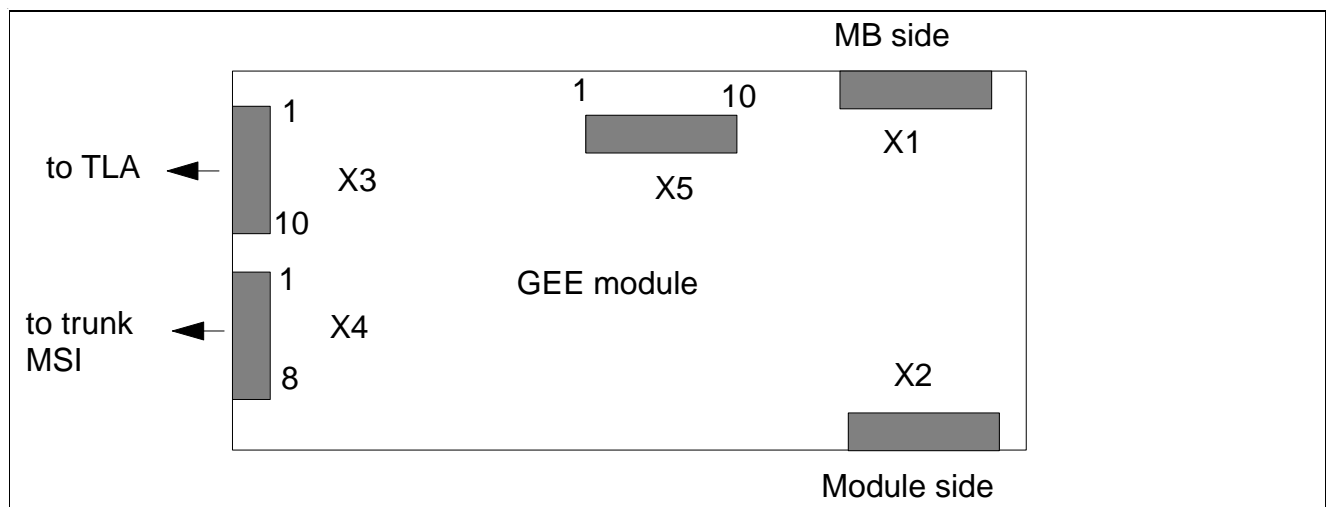


Figure 3-12 GEE module, interfaces



## Overview of modules

Function expansions with options bus

Contact		Port X3	Port X4	Port X5
1	a	GND *	Trunk 1 (AL1)	0V
2	b	Trunk 1 (BN 1)	Trunk 1 (BL1)	0V
3	a	Trunk 1 (AN 1)	Trunk 2 (AL2)	RTS
4	b	Trunk 2 (BN 2)	Trunk 2 (BL2)	CTS
5	a	Trunk 2 (AN 2)	Trunk 3 (AL3)	RXD
6	b	Trunk 3 (BN 3)	Trunk 3 (BL3)	TXD
7	a	Trunk 3 (AN 3)	Trunk 4 (AL4)	0V
8	b	Trunk 4 (BN 4)	Trunk 4 (BL4)	+5V
9	a	Trunk 4 (AN 4)		0V
10		Call charging module assignment		+5V

\* in the case of GEE 50 FRA (otherwise not assigned)

Table 3-19 Contact assignment of the GEE module

### 3.6.3 Serial interface board (SIB) (V.24 connection)

An additional V.24 interface is offered as an optional babyboard in the GEE12/16 module housing. Level matching and galvanic isolation of the V.24 adapter are implemented on the SIB. The 2400 baud rate cannot be changed.

Up to 4 GEE modules can be installed; up to 4 serial interface boards can therefore be operated.

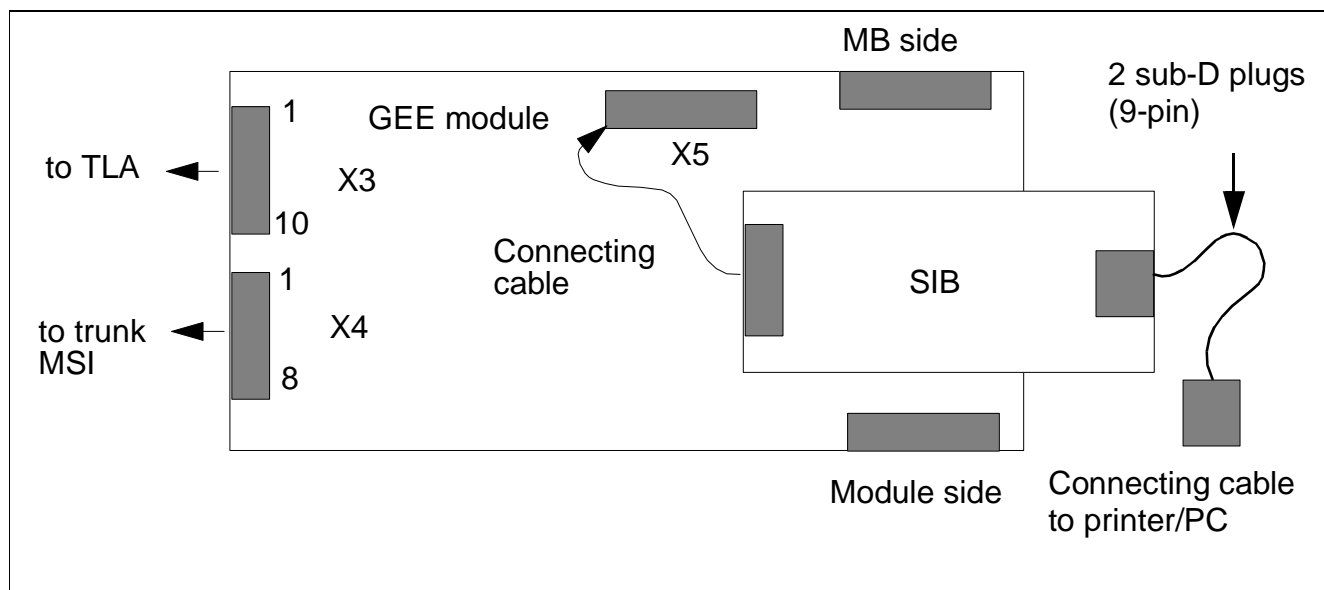


Figure 3-13 SIB (serial interface board) interfaces

### 3.6.4 STRB control relay module (actuators/sensors)

Actuators and sensors for monitoring, alarm output, control and regulation can be connected to the STRB control relay module. Actuators are relays that can be accessed from any extension by means of a code (e.g. door opener). Sensors can detect a change in status of the connected equipment and dial a number stored in the system (e.g. temperature monitor, movement detector etc.).

The module has a total of 4 outputs (each consisting of 2 floating flip-flops) and 4 optocouplers as control inputs. The optocouplers receive their external trigger pulses from a galvanically isolated NO switch.



#### Caution

Customer data is stored on the STRB module. When replacing the module, store the customer data on a separate medium. If you are using a module that has already been used, it may still contain "old" data.

Example: at port X4 or X6, supply the +12V signal at the control input of the relevant optocoupler via an NO contact that is galvanically isolated from the external device and program the alarm type. For reasons of safety, the control voltage for the optocoupler is galvanically isolated from the other derived voltages in the system.

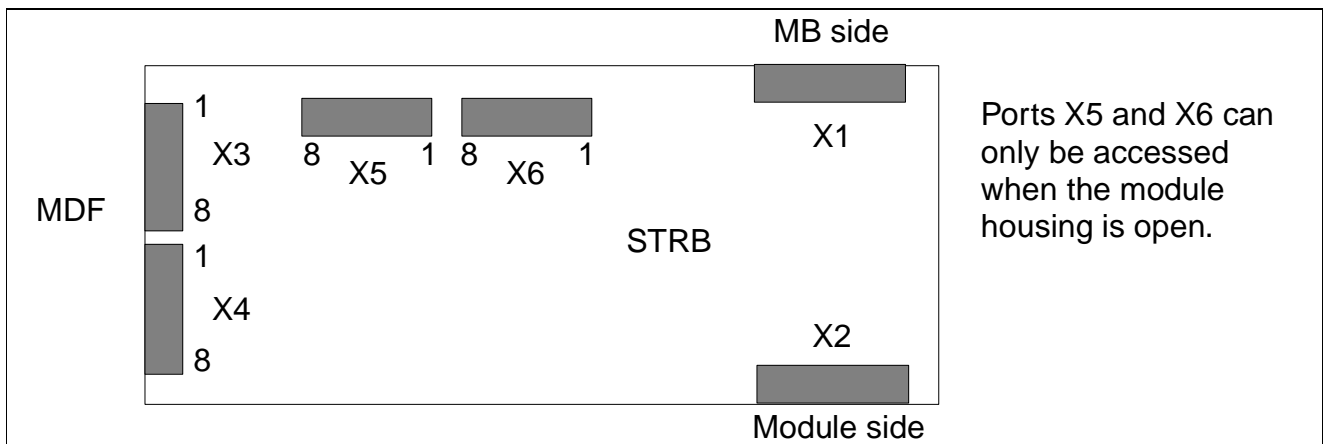


Figure 3-14 Control relay module – interfaces

Load capacity of outputs:	30W, 60 VA
I max. 1A	110V -
I max. 1A	125V ~

Table 3-20 Load capacity of control relay outputs



The required response time (expert mode code 25 2) must be entered in the case of the manual relay on/off and door opener functions.

## Overview of modules

Function expansions with options bus

Port	Contact	Signal	Function
X3	1	K 4.21	Flip-flop K4.2 IN
	2	K 4.22	Flip-flop K4.2 on
	3	K 4.23	Flip-flop K4.2 off
	4	K 3.21	Flip-flop K3.2 IN
	5	K 3.22	Flip-flop K3.2 on
	6	K 3.23	Flip-flop K3.2 off
	7	K 2.21	Flip-flop K2.2 IN
	8	K 2.22	Flip-flop K2.2 on
X4	1	K 2.23	Flip-flop K2.2 off
	2	K 1.21	Flip-flop K1.2 IN
	3	K 1.22	Flip-flop K1.2 on
	4	K 1.23	Flip-flop K1.2 off
	5	+12VI	+12V control voltage, optocoupler
	6	OPTKP 2	Control input, optocoupler 2
	7	+12VI	+12V control voltage, optocoupler
	8	OPTKP 1	Control input, optocoupler 1
X5	1	K 3.12	Flip-flop K3.1 on
	2	K 3.13	Flip-flop K3.1 off
	3	K 2.11	Flip-flop K2.1 IN
	4	K 2.12	Flip-flop K2.1 on
	5	K 2.13	Flip-flop K2.1 off
	6	K 1.11	Flip-flop K1.1 IN
	7	K 1.12	Flip-flop K1.1 on
	8	K 1.13	Flip-flop K1.1 off
X6	1	OPTKP 3	Control input, optocoupler 3
	2	+12VI	+12V control voltage, optocoupler
	3	OPTKP 4	Control input, optocoupler 4
	4	+12VI	+12V control voltage, optocoupler
	5	K 4.11	Flip-flop K4.1 IN
	6	K 4.12	Flip-flop K4.1 on
	7	K 4.13	Flip-flop K4.1 off
	8	K 3.11	Flip-flop K3.1 IN

Table 3-21 Contact assignment of STRB module

### **3.6.5 Fax recognition and DDI module**

Incoming fax calls are recognised and/or DTMF suffix dialling interpreted with the fax/DDI option. The following functions are possible:

#### **Fax recognition**

This function supports automatic switching to a defined extension when receiving a fax or modem call. When this function is activated, a trunk call is answered immediately. If a fax control tone is present, the fax connection is automatically through-connected. If no fax tone is present, the trunk call is switched to the extension predefined in the system (intercept console). After the call is answered, a recorded announcement informs the caller of the fax check.

#### **DDI**

This function permits a desired extension to be accessed directly. When this function is enabled, a trunk call is answered immediately. A recorded announcement informs the calling party that he or she can reach an extension directly by means of DTMF suffix dialling. If no suffix dialling occurs within a certain period of time, the trunk call is switched to the extension predefined in the system (intercept console).

#### **Fax/DDI**

When the appropriate system configuration (programming) is set, the fax and DTMF suffix dialling features can be implemented in combination using an options module.

#### **Automatic fax recognition (AutoFax)**

Lines that are not assigned to a fax option are also monitored for fax signals.

If an extension recognises a fax activation tone after answering an external call (within 10 s), the connection is automatically routed to the fax machine and the call to the internal extension is automatically disconnected.

Terminal display: *"Fax being received, please hang up"*

#### **Recorded announcement before answer**

Only the fax/DDI module's recorded announcement feature is used for this. The announcement module can be entered as a pseudo port in Call Management. If this entry is active (e.g. as the first port called), the announcement is played for the caller. The system then switches directly to the next extension/group entered.

As of SW 2.1, the extension number of the destination to which the option is to forward a call must be entered directly after option type "873" (announcement) in Call Management. The caller will incur call charges from the start of the announcement.

## Overview of modules

### Function expansions with options bus

#### Example:

List 1	1st entry " * "
List 1	2nd entry "873"
List 1	3rd entry "11" (intercept console) or other extension



This module requires an analogue channel to the switching network, which means that one a/b extension port is lost. This port is used for internal system communication and is **not** the same as the fax destination.

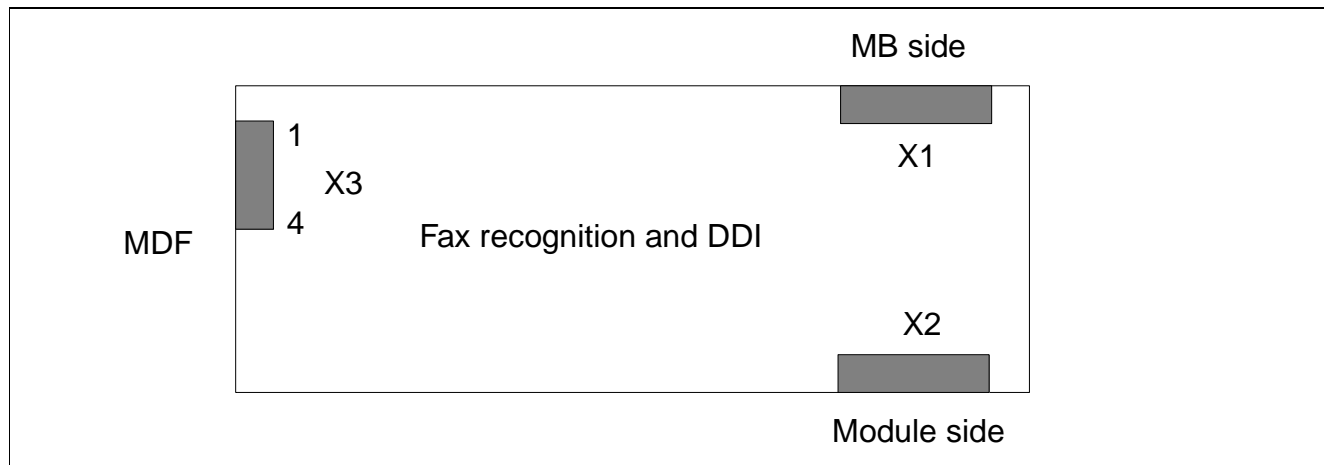


Figure 3-15 Fax recognition and DDI module - interfaces

Contact	Port X3
1	AT (wire A of a free analogue port)
2	BT (wire B of a free analogue port)
3	W1 (connection for jumper)
4	W2 (connection for jumper)

Table 3-22 Contact assignment of the fax recognition and DDI module



#### Caution

Normally, W1 and W2 are always jumpered and the jumper must be inserted before initial operation. Do not remove jumpers unless expressly instructed to do so.

### 3.6.6 ALUM module

If the power supply fails or a serious system error occurs, a trunk failure transfer is activated (analogue trunk only).

The module implements trunk failure transfer for four analogue terminals. Normal telephones are the only terminals that can be used as transfer destinations. The signalling method of the destination terminals must be the same as that of the trunk, otherwise dialling is not possible.

If the PBX is switched off or when a fault occurs, the trunks are connected directly to the terminals. When normal operation resumes, the transfer shown in diagrammatic form below is effected. Calls in progress will be disconnected when the power is lost or restored.

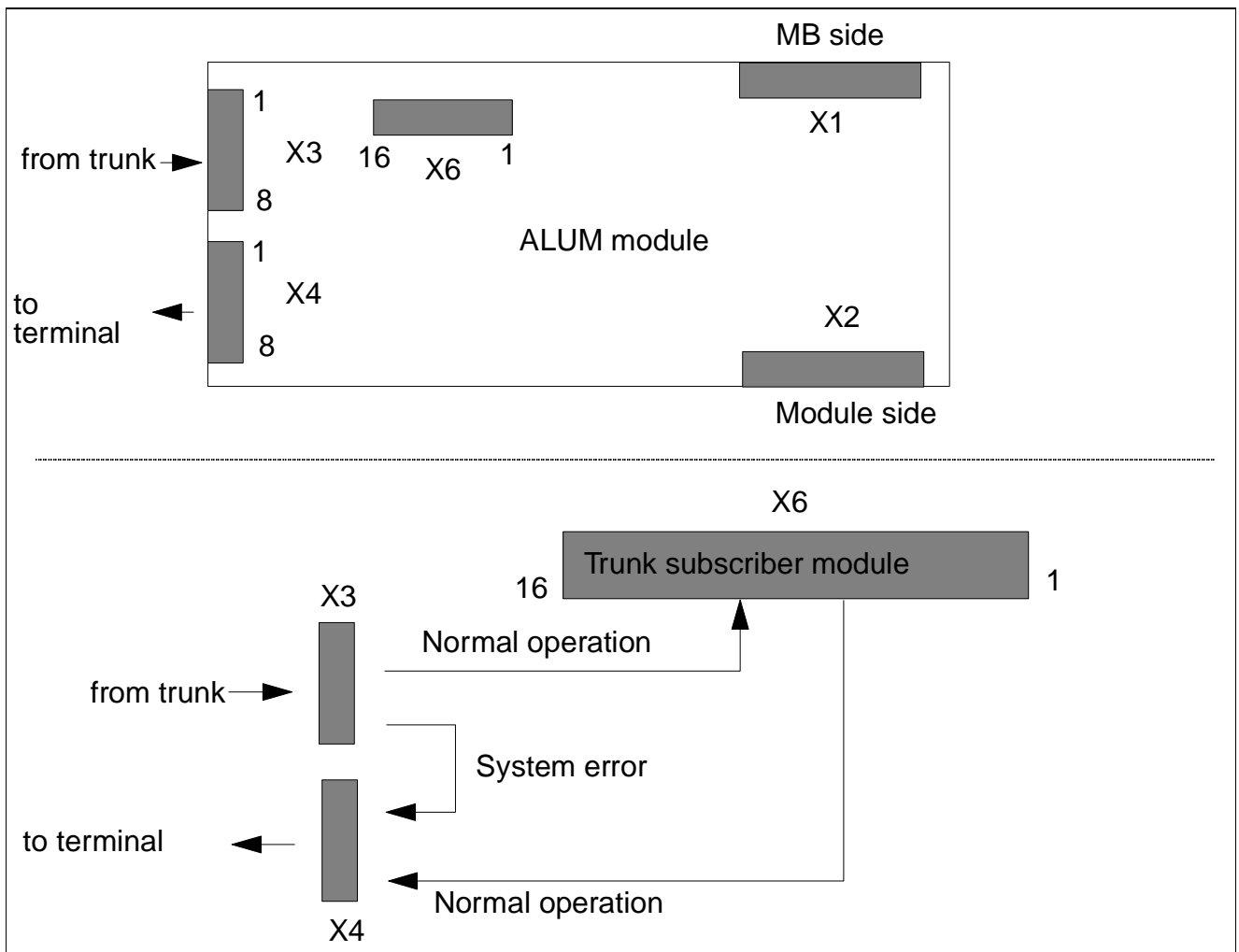
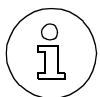


Figure 3-16 ALUM module interfaces



The X6 port can be accessed only when the module housing is open. The cable connected as standard is split and connected to the TLA and SLAS modules.

## Overview of modules

Function expansions with options bus

Contact	Port X3	Port X4	Port X6
1	R1 from trunk 1a	AE1 to ext. 1a	AT1 to TLA a
2	T1 from trunk 1b	BE1 to ext. 1b	BT1 to TLA b
3	R2 from trunk 2a	AE2 to ext. 2a	AT2 to TLA a
4	T2 from trunk 2b	BE2 to ext. 2b	BT2 to TLA b
5	R3 from trunk 3a	AE3 to ext. 3a	AT3 to TLA a
6	T3 from trunk 3b	BE3 to ext. 3b	BT3 to TLA b
7	R4 from trunk 4a	AE4 to ext. 4a	AT4 to TLA a
8	T4 from trunk 4b	BE4 to ext. 4b	BT4 to TLA b
9			TA1 to SLA* a
10			TB1 to SLA* b
11			TA2 to SLA* a
12			TB2 to SLA* b
13			TA3 to SLA* a
14			TB3 to SLA* b
15			TA4 to SLA* a
16			TB4 to SLA* b

\* = or to the free analogue port

Table 3-23 Contact assignment of the ALUM module

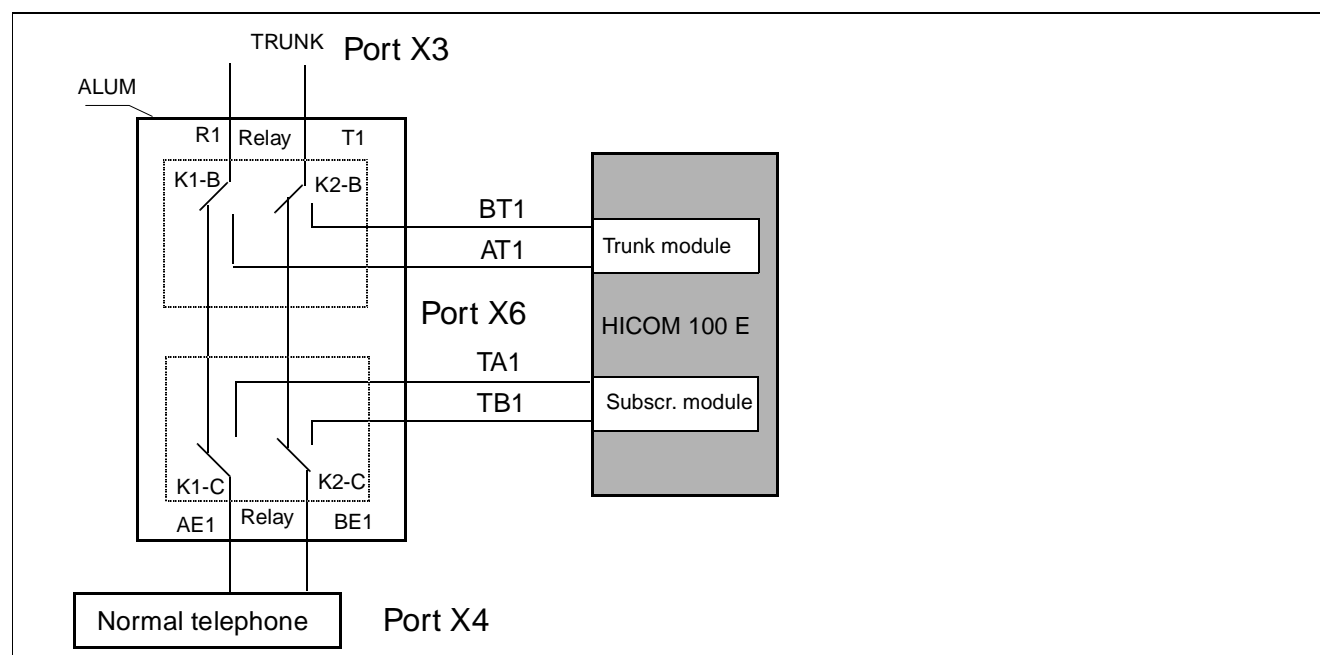


Figure 3-17 Basic layout of the ALUM module

### 3.6.7 STBG4 module

This current-limiter module is designed for use with the analogue trunk interface in **France**. It incorporates the current-limiter components and overvoltage isolators required.

The module does not occupy any options-bus lines.

The circuitry of slot X3 is designed such that the module cannot be inserted with reversed polarity.

The STBG channel is looped between the TLA and the trunk.

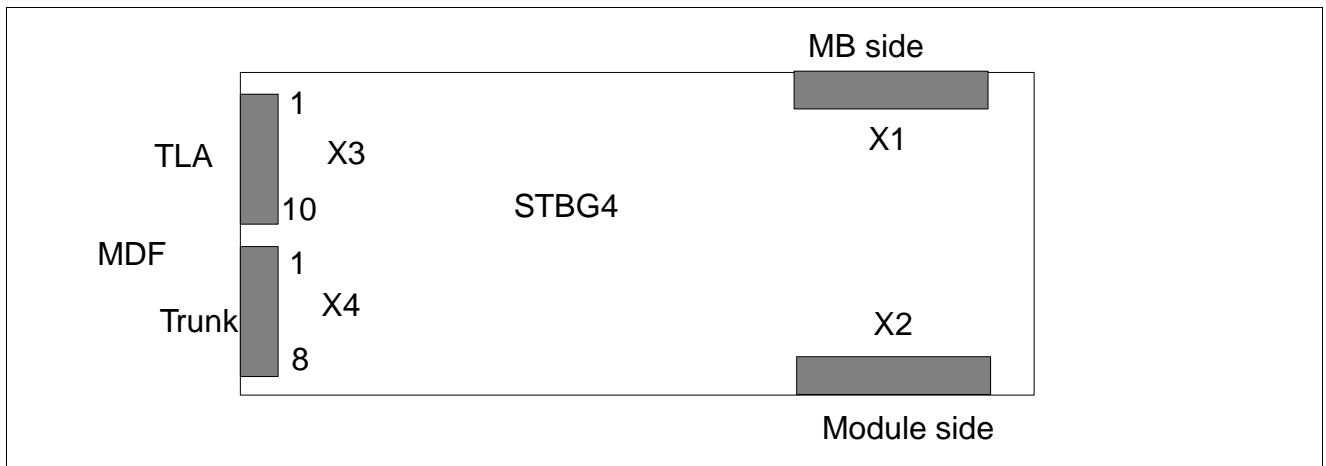


Figure 3-18 STBG4 module interfaces

Contact	Port X3	Port X4
1	Not assigned	AL 1
2	BL 1	BL 1
3	AN 1	AL 2
4	BL 2	BL 2
5	AN 2	AL 3
6	BL 3	BL 3
7	AN 3	AL 4
8	BL 4	BL 4
9	AN 4	
10	Not assigned	

Table 3-24 Contact assignment of the STBG module



3.7 Function expansions without options bus

These function expansions do not connect to the system via the options bus. They can be used in a variety of systems.

3.7.1 EXM/MPPI

The system features a slot for the external music module EXM or the stored music-on-hold module MPPI. The EXM module is always used in the first option expansion. It is inserted in the housing cover with the component side facing the cover. The MPPI module is located in a separate housing with fixed wiring and is positioned in the cable channel of the main distribution frame.

For the system settings (menu 211), it is possible to choose between music on/off, ring tone or music when a ringing call is transferred to another user. “Music on” must be programmed when these modules are connected. Ensure that the orientation of the ribbon cable is correct.

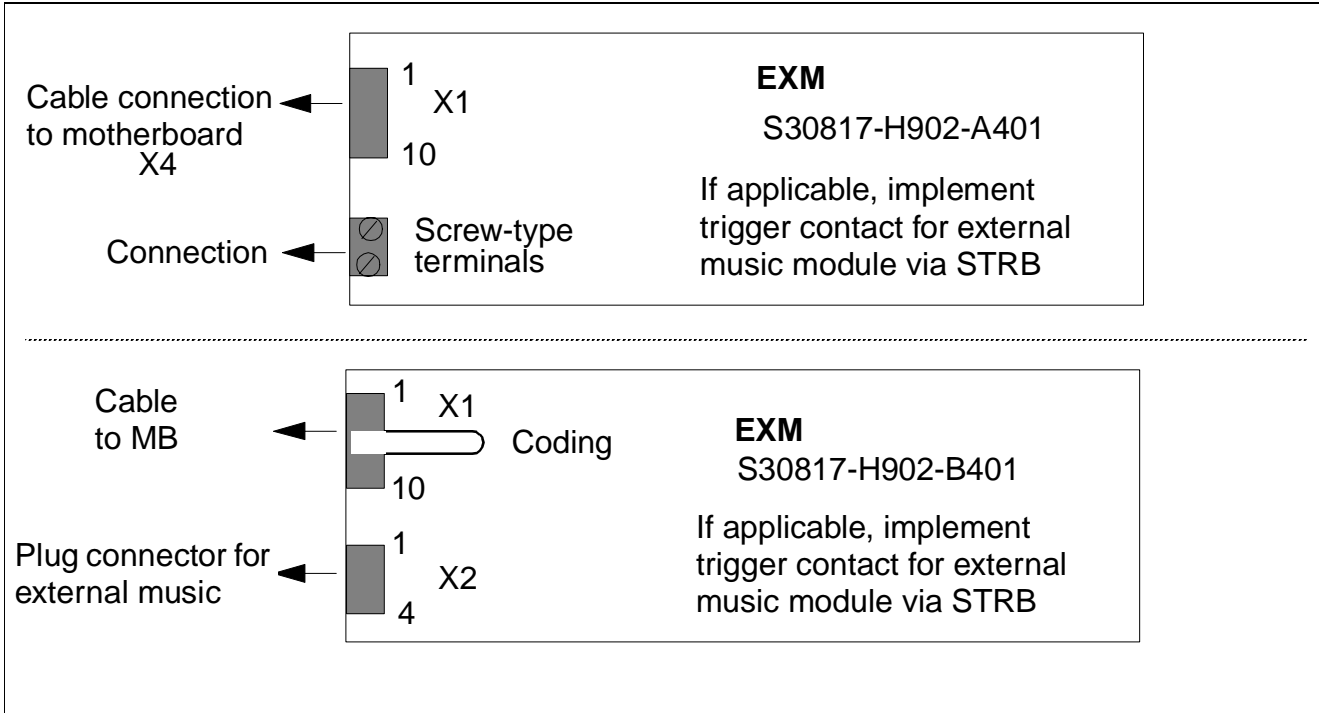


Figure 3-19 EXM interfaces (2 versions)

Contact	Port X1 - EXM	Port X2 - EXM	Port X4 - MPPI
1	GND	Connection	GND
2	Not assigned	Connection	Not assigned
3	Not assigned	Not assigned	Not assigned
4	EXMCL	Not assigned	EXMCL

Table 3-25 Contact assignment of the EXM/MPPI modules

Contact	Port X1 - EXM	Port X2 - EXM	Port X4 - MPPI
5	EXMDIR		EXMDIR
6	HRES		HRES
7	EXMD		EXMD
8	EXMDET		EXMDET
9	+5V		+5V
10	Not assigned		Not assigned

Table 3-25 Contact assignment of the EXM/MPPI modules

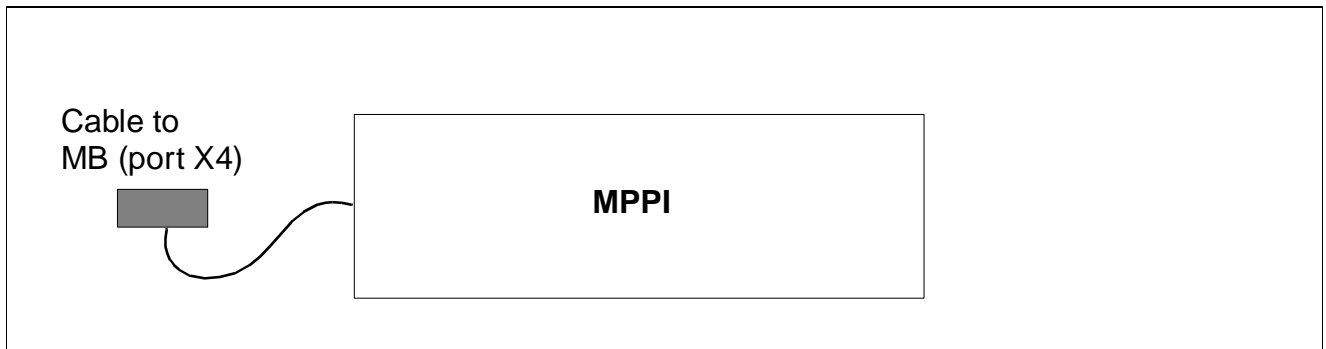


Figure 3-20 MPPI interface

3.7.2 Serial Interface Cable and V.24 adapter

The V.24 adapter cable is used to connect PCs directly. An electronic controller incorporated in the cable matches levels. Without level matching, V.24 operation is not possible.

For connecting printers or modems, differently wired adapters are connected between the 9-pole SubD socket of the cable and the interface of the relevant device.

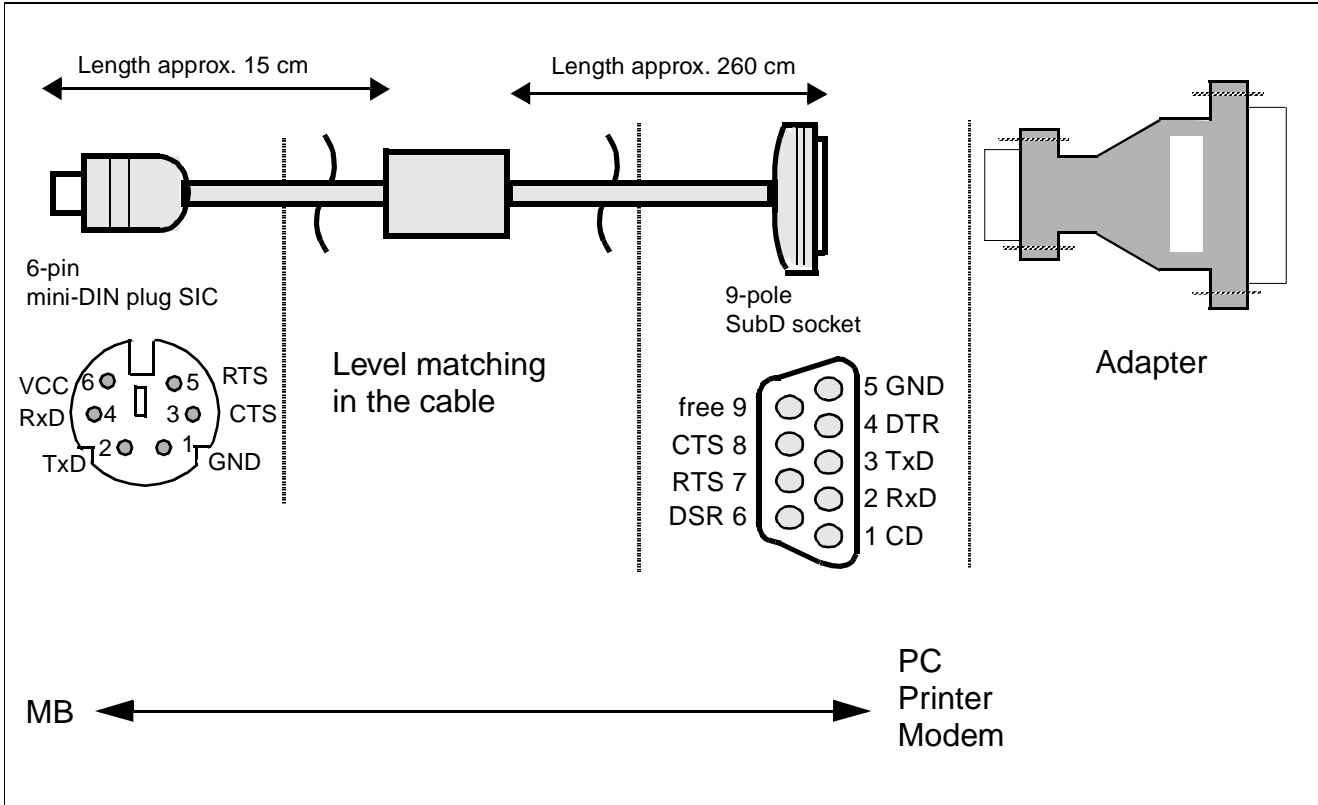


Figure 3-21 Pin assignment of the V.24 adapter cable

CD	Carrier Detect
CTS	Clear To Send
DSR	Data Send Ready
DTR	Data Terminal Ready
GND	Ground
RTS	Request To Send
RxD	Receive Data
TxD	Transmit Data

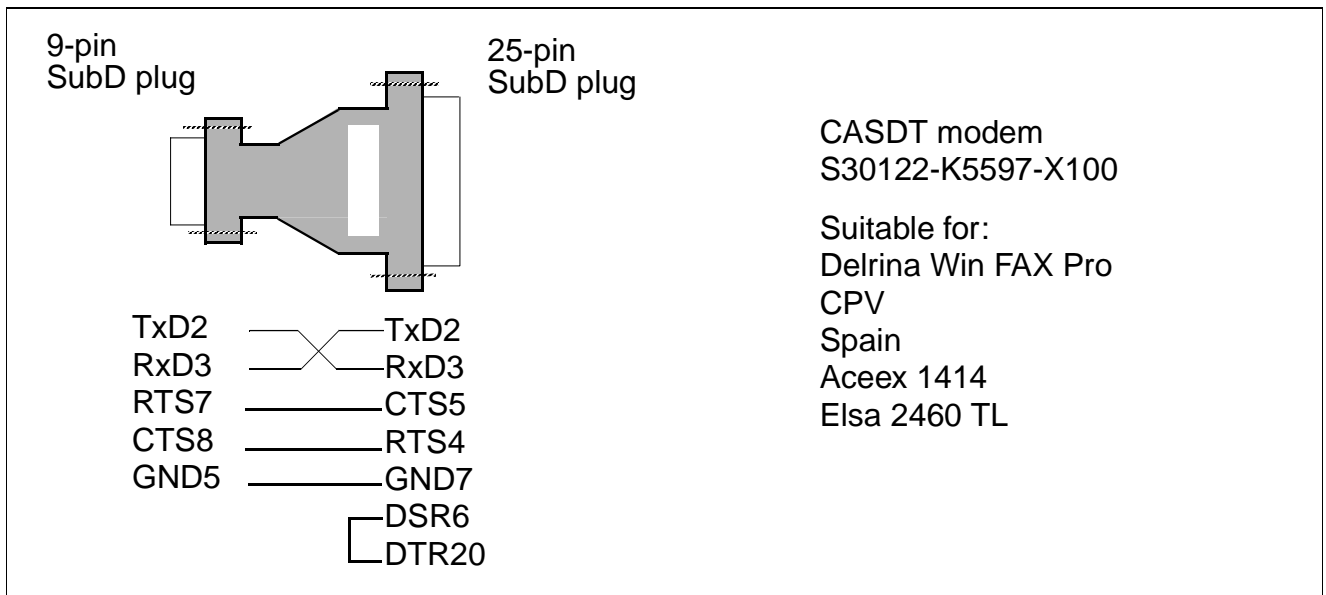


Figure 3-22 Pin assignment of the modem adapter

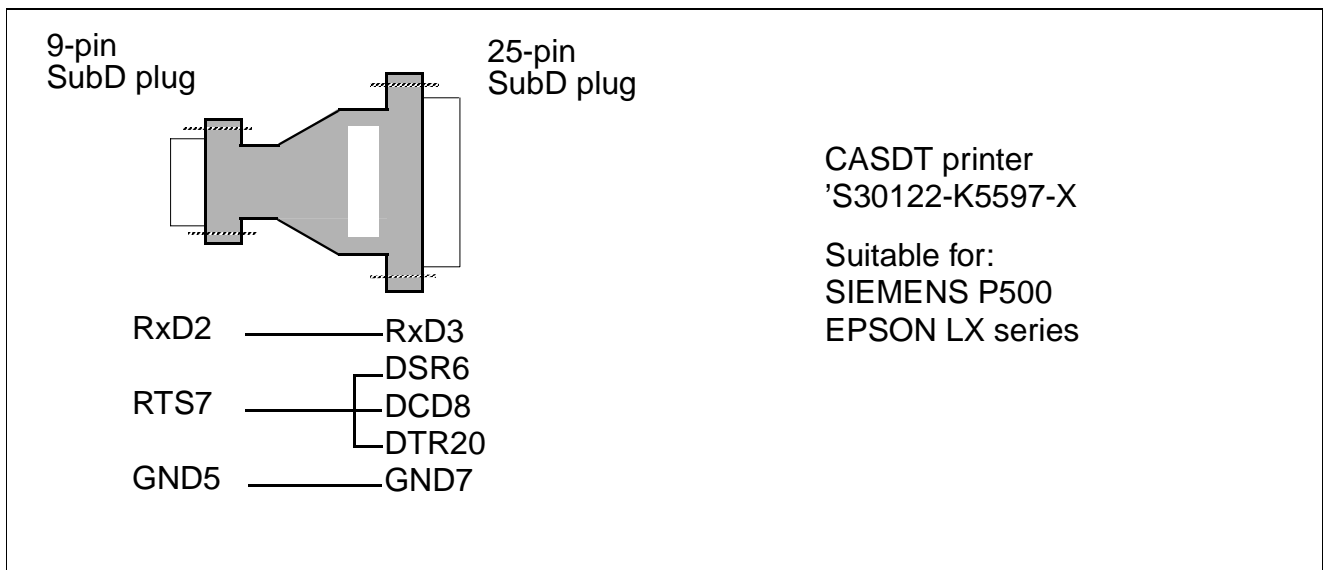


Figure 3-23 Pin assignment of the printer adapter

### 3.7.3 Coarse protection

The modules incorporate overvoltage protectors. Additional protection can be provided by commercially available connection boxes with gas-type surge arresters or the MDFU of the Hicom 125/130. National regulations must be observed. Generally speaking, the systems are not suitable for a cable that exits the building.

## Overview of modules

### Power supply (PSU/UPS)

## 3.8 Power supply (PSU/UPS)

The power supply units (PSU) are externally mounted; different output ratings are available for Hicom 108/112 and Hicom 118. An uninterruptible power supply (UPS) can be used as an alternative for Hicom 112 and Hicom 118. The power supply cables are fitted with rubber connectors. Connecting cables with plug connectors are used for the connection to the motherboard.

The following are used:

PSU/UPS 1 Hicom 108 (see [Table 5-1](#))

PSU/UPS 1 Hicom 112 (see [Table 5-1](#))

PSU/UPS2 Hicom 118 (see [Table 5-2](#))

Type	Derived voltages	Overall rating
PSU/UPS1	5V DC supply for electronics -48V DC supply for analogue and digital extensions 75Veff, 25 Hz ringing voltage (50 Hz FRA)	35 W
PSU/UPS2	5V DC supply for electronics -48V DC supply for analogue and digital extensions 75Veff, 25 Hz ringing voltage (50 Hz FRA)	90 W

Table 3-26 Power supply (PSU/UPS) – derived voltages

Battery voltage/capacity	Bridging time *	
	Hicom 108/112	Hicom 118
2x12V / 1, 2Ah	20 min	6 min
2x12V / 4Ah	100 min	35 min
2x12V / 7Ah	200 min	70 min
2x12V / 10Ah	300 min	130 min

\* The bridging times specified correspond to a system load of 60% and an ambient temperature of +25 °C

Table 3-27 Bridging times for different battery capacities



### Caution

Before commencing work on the system or installing expansions, always pull the power plug, disconnect (screw connections) and pull the PSU or UPS, as otherwise the modules may be damaged.



**Danger**

The heat sinks in the power supply unit are directly connected to the mains. Always unplug the mains plug before opening the PSU housing.

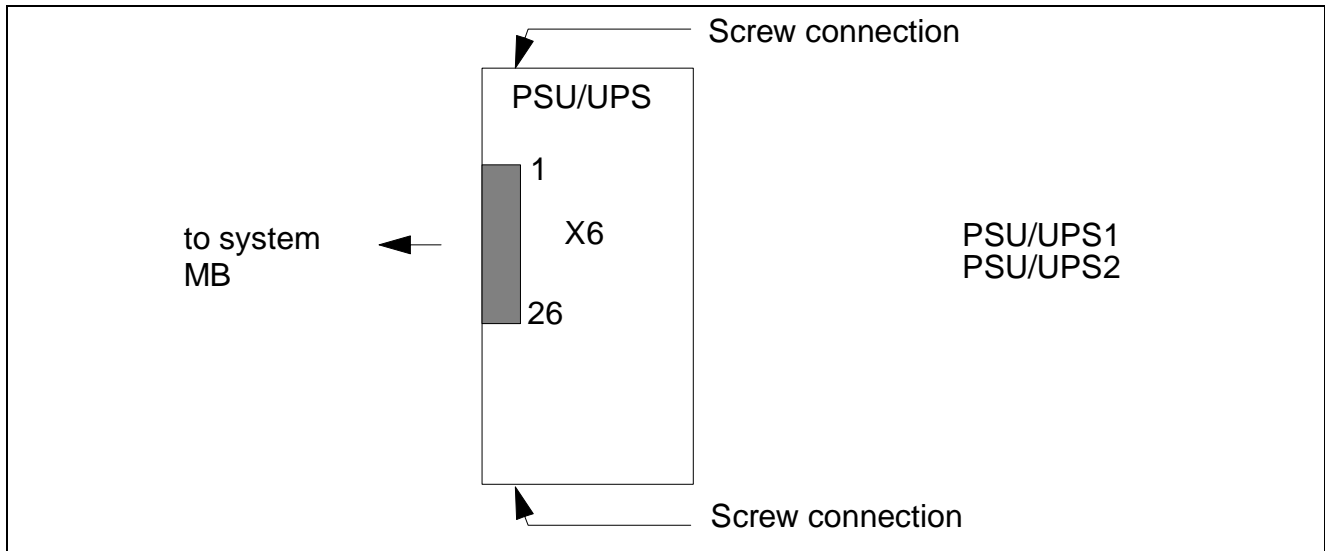


Figure 3-24 PSU/UPS circuitry

Contacts solder side	Contacts component side	Port X6
1	2	GND
3	4	GND
5	6	- 48V
7	8	- 48V
9	10	75VAC
11	12	GND
13/15	14	GND
17	16	+ 5V
19	18	+ 5V
21	20	+ 5V
	22	not assigned
23	24	GND
25	26	GND

Table 3-28 Contact assignment of PSU/UPS1 and PSU/UPS2

## Overview of modules

### *Main distribution frame*

## 3.9 Main distribution frame

The integral main distribution frame is the connecting point for the cable network to the trunk and to the extensions. Connection is implemented by means of screw connectors and terminal blocks. The terminal blocks can be disconnected from the system for easy assembly/disassembly.

The modules for system expansions and the function-expansion modules have their own distributor portions in the form of PC board connectors for the terminal blocks. The terminal blocks required for wiring are supplied with the respective modules.

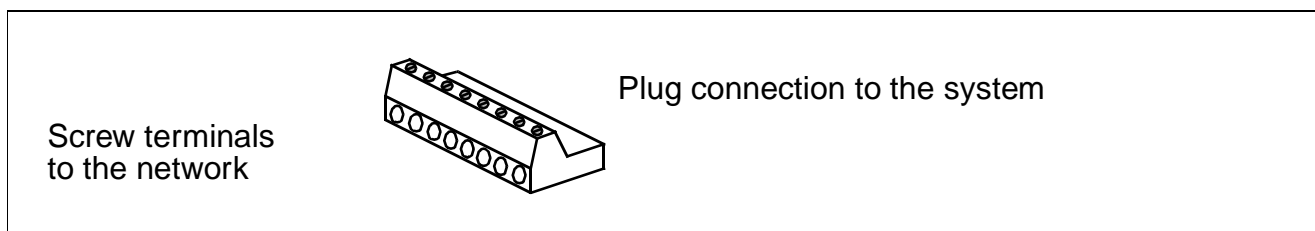


Figure 3-25 Main distribution frame – screw terminals

## 4 Features

### 4.1 Hardware features

Feature	Remarks
Switching network/speech path DDI	Digital
Trunk interfaces	<ul style="list-style-type: none"> <li>• S<sub>0</sub> (DSS1 protocol) PP and PMP</li> <li>• Analogue trunk (DP or DTMF)</li> <li>• DDI (AUS)</li> </ul>
Extension interfaces	<ul style="list-style-type: none"> <li>• U<sub>P0/E</sub></li> <li>• S<sub>0</sub>/DSS1, bus operation possible</li> <li>• a/b - DTMF/DP (ground key not supported)</li> </ul>
V.24 interface	PC, printer or modem port
SIB (additive V.24 interface)	Can be integrated in GEE module (babyboard)
Option bus	Option bus for function expansions

### 4.2 ANIS

Feature	Remarks
Call diversion in network (entire connection)  Only possible if it has been released by Telecom	ANIS (analogue network integrated services), only DTMF trunk lines
Three-way conference  Only possible if it has been released by Telecom	With consultation hold (shuttle) and conference
Outgoing call  Only possible if it has been released by Telecom	With traffic restrictions (15 categories)
Camp-on with busy telephone  Only possible if it has been released by Telecom	



## Features

### All traffic modes

#### 4.3 All traffic modes

Feature	Remarks
Intrusion	With code or DSS key
Hold, common	With hold key, retrieved with line key
Hold, exclusive	With key and call number (consultation hold)
Conference	Three-way conference, with at least 1 internal extension <b>(also available with external analogue trunks as of SW 2.0.2 )</b>
Shuttle	Shuttle between calls
Music on hold	Music from internal (MPPI) or external (EXM) source, MOH or ring tone can be set on the system
Call park	Multiple calls, each with assigned code
Consultation hold	Setting up a new call while a call is in progress, external and internal
Speed call transfer	Internal user A calls user B followed (immediately) by user C and then replaces handset (not for groups)
Transfer unsupervised	Transfer ringing call to other user
Transfer supervised	Transfer call in progress to other user
Attendant console/intercept console	Specified system extension, in case DDI not possible or not available
Recognise signalling method	Recognise signalling method of a/b extensions
Automatic return of call after timeout from Park or Hold	Retrieve call from park, hold etc.
Shared line	One telephone line for two extensions
Overload indicator	FRA only

## 4.4 Incoming traffic, general

Feature	Remarks
Camp-on/intrusion	Call to busy telephone with camp-on tone
Caller list	Calls recorded at terminals with display, specific number redial <b>(as of SW 2.0.2)</b>
Call pickup	Inside or outside call pickup groups
Call pickup groups	Pickup call from specified extensions, 2 groups <b>(as of SW 2.0.2 = 8 groups)</b>
Call diversion, internal	From user's own telephone to internal destination extension. Can also be activated while a call is in progress
Call diversion, external, ISDN	To external extensions. Can also be activated while a call is in progress <b>(authorisation assignment for each extension as of SW 2.0.2)</b>
Call diversion, external, analogue trunk, with timeout	
Call diversion in PBX	Enter basic rate access diverted in the attendant console
Do-not-disturb	Caller receives busy tone. Can also be activated while a call is in progress
Do-not-disturb override (ignore)	Can be configured for each extension
Group ringing	All specified extensions are called simultaneously. A procedure is available for excluding individual extensions <b>(as of SW 2.0.2)</b>
Exclude from group ringing/hunting group	An ext. of one or more extension groups can be excluded from all groups (by following a specific procedure)
Night service	Switchover in accordance with call allocation list
Call pickup	Calls to other extensions can be picked up (activated using a key combination or by following a defined procedure)
Differential ringing	Two different tones for executive/secretary relationship, internal trunk call
Call forwarding, no reply	An unanswered call is forwarded to another extension
Answer group	One extension determines which extensions are members of an answer group

## Features

### Outgoing traffic, general (as of SW 2.0.2)

Feature	Remarks
Silent call	For U <sub>P0/E</sub> extensions > no acoustic signal, display only <b>(as of SW 2.0.2)</b> <b>as of SW 2.1:</b> a one-time alerting tone is applied
Hunting group, linear	Call directed to 1st member of hunting group. An extension can be excluded by following a defined procedure <b>(as of SW 2.0.2)</b>
Hunting group, cyclic	Call directed to next free member of hunting group. An extension can be excluded by following a defined procedure <b>(as of SW 2.0.2)</b>
Reject a call	Although an incoming call is signalled, another outgoing line can be seized
Call pickup from answering machine	Any user can pickup a call being recorded onto an answering machine
Fax information	Optical signal that a fax message has been received

### 4.5 Outgoing traffic, general (as of SW 2.0.2)

Feature	Remarks
Code lock, individual	When lock is activated, direct trunk access is reduced to outward-restricted and central abbreviated dialling. Level of access can be changed <b>(as of SW 2.0.2)</b>
DTMF transmission	Can only be activated by procedure: Pushbutton telephone – after line seizure + dialogue menu or code Normal telephone (DP) – only after external dial + timeout + code Can be transmitted by DTMF: Normal telephone (DTMF) – after trunk seizure + signal key + code
Systemwide option in programming	

## 4.6 General trunk traffic

Feature	Remarks
Multi-device connection	ISDN multi-device connection for parallel operation with other ISDN terminals
Call park	Multiple calls, each with assigned code
Routing	External lines (B-channels) can be assigned a total of 4 routes. Only one route per line. Route overflow possible
Line keys	On pushbutton telephone (B-channel)
Call keys	Max. 6 keys for incoming and outgoing line seizure
Transit traffic	External call diversion or transfer to external destination
Suppression of call number display, system-wide	
Suppression of call number display, extension-related	<b>As of SW 2.0.2</b>

## 4.7 Incoming trunk traffic

Feature	Remarks
Camp-on without tone	
Call information	Information via V.24 interfaces, output of a data record, e.g. extension number of caller
Recorded announcement before answer	Via fax/DDI option
AutoFax	Line automatically monitored for fax signals
Direct dialling in (DDI)	ISDN and analogue trunk with DTMF pseudo DDI. Numbers with up to 10 digits possible
Fax recognition, integral	Option with fax/DDI module
Automatic fax call forwarding	Option with fax/DDI module
Group ringing, external and internal	All member extensions in group are called simultaneously
Night service	Fixed and variable

## Features

### Outgoing trunk traffic

Feature	Remarks
Night/intercept station	Destination extension for misdirected calls during day or night. No destination entry > entry of call allocation per line is evaluated
Pseudo DDI with DTMF	Option with fax/DDI module for analogue trunk mode (also available with PMP connection)
Call allocation	Defines who is called and when. Analogue trunks and B-channels handled differently
Answer group on/off	Variable allocation of who is called and when
Common ringer	An extension or relay is called as a common ringer
Call trace	Trace nuisance/malicious callers. Individual extension authorisation possible, Must be released on the exchange side by Telecom <b>(as of SW 2.0.2)</b>
Immediate intercept in the case of ISDN trunks	Immediate diversion to attendant console if an blank message is received <b>(AUS)</b>
Consultation-call prevention	Automatic clear-down of incoming consultation-calls <b>(BRA only)</b>

## 4.8 Outgoing trunk traffic

Feature	Remarks
Classes of service	Traffic restrictions for certain extensions
Trunk group, one-way	Various routes possible with overflow
Audible tone monitoring	Dialtone dedector for analogue trunks
Central abbreviated dialling	Abbreviated dialling destinations for all extensions.
Individual abbreviated dialling (in system)	Abbreviated dialling destinations for individual extensions <b>(as of SW 2.0.2)</b> also with dial pause and DTMF switchover)
Line seizure	<ul style="list-style-type: none"><li>• Trunk code and route code</li><li>• Line keys</li><li>• Call keys (virtual line keys)</li></ul>
Line seizure, automatic	Via trunk group and overflow trunk group
Dial pause	With analogue trunk (programmable)
Project code	Max. 11-character project code per call.
Booking code	Allocation of project-related charges

Feature	Remarks
Route keys	+ line keys
Route seizure, linear	Starting with the first line
Route seizure, cyclic	Starting with the next available line
Route overflow	If route is busy, the next available route is dialled
Temporary signalling method switchover	Follow defined procedure
End-of-dial detection	Once timer has expired
Signalling method to trunk	Automatic recognition of signalling method for analogue trunk modules
Toll restriction	Allowed numbers list and barred numbers list for different digit combinations, with the exception of the central abbreviated dialling entries up to SW 2.0.1+ > 1 allowed nos. + 1 barred nos. list <b>as of SW 2.0.2</b> > 6 allowed nos. + 6 barred nos. lists
Number redial	LNR (last number redial)
Extended number redial	Storage of last 3 numbers dialled ( <b>as of SW 2.0.2</b> )
Automatic line reservation	Reservation of a seized line ( <b>as of SW 2.0.2</b> )
Line reservation	<b>BRA</b>

## 4.9 Least cost routing

Feature	Remarks
Selection of network provider (GBR)	An existing network connection also supports access to private network providers. Data which remains undisclosed to the user is exchanged for subsequent call billing and call setup purposes.
LCR for GBR	
LCR for T-Net (Thyssen/Telecom) <b>Dial In Control Server (DICS)</b>	
Private network translation tables	

## Features

### Internal traffic

#### 4.10 Internal traffic

Feature	Remarks
Absence texts	For extensions calling internally
Mailbox	Cf. message texts
Voice calling	Voice calling at terminal devices with loudspeaker/handsfree talking
Handsfree answering	Respond to voice calling (only on terminals with handsfree talking)
Group ringing	All devices in group ring simultaneously
Hold, internal	Place internal caller on hold
Conference, internal	Three-way conference
Loudspeaker announcement	Via door opener
Message texts	For terminals with display
Names for internal extensions	For terminals with display
Babyphone	For terminals with handsfree talking. Activated when called
Consultation hold, internal	During internal call
Callback, no reply	Automatic callback after seizure, not for S <sub>0</sub> ext.
Callback, busy	Automatic callback when extension becomes available
Internal telephone directory	For terminals with display: displays and dials all connected extension numbers, as long as subscriber names are available
Entrance telephone	<b>Up to 4 entrance telephones, via door opener (TFE), TFE/V (as of SW 2.0.2)</b>
Door opener/loudspeaker announcement	<b>For 4 entrance telephones, via door opener (TFE), TFE/V (as of SW 2.0.2)</b>
Doorbell signalling	<b>From 4 entrance telephones, also follows call diversion (as of SW 2.0.2)</b>
Door busy indicator	Relay option via actuators
Open door from entrance telephone	<b>With DTMF code (as of SW 2.0.2)</b>

## 4.11 Miscellaneous

Feature	Remarks
Display features/functions activated by extension	Using PC service tool
Actuators/sensors	Option
Display extensions with trunk access	Procedure for querying extensions with trunk access at connected lines (AUS)
Pharmacy circuit/entrance telephone	Via door opener adapter box
Altering tones (can be deactivated)	From programming telephone for conferences and call pickup groups
Intrusion	Intrude on a call in progress (conference mode)
Administration and maintenance using PC teleservice	Remote maintenance: customer data memory manipulation via V.24 adapter and modem, S <sub>0</sub> modem
Administration and maintenance using PC tool	Customer data memory manipulation via V.24 adapter
Administration and maintenance during call	Start system administration during a call. Diagnosis with customer assistance
Executive/secretary functions	Two different tones
CTI functions/dialling aid: Associated dialling Automatic dialler Associated services  Call information	<ul style="list-style-type: none"> <li>• Computer Telephony Integration:</li> <li>• Dialling for another extension</li> <li>• Automatic dialler interface (e.g. Teleint)</li> <li>• Activate/deactivate various features for another extension</li> <li>• Additional information via V.24 as part of CDRC output, associated services</li> </ul>
Date and time display	For terminals with display <b>(as of SW 2.0.2, also weekdays)</b>
Service activation during a call	All "S" services
Use as satellite system (analogue trunk)	DTMF; connection extension port of main PBX
Use as satellite system (CorNet-N)	S <sub>0</sub> dedicated connection, CorNet protocol
Use as satellite system (Q-Sig)	S <sub>0</sub> dedication connection, Q-Sig protocol
Hotel applications	Caracas desk
Integral digital modem (S <sub>0</sub> )	Teleservice <b>(as of SW 2.0.2)</b>
Customer data memory output to V.24	Text format, e.g. for printer, terminal etc.



## Features

### Miscellaneous

Feature	Remarks
Customer data memory output, binary	Via V.24 to a PC
Multilingual text output, system-wide	For terminals with display
Multilingual text output, extension-related	For terminals with display <b>(as of SW 2.0.2)</b>
Night service, class of service	Can be limited to specific extensions
Names for central abbreviated dial	<b>(as of SW 2.0.2)</b>
Numbering scheme, flexible	Only with PC.
Voicemail connection	To a/b, data transfer by DTMF
Programming dial pauses	Analogue trunk <b>(as of SW 2.0.2)</b>
Remote administration and maintenance via DTMF	For analogue trunks <b>(as of SW 2.0.2)</b>
Route names	For terminals with display
Reset activated features	For each extension, via a defined procedure (also using PC tool)
Voice channel signalling protection	Permanent/temporary, tone intrusion override in voice channel, including camp-on tone
S <sub>0</sub> trunk	DSS1; PP and PMP (point-to-multipoint)
S <sub>0</sub> CorNet-N	Consultation hold, transfer, callback, call diversion, extension number
S <sub>0</sub> extension DSS1	Also point-to-multipoint (terminals with internal power supply)
Silent call	Procedure for deactivating call signal
SW query	From programming telephone, system+modules
Temporary call number suppression	Own ext. no. is not displayed
Satellite system capability	May be used as satellite PBX
Overload indicator	FRA only
Closed numbering	Always same extension number in the system network
Extension signalling method	DP/DTMF
On-hook dialling	Handsfree mode
Change external signalling method	Temporary DP/DTMF
X.31 connection	To the trunk interface
Common ringer	a/b or actuator via relay module
Resetting a call	Although a call is signalled, the called extension can seize another line (without answering the first call). The first call is then signalled as a camp-on call.

Feature	Remarks
Secondary telephone	Answer group by means of Call Management for executive/secretary configuration

#### 4.12 Call charges - call detail recording

Feature	Remarks
Call charge display at station (GESP)	Display call charges with call in progress
Call charges/extension (GET)	Call data recording for each extension (also output via V.24 interfaces)
Call charges/line (GEL)	Call data recording for each line (also output via V.24 interfaces)
Call detail recording, central (GEZ)	Central call data recording via V.24
Call duration recording	On the terminal for analogue trunks without GEE
Printer message	Message displayed at the programming telephone in the case of printer error <b>(as of SW 2.0.2)</b>

#### 4.13 Configuration

Feature	Remarks
Preconfiguration - ex-works settings	System is ready for use as soon as it is switched on
Change preconfiguration	Parameters can be customised
System administration	<ul style="list-style-type: none"> <li>• Programming telephone</li> <li>• PC tool</li> <li>• Teleservice <b>(as of SW 2.0.2)</b></li> <li>• DTMF remote administration &amp; maintenance <b>(as of SW 2.0.2)</b></li> <li>• Digital modem <b>(as of SW 2.0.2)</b></li> </ul>

## Features

*Measures in the event of a power failure*

### 4.14 Measures in the event of a power failure

Feature	Remarks
Non-volatile customer data memory	Customer data is retained
ALUM (option)	Power failure transfer, analogue trunk to analogue terminal
UPS (option)	Uninterruptible power supply (backup for approx. 20 minutes)

### 4.15 Cordless solutions

Feature	Remarks
Gigaset 900/1000	Connection via a/b port
Cordless connection to S <sub>0</sub>	Feature not yet available

### 4.16 CorNet-N

Feature	Remarks
Trunk access	Five standardised classes of service
Call diversion (DVN)	With partial rerouting (optimising B-channel utilisation)
Call detail recording	Not influenced by networking
Name display	Call number or name transmission, also in the case of incoming calls, uppercase only
Incoming connection	Main Hicom 100E PBX
Automatic callback, no reply/busy	Also systems-wide
Consultation hold	Via the second B-channel in the main PBX, also possible in user's own system
Transfer	
Accept	

## 4.17 Q-Sig networking

Feature	Remarks
BC - basic call	Includes consultation hold
ID - identification	CLIP, CLIR, COLP, COLR
CT - call transfer	Transfer
CC - call completion	Callback
CFU - call forwarding unconditional	Immediate call forwarding
NA - name identification	Name display
CINT - call interception	Intercept
CI - call intrusion	Intrusion
RE - recall	Recall in the network

## 4.18 Euro-ISDN to PBX

Feature	Remarks
MSN - multiple subscriber number	Multiple subscriber numbers
DDI - direct dialling in	Direct dialling in
CLIP - calling line identification presentation	Transfer personal ext. no.
CLIR - calling line identification restriction	No CLIP
COLP - connected line ident. presentation	Display number of caller A
COLR - connected line ident. restriction	No COLP
AOCD - advice of charge during	Display call charges during call
AOCE - advice of charge end	Display call charges after call
CFU - call forwarding unconditional	Immediate call diversion
CFNR - call forwarding no reply	Call forwarding, no reply
CFB - call forwarding busy	Call forwarding, busy
CCBS - completion of calls to busy subscr.	Callback, busy
CH - call hold	Call hold
CW - call waiting	Camp-on
3PTY - three party service	Internal conference with additional external ext.
SUB - subaddressing	Provide info. in addition to the ext. number
MCID - malicious call identification	Trace nuisance/malicious callers (via Telecom only)

## Features

### *Euro-ISDN to extension $S_0$*

Feature	Remarks
UUS 1 - user-to-user signalling	User-to-user signalling, service 1

## 4.19 Euro-ISDN to extension $S_0$

Features implemented for extension  $S_0$  bus

Feature	Remarks
MSN - multiple subscriber number	Multiple subscriber numbers
CLIP - calling line identification presentation	Transfer personal ext. no.
CLIR - calling line identification restriction	No CLIP
COLP - connected line ident. presentation	Display number of caller A
COLR - connected line ident. restriction	No COLP
A OCD - advice of charge during	Display call charges during call
CH - call hold	Call hold
TP - terminal portability	Call parking: a call parked at an a/b or $U_{P0/E}$ extension cannot be retrieved from an $S_0$ extension.
ECT - explicit call transfer	External call transfer
3PTY - three party service	Internal conference with additional external ext.
SUB - subaddressing	Provide info in addition to ext. number
UUS 1 - user-to-user signalling	User-to-user signalling, service 1
CW - call waiting	Camp-on
CFU - call forwarding unconditional	Immediate call diversion
CCBS - completion of calls to busy subscr.	Callback, busy
MCID - malicious call identification	Trace nuisance/malicious callers (via Telecom only)

## **4.20 Description of feature update in SW 2.1**

### **4.20.1 MSN feature**

With a system using ISDN2 trunks supporting MSN (Multi-Subscriber Numbering) or DDI (Direct Dial In) it is possible for a user to seize one of these numbers for an outgoing call. The MSN/DDI number seized will be passed to the Network and then the called party by means of ISDN CLIP (Calling Line Identification Presentation). This assumes that the called party has the ability to display CLIP.

A soft key may be programmed with this feature on Optiset telephones. This allows ease of seizure of that MSN/DDI for an outgoing call and also a visual indication if that number has been dialled for an incoming calls. A total of six MULAP keys may be programmed at each extension. This feature is only supported for use with Optiset telephones with programmable soft keys. Entry phones, analogue telephones and S<sub>0</sub> terminals can not be used in conjunction with this feature.

The functionality of this MSN feature corresponds to that of a MULAP (Multiple Line Appearance) on the Hicom 150E. It also has the added advantage of supporting more than one simultaneous incoming call under the same MSN/DDI.

A different ringtone may be assigned for calls to the MULAP group to differentiate between a MULAP call and an incoming direct DDI call to that extension.

This feature is not dependant on the type of ISDN protocol used.

#### **4.20.1.1 Specific seizure with existing DDI number**

An existing DDI number can be specifically seized for outgoing calls by implementing the appropriate procedure or programming a MUSAP key. An existing DDI number is assigned to this key.

Seizure does not take place, however, when this key is pressed. The route, line or prime line must be subsequently dialled for this purpose. The specific DDI of the key pressed is transferred to the destination of the call.

The MUSAP key acts as a call key in the case of incoming calls. Similar to line, call and DSS keys, the LED is activated in accordance with the status of the line or user task assigned to the key. Features such as shuttle, consultation, etc. are possible.

In the case of outgoing connections, this key only acts as a call key following external seizure.

Up to six MUSAP keys can be programmed (same field as that used to program call keys). Simultaneous programming of call and MUSAP keys is restricted accordingly.

A total number of six call and MUSAP keys can be programmed.

When using an existing DDI number for specific seizure, the procedure must first be called up by entering the appropriate code. The DDI number is then dialled before selecting the required call number.

## Features

### *Description of feature update in SW 2.1*

The feature is only supported for Symphony B and D terminals since these are the only models with programmable keys. In the case of normal telephones, EntryPhones and S<sub>0</sub> terminals, the feature is only available via the procedure, which can be saved, if necessary, by programming one of the terminal-specific keys.

The feature does not depend on point-to-point or point-to-multipoint mode. Nor is it dependent on the QSIG, CorNet and DSS1 protocols.

If, on the other hand, the user dials a line or route code, activates a line or route key for trunk access or dials a prime line, the DDI assigned to the extension in question is entered as the calling party number.

#### **4.20.1.2 DDI-specific signalling**

Different ring types must be programmed for destination extensions or groups reached under a specific DDI in order to generate an acoustic signal identifying the number dialled by the calling party in the case of an incoming external call.

When an external call is received, the acoustic signal entered for the destination extension of the call is applied. If an extension is called using its own DDI number, the external ring type entered for the extension is applicable. If the extension belongs to a group and the group is called with its DDI number, the group's external ring type is activated.

The external ring type entered for the destination extension is also acoustically applied to extensions which receive an external call via an answer group, call diversion or call forwarding.

The DDI-specific visual signal is provided by the LED assigned to the MUSAP key. In order to use this feature, MUSAP keys must be programmed at this terminal. The LED is thus activated in the same way as the call keys. The associated LED is activated only for terminals with an incoming call, with a call in progress or with an outgoing call, i.e. the MUSAP somehow applies to the current status.

The feature is only supported for Symphony B, D terminals, EntryPhones and normal telephones. DDI-specific acoustic signalling is not possible at S<sub>0</sub> terminals.

#### **4.20.1.3 MULAP group**

A group can be identified as a normal or a MULAP group in the customer database. A MULAP group is characterised by the fact that the group members are not contactable for incoming calls under the group extension number if one group member is busy. Terminals belonging to a MULAP group can set up outgoing connections, however.

#### **4.20.1.4 Configuration options**

##### **Key programming**

A MUSAP key is programmed in the same way as other keys (code \*91). Once the key has been selected, the "Assign ext. number" feature is activated and the corresponding DDI is entered. The digit analysis function assigns an extension port or a pseudo port to the external DDI in the case of a group. An error message is output if no assignment exists.

The extension or pseudo port is used as a reference for DDI. In this way, it is possible to subsequently modify the external DDI of the reference, without causing incorrect inputs in connection with seizure using a MUSAP key (CLIP transfers an external DDI that no longer exists).

##### **System administration**

The system administrator programs one of three available external ring types for each extension or pseudo port. The assignment of DDIs to extension PENS implicitly assigns external ring types to DDIs.

##### **Administration of call charge data**

An information element IE\_MUSAP is communicated in the Setup message for AOC for extension-specific and DDI-specific assignment of call charge data. This element contains the extension or pseudo port of which the DDI is transferred by CLIP to the outgoing seizure. This information element is stored on the basis of the line task. This supports section-related processing of call data in the case of features such as conference, shuttle, pickup or transfer.

#### **4.20.2 Automatic DTMF switchover after "CONNECT"**

The system can be configured to automatically switch over to DTMF mode after each outgoing call has been successfully set up (CONNECT).

This feature is useful, for example, when retrieving answering machine messages remotely. In this case, the "S" key (service) is always to be used to activate features during a call (not possible in the case of normal DP telephones).

#### **4.20.3 Enhanced door opener functions**

The door opener "Doorline M02" is supported.



## **Features**

*Description of feature update in SW 2.1*

### **4.20.4 Extending an undialed line**

A Hicom 100 E extension that does not have outgoing trunk access can be assigned an undialed line via the local attendant console to allow it to conduct an external call. This feature can be used from the local attendant console (not network-wide) or from any other attendant console, an attendant console group or from the night station. It can be configured using system-wide data.

### **4.20.5 Group ringing, no answer**

Group ringing is implemented by means of Call Management for incoming internal and external calls. Transfer to the group without notification is not available if even one of its member has activated external call diversion.

### **4.20.6 Printout of updated customer data**

It is possible to print out updated customer data, i.e. customer data that deviates from the standard data. This output form can only be activated with Assistant L.

## 5 Installation

Hicom 108/112/118 are compact, digital, Euro-ISDN-compatible telephone systems belonging to the Hicom 100 E product family. They may consist of several components depending on the version and on the requirements. These instructions are intended for **Siemens field engineers** or the **specialist contractors**, who install, connect and commission the individual components of the Hicom 108/112/118 system.

### 5.1 Selecting the most suitable location

- Note the dimensions of and clearances required by the system and an expansion box
- A mains socket must be within convenient reach
- Do not install near sources of heat or electrical fields.

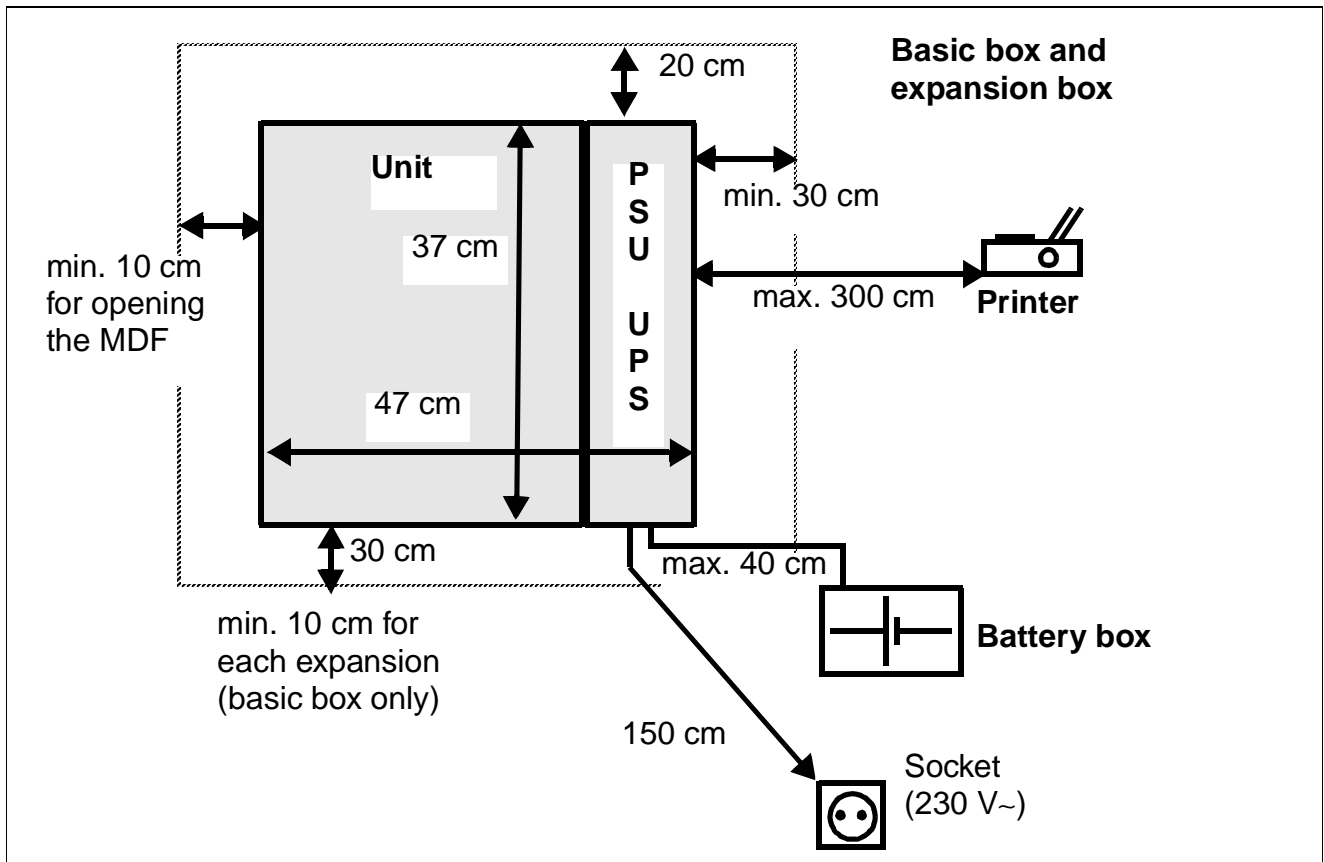


Figure 5-1 Location, dimensions and minimum clearances



#### Caution

The systems are only suitable for wall mounting.

## Installation

### *Installing the system unit*

## 5.2 Installing the system unit

- Drill hole, insert wall plug with screw supplied and turn screw until head projects by approx. 5 mm from surface of wall.
- Engage screw (1) in hole at top of unit.
- Mark positions of holes for remaining wall plugs (2) and remove unit.
- Drill holes, insert wall plugs and turn screws until head projects by approx. 5 mm.
- Engage unit on all three screws, align and tighten bottom screws.

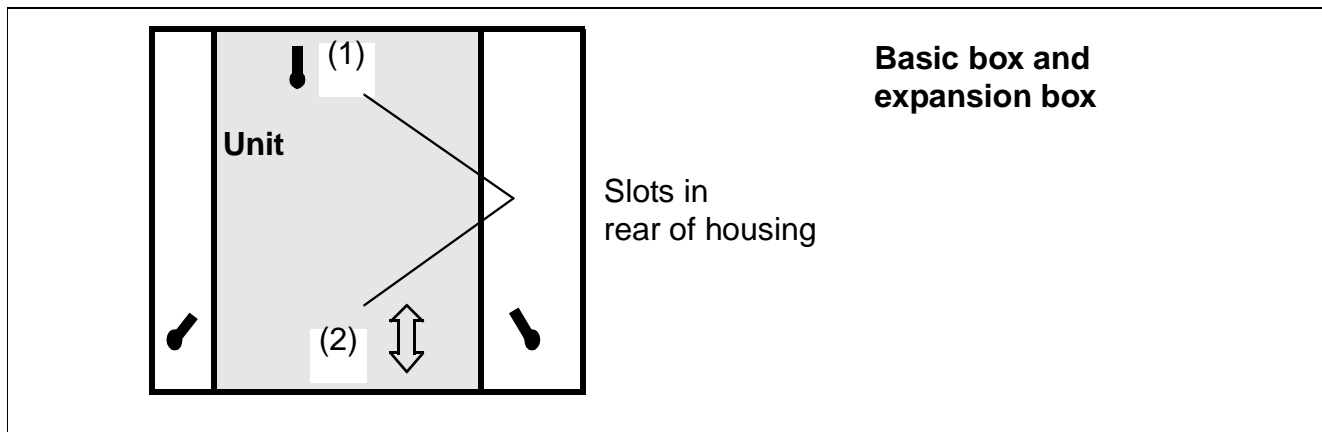


Figure 5-2 Installing unit

## 5.3 Power supply

Power supply unit with PSU power cable (1.5 m) or UPS with power cable (1.5 m) and battery adapter. Overall ratings:

- PSU 1/UPS1 > 35W
- PSU 2/UPS2 > 90W.

Mains input 230 Vac~  $\pm 15\%$  and 115 Vac~  $\pm 15\%$ . Input for 98 Vac to 264 Vac voltage range, Frequency 50/60 Hz.

The ringing voltage is adjustable (in the GER version, permanently set to 75 Vac, not adjustable):

- 75 Vac~  $\pm 10\%$  for 50 Hz or
- 75 Vac~  $\pm 10\%$  for 25 Hz

Insert and screw the PSU or UPS once the necessary add-on modules have been inserted.



### **Danger**

The heat sinks in the PSU are directly connected to the mains. Always unplug the mains plug before opening the PSU housing.

## **5.3.1 PSU1/UPS1 power supply**

Derived voltages	MB and system expansion	Function expansion	Total
+5V DC	7W	3W	10W
-48V DC	19W	1W	20W
-45/75 V DC	4W	–	4W

Table 5-1 Power split PSU1/UPS1 for Hicom 108/112

## **5.3.2 Battery for UPS1**

- 1 battery box for wall mounting, complete with rechargeable battery and connecting cable (0.4 m) to the power supply unit
- 4 wall plugs, 4 woodscrews
- Bridging times, see [Table 3-27](#)

## **5.3.3 PSU2/UPS2 power supply**

Derived voltages	MB and system expansion	Function expansion	Total
+5V DC	15W	5W	20W
–48V DC	50, 8W	2W	52, 8W
–45/75 V DC	8W	–	8W

Table 5-2 Power split PSU2/UPS2 for Hicom 118

### 5.3.4 Battery for UPS2

- 1 battery box for wall mounting with rechargeable battery and connecting cable (0.4 m) to the power supply unit
- 4 wall plugs, 4 woodscrews
- Bridging times, see [Table 3-27](#)

### 5.3.5 Installing the battery box

If the UPS (uninterruptible power supply) is required, proceed as follows:

- Mount the battery box on the wall, no more than 40 cm from the power supply unit
- Connect the cable to the PSU. Check the switch setting!  
On = mains/battery operation  
Off = mains operation

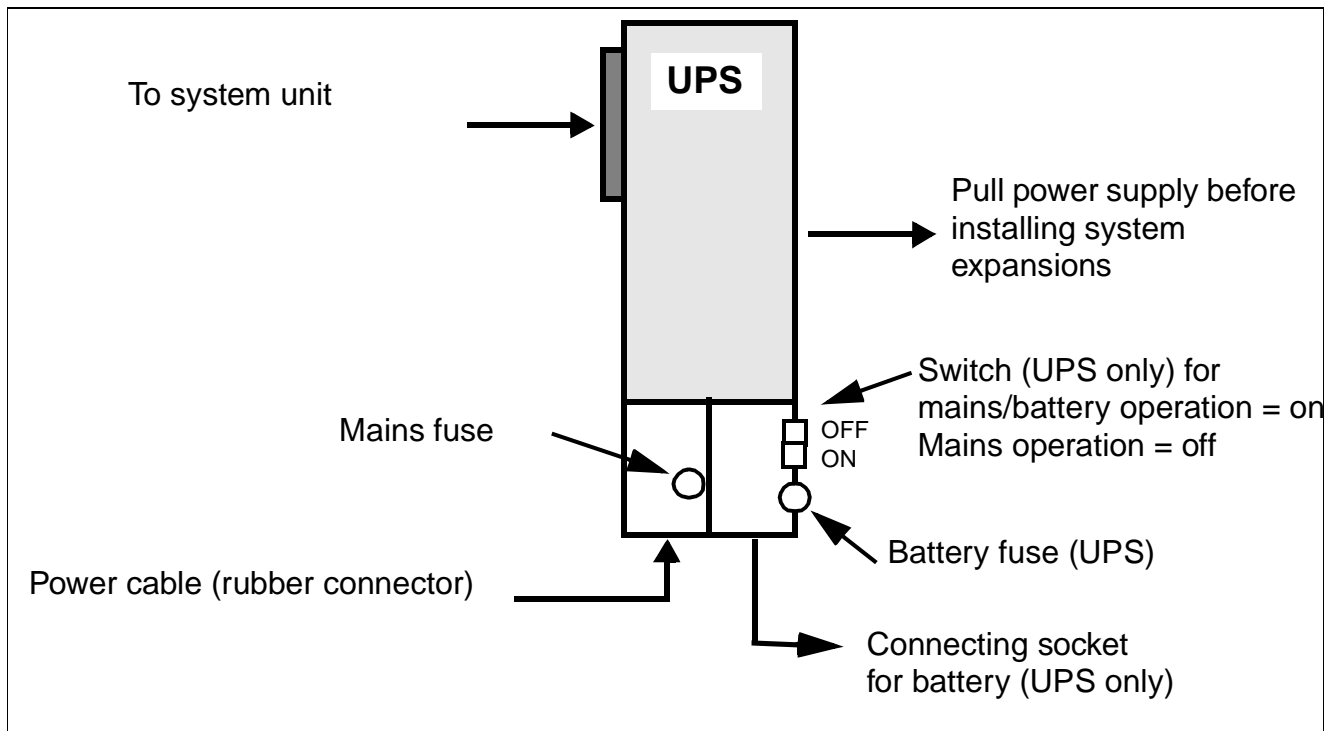


Figure 5-3 Connecting the UPS battery cable



#### **Danger**

Do not insert the power cable in the mains socket until all installation and connection work has been completed.



**Caution**

Plugging/unplugging the mains plug is basically the only way to activate/deactivate the system. If a UPS is fitted, always deactivate battery mode before pulling the mains plug.

## Installation

### *Installing cards for system expansions*

## 5.4 Installing cards for system expansions

The new equipping sequence must be observed when installing subsequent expansions to the Hicom 118. This is the counting scheme for the individual slots:

Trunk modules	1 2 4 3
Subscriber modules	3 4 2 1

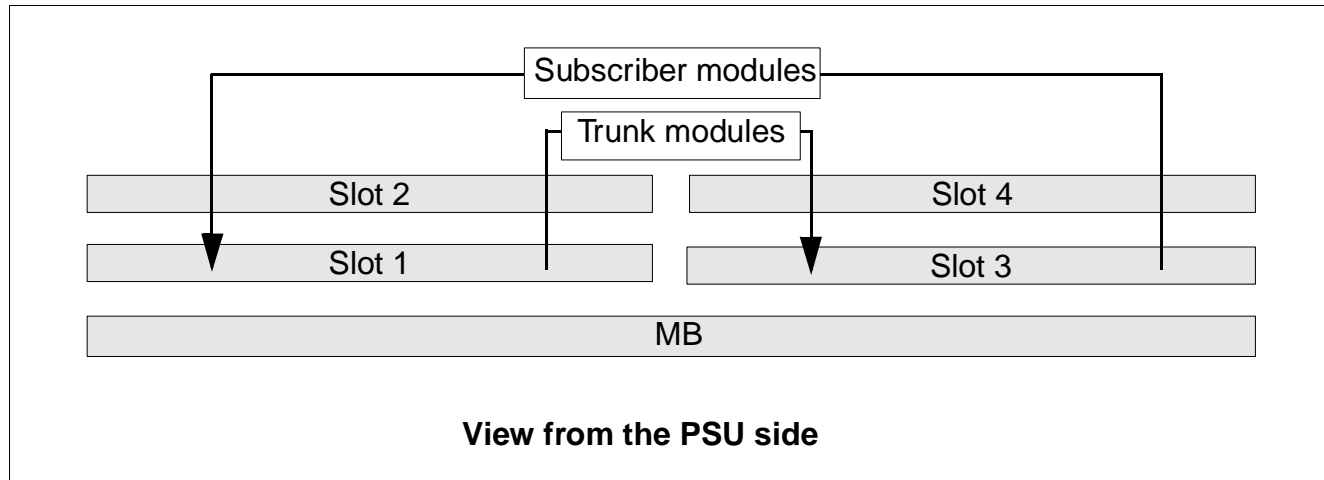


Figure 5-4 Equipping sequence for subscriber and trunk modules

Connect system expansions to one another and to the MB via ribbon cable, noting ribbon cable colour coding.

### 5.4.1 Installing or replacing an SLU8

After the power supply has been disconnected, at least 2 min. must elapse before the SLU can be removed or a new SLU module can be plugged.

Failure to adhere to this requirement could result in damage to the MB [Figure 3-7](#).

## 5.5 Extension and line number allocation

The extension and line numbers are allocated consecutively during system startup.

The following rules apply to consecutive extension number allocation:

- The system configuration status is stored in the EEPROM on first initialisation. This data is accessed after each system reset and the system's extension number play is generated from this data.
- If a changed equipping scheme is detected during startup:
  - Missing or defective module > no action.

- Other module type detected > module will not be put into operation.
- Same module type detected, but smaller number of channels > module will be put into operation with fewer ports; there will be a gap.
- Same module type detected, but larger number of channels > module will be put into operation with the number of channels stored in the EEPROM, the additional ports will not be activated.
- New module in empty slot:
  - The module will be plugged last in accordance with the equipping sequence > all modules will be put into operation, the numbering plan will be updated with no gaps.
  - If the module is plugged in front of a corresponding module in accordance with the equipping sequence, it will be put into operation and appended to the last module in the extension number plan.
- Re-initialising > The system will be returned to its pre-initialisation status with redefined passwords. The data contained in the EEPROM regarding the system configuration will be erased, and the configuration status can be modified as required.  
If expansion work requiring re-initialisation of the extension number plan is carried out, proceed as follows:
  - Enter the re-initialisation password before making the change > the existing configuration will be erased.
  - Disconnect the system, release and remove the PSU/UPS, plug in new module(s).
  - Insert and screw the PSU/UPS, connect system, the extension number plan will be set up with no gaps as in the case of initial activation.



**Caution**

Extension-related data will be changed if the extension number plan for users is changed.

- If users are connected on the STLS module ( $S_0$  bus), the standard extension number will be based on the MSNs of the terminals irrespective of the equipping scheme. The following scheme applies to the allocation of the default MSNs of the 16 possible  $S_0$  ports (used if no MSN is assigned to the terminal):

<b>S0 port</b>	<b>Default MSN</b>
1	74
2	73
:	...
:	...



## Installation

### *Connecting ISDN (S<sub>0</sub>) interfaces*

<b>S<sub>0</sub> port</b>	<b>Default MSN</b>
15	60
16	59

- If the configuration limit for lines is exceeded due to the equipping operation (more than 32 lines), the ports will only be put into operation up to the configuration limit.
- If subscriber and trunk lines are combined on an S<sub>0</sub> module, there may be gaps in the numbering of the lines since all the module's ports are initially put into operation as lines and not reconfigured until later.

## 5.6 Connecting ISDN (S<sub>0</sub>) interfaces

The Mini-Western sockets of the STLS module are for connection to Euro-ISDN S<sub>0</sub> interfaces 1 through 4.

Use S<sub>0</sub>1 for connection to the public telecommunications system (ISDN trunk).

The remaining S<sub>0</sub> interfaces (S<sub>0</sub>2 through S<sub>0</sub>4) can also be used for connection to an ISDN trunk or to ISDN terminals (ISDN telephone, group 4 fax machines, PC, automatic dialler) via an S<sub>0</sub> bus.

The connection to Hicom 150E and Hicom 300 (networking with CorNet-N) can also be established via the S<sub>0</sub> interfaces S<sub>0</sub>1 through S<sub>0</sub>4.

Hicom 100E S<sub>0</sub> connection options:

- Point-to-point - PP connection (default)
- Point-to-multipoint - PMP connection

## 5.7 Connecting to ISDN trunk

A Euro-ISDN interface (NT = Network termination) is pre-installed by the network provider.

Plug the connecting cable supplied with the unit into socket S<sub>0</sub>1 through S<sub>0</sub>4. Plug the other end into the NT.

## 5.8 Connecting to Hicom 300 (CorNet-N)

Plug the connecting cable supplied with the unit into socket S<sub>0</sub>1 through S<sub>0</sub>4. Plug the other end into the Hicom 300.

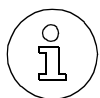
## 5.9 Connecting ISDN terminals

Depending on the system, a maximum of 4 internal  $S_0$  buses ( $S_01$  to  $S_04$ ) can be set up for each module. Each  $S_0$  bus can address a maximum of 8 ISDN terminals.

An internal  $S_0$  bus is always a PMP (point-to-multipoint connection).

Slot 1	$S_0$	Line no.	Default MSN (from system)
1	1	801/802	74
	2	803/804	73
	3	805/806	72
	4	807/808	71
2	1	809/810	70
	2	811/812	69
	3	813/814	68
	4	815/816	67
3	1	825/826	66
	2	827/828	65
	3	829/830	64
	4	831/832	63
4	1	817/818	62
	2	819/820	61
	3	821/822	60
	4	823/824	59

Table 5-3 MSN - default numbering



Default MSN numbers are only valid if there are no MSNs entered in the terminal.

Set up  $S_0$  bus, see [Figure 5-6](#)

If no MSN (multiple subscriber number) is assigned for an  $S_0$  terminal (PC, telephone), it is automatically assigned by the system. If an  $S_0$  terminal responds with its own (defined) MSN, this MSN is used.

The MSN is assigned as follows:

The first  $S_0$  interface of the STLS is automatically assigned the first internal extension number that would be assigned to an extension at this slot. The other  $S_0$  interfaces (2, 3 and 4) are assigned the extension numbers of the next three extensions in ascending order as their MSNs.

**Installation**  
*Connecting ISDN terminals*

S<sub>0</sub> bus with Mini-Western socket

Connect S<sub>0</sub>1 through S<sub>0</sub>4, see [Figure 5-6](#)

Plug the ISDN terminal (connecting cable) into the Mini-Western socket. A backup supply (e.g. from Sedlbauer) is required for connecting an ISDN telephone.

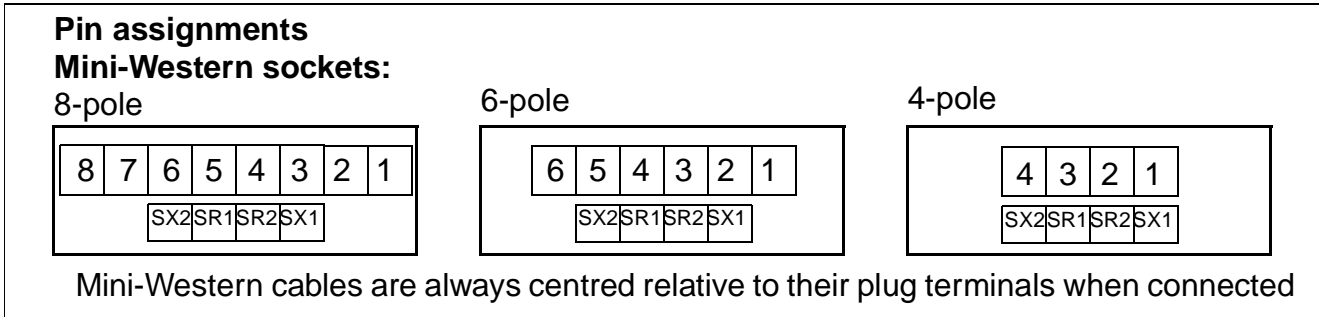


Figure 5-5 Examples of Mini-Western socket wiring

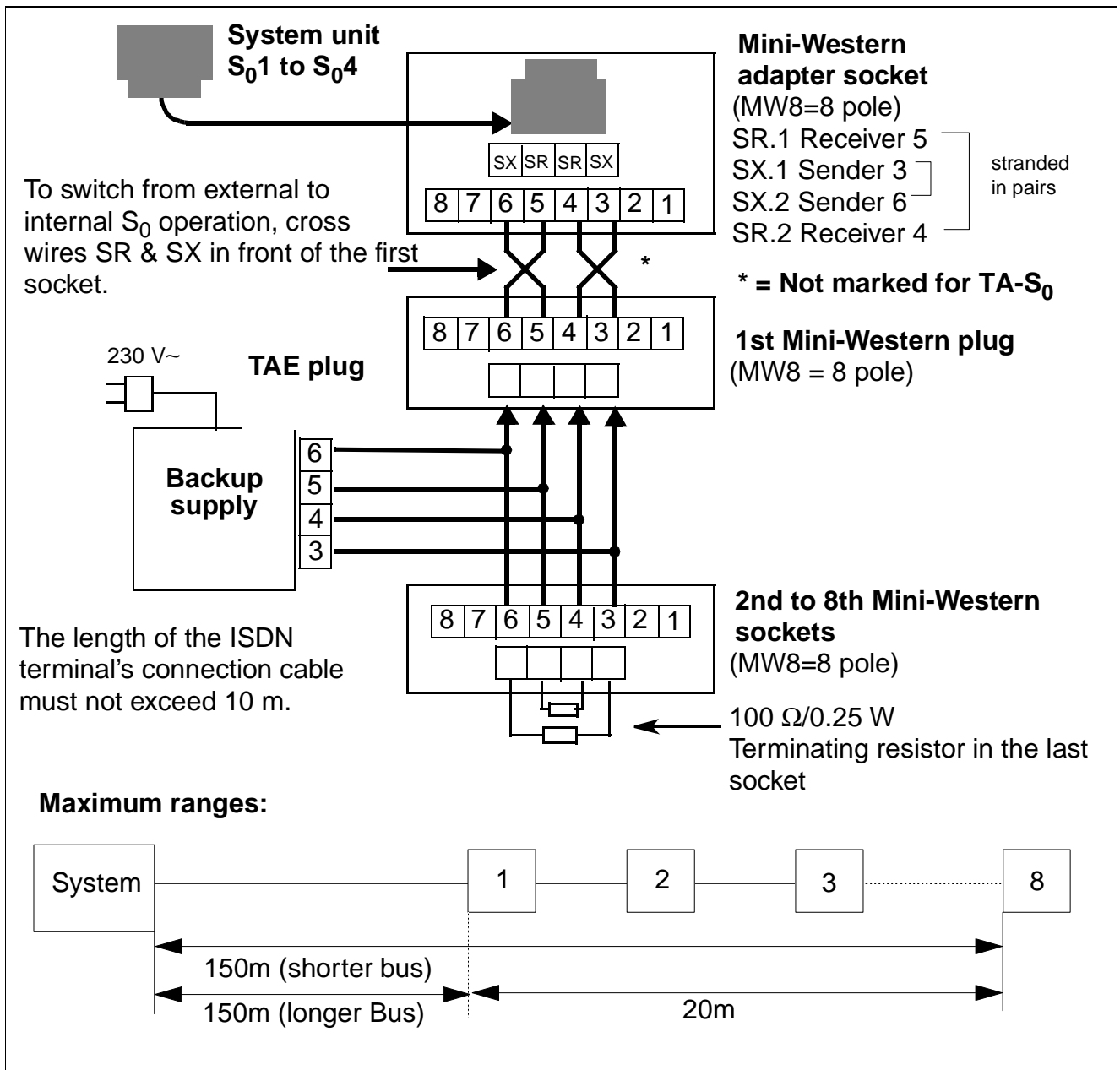


Figure 5-6 Example of  $S_0$  bus socket wiring

## Installation

### *Extension number for internal $S_0$ extensions*

## 5.10 Extension number for internal $S_0$ extensions

- The extension number must be entered in the codes for internal extensions.
- The extension number to be assigned for the internal  $S_0$  extension must not be seized in the default number plan with the extension number of a subscriber module.

### **Example:**

- Hicom 118 – MB (extension numbers 11–26)
- Expansion module 3 = SLU8 (extension numbers 27–42)
- Expansion module 4 = SLA8 (extension numbers 43–50)

Possible extension numbers for internal  $S_0$  extensions: extension numbers 51–74

## 5.11 Multi-device connection

The following factors must be taken into account to implement the "multi-device connection" feature (Telecom's  $S_0$  bus):

- Telecom assigns an MSN (**M**ultiple **S**ubscriber **N**umber) at the  $S_0$  bus for terminals that can be connected > usually at least 3 MSNs for each basic access.
- For the ISDN parameters of the system settings, Euro-trunk PMP must be set for the port that is used under port configuration (menu 19 3).
- System extension number + MSN are programmed in the table for DDI numbers, so the number of digits which can be entered has been increased to 11. For each MSN allocated it is possible to reach an extension, a group or a hunting group connected to the Hicom 100E with DDI.
- No entry may be made under "system extension number".
- Hicom 100E must always be looped in as the last extension on the  $S_0$  bus, because the terminating resistors (2x 100  $\Omega$ ) are fixed installations in this system's trunk circuit. Existing terminating resistors must, therefore, be removed from the last socket.

### 5.11.1 Call forwarding in the exchange in the case of PMP

User 11 of the Hicom 100E can activate call forwarding in the exchange for an MSN assigned to her or him (Service \* 64). It only applies to this user and not to the entire multi-device connection. All other users with an assigned MSN can continue to be accessed with DDI. In the case of mixed equipping, a distinction must be made between the routes.



Call forwarding in the exchange is only supported at extension 11 in the case of PMP.

## **5.12 Connecting printer, modem or PC**

The V.24 interface of the MB or the SIB module can be used to connect a printer for printing call charge or customer data, a PC for processing the call charge data (call charge data management), or a PC for system maintenance.

The printer or PC to be connected must have the same parameter settings as the V.24 interface of the system's MB: 2400 or 9600 baud (settable), parity off, 1 stop bit, 8 data bits.

Connection to the system unit:

V.24 MB: connect the Mini-DIN plug of the V.24 cable (S30122-X5468-X) to the V.24 socket in the system unit and route the cable out through the strain-relief fixture, see [Figure 5-7](#).

V.24 SIB: connect the 9-pin cable to the 9-pole V.24 plug of the SIB, 2400 baud only permissible, (port 2-5), see [Figure 5-8](#).

Connection to printer/modem/PC: connect the 9-pole SubD female connector via the applicable CASDT adapter.

Observe the manufacturer's instructions when using the printer/modem/PC.

Output format, long:

- Date
- Time
- Line
- Extension
- Duration
- Extension number
- Currency amount

## Installation

### *Connecting printer, modem or PC*

The following call charge data is printed for each line as a compressed data record (80 characters, CR, LF) in uneditable format from left to right:

- Date (8 characters)
- Time (end of call, 8 characters)
- Number of lines seized (2 characters)
- Internal number (5 characters)
- Duration of call for incoming calls (5 characters)
- Duration of call (8 characters)
- External number (20 characters; last 4 places may be suppressed)
- Unit charges (11 characters)
- Type of call and additional information (2 characters)
  - 1 = incoming voice call
  - 2 = outgoing voice call
  - 3 = incoming data call
  - 4 = outgoing data call
  - 5 = incoming forwarded voice call
  - 6 = outgoing forwarded voice call
  - 7 = conference with incoming voice call
  - 8 = conference with outgoing voice call
  - 9 = call diversion to external destination/transfer to external
  - 0 = call information to PC for further processing
- Project code (max. 11 characters)
- MSN number

## 5.12.1 Pin assignment of the V.24 adapter cable

### 5.12.1.1 V.24 connection to MB

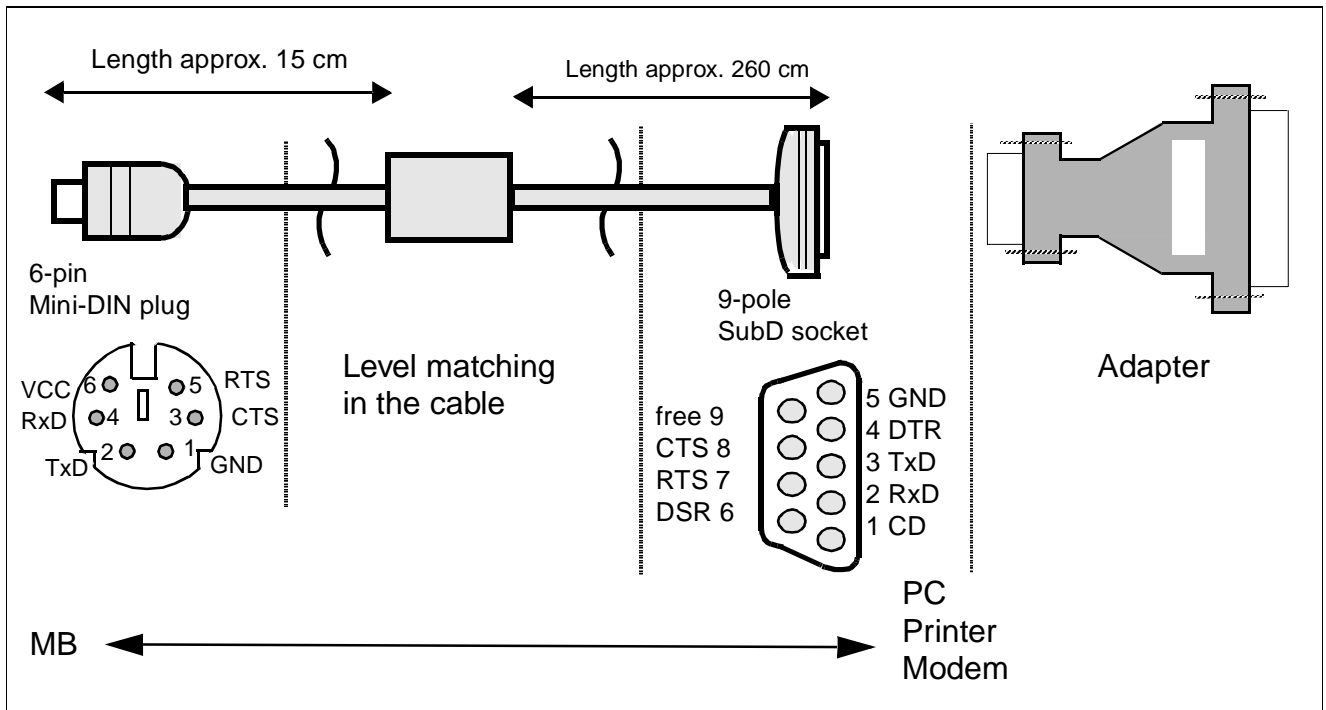


Figure 5-7 Pin assignment of the V.24 adapter cable to MB



**Installation**  
*Connecting printer, modem or PC*

**5.12.1.2 V.24 connection to SIB**

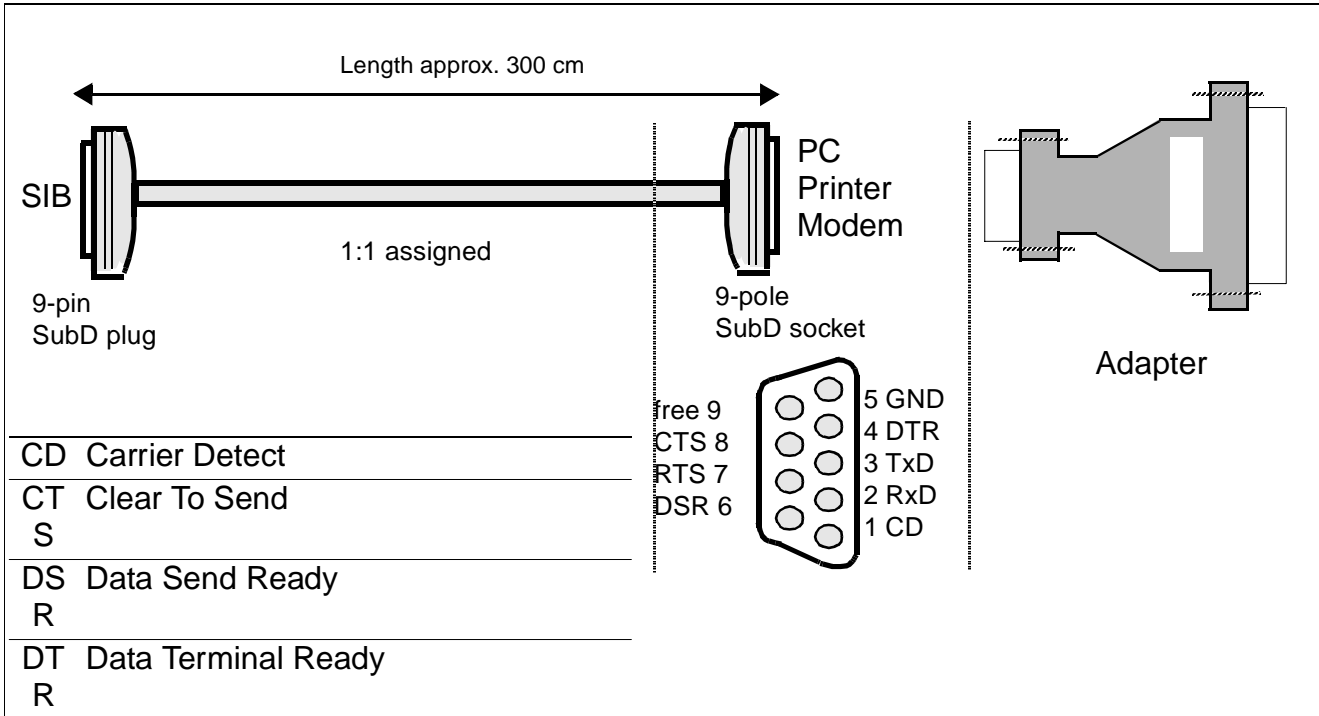


Figure 5-8 Pin assignment of the V.24 adapter cable to SIB

**5.12.2 Pin assignment of the printer/modem adapter**

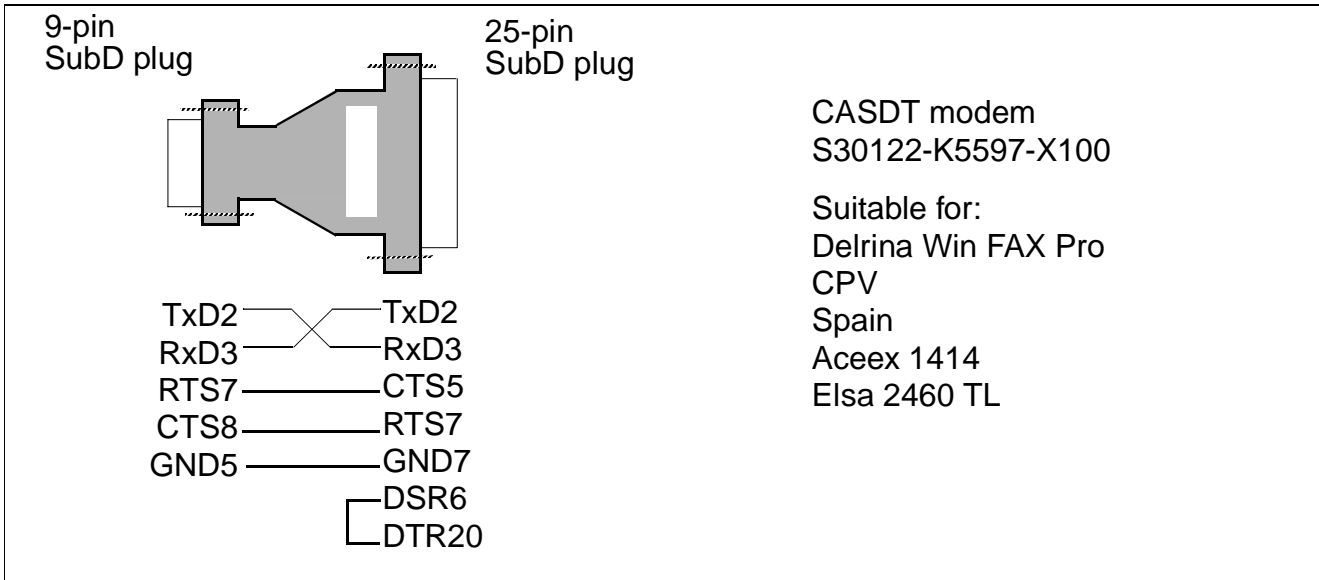


Figure 5-9 Pin assignment of the modem adapter

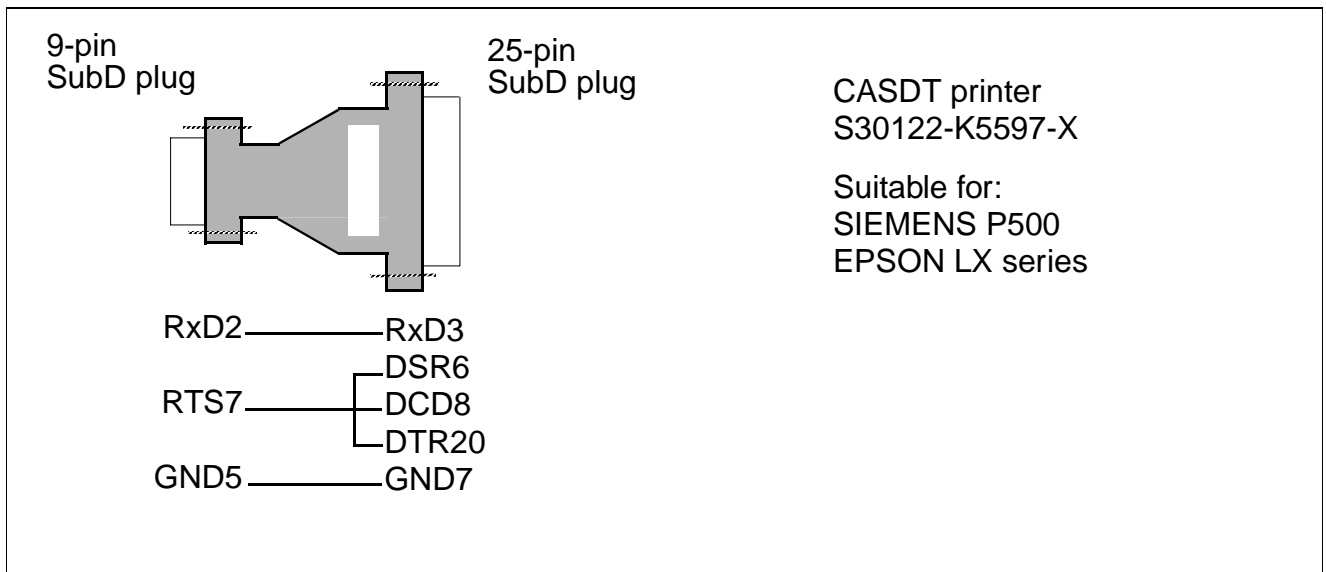


Figure 5-10 Pin assignment of the printer adapter

## Installation

### *Connecting a/b terminals or entrance telephones*

#### 5.13 Connecting a/b terminals or entrance telephones

A maximum of four analogue **standard telephones** with tone dialling (DTMF and/or DP) can be connected to the motherboard MB. If the SLAS card is fitted, a maximum of sixteen additional telephones can be connected.

Other a/b terminals such as fax machines, answering machines or an automatic dialler can be connected instead of the standard telephones.

Commercially available entrance telephones can also be connected to the MB or SLAS via a entrance telephone adapter. Do not forget to take the internal extension numbers into account.

If entrance telephones/door openers are connected, a definition must be entered in system administration. Connection to a/b terminal. Follow the manufacturer's instructions, see also Section 10.5.2 and Section 11.3.

Up to 4 entrance telephones can be connected.



The system activates analogue ports only **after** seizure.

## 5.14 Connecting automatic dialler (associated dial)

An automatic dialler can be connected to an S<sub>0</sub> bus or an a/b terminal for each system (optiset) telephone, see [Section 5.9](#).

Since it uses the same dialling method as its master telephone, the automatic dialler must be set accordingly, i.e. with or without automatic line seizure.

Before dialling the destination number, the automatic dialler must first dial ★ or, in the case of DP, the substitute code 75, followed by **67** and the internal number of the master telephone (12 in this example). This is followed by the destination number with route code (in the example, 0 as route code).

Example: extension number is 0897220 for extension 12:

The automatic dialler with DTMF and optiset (ENB) must dial the following number:

★67 12 0 0897220

The automatic dialler with DP and S<sub>0</sub> must dial the following number:

75 67 12 0 0897220

The length of the entire dialling string should not exceed 16 positions.



Very few modems and **no** ISDN cards can dial \*.

## 5.15 Connecting the fax DDI module

The correct installation sequence must be strictly adhered to when connecting the fax DDI module or the fax/DDI option may not function properly.

Installation:

1. Remove mains plug from socket > release PSU/UPS screw connections and remove.
2. Plug in fax DDI module.
3. Connect the module's a/b terminals (AT/BT) to the analogue a/b port of the MB (e.g. ext. 23); analogue access is not identical to fax destination!
4. Insert W1-W2 link.
5. Plug in/screw PSU/UPS and connect to power supply.

See Programming guide, [Section 10.8.3](#) for details on programming.

## **Installation**

*Connecting the fax DDI module*

## 6 Initial operation

### 6.1 Cutover

System cutover must proceed as follows:

1. Establish the required system configuration (plug in all required expansion cards and function modules).
2. Plug in and screw PSU/UPS, plug the power cable into the mains socket.
3. If, after approx. 12 seconds, the date Jan 1 00 and the time 00.00 appears in the display of the system telephones, the Hicom 100E is ready for operation.
4. After approx. six seconds, the number of active  $S_0$  connections appears in the display: active ISDN lines: x with x  $S_0$  interfaces in use.
5. Perform nationalisation.
6. Re-initialise the system.
7. Perform "power down reset".
8. Enter the external extension number (system number, see Section 6.8) for each trunk group.
9. Perform system programming. The system is programmed either using the programming telephone or the PC tool "ASSISTANT L".  
If changes are made with the programming telephone during PC-based programming, the data is overwritten once again when it is read back from the PC.

### 6.2 Upgrading a system

Note the following procedures to be used when upgrading an existing system:

1. Disconnect the system from the power supply, release and remove PSU/UPS.
2. Plug in new module(s) (exchange the 2 x ribbon cable for the 3 x ribbon cable, if necessary).
3. Install an expansion box (depending on configuration level of system). Please ensure the connecting cable between the basic box and the expansion box is the correct length.
4. Plug the power cable into the re-connected power supply.
5. Re-initialise the system (not necessary, if only previously unoccupied free slots are used).
6. Supplement customer data if necessary, see Section 6.5

## 6.3 Nationalisation

Nationalisation is performed on the system telephone which has the internal number 11 (port 01) or 12 (port 02). Nationalisation entails loading the data for a specific country, after which the system complies with national requirements.

<div style="border: 2px solid black; padding: 10px; display: inline-block; background-color: #f0f0f0;"> <div style="border: 1px solid black; padding: 5px; display: inline-block; background-color: white;"> <b>*95</b> </div> </div> <p>Enter code for "System administration".</p>	<div style="border: 2px solid black; padding: 10px; display: inline-block; background-color: #f0f0f0;"> <div style="border: 1px solid black; padding: 5px; display: inline-block; background-color: white;">             .....           </div> </div> <p>Enter 8-digit national code.</p>
--	--


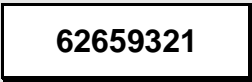
**Entering the national code causes the system to boot.** Settings such as central abbreviated dialling destinations and classes of service are deleted or reset to their defaults.

Land	Code	Land	Code	Land	Code
Argentina	99195953	France 2	52633110	Philippines	99251479
Australia	99168546	Greece	52632505	Poland	51978559
Austria	48376691	Great Britain	54721445	Portugal	37496521
Belgium	25279542	Hungary	75572398	Singapore	74857265
Brazil	14463075	India	98274353	South Africa	58049590
Brazil 2	99327765	Indonesia	78112637	Spain	96149549
China	98245912	Ireland	98213498	Sweden	53891305
CIS	79687413	Italy	70129594	Switzerland	63172653
Czech Rep.	98385917	Malaysia	76010255	Thailand	50692539
Denmark	98457559	Netherlands	49545821	Turkey	53951509
FR Germany	45109382	Netherlands 2	99291187		
Finland	69442143	Norway	53911312	IM	85315585
France	68141859	Pakistan	51951328	IM2	98256348
IM = International Markets					

Table 6-1 National codes

## 6.4 Re-initialising

### 6.4.1 Re-initialising the system cards (as of SW 2.0.1+)

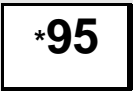
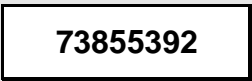
 *95	 62659321
Enter code for "System administration".	Password for re-initialising system cards

The system is returned to its pre-initialisation status with a redefined password. The data contained in the EEPROM regarding the system configuration is erased, and the configuration status can be changed as required. Existing customer-specific data is not changed. If expansion work requiring re-initialisation of the extension number plan is carried out, proceed as follows:

- Enter the re-initialisation password before making the change to ext. 11 > the existing module configuration will be erased.
- Disconnect the system, release and remove the PSU/UPS, plug in new module(s).
- Insert and screw PSU/UPS, connect the system, the extension number plan will be set up with no gaps as in the case of initial activation.

The extension number plan will be changed, see [Extension and line number allocation](#).

### 6.4.2 Re-initialising the expansions modules (as of SW 2.0.2)

 *95	 73855392
Enter code for "System administration".	Password for re-initialising modules

Optional modules are automatically recognised when the system is connected and booted. This data is stored in the EEPROM.

A special password must be entered in order to modify an option that is connected and recognized. After entering this password and resetting the system, the modules currently connected are recognized by the system.

Existing messages stored in FAX/DUWA module(s) are erased.



## 6.5 Customer data

Extension-related data will be changed if the extension number plan for users is changed. For this reason, the changed data must be reprogrammed following re-initialisation and nationalisation.

## 6.6 Terminal test

After initial operation and nationalisation, always test each system telephone.

If the reaction to the test is not as described, the system telephone in question requires a separate power supply (plug-in PSU).

If the date and time of day do not appear in the display after initial operation, either the system telephone or the cabling is defective. Replace the system telephone or check the cabling.

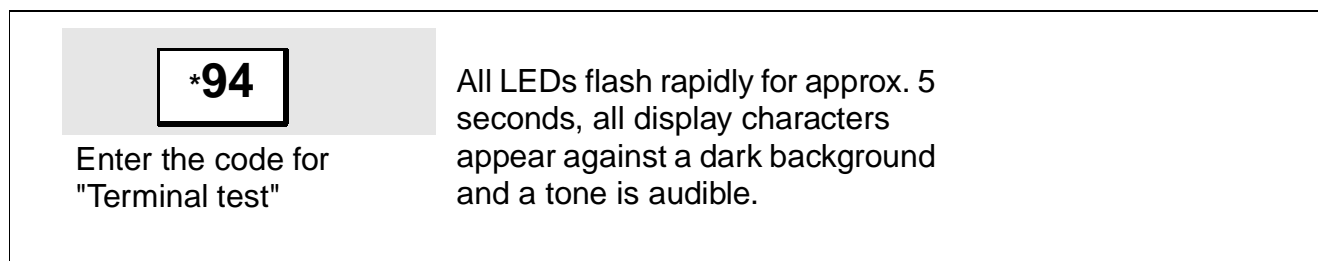
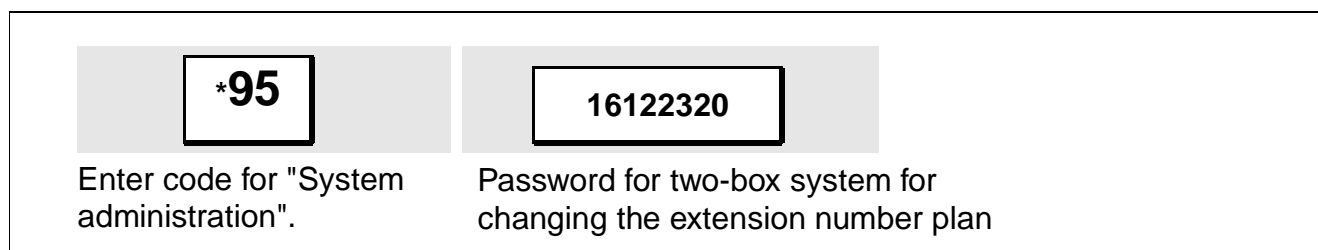


Figure 6-1 Terminal test

## 6.7 Extension numbering plan, two-box system (118-2)



Enter the above password to change the extension number plan of the basic box in a two-box system from 3-digits extension numbers (200-319) to 2-digit extension numbers (11–74). This ensures that the extension number plan of the basic box and the expansion box is uniform. The extension numbers in the expansion box remain 3-digit numbers and must be changed with the ASSISTANT L PC tool.

## 6.8 System extension number

After initial operation and nationalisation, enter the extension number of the system (without DDI number and console code) or, depending on the configuration, the tie-trunk number for Hicom 300 on the system telephone with the internal extension number 11, [Figure 7-2](#).

The system extension number is assigned by the network provider or the Telecom administration authority.

No system extension number may be entered in the case of point-to-multipoint operation or tie-trunk calls to Hicom 300 (depending on the configuration).

### Example:

Terminal number: 98008

National number: 2302 (prefix without 0)

International number: 49 (national code)

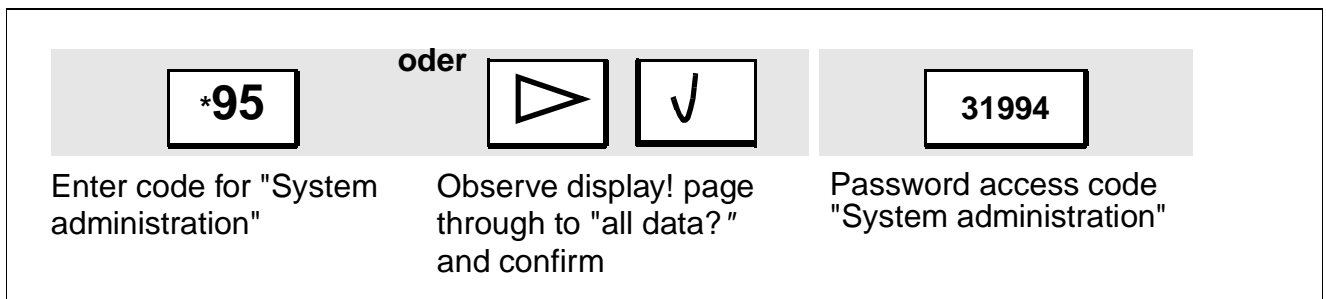


Figure 6-2 Starting "System administration"

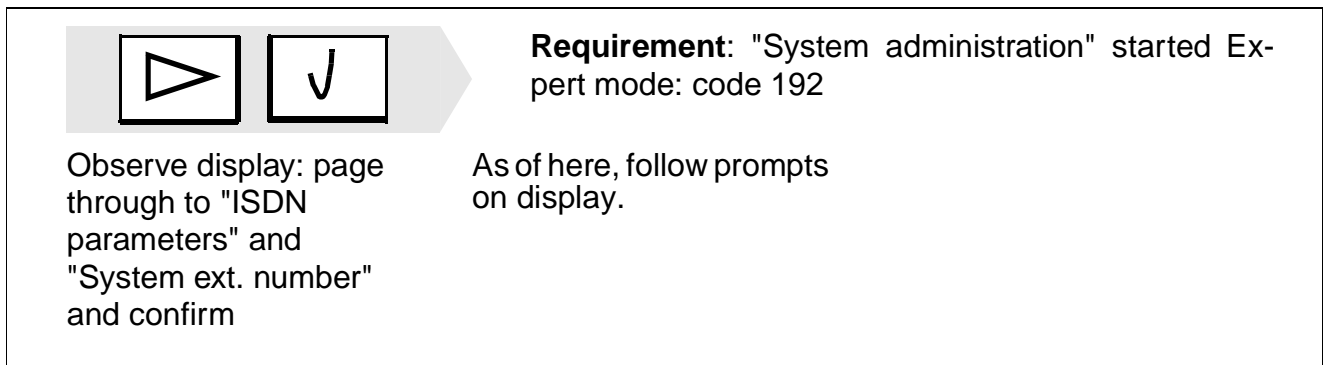


Figure 6-3 Entering system extension number

## **6.9 Call management (CM)**

Call management (CM) serves to configure how incoming calls are to be handled in accordance with line type and day/night service.

First, here is a simple overview:

An extension number is assigned to an analogue trunk (menu item – Call allocation line day, code 15 17 and Call allocation line night, code 15 18). A call destination list is then assigned to the extension number (menu item Call destination lists day/night, code 15 191/15 19 2) and, finally, call management is programmed in this list.

### **6.9.1 Call allocation**

Each of the different call allocations (day, night, internal) is processed with its own CM string. With call allocation, the 32 possible analogue trunks are assigned internal extension numbers. Call allocation can only be changed (diverging from the default setting) by changing the call destination list (menu item Call destination list, code 15 191), see [Figure 6-4](#).

### **6.9.2 Reference to call destination lists**

There are different references with the same layout that each contain:

64 entry options (default 11–74) for extension numbers and  
8 entry options (default 881–888) for group ringing/hunting groups.

References to the following destination lists are specified as standard (as of SW 2.0.1+):

- External calls during the day refer to the call destination list 14
- External calls during the night refer to the call destination list 15
- Internal calls refer to the call destination list 16.

This means that in many cases (especially in the case of night service), the call allocation can only be changed by changing the reference, see [Figure 6-5](#).

### **6.9.3 Call destination lists**

The following CM list elements can be programmed individually in 16 call destination lists ([Figure 6-6](#)):

Entry 1–4 one cell each for processing the actual calls,

Entry 5 one cell for defining the call diversion time for cells 1–4.

Entry 6 one cell for forwarding handling common ringer.

Entry 7 one cell for connection type of common ringer or secondary telephone.

#### **6.9.4 Call group and hunt groups**

Eight groups, each with 8 members, can be set up as linear/cyclic hunting groups or with group ringing characteristics, see [Figure 6-6](#).

6.9.5 Call allocation/call management: examples

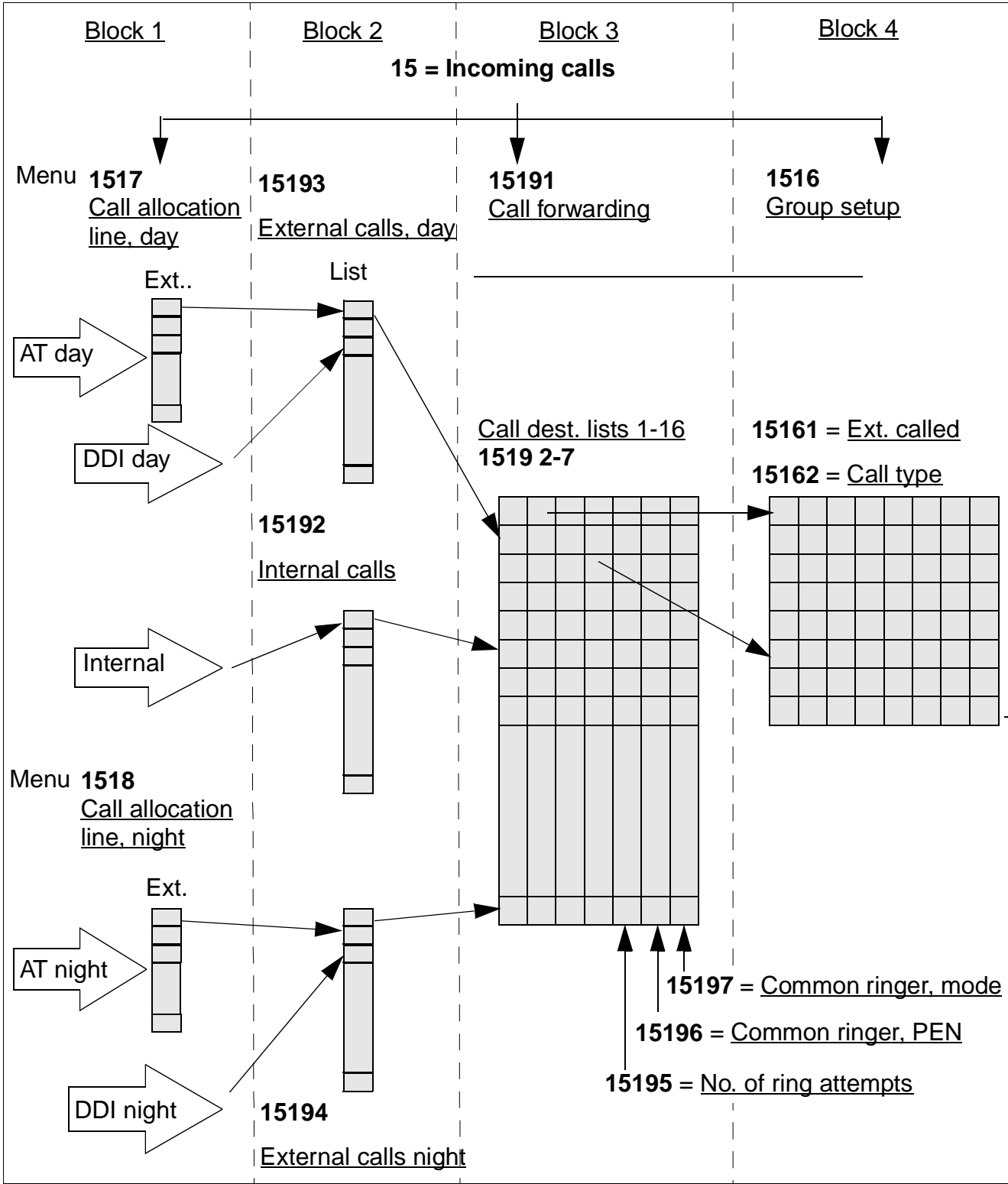


Figure 6-4 Call Management overview

## Call management / incoming calls

Call management is selected via "System administration" by entering **\*95 31994** under menu item 15 = Incoming calls.

The call management submenus are displayed under menu 15 = Incoming calls.

## Description of the 4 blocks that make up call management

The overview shown in [Figure 6-4](#) was divided into 4 blocks which show the logical sequence of customer-specific programming.

### Description of blocks:

<u>Block 1 Incoming calls MSI lines (analogue trunk lines)</u>		
<b>1517</b>	Call allocation line, day	MSI lines are first assigned to an internal extension for day and night service.
<b>1518</b>	Call allocation line, night	
Call allocation continues in block 2 (call signalling).		
<u>Block 1 DDI line (S0, CorNet, QSig)</u>		
<b>1513</b>	Intercept console day	DDI calls which are intercepted are signalled at the day/night intercept console with the default setting. This applies to all lines.
<b>1514</b>	Intercept console night	The day/night intercept console must first be deleted if a different intercept console is required for each line. Intercept console entries per line are made under Call allocation line, day 1517/night 1518.
<b>1515</b>	Intercept criteria	No answer, busy, invalid, incomplete, recall
Call allocation continues in block 2 (call signalling).		

**Initial operation**  
*Call management (CM)*

<u>Block 2 Incoming calls/call forwarding</u>		
<b>15193</b>	External calls, day	A reference is made to one of 16 call destination lists in block 3 for each extension in these tables. In each of these tables, you can enter the required references to the call destination lists for all extensions (11–74) as well as for 8 groups (881–888). With call allocation, the internal extension number always refers to a call destination list, even if this differs from the DDI number. (This applies in particular with point-to-multipoint connections P-MP)
<b>15192</b>	Internal calls	
<b>15194</b>	External calls, night	
Call allocation continues in block 3 (call signalling).		

<b>Block 3 Incoming calls/call forwarding</b>		
<b>15191</b>	Call dest. lists	<p>16 call destination lists are available.</p> <p>4 entries can be made in each of these lists.</p> <p>The extensions and/or groups entered in these lists are called in consecutive order (# for system search ) in accordance with the "number of ring attempts" (CFW time).</p> <p>If group numbers are entered, the further allocation of the call (call signalling) takes place in block 4.</p>
<b>15195</b>	No. of ring attempts	<p>The required call forwarding timeout can be specified in each call destination list.</p> <p>The value input equals the number of rings permitted before the call is forwarded.</p>
<b>15196</b>	Common ringer, PEN	<p>Either the internal extension number of an analogue extension for connecting a second ringer or an actuator 1–4 is entered.</p> <p>A telephone can be connected instead of the second ringer (e.g. a second telephone such as a mobile telephone that also rings when another telephone is called).</p>
<b>15197</b>	Common ringer, mode	<p>Enter whether the function defined under 15196 (second ringer, actuator) is to be activated immediately or after the first call forwarding timeout.</p>

<b>Block 4 Incoming calls/group setup</b>		
<b>15161</b>	Ext. called	<p>In this table, up to 8 group extensions can be entered for each of the 8 possible user groups (with extension numbers 881–888).</p>

<b><u>Block 4 Incoming calls/group setup</u></b>		
<b>15162</b>	Call type	The function of the group (881–888) is entered here. Functions are: cyclic hunting group, linear hunting group, group ringing, group ringing, no answer.



*Call management (CM)*

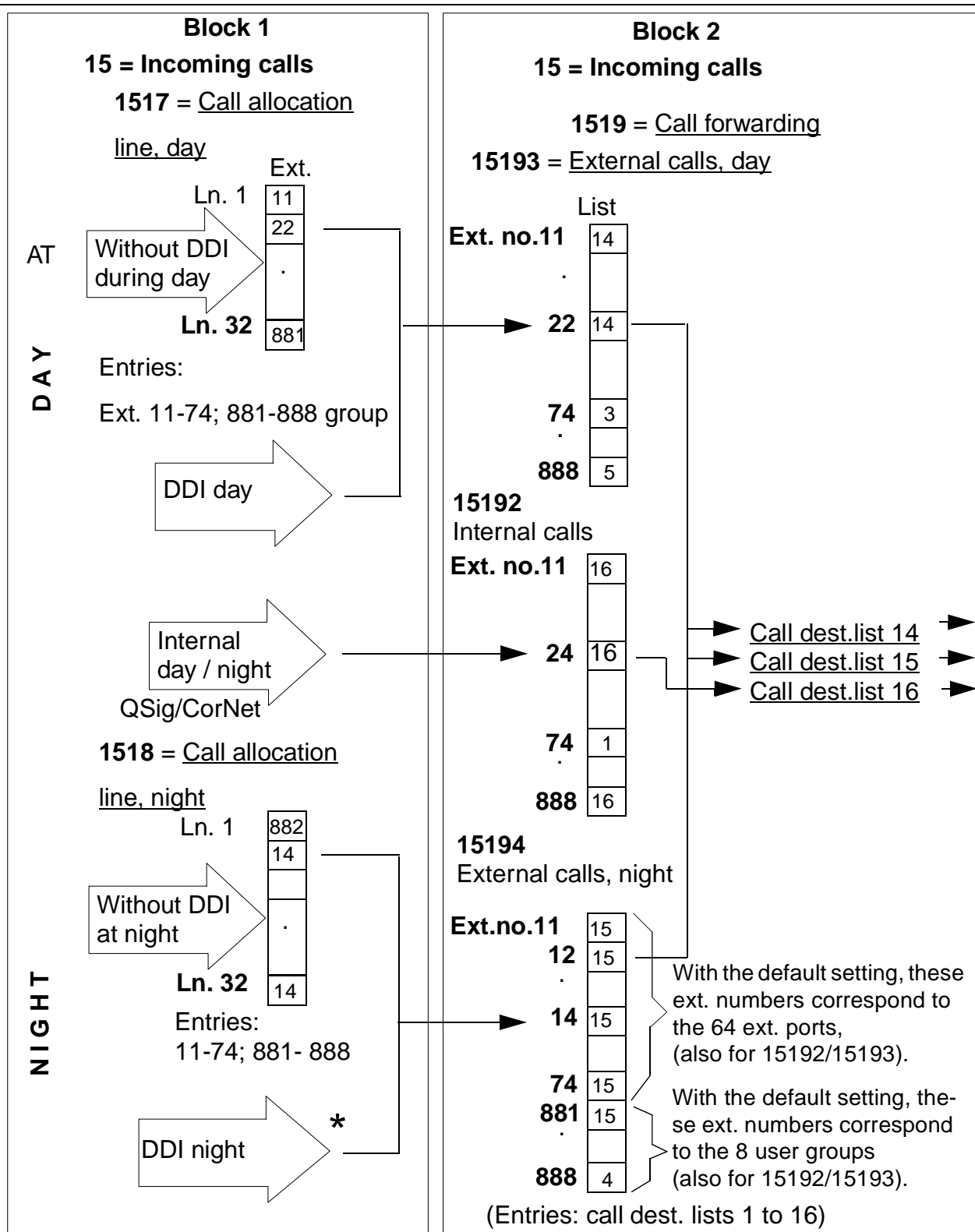


Figure 6-5 Call Management (example)

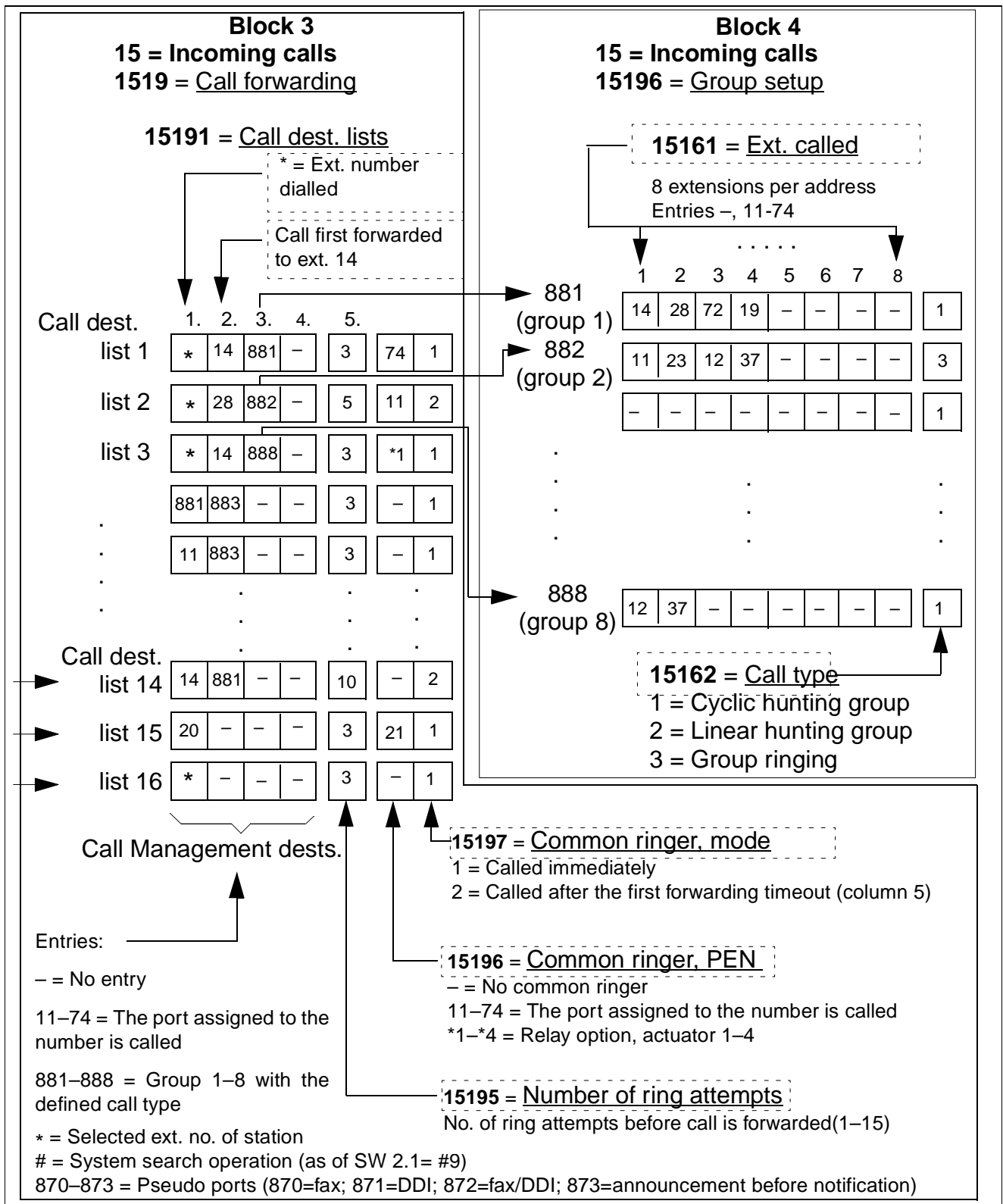


Figure 6-6 Call Management (example, continued)

**Initial operation**  
*Call management (CM)*

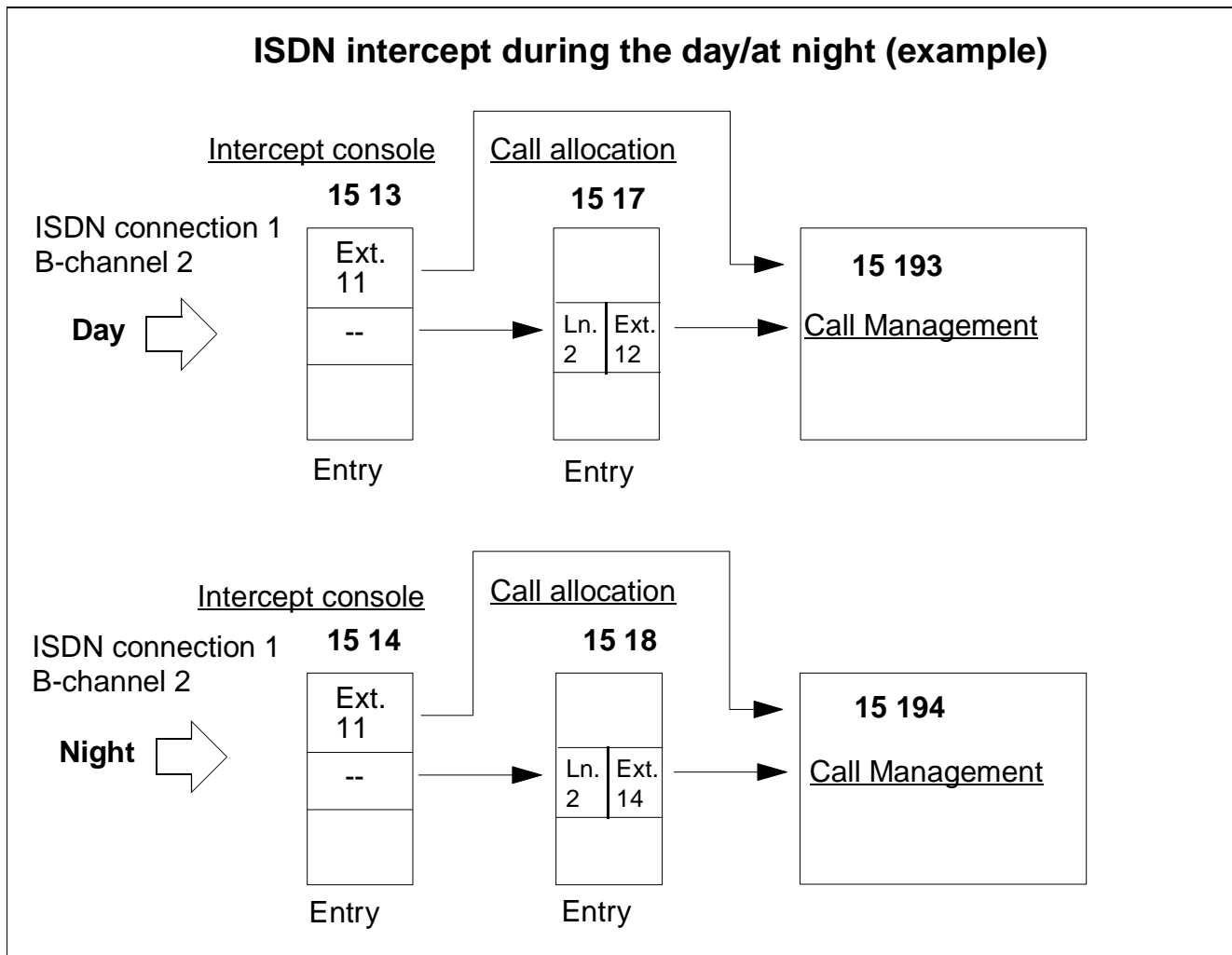


Figure 6-7 ISDN intercept day/night

If an intercept position has not been entered, intercepted calls are allocated to the extension which is assigned to the respective line according to the call allocation scheme (B-channel=line).



The central intercept console (CDM 16 19) may only be configured in the case of QSig.

Incoming calls are not signalled if there is a fault at the intercept console (only  $U_{P0/E}$  extension).

You must enter a call forwarding command to an extensions in the call destination list of the intercept console in order to guarantee a signal. The call forwarding timeout for this list should be set to 15 rings so that calls are not forwarded when the intercept console is functioning properly.

## **6.10      Networking (Hicom 112/118 only)**

### **6.10.1      Automatic line seizure (menu 16 11) for optiset telephones only**

Automatic line seizure only applies to optiset and optiset E terminals (not optiset E entry). Here, all lines are automatically preassigned to an extension (possible only if a single route is specified). When the numeric keys on a system telephone or an abbreviated dialling key is pressed, the selected line is automatically seized.

**Attention:** when changing the initial setting of this parameter, keep in mind that it is possible to dial the wrong number with the optiset memory if route numbers have been incorrectly programmed!

### **6.10.2      Route assignment (menu 16 12)**

This is where one of four routes (1–4) is assigned to an external line (analogue trunk or ISDN B-channel). All ports can be assigned to the same route (route 1 is entered as default for all external lines). A line cannot be assigned more than one route, however. The default codes for routes 1–4 are 0, 84, 85, 86. The automatic line seizure feature must be deactivated.

### **6.10.3      Overflow route (menu 16 13)**

Assigns a route an "overflow option" in the form of another route. If all the lines of a route are busy, all additional requests for lines are diverted to the route defined here.

### **6.10.4      Trunk/PBX line type (menu 16 14)**

This setting serves to determine the further processing of supplementary lines features (for CorNet-N, also includes name and features transfer). Flash time for analogue trunk: PBX = short, trunk = long.

### **6.10.5      Route names (menu 16 15)**

Names can be entered for the 4 routes via the alphanumeric keypad. Once assigned, the name appears in the display instead of the corresponding number ("route 1, 2, 3 or 4"). For example, if the name assigned for route 2 = Office A, the words "Office A" appear in the display when route 2 is dialled if no extension number is transferred.

### **6.10.6      Route codes (menu 7 22 4)**

Each route can be assigned up to 10 codes on the basis of the extension number plan (max. 3-digit).

## Initial operation

Networking (Hicom 112/118 only)

### 6.10.7 Digit repetition (menu 16 16)

Defines whether the dialled route code is automatically repeated. If digit repetition is deactivated, only one route code per route can be programmed. Digit repetition must be activated if several route codes are to be programmed, i.e. it prefixes the next extension number dialled (only to be set up if Hicom 100E is networked with a main PBX which involves a shared extension number plan).

### 6.10.8 Route seizure (menu 16 17)

This setting can be used to assign each route a cyclic or linear seizure sequence for the lines of this route.

### 6.10.9 Error messages for network settings

The messages shown below may appear in the display of your system telephone with the internal extension number 11 or 12. These messages are directly related to the network settings:

Setting	Message	Remarks
<b>Activate automatic line seizure</b>	Collision with 1612 route assignment	Not all lines configured in route 1
	Collision with 1616 digit repetition	Digit repetition activated (note all 4 routes)
<b>Assign route other than 1 to line</b>	Collision with 1611 auto. line seizure	Automatic line seizure is activated
<b>Program route code</b>	Collision with 1616 digit repetition	Digit repetition is deactivated
<b>Activate digit repetition</b>	Collision with 1611 auto. line seizure	Automatic line seizure is activated
<b>Deactivate digit repetition</b>	Collision with 224 route X, pos. X	More than one route code is assigned
<b>Assign codes</b>	Collision with 224 route code	Collision with one of the route codes entered
	Collision with int. extension number	Collision with one of the internal extension numbers

Table 6-2 Error messages for network settings

Setting	Message	Remarks
<b>Assign codes</b>	Collision with 221 substitute code *	Collision with the substitute code for *
	Collision with 222 substitute code #	Collision with substitute code for #
	Collision with 223 line X	Collision with a line code
	Collision with internal console code	Collision with the console code (intercept console)
	Collision with 224 route X, pos. X	Collision with specified route code when entering route codes
	Collision with 1616 digit repetition	Digit repetition was deactivated when attempt was made to assign additional route codes

Table 6-2      Error messages for network settings

Error messages must be acknowledged before you proceed with programming.

## Initial operation

Networking (Hicom 112/118 only)

### Example of extension and line number assignment with networking (common extension number plan).

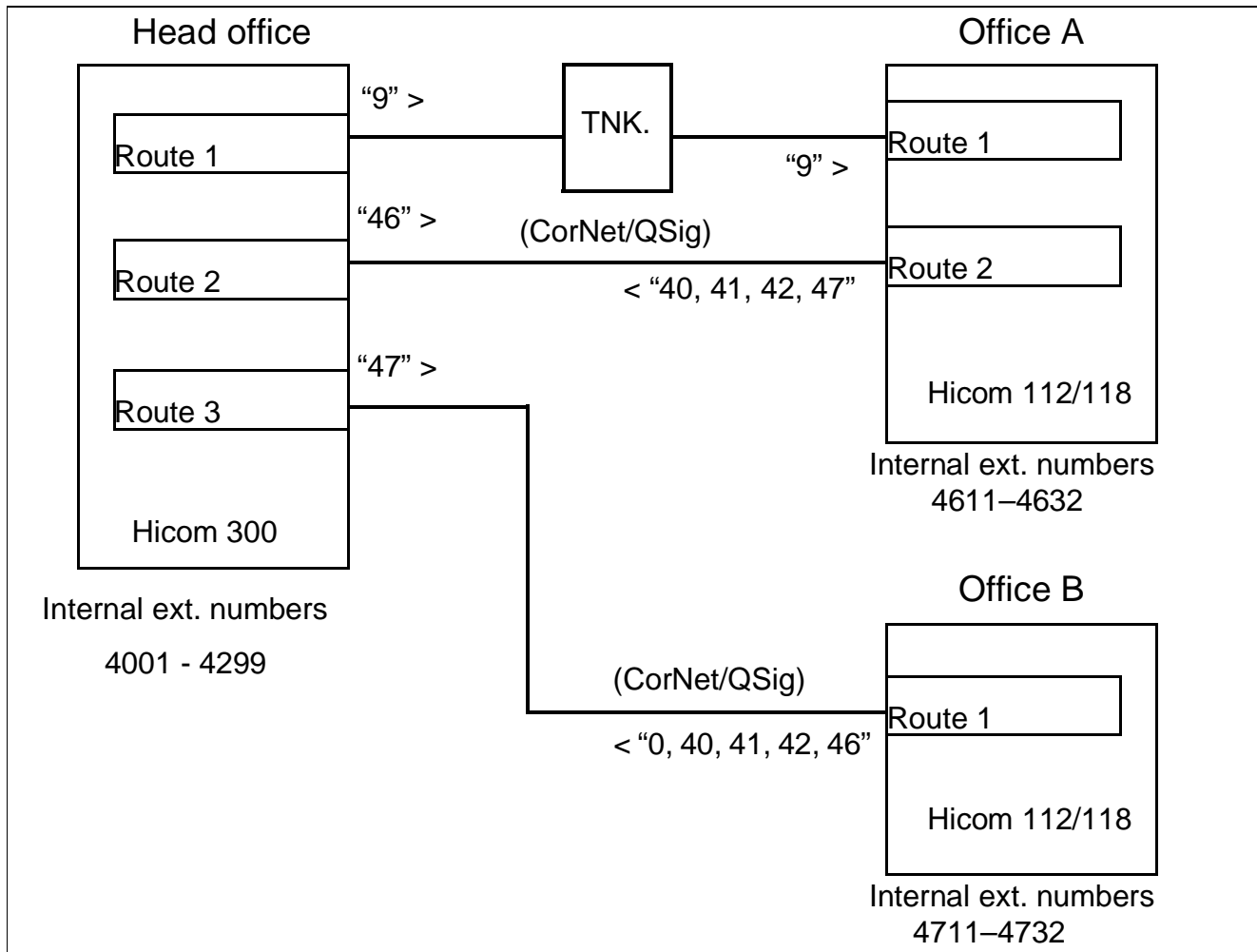


Figure 6-8 Example of networking

Extension number plan and settings for:

Head office internal numbering 4001-4299

Route 1 > trunk = route code 9, digit repetition deactivated

Route 2 > office A = code 46, digit repetition activated

Route 3 > office B = code 47, digit repetition activated

Office A internal numbering 4611-4632 (can only be set via a PC tool)

Office A: DDI numbering for 11 to 32

Route 1 > trunk = route code 9, digit repetition deactivated

Route 2 > head office = route code 40, 41, 42, 47 digit repetition activated

Office B internal numbering 4711-4732 (can only be set via a PC tool)

Office B: DDI numbering for 11 to 32

Route 1 > head office = route code 0, 40, 41, 42, 46, digit repetition activated

### Example of dialling for office A:

User dials:

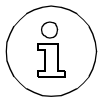
- 9 089 7220 9 = route code, trunk, 089 = prefix, 7220 = extension number; extension is called.
- 46 12 46 12 = extension 12 in office A is called.
- 41 11 Extension 4111 in the head office is called.
- 47 11 47 = route code, head office, 47 is repeated and 11 is appended, route 3 (office B) in the head office is seized, 47 is repeated and 11 is appended, extension number 4711 is passed to office B, 47 11 = extension 11 in office B is called.

### Example of dialling for office B:

User dials:

- 9 089 7220 9 = route code, head office, 9 is repeated and 089 7220 is appended (9=seize trunk in the head office; 089 = prefix, 7220 = extension number), extension is called.
- 47 12 47 12 = extension 12 in office B is called.
- 41 11 41 = route code, head office, 41 is repeated and 11 is appended = extension 4111 in the head office is called.
- 46 11 46 = route code, head office, 46 is repeated and 11 is appended, route 2 (office A) is seized in the head office, 46 is repeated and 11 is appended, extension number 4611 is passed to office A, 46 11 = extension 11 in office A is called.

With these settings, the three systems work together as a whole. Regardless of where you are within the company, the extension and telephone numbers are always the same.



Examples do not apply in the case of closed numbering.



## 6.11 Upgrading a system

As of SW version 2.0.2, the software is no longer upgraded by replacing the appropriate EPROMs, but rather by using a PC tool connected via the system's V.24 interface on the MB.

The PC is to be connected to the system via the V.24 adapter cable S30122-X5468-X for this purpose.



**Caution**

The S30122-X5468-**X01** cable must **not** be used to upgrade the software.

Conversion necessary when upgrading with customer batch, see Section 6.12.

**Proceed as follows for software upgrading:**

1. Copy the file with the new software version to the "Loader" directory on the PC hard disk.
2. Connect the PC to the system (see above).
3. Start the "Loader.exe" PC tool (by double-clicking on the Flash icon).
4. Enter a special password at the programming telephone ext. 11:

<div><b>*95</b></div> <p>Enter code for "System administration".</p>	<div><b>13290396</b></div> <p>Password for flash programming.</p>
--	---

5. The message "Remote Admin. Allowed r" appears on the programming ext. 11.
6. Reset the system by disconnecting and then reconnecting the mains plug (after 5 seconds).
7. Select the IC symbol within the Loader program
8. Select the file containing the new SW version and click "OK".
9. The data is loaded to the system. This lasts approx. 10 minutes.
10. The system is then automatically booted. The PC tool can be exited.
11. Once the system has re-booted, perform system Nationalisation( Section 6.3) and reenter the customer programming.

If an error message appears, abort the load process and start again from point 7 of the upgrade instructions.

## **6.12      Converting from SW 2.0.2 to SW 2.1**

### **Procedure:**

- Use Assistant\_L to make a copy of the customer configuration on the SW 2.0.2 system (save this to disk as e.g. "data202.kds")
- From extension 11 enter the password \*95 13290396 and power off the system. Follow procedure "Upgrading a system", see Section 6.11. Load the new 2.1 software.
- The system restarts automatically.
- Enter the password \*95 followed the Nationalisation code (Section 6.3). Perform a power reset.
- Enter the password \*95 62659321. Perform a second power reset.
- Prepare an empty database by taking a download (PABX to PC) of the upgraded and default system using Assistant\_L.
- Save this database to disk (e.g.new21.kds).
- Open the customer database "data202.kds".
- Transpose this 2.0.2 customer database (data202.kds) on to the new 2.1 default database "new21.kds", (the destination file). This is done by selecting "File and Convert" within Assistant\_L.
- A new file is automatically created, "konvert.kds". This contains the customer programming on the SW 2.1 matrix and may be uploaded to the system.

## **Initial operation**

*Converting from SW 2.0.2 to SW 2.1*

## 7 Administration and maintenance

### 7.1 Configuring the system

The system is supplied with all user-configurable system parameters set to their default values. This means that the system can be used as soon as it is booted. The user-programmable keys of the terminals are thus assigned default features and/or user numbers.

Some of the settings in this initial configuration can be individually activated, deactivated and configured at the terminals. Certain system-wide features, in contrast, can be configured only by a user who enters a special access code at a system telephone with the class of service for programming (U<sub>P0/E</sub> with the internal extension number **11** or **12**).

Names can be entered only via a programming telephone with an alphanumeric keypad.

### 7.2 Functions without an access code

Can be activated from extensions **11** or **12** [Figure 7-2](#).

<div> <div>*95</div> <div>▶</div> <div>✓</div> </div> <div> Enter the code for "System administration" Observe display: scroll to "User data?" and confirm </div>			
Code SW 2.0.1+	Code SW 2.0.2/2.1		Type
optiset E memory	advance		
<b>1</b>	<b>11</b>	<b>1</b>	Central abbreviated dialling – see menu system or code 12
<b>2</b>	<b>12</b>	<b>2</b>	Time – see menu system or code 18 3
<b>3</b>	<b>13</b>	<b>3</b>	Date – see menu system or code 18 4
<b>4</b>	<b>14</b>	<b>4</b>	Call charge recording – see menu system or code 11
<b>5</b>	<b>15</b>	–	Station names – see menu system or code 13 2
<b>6</b>	<b>16</b>	–	Group names – see menu system or code 16 3
<b>7</b>	<b>17</b>	–	Message texts – see menu system or code 18 1
<b>8</b>	<b>18</b>	–	Absence texts – see menu system or code 18 2
–	<b>19</b>	–	Texts for fax/DDI option
–	<b>20</b>	<b>6</b>	Code for remote administration

Figure 7-1 User data codes

## Administration and maintenance

*Codes/extension numbers without the S key and \* or #*

### 7.3 Codes/extension numbers without the S key and \* or #

The table below lists the system features that can be activated by codes. S<sub>0</sub> terminals are treated as normal telephones.

U <sub>P0/E</sub>	DTMF*	DP/S <sub>0</sub>	Codes without S key and * or #
11–74	11–74	11–74	Internal extension numbers for U <sub>PN</sub> , a/b, S <sub>0</sub> ports
		75	Substitute code for * (DP and ISDN telephones)
		76	Substitute code for # (DP and ISDN telephones)
77 78 79	77 78 79	77 78 79	Not used
801–832	80–832	801–832	Selective line seizure for max. 32 lines or B-channels only, if automatic the line seizure is deactivated.
84 85 86	84 85 86	84 85 86	Route 2 Route 3 Route 4
87 0 Fax 87 1 DDI 87 2 Fax/DDI 87 3 Announcement before notification	87 0 87 1 87 2	87 0 87 1 87 2	Pseudo ports for fax/DDI module (DVN only); a fax/DDI module can be entered as a DVN destination for external calls using these numbers
881–888	881–888	881–888	881–888 ext. numbers of user groups 1 to 8
89	89	89	Not used
9 (GBR 0)	9 (GBR 0)	9 (GBR 0)	Attendant console
0 (GBR 9)	0 (GBR 9)	0 (GBR 9)	Route 1
* Also applicable for optiset entry			

Table 7-1 Codes/extension numbers without S key and \* or #

## 7.4 Codes for accessing services

The table below lists the system features that can be activated by means of the S key and code or \* or # on a pushbutton telephone.

	<b>DTMF</b>	<b>DP/S<sub>0</sub></b>	
	● Flash		
(S)*0	●	75 0	Retrieve from hold
(S)#0	# 0	76 0	Deactivate all initiated features
(S)*11 ext.no.	*11 ext.no.	75 11 ext.no.	Call diversion 1, div. internal and external calls
(S)*12 ext.no.	*12 ext.no.	75 12 ext.no.	Call diversion 2, div. external calls only
(S)*13 ext.no.	*13 ext.no.	75 13 ext.no.	Call diversion 3, div. internal calls only
(S)#1	#1	76 1	Deactivate call diversion
(S)*2	● *2	75 2	Shuttle
(S)*3	● *3	75 3	Three-way conference ON
(S)#3	#3	76 3	Three-way conference OFF
(S)*4 ext.	*4 ext.	75 4 ext.	Activate night service for extension no. <b>only to SW 2.0.2</b>
(S)*4	*4	75 4	Activate night service <b>only to SW 2.0.2</b>
(S)#4	#4	76 4	Deactivate night service <b>only to SW 2.0.2</b>
(S)*41/ DDI	● *41/DDI	75 41/DDI	Assign extension number ( <b>as of SW 2.1</b> )
(S)*44 ext.no.	*44 ext.no.	75 44 ext.no.	Activate night service for extension no. ( <b>SW 2.1</b> )
(S)*44*	*44*	75 44 75	Activate night service (permanent) ( <b>SW 2.1</b> )
(S)#44	#44	76 44	Deactivate night service ( <b>SW 2.1</b> )
(S)*50	*50	75 50	Alternative carrier, e. g. Mercury
(S)*51	● *51	75 51	Flash to PBX (e.g. ANIS), consultation main PBX
(S)*52			Mute ON
(S)#52			Mute OFF

Table 7-2 Codes for accessing services

## Administration and maintenance

### Codes for accessing services

	DTMF	DP/S <sub>0</sub>	
	● Flash		
(S)*53	● *53	75 53	DTMF transfer from pushbutton telephone DP normal telephone change trunk circuit DP – DTMF S <sub>0</sub> DTMF in the B-channel
(S)*54	*54	75 54	Primary carrier, e. g. BT
(S)*55	● *55	75 55	Accept camp-on
(S)*56 pos.	● *56 pos.	75 56 pos.	Initiate call park (position 0–9)
(S)#56 pos.	#56 pos.	76 56 pos.	Retrieve parked call Only calls that have been parked on the S <sub>0</sub> ext. can be retrieved.
(S)*57	*57	75 57	Call pickup in pickup group
(S)*58	● *58	75 58	Initiate callback
(S)#58	#58	76 58	Retrieve/delete callback requests
(S)*59 ext.no.	*59 ext.no.	75 59 ext.no.	Call pickup outside pickup group
(S)*60 PCD	*60 PCD	75 60 PCD	Project code (max. 11 characters), store with #
(S)*61/No. 1–4	● *61/No.1–4	75 61/No. 1–4	Door opener (number suffix-dialled <b>as of SW 2.0.2</b> )
(S)*62	● *62	75 62	Intrusion
(S)*63 line	*63 line	75 63 line	Retrieve line
(S)#63	#63	76 63	Deactivate selection of network provider <b>only to SW 2.0.2</b>
(S)*63 line no.	*63 line no	75 63 line no	Retrieve "Hold" <b>SW 2.1</b>
(S)*64 ext.no.			Activate call diversion in PBX (ISDN), attendant console only
(S)#64			Deactivate call diversion in PBX (ISDN), attendant console only
(S)*65	*65	75 65	Display call charges
(S)*66 code	*66 code	75 66 code	Code lock ON
(S)#66 code	#66 code	76 66 code	Code lock OFF

Table 7-2 Codes for accessing services

	<b>DTMF</b> ● Flash	<b>DP/S<sub>0</sub></b>	
(S)*67 ext./dest	*67 ext./dest.	75 67ext./dest	Initiation for associated dialling
(S)*68	*68 ext./ix	75 68 ext./ix	Message texts in display (ix=index)
(S)#68	#68 #68 -1 #68 -2	76 68	Read/delete message texts Deletes message texts sent at "entry" only Deletes message texts received at "entry" only
(S)*69 index	*69 index	75 69 index	Activate absence texts in display
(S)#69	#69	76 69	Deactivate absence texts in display
(S)*7 index	*7 index	75 7 index	Select central/individual abb. dialling destinations
(S)*80 ext.no.	*80 ext.no.	75 80 ext.no.	Voice calling
(S)*81 ext.no.	*81 ext.no.	75 81 ext.no.	Personal answer group (max. 5 extensions)
(S)#81	#81	76 81	Deactivate/delete personal answer group
(S)*82	*82	75 82	Save extension number
(S)#82	#82	76 82	Caller list
(S)*83 ext./service suffix dialled	*83 ext./service	75 83 ext./service	Associated services
(S)*84	*84	75 84	Call trace (released by Telecom)
(S)*85	*85	75 85	Group setup ON
(S)#85	#85	76 85	Group setup OFF
(S)*86	*86	75 86	Suppress call number
(S)#86	#86	76 86	Transfer call number
(S)*87	*87	75 87	Camp-on without tone
(S)#87	#87	76 87	Camp-on with tone
(S)*88	*88	75 88	Activate babyphone
(S)*89 ext. no./ code/x	*89 ext. no./ code/x	7589 ext. no./ code/x	Door opener ON x: 1 (with ext. no.), 2 (without ext. no.)
(S)#89 ext. no./ code/x	#89 ext. no./ code/x	7689 ext. no./ code/x	Door opener OFF x: 1=with ext., 2=without ext.

Table 7-2 Codes for accessing services



## Administration and maintenance

### Codes for accessing services

	<b>DTMF</b>	<b>DP/S<sub>0</sub></b>	
	● Flash		
(S)* 90 index	* 90 index	75 90 index	Activate actuator number (Ix = index) 1–4
(S)# 90 index	#90 index	76 90 index	Deactivate actuator number (Ix = index) 1–4
(S)*91			Assign key
(S)*92/no.	*92/no.	75 92/no.	Change abbreviated dialling number (00–09)
(S)*93 CoCnCn	*93 CoCnCn	75 93 CoCnCn	Change lock code Co=old code/Cn=new code
(S)*94			Terminal test
(S)*95			System administration
(S)*96			Release handsfree answering (pushbutton telephone with handsfree only)
(S)#96			Terminate handsfree answering
(S)*97	*97	75 97	DND ON
(S)#97	#97	76 97	DND OFF
(S)*98			Silence ON
(S)#98			Silence OFF
Dialogue menu	● dial	dial	Initiate consultation hold
On hook	on hook	on hook	Transfer without notification
On hook	on hook	on hook	Transfer with notification
Dialogue menu	●		Accept transferred call
(S)*991	*991		Remote DTMF system administration at master system
(S)*992	*992		Release remote DTMF system administration at slave system
(S)*993	*993		Release remote ISDN system administration

Table 7-2 Codes for accessing services

## **7.5 System programming in interactive mode**

Hicom 100E is programmed at the optiset connected to the U<sub>P0/E</sub> user PEN 01 or 02 (internal number **11** or **12**) after starting access-protected system administration. See [Section 7.6.1](#)

It is advisable to use an optiset memory telephone. Due to the improved user interface for terminals with a two-line display, it is also possible to use an optiset base, optiset E standard or an optiset E advanced.

The offered menus can be addressed via a number of keys. Branching is implemented as you move to higher-level or lower-level menus.

You must always acknowledge error messages! If an error message is issued because a code has already been assigned, the expert code appears at the beginning of the second line of the display. This code can be used to branch to the appropriate section of the menu.

The functions assigned to function keys F1 to F8 appear in the menu.

General key functions:

**+** scroll down **-** scroll up

**F2** continue/go to next code

**F3** delete

**F7** previous/quit

**F8** return to main menu

Simply follow the user prompts; the system will always inform you of available and unavailable (error messages) options and will recommend corrective measures using expert mode (branch address to collision entry found).

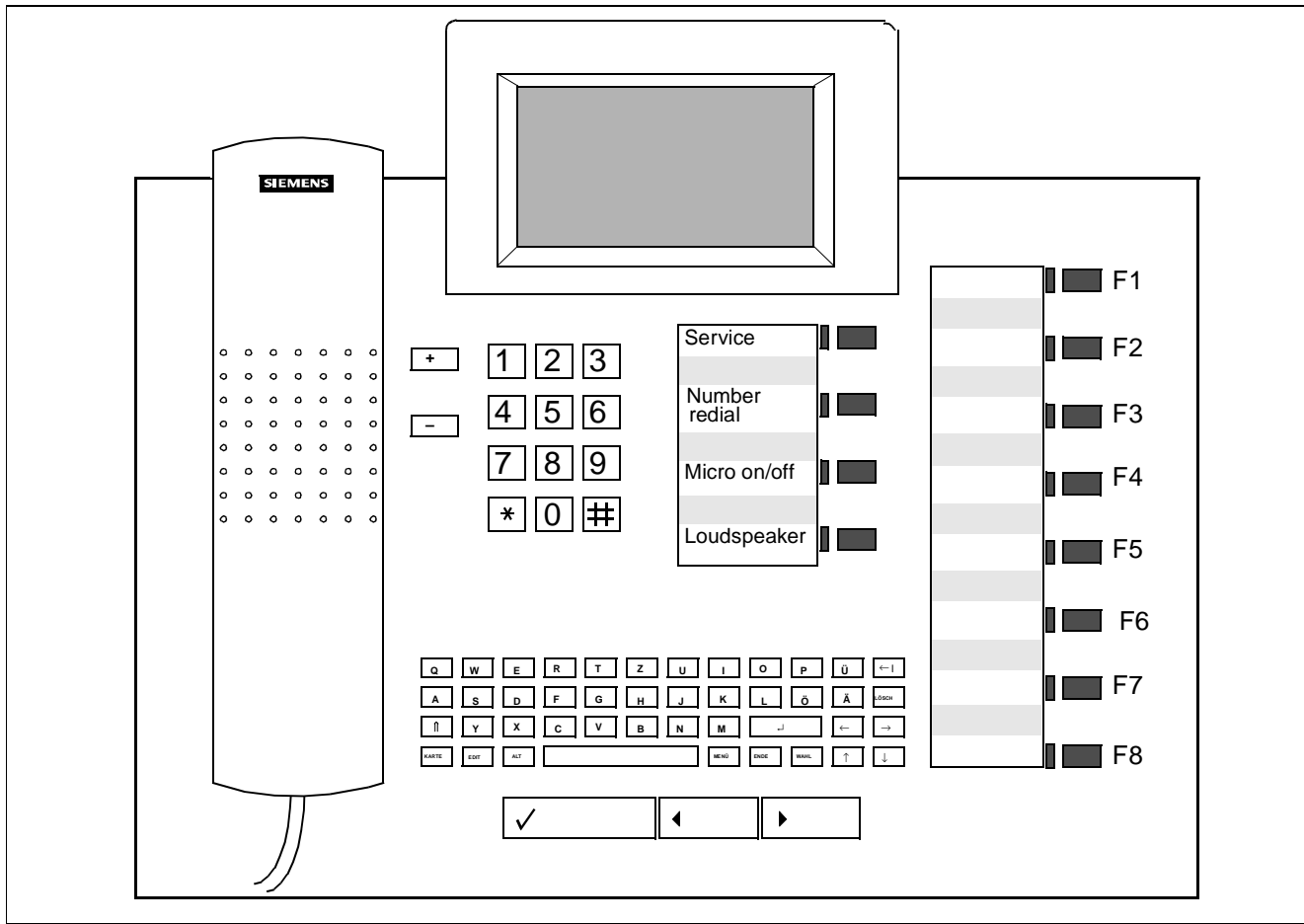


Figure 7-2 optiset E memory programming telephone

## 7.6 System programming in expert mode

The Hicom 100E can also be programmed with an optiset E memory telephone in expert mode. Expert mode is initiated by concatenating sequences of characters, whereby branching is automatically implemented.

Expert code display in the event of error messages:

You must always acknowledge error messages! If an error message is issued because a code has already been assigned, the expert code appears at the beginning of the second line of the display. This code can be used to branch to the appropriate section of the menu.

Selection using codes: depending on the menu, you must enter single or multiple-digit codes.

On the keypad, "\*" can be used to change the data position and "#" to call the configuration option.

## 7.6.1 Starting system administration

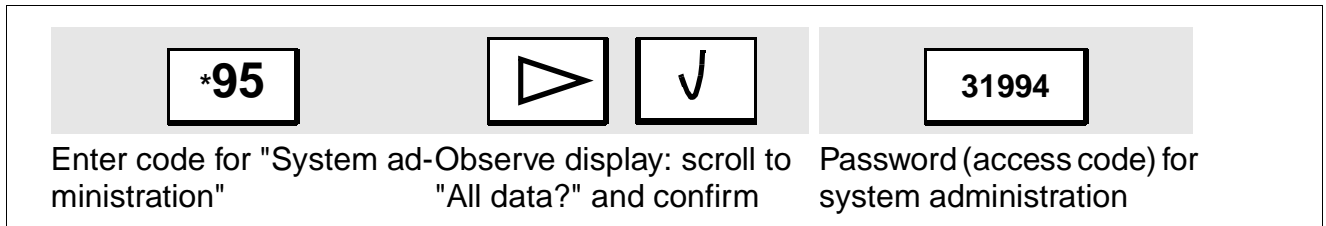


Figure 7-3 Starting system administration

## 7.6.2 Codes for expert mode

Code group	Function
<u>11</u>	Call charge menu
<u>12</u>	Central abbreviated dialling
<u>13</u>	Station setup
<u>14</u>	Trunk access
<u>15</u>	Incoming calls
<u>16</u>	Networking
<u>17</u>	Internal traffic
<u>18</u>	Display texts
<u>19</u>	ISDN parameters
<u>20</u>	Analogue trunk (MSI) parameters
<u>21</u>	System settings
<u>22</u>	Codes
<u>23</u>	Doorphone setup
<u>24</u>	Fax/DDI
<u>25</u>	Actuators
<u>26</u>	Sensors
<u>27</u>	Least cost routing
<u>28</u>	Print customer data
<u>29</u>	System data
<u>30</u>	Remote administration
<u>31</u>	Call distribution (Hicom 118-2 only, two-box system)

Table 7-3 Code groups for expert mode

**Administration and maintenance**  
*System programming in expert mode*

Codes					Function
	A	B	C		
<b>11</b>					<b>Call charge menu</b>
11	1	1	1		Call charges/extension
11	1	1	1	1	Edit call charges/ext., enter ext. number (11–74)
11	1	1	1	2	Print call charges/ext.
11	2	2	2		Call charges/line
11	2	2	2	1	Edit call charges/line, enter line number (1–32)
11	2	2	2	2	Print call charges/line
11	3	3	3		CDRC
11	3	3	3	1	Print format – 0 = compressed/1 = non-compressed
11	3	3	3	2	Extension no. display, digit suppression, 0 = no/1 = yes
11	3	3	3	3	Incoming calls, 0 = no/1 = yes
11	3	3	3	4	Call duration, 0 = no/1 = yes
11	3	3		5	On ringing, 0 = no/1 = yes
11	4	4	4		Charge factor, entry from 0 to 65535
11	5	5	5		Currency unit, alphanumeric entry (up to 3 characters)
11		6	6		ISDN unit, factor 0 to 65535
11			7		On ringing, 0 = no/1 = yes
<b>A</b> = SW 2.0.1+; <b>B</b> = SW 2.0.2; <b>C</b> = SW 2.1					

Table 7-4 Codes for expert mode

Codes					Function
	A	B	C		
<b>12</b>					<b>Central abbreviated dialling</b>
					3-digit seizure code, unabbreviated ext. number (max. 20 digits)
12	1	1	1		Central abb. dialling ext. numbers
12		2	2		Central abb. dialling names
<b>A</b> = SW 2.0.1+; <b>B</b> = SW 2.0.2; <b>C</b> = SW 2.1					

Table 7-4      Codes for expert mode

**Administration and maintenance**  
*System programming in expert mode*

Codes					Function
	A	B	C		
<b>13</b>					<b>Station setup</b>
13	1	11	11		Station type
13	1	11	11	0	Standard
13	1	11	11	1	Fax
13	1	11	11	2	Phone mail
13	1	11	11	3	Loudspeaker
13	1	11	11	4	Answering machine
13	2	12	12		Station names, alphanumeric entry (up to 16 characters)
13	3	13	13		Intrusion – 0 = not enabled/1 = enabled
13	4	14	14		Associated dialling/services, 0 = not enabled/1 = enabled
13	5	15	15		Camp-on rejection, data security, 0 = off/1 = on
13	6	16	16		Headset, 0 = off/1 = on
13	7	17	17		Call pickup group, 1 = group 1; 2 = group 2 8 groups as of SW2.0.2
13	8	18	18		Telephone lock code, 0 = reset to 00000
13	9	19	19		DND override, 0 = no/1 = yes
13		20	20		Caller list, 0 = no/1 = yes
13		21	21		Call trace, 0 = not enabled/1 = enabled
13		22	22		External call diversion, 0 = not enabled/1 = enabled
<b>A</b> = SW 2.0.1+; <b>B</b> = SW 2.0.2; <b>C</b> = SW 2.1					

Table 7-4 Codes for expert mode

Codes					Function
	A	B	C		
<b>14</b>					<b>Trunk access</b>
14	1	1	1		Trunk access, day, specify reference ext. Enter new data: 0/0 No trunk access except via central abbreviated dialling 1/1 Outward restricted 2/2-7 Allowed numbers list/allowed numbers list 1–6 3/8-13 Barred numbers list/barred numbers list 1–6 4 /14 Unrestricted trunk access (SW 2.0.1+/as of SW 2.0.2)
14	2	2	2		Trunk access, night, specify reference ext. Enter new data: 0/0 No trunk access except via central abbreviated dialling 1/1 Outward restricted 2/2-7 Allowed numbers list/allowed numbers list 1–6 3/8-13 Barred numbers list/barred numbers list 1–6 4/14 Unrestricted trunk access (SW 2.0.1+/as of SW 2.0.2)
14	3				Allowed numbers list, 45 items
14		3	3	1	Allowed numbers list 1, 45 items
14		3	3	2	Allowed numbers list 2, 10 items
14		3	3	3	Allowed numbers list 3, 10 items
14		3	3	4	Allowed numbers list 4, 10 items
14		3	3	5	Allowed numbers list 5, 10 items
14		3	3	6	Allowed numbers list 6, 10 items
14	4				Barred numbers list, 25 items
14		4	4	1	Barred numbers list 1, 25 items
14		4	4	2	Barred numbers list 2, 10 items
14		4	4	3	Barred numbers list 3, 10 items
14		4	4	4	Barred numbers list 4, 10 items
14		4	4	5	Barred numbers list 5, 10 items
14		4	4	6	Barred numbers list 6, 10 items
14	5	5	5		Total active exts. – for information purposes only
<b>A</b> = SW 2.0.1+; <b>B</b> = SW 2.0.2; <b>C</b> = SW 2.1					

Table 7-4 Codes for expert mode



**Administration and maintenance**  
*System programming in expert mode*

Codes					Function
	A	B	C		
14		6	6		Code lock 0 No trunk access except via central abbreviated dialling 1 Outward restricted 2-7 Allowed numbers list 1–6 9-13 Barred numbers list 1–6 14 Unrestricted trunk access
14		7	7		Dialling signal transmission, 0 = step-by-step, 1 = block-by-block
<b>A</b> = SW 2.0.1+; <b>B</b> = SW 2.0.2; <b>C</b> = SW 2.1					

Table 7-4      Codes for expert mode

Codes					Function
	A	B	C		
<b>15</b>					<b>Incoming calls</b>
15	11	11	11		DDI numbers, ext. number (old) is displayed, enter (new) ext. number
15	12	12	12		Attendant code (DDI), enter new console code (max. 11 characters)
15	13	13	13		Intercept position, day, enter new destination, group or ext. no. (max. 5 characters)
15	14	14	14		Intercept position, night, enter new destination, group or ext. no. (max. 5 characters)
15	15	15	15		Intercept options
15	15	15	15	1	No answer, 0 = no/1 = yes
15	15	15	15	2	Busy, 0 = no/1 = yes
15	15	15	15	3	Invalid, 0 = no/1 = yes
15	15	15	15	4	Incomplete, 0 = no/1 = yes
15		15	15	5	Recall, 0 = no/1 = yes
15	16	16	16		Group setup
15	16	16	16	1	Group members, select group and assign dest. (1–8)
15	16	16	16	2	Group type, select group and type 1 = cyclic hunting group 2 = linear hunting group 3 = group ringing 4 = group ringing, no answer
15	16	16	16	3	Group name, select group 881–888 and enter name
15	17	17	17		Call allocation, day, select line and assign ext. no.
15	18	18	18		Call allocation, night, select line and assign ext. no.
15	19	19	19		Call forwarding
15	19	19	19	1	Call management lists, select list 1–16 and dest. index 1–4 and ext. no. or enter * for dialled ext. or # to search all exts.
15	19	19	19	2	Internal calls, select ext./grp., assign 11–74/881–888 and a call dest. list
15	19	19	19	3	External calls, day, select ext./grp., assign 11–74/881–888 and a call dest. list
<b>A</b> = SW 2.0.1+; <b>B</b> = SW 2.0.2; <b>C</b> = SW 2.1					

Table 7-4 Codes for expert mode

**Administration and maintenance**  
*System programming in expert mode*

Codes					Function
	A	B	C		
15	19	19	19	4	External calls, night, select ext./grp., assign 11–74/881–888 and a call dest. list
15	19	19	19	5	Number of ring attempts, select list 1–16 and define the ring attempts (1–15)
15	19	19	19	6	Common ringer, PEN, select list 1–16 and define ext. or actuator (*1–*4)
15	19	19	19	7	Common ringer, mode, select list 1–16 and set 1 = immediately or 2 = after timeout
15	20	20	20		Consultation-call prevention (BRA only) 0 = off/ 1 = on
15			21		Signalling type, 0=call type 1, 1=call type 2, 2=call type 3
<b>A</b> = SW 2.0.1+; <b>B</b> = SW 2.0.2; <b>C</b> = SW 2.1					

Table 7-4      Codes for expert mode

Codes					Function
	A	B	C		
<b>16</b>					<b>Networking</b>
16	1	1	11		Simplified dialling 0 = off/1 = on
16	2	2	12		Route assignment, select line and assign route 1–4
16	3	3	13		Route overflow, select route and assign overflow 1–4
16	4	4	14		Trunk/PBX line type, select route (1–4): 0 = trunk/1 = PBX
16	5	5	15		Route names, select route (1–4) and enter names
16	6	6	16		Digit repetition, select route: 0 = off/1 = on
16	7	7	17		Route assignment, select route: 0=cyclic/1=linear
16	8	8	18		Rerouting (optimised use of B-channel)
16	8	8	18	1	Active rerouting, 0 = no/1 = if path is known/2 = always
16	8	8	18	2	Route change, 0 = not enabled/1 = enabled
16			19		Central intercept
16			20		Connection data routing
16			20	1	Ext. number destination system
16			20	2	System number
16			20	3	Group number
<b>A</b> = SW 2.0.1+; <b>B</b> = SW 2.0.2; <b>C</b> = SW 2.1					

Table 7-4      Codes for expert mode

**Administration and maintenance**  
*System programming in expert mode*

Codes					Function
	A	B	C		
<b>17</b>					<b>Internal traffic</b>
17	1	1	1		Executive/secretary groups, select group 1–4, entry: 1 = executive 1/2 = executive 2/3 = secr. 1/4 = secr. 2
<b>18</b>					<b>Display texts</b>
18	1	11	11		Message texts: select text number 0–9 and enter full alphanumeric text (up to 24 characters)
18	2	12	12		Absence texts: select text number 0–9 and enter full alphanumeric text (up to 24 characters)
18	3	13	13		Set time – enter 4 characters in the format HHMM (hour minute)
18	4	14	14		Set date – enter 6 characters in the format DDMMYY (day month year)
18	5	15	15		Specify language 1/11 = German, 2/12 = English, 3/13 = French, 4/14 = Spanish, 5/15 = Italian, 6/16 = Dutch, 7/17 = Portuguese, 8/18 = Finnish, –/19 = Czech, –/20 = Danish, –/21 = Swedish, –/22 = Norwegian, –/23 = Turkish (SW 2.0.1+/as of SW 2.0.2)
18	6	16	16		Call duration: 0 = off/1 = on
18		17	17		Names/ext. numbers, 0 = ext. no. only/1 = names/2 = names+ext. no.
18		18	18		Recall, 1 = caller/2 = transfer destination
18		19	19		Transfer without notification, 1 = transferring party/2 = transferred party
18		20	20		Data compression, 0 = no/1 = yes
<b>A</b> = SW 2.0.1+; <b>B</b> = SW 2.0.2; <b>C</b> = SW 2.1					

Table 7-4 Codes for expert mode

Codes					Function
	A	B	C		
<b>19</b>					<b>ISDN parameters</b>
19	1	1	1		Call number suppression – 0 = off/1 = on
19	2	2			System ext. number, select route 1–4 and enter ext. no. (max. 15 characters)
19			2		System ext. number
19			2	1	Terminal number, select route 1–4
19			2	2	National number, select route 1–4
19			2	3	International number, select route 1–4
19			2	4	Ext. number type, outgoing, select route 1–4: 0=unspecified, 1=terminal, 2=national, 3=international
19	3	3	3		Port configuration, select port 1–16 and specify port type 0 = Automatic    1 = Euro trunk PP   2 = QSIG network 3 = CorNet 1   4 = Euro bus   5 = VN trunk France 6 = Euro ISDN PMP   7 = CorNet 2
<b>A</b> = SW 2.0.1+; <b>B</b> = SW 2.0.2; <b>C</b> = SW 2.1					

Table 7-4          Codes for expert mode

**Administration and maintenance**  
*System programming in expert mode*

Codes					Function
	A	B	C		
<b>20</b>					<b>Analogue trunk parameters</b>
20	1	1	1		Signalling method, select line 1–32: 0 = automatic, 1 = DTMF, 2 = DP
20	2	2	2		Dial pause, select route 1–4 0 = no pause, 1 = 1s, 2 = 3s, 3 = 6s, 4 = 9s
20	3	3	3		Trunk call pause, select route 1–4, 1 = 6s, 2 = 13s
20	4	4	4		Line length, select line 1–32: 0 = short/1 = long
<b>A</b> = SW 2.0.1+; <b>B</b> = SW 2.0.2; <b>C</b> = SW 2.1					

Table 7-4      Codes for expert mode

Codes					Function
	A	B	C		
<b>21</b>					<b>System settings</b>
21	1	1	11		Music on hold, 0 = off/1 = on, always MOH/ 2 = on, with ringtone on transfer
21	2	2	12		Telephone directory 0 = off/1 = on (internal telephone directory up to SW 2.0.1+ only)
21	3				V.24 setup, 1 = 2400 baud/2 = 9600 baud
21		3	13		V.24 setup
21		3	13	1	MB baud rate, 1 = 2400 baud/2 = 9600 baud
21		3	13	2	Port allocation, 1 = port for CDRC/2 = port for call charges/ext./3 = port for call charges/line/4 = port for customer data output/5 = port for call info
21	4				External diversion, call connected, 0 = on answer/1 = immediately
21		4	14		External diversion
21		4	14	1	Connect call, 0 = on answer/1 = immediately
21		4	14	2	Call forwarding, 0 = disabled/1 = enabled
21		5	15		Caller list mode, 1 = external only/2 = external, internal
21		6	16		Automatic line reservation, 0 = off/1 = on
21		7	17		Tones and rings
21		7	17	1	Conference alerting tone, 0 = off/1 = on
21		7	17	2	Call pickup alerting ring, 0 = off/1 = on
21		8	18		Signal key (retrieval), 1 = press x 1/2 = press x 2
21		9	19		Classes of service
21		9	19	1	Night service, enter ext. 1–5
21			20		Automatic DTMF, 0=no/1= yes
21			21		Extend undialed line, 0=no/1= yes
<b>A</b> = SW 2.0.1+; <b>B</b> = SW 2.0.2; <b>C</b> = SW 2.1					

Table 7-4 Codes for expert mode



**Administration and maintenance**  
*System programming in expert mode*

Codes					Function
	A	B	C		
<b>22</b>					<b>Codes</b>
22	1	1	1		Substitute code *, code 75
22	2	2	2		Substitute code #, code 76
22	3	3	3		Line code, select line 1–32 and enter new code (max. 3 characters: 801–832)
22	4	4	4		Route code, select route 1–4, then code position 1–10 (max. 10 codes for one route) and enter a new code (max. 5 characters)
22	5	5	5		CO code of main PBX, select route 1–4 and enter new code (max. 2 characters)
<b>23</b>					<b>Doorphone setup</b>
23	1	1	1		Entrance telephone, enter ext. number (max. 5 characters) Door 1–4 as of SW 2.0.2
23	2	2	2		Receiving extension for doorbell, enter extension or group number (max. 5 characters) Door 1–4 as of SW 2.0.2
23	3	3	3		Door opener, 0 = off/1 = on also 2 = on with DTMF, door 1–4, as of SW 2.0.2
23		4	4		Doorbell divert, external 0 = disable/1 = enable
23		5	5		DTMF door release, 0 = disabled/1 = enabled
<b>A</b> = SW 2.0.1+; <b>B</b> = SW 2.0.2; <b>C</b> = SW 2.1					

Table 7-4 Codes for expert mode

Codes					Function
	A	B	C		
<b>24</b>					<b>Fax/DDI</b>
24	1	1	1		Number of fax options, enter 1-digit number
24	2	2	2		Number of DDI options, enter 1-digit number
24	3	3	3		Number of fax/DDI options, enter 1-digit number
24		4	4		Number of announcement options
24	4	5	5		Terminal ports, select option 1–4, enter extension number (max. 5 characters)
24	5	6	6		Line assignment, select line 1–32, assign feature: 1 = fax/2 = DDI/3 = fax/DDI/4 = announcement
24	6	7	7		Fax destination, select line 1–32, enter ext. number (max. 5 characters)
24	7	8	8		Record announcements
24	7	8	8	1	Announcements for fax 1 = greeting message(1=playback , 2=record ) 2 = transfermessage(1=play ack , 2=record )
24	7	8	8	2	Announcements for DDI 1 = greeting message(1=playback , 2=record ) 2 = transfermessage(1=play ack , 2=record )
24	7	8	8	3	Announcements for fax/DDI 1 = welcome text BT (1=play back text, 2=record text) 2 = transfer text VT (1=play back text, 2=record text)
24		8	8	4	Announcement message(1=playback , 2=record )
24	8	9	9		Initialisation – module (announcements are deleted)
<b>A</b> = SW 2.0.1+; <b>B</b> = SW 2.0.2; <b>C</b> = SW 2.1					

Table 7-4 Codes for expert mode

**Administration and maintenance**  
*System programming in expert mode*

Codes					Function
	A	B	C		
<b>25</b>					<b>Actuators</b>
25	1	1	1		Type, select actuator 1–4 and assign function: 1 = manual (by means of a code) on and off 2 = automatic off after timeout 3 = door opener 4 = loudspeaker/amplifier (trigger contact for amplifier) 5 = busy indicator 6 = music on hold 7 = call charge pulse 8 = second ringer 9 = active extension (as of SW 2.0.2)
25	2	2	2		Response time select actuator 1–4 and enter max. 3 digit(s) (0-255)
25	3	3	3		Assigned ext. select actuator 1–4 and enter ext. number
25	4	4	4		Actuator names, select actuator 1–4, enter alphanumeric names (max. 16 characters)
<b>A</b> = SW 2.0.1+; <b>B</b> = SW 2.0.2; <b>C</b> = SW 2.1					

Table 7-4      Codes for expert mode

Codes					Function
	A	B	C		
<b>26</b>					<b>Sensors</b>
26	1	1	1		Destination ext. number, select sensor 1–4 and enter extension, group or external ext. number (with seizure code) (max. 23 characters)
26	2	2	2		Ext. number for announcement, select sensor 1–4 and enter extension or group ext. number (max. 5 characters)
26	3	3	3		Voice mail control data, select sensor 1–4 and enter control character 0–9, *, # (max. 24 characters)
26	4	4	4		Call duration, select sensor 1–4 and enter 1–255
26	5	5	5		Call interval, select sensor 1–4 and enter 0–255
26	6	6	6		Number of calls, select sensor 1–4 and enter 1–255
26	7	7	7		Disable time, select sensor 1–4 and enter 0–255
26	8	8	8		Sensor name, select sensor 1–4, enter alphanumeric names (max. 16 characters)
<b>A</b> = SW 2.0.1+; <b>B</b> = SW 2.0.2; <b>C</b> = SW 2.1					

Table 7-4      Codes for expert mode

**Administration and maintenance**  
*System programming in expert mode*

Codes					Function
	A	B	C		
<b>27</b>					<b>Least cost routing</b>
27	1	1	1		Least cost routing, 0 = off/1 = on
27		2	2		Names of the network
27		2	2	1	Network A, alphanumeric input (max. 16 characters)
27		2	2	2	Network B, alphanumeric input (max. 16 characters)
27		3	3		Routing type, 1 = 1-level exception table/2 = 2-level exception table/ 3 = interpretation table/4 = DICS
27	2	4	4		Access code (LCR type 1, 2 or 4 only), enter code 0–9, *, # (max. 10 characters)
27	3	5	5		Authorisation code (LCR type 1, 2 or 4 only), enter code 0–9, *, # (max. 15 characters, max. 10 characters up to SW 2.0.1+)
27	4	6	6		Exception table (LCR type 1, 2 or 4 only): select item number 1–50 and enter control numbers 0–9, *, # (max. 7 characters)
27			7		Dialled digits (LCR type 3 only) (max. 7 characters)
27			8		Interpreted digits (LCR type 3 only) (max. 7 characters)
27			9		Route (LCR type 3 only) (1 character)
<b>A</b> = SW 2.0.1+; <b>B</b> = SW 2.0.2; <b>C</b> = SW 2.1					

Table 7-4 Codes for expert mode

Codes					Function
	A	B	C		
<b>28</b>					<b>Print customer data</b>
28					Print job
<b>29</b>					<b>System data</b>
29	1	1	1		System
29	1	1	1	1	System type (for information only), 5 = Hicom 108, 6 = Hicom 112, 7 = Hicom 118
29	1	1	1	2	SW version (for information only)
29		2	2		Options
29		2	2	1	Option type for each option (1...16)
29		2	2	2	SW version for each option (1...16)
<b>A</b> = SW 2.0.1+; <b>B</b> = SW 2.0.2; <b>C</b> = SW 2.1					

Table 7-4      Codes for expert mode

**Administration and maintenance**  
*System programming in expert mode*

Codes					Function
	A	B	C		
<b>30</b>					Remote administration
30		1	1		DTMF access, 0 = no access/1 = access as master/2 = access as slave/3 = master and slave
30		2	2		ISDN access trunk, 0 = release procedure/1 = Logon (DDI) without code/2 = Logon (DDI) with code
30		3	3		Other accesses, 0 = release procedure/1 = Logon (DDI) without code/2 = Logon (DDI) with code
30		4	4		DDI no., remote administration, max. 11 characters
		5	5		Internal ext. no., remote administration, max. 5 characters
		6	6		Reset access code (6 characters): 0 = reset
		7	7		Automatic customer data printout, access 0 = no/1 = yes
<b>A</b> = SW 2.0.1+; <b>B</b> = SW 2.0.2; <b>C</b> = SW 2.1					

Table 7-4      Codes for expert mode

Codes					Function
	A	B	C		
<b>31</b>					<b>Call distribution (Hicom 118-2 only, two-box system)</b>
31			1		Group assignment, dial code, 1 character
31			2		Announcement equipment
31			2	1	Announcement device, ext. 5 characters
31			2	2	Announcement type, 1=announcement/2=music on hold
31			3		Group parameters
31			3	1	Waiting destinations, 1=device 1/2=device 2/3=device 3/4=device 4
31			3	2	Waiting times
31			3	3	Ring attempts: 1 = primary ring attempts; 2 = secondary ring attempts
31			4		Post-processing time
<b>A</b> = SW 2.0.1+; <b>B</b> = SW 2.0.2; <b>C</b> = SW 2.1					

Table 7-4      Codes for expert mode



## 7.7 Overview of configuration parameters

The following table lists all system configuration items along with the default values and the entry options, the programming options using a PC tool and/or a programming telephone (terminal).

The configuration items are grouped under the following headings:

- System parameters
- Doorphone setup
- Call data
- Time parameters
- S0 configuration
- Networking
- Lines
- Extensions
- Classes of service
- Call management
- Digit analysis
- Least cost routing
- Call pickup
- Executive/secretary
- Actuators/sensors
- Fax/DDI/announcement without notification
- Central abbreviated dialling
- Daylight saving time
- Call charge menu
- Texts
- Status display: system-wide
- Status display: lines
- Status display: extensions

In the following table, the expert mode codes (CDM menu) are specified in the column "Term.".

Configuration items	Default	Entries	PC	Term. CDM menu
<b>System parameters</b>				
Auto. line seizure	yes	yes/no	x	16 11
Music on hold	yes	yes/no	x	21 11
Switch MOH to ring tone	no	yes/no	x	21 12
Call no. suppression	no	yes/no	x	19 1
Transit	yes	yes/no	x	
Language	country	All languages	x	18 15
Date format	country	Europe, USA, international	x	
Set date/time	1.1.95 00:00	Corresponding to the selected format		18 13 18 14
V.24 selection (as of V2.0.2) for customer data printout	yes	V.24 interface index (1 = MB, 2-5=SIB)		x
Customer data printout using PC tool (as of V2.0.2)	yes	not relevant	x	28
Printout of updated customer data (as of V2.1)		Only deviations from default values are printed	x	
Extend undialed lines (as of V2.1)	no	yes/no system-wide	x	21 21
V.24 selection (as of V2.0.2), for in- formation call function	1	V.24 interface index (1 = MB, 2-5=SIB)		x
Intercept options:				15
Busy	no	yes/no	x	15 2
No answer	yes	yes/no	x	15 1
Incomplete number	yes	yes/no	x	15 4
Invalid number	yes	yes/no	x	15 3
Recall (as of V2.0.2)	no	yes/no	x	15 5
a/b terminals seized at 2nd level	no	yes/no		
Camp-on, busy	yes	yes/no	x	13 15
Intercept with linked Diversion	no	yes/no	x	
V.24 baud rate for MB (SIB=2400 baud, permanent set- ting)	2,400	2,400/9,600 baud	x	21 131

Table 7-5      System configuration via PC and/or programming telephone

## Administration and maintenance

### Overview of configuration parameters

Configuration items	Default	Entries	PC	Term. CDM menu
Alerting tone for conference (as of V2.0.2)	on	on/off system-wide	x	21 171
Alerting ring for call pickup groups (as of V2.0.2)	on	on/off system-wide	x	21 172
Doorbell call follows DVN (as of V2.0.2)	no	yes/no system-wide	x	23 4
Display when transferred (as of V2.0.2)	who	who/from whom	x	18 19
Display when recalled (as of V2.0.2)	transfer dest.	Caller/transfer dest.	x	18 18
Display name or ext. number (as of V2.0.2)	name	Name/ext. number system-wide	x	18 17
Data compression of display mes- sage for each extension	yes	yes/no	x	18 20
DTMF remote AM (as of V2.0.2)	no	master, slave, master + slave	x	30 1
PIN code for remote admin. (as of V2.0.2, accessible for cus- tomers)	XXXXXX (no access)	6-digit access code can be entered by the customer		User data 20
PIN code for remote admin. (as of V2.0.2)		PIN code reset to default value		30 6
ISDN remote AM release	pro- cedure	0=procedure/1=logon without code, 2=logon with code		30 2
Other access for remote AM	pro cedure	0=procedure/1=logon without code, 2=logon with code		30 3
Automatic switchover to DTMF after <b>CONNECT (as of V2.1)</b>	no	yes/no system-wide	x	21 20
<b>Doorphone setup</b>				
Entrance telephone(s) (4 entrance telephone possible as of V2.0.2)		Ext. number, max. 5 characters	x	23 1
Receiving extension(s) for doorbell		max. 5 characters	x	23 2

Table 7-5 System configuration via PC and/or programming telephone

Configuration items	Default	Entries	PC	Term. CDM menu
Door opener (as of SW 2.0.2 also with DTMF)		0 = not available 1 = available 2 = with DTMF	x	23 3
Doorbell diversion		0 = do not perform 1 = perform	x	23 4
Door opener with DTMF		0 = not enabled 1 = enabled	x	23 5
Intercept console day	11	1 extension number each	x	15 13
Intercept console night	11		x	15 14
Call charge recording				
Call data format	Decimal 12 GBP	With or without decimal point  up to 3 letters	x	11 4 11 5 11 6
Factor			x	
Currency format			x	
ISDN amount (SW 2.0.2)			x	
Printer output format	comp.	0 = compressed 1 = uncompressed	x	11 31
Digit suppression	no	Digit display 0 = no/1=yes	x	11 32
Call duration	yes	Output 0 = no/1=yes	x	11 34
Call info (as of SW 2.0.2 with V.24 interface selection)		Output 0 = no/1=yes	x	11 7
Incoming calls	no	Output 0 = no/1=yes	x	11 33
Activate CDRC output and select V.24 (as of V2.0.2)	—	V.24 interface index (1 = MB, 2-5=SIB)	x	x
V.24 selection for call charges/ext.	1	V.24 interface index (1 = MB, 2-5=SIB)	x	x
V.24 selection for call charges/line	1	V.24 interface index (1 = MB, 2-5=SIB)	x	x
Time parameters				
End-of-dial timeout for DTMF termi- nals	10 s	Multiples of 1 s	x	

Table 7-5      System configuration via PC and/or programming telephone

## Administration and maintenance

### Overview of configuration parameters

Configuration items	Default	Entries	PC	Term. CDM menu
Timeout for activating feature during call	2 s	Multiples of 100 ms	x	
Re-seizure disable time	0 s	Multiples of 1 s	x	
Callback timeout	5 s	Multiples of 1 s	x	
Callback duration	20 s	Multiples of 1 s	x	
Timeout before recall in the case of "Transfer without notification"	30 s	Multiples of 1 s	x	
Recall timeout after "Transfer without notification" and "Park"	45 s	Multiples of 1 s	x	
Timeout before recall in the case of "Park"	180 s	Multiples of 10 s		
Timeout before recall is activated at intercept console	60 s	Multiples of 10 s	x	
Call forwarding timeout	6 s	Multiples of 1 s	x	
Flash time for satellite PBX operation	90 ms	Multiples of 10 ms	x	
Flash time for trunk operation	270 ms	Multiples of 10 ms	x	
Dial pause	3 s	Multiples of 100 ms	x	
Timeout, if dialling not performed	10 s	Multiples of 1 s	x	
<b>S<sub>0</sub> configuration</b>				
Extension bus	short bus	Default/short bus/long bus	x	x
Port type	automatic	Automatic, Euro trunk, CorNet network, QSIG network, VN, bus	x	19 3
Line monitoring	yes	yes/no	x	x
Operating mode	P-P	Point-to-point	x	x
		point-to-multipoint (V2.0.1+)	x	x
		X.31 collision processing (V2.0.1+)	x	
TEI entry for PMP (only up to SW 2.0.1+)	22	01 to 63	x	x
<b>Networking</b>				
Route parameters		Name, system ext. number	x	16 15

Table 7-5 System configuration via PC and/or programming telephone

Configuration items	Default	Entries	PC	Term. CDM menu
Route codes	1: 0 2: 84 3: 85 4: 86	Up to 10 codes (each with max. 3 digits) for each route as of V2.1, up to 5-digit codes	x	22 4
Rerouting	no	no/if known/always	x	16 181
Route change	no	yes/no	x	16 182
Dial pause	0	0=1s, 1=2s, 2=3s, 3=6s, 4=9s	x	20 2
Digit repetition	off	0=off/1=on	x	16 16
Evaluation of 2nd audible tone	off	on/off	x	
Route overflow/overflow route	off/blank	on/off/overflow route	x	16 13
Route type	trunk	Trunk/PBX	x	16 14
Seizure mode, route seizure	linear	Cyclic/linear	x	16 17
Trunk call pause	6 s	13 s, 6 s	x	20 3
Assignment of lines to routes	route 1	4 routes possible	x	16 12
Ext. number of the central attendant console – QSig networking <b>(as of V2.1)</b>	–	Ext. number	x	16 19
<b>Lines</b>				
Analogue trunk parameters: Line length Line monitoring Trunk call recognition	short no 1 long	Short/long yes/no 2 short calls/1 longer call	x x x	20 4
Signalling method	DP	DP/DTMF	x	20 1
Assignment of MSNs to lines <b>(as of V2.1)</b>	–	for specific MSN seizure in the case of outgoing dialling	x	Kz * 41
Assignment of call signalling to dialled extension <b>(as of V2.1)</b>	Std. external call	3 different rings available	x	15 21
<b>Extensions</b>				
Name	–	up to 16 characters	x	13 12
Camp-on rejection	no	yes/no	x	13 15
Caller list (as of V2.0.2)	yes	yes/no for each user	x	13 20
Intrusion class of service	no	yes/no	x	13 13

Table 7-5 System configuration via PC and/or programming telephone

## Administration and maintenance

### Overview of configuration parameters

Configuration items	Default	Entries	PC	Term. CDM menu
Class of service for external DVN (as of V2.0.2)	yes	yes/no	x	13 22
Class of service for associated dial, as of V2.0.2 this class of service also applies to associated services	no	yes/no	x	13 14
Class of service for call trace (as of V2.0.2)	no	yes/no	x	13 21
Headset	no	yes (for each ext.)/no	x	13 16
Station type	default	Default, phone mail, answering machine, fax/modem, loudspeaker	x	13 11
Assignment of trunk access group, day/night	1/1	1 to 4 respectively 1 to 15 (as of SW 2.0.2)	x x	14 1 14 2
Telephone lock code	00000	May be changed by the user, 5- digit, can be reset to 00000 via system administration	x	13 18
Assignment to call dest. lists, inter- nal/day /night	16/14/15	16 call dest. lists are available	x	15 191
Display language for each ext. (as of V2.0.2)	country	Each of the available languages	x	1815
Assignment of programmable keys (terminals and consoles) <b>(as of V2.1)</b>	as before	The programmable keys can be assigned on an extension-specific basis (remote or local)	x	Code * 91
<b>Classes of service</b>				
Class of service trunk group, day Class of service trunk group, night	COS 4, COS 14 as of V2.0.2	COS 0 to 4 for each line, COS 0 to 14 as of V2.0.2	x x	14 1 14 2
Assignment of ext. to COS trunk group, day/night	1/1	1 to 4 respectively 1 to 14 respectively as of V2.0.2	x x	14 1 14 2
Toll restriction: barred numbers list/ allowed numbers list	blank	45/25 entries 6 allowed and 6 barred numbers lists (as of SW 2.0.2)	x x	14 3 14 4
<b>Call Management</b>				

Table 7-5 System configuration via PC and/or programming telephone

**Administration and maintenance**  
*Overview of configuration parameters*

Configuration items	Default	Entries	PC	Term. CDM menu
Call allocation line to extension, day/night	11	One entry per line from: 11..74, 881..888	x	x
Seizure of 16 call dest. lists	1st dest.: * 3 attempts. C.R.: immed.	Up to 4 dests.	x	15 191
		Number of call attempts (15)	x	15 195
		Common ringer mode, immediately, after timeout	x	15 197
		Internal calls	x	15 192
		External calls, day	x	15 193
		External calls, night	x	15 194
Group ringing/hunting group		Ext. called 8 groups, each with 5 exts.	x	15 161
		Call type: 1 = cycl. hunting group 2 = lin. hunting group 3 = group ringing 4 = group ringing, free	x	15 162
		Group names max. 16 characters	x	15 163

Table 7-5      System configuration via PC and/or programming telephone



## Administration and maintenance

### Overview of configuration parameters

Configuration items	Default	Entries	PC	Term. CDM menu
<b>Digit analysis</b>				
Define the DDI numbers per ext./group	as for internal	5-digit, and/or 11-digit for PMP	x	15 11
Define the internal ext. numbers per ext./group/pseudo-ports	11..74, 881..888	max. 5 characters	x	
Codes for specific line seizure	801–832	max. 3 characters	x	22 3
Substitute codes for *, #	75, 76	max. 3 digits (from 0..9)	x	22 1 22 2
Attendant console code internal/external	9 (GBR 0)	max. 5 characters	x	x
Route codes	0, 84, 85, 86	Up to 10 codes (each with 3 digits) for each route	x	22 4
Service codes for activating services/features	see code plan		x	
<b>Least cost routing</b>				
LCR deactivate/activate	off	off/on	x	27 1
LCR mode	–	Single-stage, two-stage, (T-Net), DICS interpretation table	x	27 3
Prefix (for single-stage, two-stage)	blank	max. 9 characters	x	27 4
Authorisation code (for two-stage)	blank	max. 10 characters (closed entry), max. 15 characters (as of SW 2.0.2)	x	27 5
Destination ext. numbers (for T-Net)	blank	max. 20 characters	x	27 8
Exceptions table/route table	GBR preset otherwise blank	Up to 50 entries (max. 7 characters)	x	27 6
String dialled for "Corporate Network" LCR	blank	max. 7 characters, any digit string for 50 entries	x	27 7
Substitute digit seq. for dial string for each entry in the case of "Corporate Network" LCR	blank	Any digit string (max. 7 characters) for each of the 50 entries	x	27 8

Table 7-5 System configuration via PC and/or programming telephone

<b>Configuration items</b>	<b>Default</b>	<b>Entries</b>	<b>PC</b>	<b>Term. CDM menu</b>
Route selection for each entry in the case of "Corporate Network" LCR		Route 1 to 4	x	27 9
<b>Call pickup</b>				
Define the extensions in the 2 call pick-up groups (8 as of SW 2.0.2)	blank	Up to 16 telephones per group	x	13 17

Table 7-5      System configuration via PC and/or programming telephone

**Administration and maintenance**  
*Overview of configuration parameters*

Configuration items	Default	Entries	PC	Term. CDM menu
<b>Executive/secretary</b>				
Define the 4 exec./secretary relationships: Exec.1, Exec.2, Secr.1, Secr.2	blank		x	17 1
<b>Actuators/sensors</b>				
Actuators	blank	Name	x	25 4
		Response time	x	25 2
		Assigned ext.	x	25 3
Actuator type	no function	1 = manual on/off 2 = automatic off after timeout 3 = door opener 4 = loudspeaker – amplifier 5 = busy indicator 6 = music on hold 7 = call charge pulse 8 = common ringer 9 = ext. active	x	25 1
Sensors	blank	- Dest. ext. number - Ext. no. for announcement - Voice mail control data - Call duration - Dial pause - No. of calls - Disable time - Sensor name	x	x
<b>Fax/DDI/ announcement before notification</b>				
Assignment of option to port	none	One port (11...74) is defined for each of the max. 4 options	x	24 5
Number of options per option type	0	No. of faxes		24 1
		no. of DDIs		24 2
		no. of fax/DDIs		24 3
		no. of announcements (V2.0.2)		24 4
Fax destination	0	One fax dest. for each line	x	24 7
Record announcement		Play back announcement		24 8

Table 7-5      System configuration via PC and/or programming telephone

Configuration items	Default	Entries	PC	Term. CDM menu
<b>Central abbreviated dialling</b>				
Central abb. dialling destinations as of V2.0.2 with dial pauses and DTMF switching	blank	max. 256 central abb. dialling dests. (100-355)	x	12 1
Names for central abb. dialling dests.	blank	as of SW 2.0.2	x	12 2
<b>Daylight saving time</b>				
Switchover time for daylight saving time for 10 years	preset	Only by means of PC tool	x	
<b>Call charge menu</b>				
Call charges/ext.	0	Display/delete	x	11 1
Start printing call charges/ext. via V.24 port no. (as of V2.0.2)	1	V.24 interface index (1 = MB, 2–5=SIB)		21 1322
Export call charges/ext. to file	not rel.	not relevant	x	
Call charges/line	0	Display/delete	x	11 2
Start printing call charges/line via V.24 port no. (as of V2.0.2)	1	V.24 interface index (1 = MB, 2–5=SIB)		21 1323
Export call charges/line to file	not rel.	not relevant	x	
<b>Texts</b>				
10 message texts:  0: Please call back 1: Visitor waiting 2: Appointment 3: Urgent call 4: Do not disturb 5: FAX waiting 6: Dictation please 7: Please join me 8: Coffee please 9: Vacate office	see left	Can be edited individually		18 11

Table 7-5      System configuration via PC and/or programming telephone

## Administration and maintenance

### Overview of configuration parameters

Configuration items	Default	Entries	PC	Term. CDM menu
10 absence texts:  0: Back on: 1: Holiday until: 2: Away until: 3: Out all day: 4: Out 'til noon: 5: Not available: 6: Avail./home: 7: Contact: 8: Avail at: 9: In room:	see left	Can be edited individually	x	18 12
<b>Status display: system-wide</b>				
Hicom 100E configuration SW version DVN status on trunk (DSS1-CF) Night service status			x x x x	 x x x
<b>Status display: lines</b>				
Code Route Line type Line status			x x x x	 (x) (x)
<b>Status display: extensions</b>				
Internal/external ext. number Port Terminal status Feature status (Handsfree answering, do not disturb, call diversion, code lock, babyphone, camp-on rejection, answer group on, answer group off; Diversion destination from XX)  Reset activated feature (as of V2.0.2)			x x x x    x	      Ext.

Table 7-5 System configuration via PC and/or programming telephone

## 7.8 System programming via PC

The system can be configured with the aid of PC software under Windows. A serial interface of the PC is connected to the system's RS232 interface via the serial interface cable (SIC).

With the PC software, the system's customer data memory is read out and processed offline on the PC. The changed customer data is then transmitted back to the system.

If an error occurs during the transmission, the original contents of the customer data memory are restored within the system.

### 7.8.1 PC tool

In addition to clarity and convenient operation, the tool offers the following advantages:

- Flexible internal extension numbering.  
The assignment of internal extension numbers can be changed directly (maximum of 5 digits). This is not possible using the optiset terminal.
- Status display of extensions.  
Type of connected terminal, call forwarding and diversion are displayed.
- Adjusting internal times in the system.  
The values of internal timers in the system are not designed to be altered. However, the tool is available for doing this in the event of particular problems.
- A program-internal copying function (DRAG) allows the convenient transfer of data already entered.
- The contents of the customer data memory can be stored on hard disk or read.
- Transfer of the contents of the customer data memory to/from the system by (digital) modem. (Entry of customer-specific password!) Figure 7-4
- Customer data memory update from SW 2.0.1 to SW 2.0.1+ and SW 2.0.2 on the basis of the new extension number plans.
- Flexible service codes.
- The assignment of internal codes (e.g. for features) cannot be freely altered **using the Optiset terminal**.
- Querying the SW status of the system and the connected modules.
- Querying the HW configuration of the system.
- Tool interfaces and help texts in the appropriate languages for the countries supported.

## 7.9 Teleservice

### 7.9.1 Modem transfer

In addition to a direct connection between the PC and Hicom 108/112/118, the PC tool also supports connection setup via modem and V.24 interface which permits remote administration of the appropriate system (also with simultaneous customer support by telephone).

To avoid transmission interruptions, the baud rate (transmission speed) should be set to 9600 baud both in the tool and in the system (only possible using the V.24 interface of the MB).

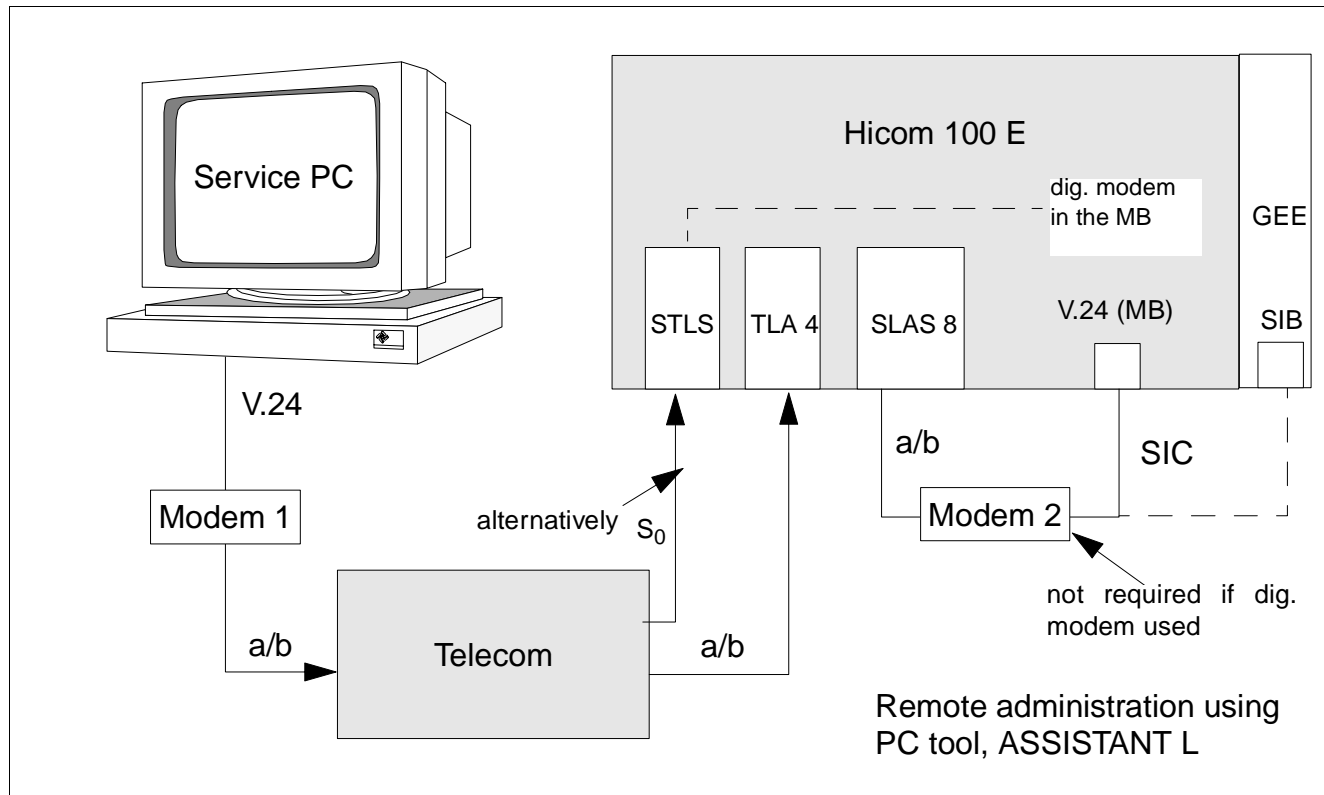


Figure 7-4 Connection setup via modem for teleservice

### 7.9.2 Digital modem (Menu 30 2)

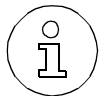
As of SW 2.0.2, the motherboard (MB) will include a digital modem which can be used for remote system administration. An external modem is thus no longer needed, **provided digital trunk lines (STLS modules) are available**.

The digital modem is treated as a pseudo port and is assigned an extension number (879, can be altered) in the system which can be reached internally using DDI. The DDI number can be manually cancelled to prevent external access.

An individual 6-digit PIN code can be programmed by the customer in the system administration (access with password). This PIN code must be entered in the PC tool. The default setting for the PIN code is not sufficient to access the digital modem.

This means that the customer must specifically release access to the digital modem by entering this PIN code.

The PIN code can, if necessary, be reset to the default value via the password-protected system administration (**programming telephone only, not PC tool**).



An MSN no. can also be assigned for an extension as can a DDI no. for remote administration.

An extension number that has already been assigned to an extension can be assigned per DDI.

### 7.9.3 DTMF remote administration and maintenance

As of **SW 2.0.2**, the system can also be programmed using DTMF signalling. This enables the system to be remotely administered and maintained without difficulty. The passive DTMF remote AM feature must also be released in the slave system (customer system). In addition, the party called must release remote AM for the current connection using the appropriate procedure and specifying a password (6 characters).

Active DTMF remote administration and maintenance mode can be activated in the remote master system (service system) by each user using the same code procedure (but a different password). Active remote administration and maintenance must always be released in the master system. The slave system (customer system) can be programmed from the master system by means of DTMF signalling. The extension in the slave system is activated.

**DTMF administration and maintenance is only available via analogue trunk lines up to SW 2.0.2.**

As of **SW 2.1**, the DTMF remote AM feature can also be activated via S<sub>0</sub> lines.





**Caution**

In general, DTMF remote administration and maintenance can only be performed between systems with the same software version.

### **7.9.3.1 DTMF remote administration and maintenance procedure**

#### **1. Initiating an external call**

This type of remote administration and maintenance can be used for masters and slaves on analogue lines (SW 2.0.2) and on S<sub>0</sub> lines (as of SW 2.1). An incoming or outgoing external call is first initiated between the service system (master) and the customer system (slave).

#### **2. Release procedure in the customer system**

Passive remote AM mode is activated in the customer system by entering a release procedure. The following restrictions apply to the release procedure for data protection reasons:

- The procedure can only be performed from the first 2 stations with display (\*992).
- The procedure must be jointly released for both stations by entering customer data (CDM 30 12).
- A 6-character password must be entered in the procedure.
- The password can be edited using the customer data entry (**user data**: code 20 for remote AM).

The slave user can replace the handset after the release procedure without deactivating the connection between the systems. The slave system then waits for 60 seconds to receive the cyclical signals emitted by the master. The line is cleared down by the slave system if there is no signal from the master during this time.

#### **3. Activation procedure in the service system**

Active remote AM mode can be activated in the service system by entering a release procedure (\*991).

This release procedure can be entered from any system telephone with display (max. 3 extensions simultaneously). In the system administration, the service system must be released as a master system in remote AM.

After activation of remote AM, the master emits cyclical signals (every 5 seconds) and waits for the slave to respond. The master exits standby mode when the first acknowledgment is received. The signalling cycle is then increased to 10s intervals and the cyclical signals are maintained during the entire administration and maintenance procedure. If user data is transferred, cyclical signalling starts again from the beginning when the transfer has been completed.

4. Monitoring the protocol

The slave starts to monitor the protocol when the first cyclical signal is received. The trunk line is cleared down if no valid signals are received within 30 seconds.

Following first initialisation of the inactive protocol and activation of system administration, the user interface switches to error status if the master does not receive an acknowledgment within 5 seconds of sending a cyclic signal. The transfer can be repeated or system administration can be cancelled from this error status.

5. Procedure during remote administration and maintenance

Remote administration and maintenance is performed using the normal system administration interface.

The entries are made in the same way as entries programmed directly using the system administration procedure at the customer system, e.g. dialling of the extension using the system-specific extension number plan.

The following configuration items cannot be selected:

- Print call charges/ext.
- Print call charges/trk.
- Print customer data
- Record announcements
- Initialise options
- Nationalisations
- All menu items under the heading "Remote administration and maintenance" with the exception of DDI and internal extension numbers.

### 7.9.3.2      **Activating DTMF remote administration**

The master and slave systems are linked via analogue trunk or S<sub>0</sub> lines.

1. Set up a voice connection between the Optiset E memory of the service system (master system) and the telephone with extension no. 11 of the customer system (slave system)
2. Start remote administration with the slave remote administration code **"\* 992"** at the slave system's telephone (ext. no. 11) and enter the customer password (default 000 000).
3. Wait one minute and enter the master remote administration code **"\* 991"** at the master system's programming telephone; wait for the main system administration menu to appear.
4. The slave system can now be programmed with the customary expert codes using the master system's programming telephone.
5. Press **"F7"** in the main menu to terminate remote administration.

## 7.10 Classes of service

Every time a terminal attempts to seize a trunk line, its class of service is checked. Five classes of service were available up to SW 2.0.1+. There are fifteen classes of service as of SW 2.0.2.

0	No trunk access, central abb.dialling dests. only	User may only telephone internally; central abbreviated dialling destinations can be used
1	Outward restricted, with central abb.dialling dests.	User may only accept external calls; central abbreviated dialling destinations can be used
2	Allowed numbers list	Reference to list with allowed ext. numbers (e.g. emergency nos.)
3	Barred numbers list	Reference to list with barred extension numbers
4	Unrestricted trunk access	User may telephone without any restrictions

Table 7-6 Classes of service up to SW 2.0.1+

0	No trunk access, central abb.dialling dests. only	User may only telephone internally; central abbreviated dialling destinations can be used
1	Outward restricted, with central abb.dialling dests.	User may only accept external calls; central abbreviated dialling destinations can be used
2	Allowed nos. list, long	Reference to list with 45 allowed ext. nos.(e.g.emergency nos.)
3	Allowed nos. list, short1	Additional list with 10 allowed ext. numbers
4	Allowed nos. list, short2	Additional list with 10 allowed ext. numbers
5	Allowed nos. list, short3	Additional list with 10 allowed ext. numbers
6	Allowed nos. list, short 4	Additional list with 10 allowed ext. numbers
7	Allowed nos. list, short5	Additional list with 10 allowed ext. numbers
8	Barred nos. list long	Reference to list with 25 barred ext. numbers

Table 7-7 Classes of service as of SW 2.0.2

9	Barred nos. list, short1	Additional list with 10 barred ext. numbers
10	Barred nos. list, short2	Additional list with 10 barred ext. numbers
11	Barred nos. list, short3	Additional list with 10 barred ext. numbers
12	Barred nos. list, short4	Additional list with 10 barred ext. numbers
13	Barred nos. list, short5	Additional list with 10 barred ext. numbers
14	Unrestricted trunk access	User may telephone without any restrictions

Table 7-7      Classes of service as of SW 2.0.2



In the case of barred number lists the trunk code is not specified.

## **7.11 Toll restriction**

### **7.11.1 Procedure for satellite PBXs**

The trunk code of the respective main PBX can be programmed for each route as a one or two-digit number. The specified trunk code is also used for evaluating a second audible tone.

Digit analysis is initiated as follows if a line configured as a PBX is seized (Menu 22 4):

Example: The trunk code "0" which is used for seizing a trunk line in the main PBX is entered for route 3. This table is not used for a line entered as a trunk line. Toll restriction is implemented.

Route 1	–	–
Route 2	–	–
Route 3	0	–
Route 4	–	–

The characters dialled (0–9, \*, #) are checked for consistency with the trunk code entered. If the characters are compliant, toll restriction takes place for the characters subsequently dialled. If the characters are not compliant, dialling is enabled and toll restriction ends.

### **7.11.2 Toll restriction data**

The actual toll restriction data is entered by a terminal with programming class of service in the form of two system-wide lists (allowed numbers list, barred numbers list, long). The "Allowed numbers list, long" contains the call numbers which the terminal in question is permitted to use in accordance with the class of service assigned. The "Barred numbers list, long" contains all call numbers which the terminal in question is permitted to use in accordance with the class of service assigned. The characters 0 ... 9, \* and # can be entered in the lists.

An additional 5 allowed and barred number lists are available with up to ten 7-digit entries as of V2.0.2. Central abbreviated dialling numbers are not subject to toll restriction.

The call numbers can be input in any sequence.

## 7.12 Timer

Timer	Entries
Trunk call pauses	6s/13 s
Inter-digit timeout (pseudo end-of-dial)	10s
Code receiver timeout (dial request)	10s
B-tone timeout (release of resources)	5s
Recall timeout	45s
Recall timeout for parked calls	3min.
Trunk activation timeout after recall	60s
Call duration for auto. dial using sensors	configurable
Activation timeout after auto. dial with sensors	5min.
Flash-timeout for consultation hold retrieval	2s
Re-seizure lockout at the end of a trunk call	500ms/2s/6s
Door opener timer	3s
Doorbell timer	30s
Activation delay after loop interruption	400ms
Seizure delay after loop detection	16ms
Flash to trunk	90ms/270ms
Callback timeout	5s
Camp-on (internal)	5s
Callback duration	30s
Timeout before loop opening (consultation-call prevention BRA)	1s
Loop opening in event of consultation call (BRA only)	2s
Automatic reservation of trunk line (BRA)	5s
Timeout for integrated fax recognition/DTMF DDI	5s
Delay for call duration recording	20s
Display delay	5s
Flash detection time: min. 50ms, max. >	280ms/700ms
Audible tone receiver detection time, min.	50ms
DP pulse/pause relationship	60/40ms/66/33ms
DP inter-digit pause	850ms/850ms
DTMF transmission time/pause time	90/90ms; NDL 80/80ms
NSA pre-hold time	20ms; GBR 240ms
NSA post-hold time	20ms; SPA 30ms
NSA response time	0ms; NDL <300ms
Entries: default value/additional values	

## **Administration and maintenance**

### *Timer*

## 8 Least Cost Routing (LCR)

As of V2.0.2, Least Cost Routing (LCR) has been configured in such a way that it can be implemented in different countries and for various functions. This feature is used to automate network selection, a process of which the user is unaware.

The time and day of the week are not taken into account. Nor is a distinction made between the type of calls (e.g. data connections) even if the call charge procedures vary.

Four different LCR types are made available in the system each of which can be selected within system administration:

1. **Single-stage LCR**
2. **Two-stage LCR**
3. **LCR for DICS dial-in procedure as of SW 2.1 (previously T-Net, Thyssen Telecom)**
4. **"Corporate Network" LCR (conversion table)**

In the case of LCR types 1, 2 and 3, the assumption is made that the alternative network provider is always less expensive than the main network provider. For this reason, an exception table which contains all the numbers not to be routed is compiled. This includes local calls, for example. The exception table can comprise up to 50 numbers each with max. 7 digits.

	Characters selected (max. 7 digits)	
1	04711	Exception table for:
2	8765487	
3	5465465	
4	089722	
5	0211	
6		• Single-stage LCR
7		
8		
50		• Two-stage LCR
		• LCR for DICS dial-in procedure

Table 8-1 Exception table



## Least Cost Routing (LCR)

In variant 3, two further entries can be made for each line in the table. The table also serves a different function (routing table).

	1. Characters selected (max. 7 digits)	2. Replace with (max. 7 digits)	3. Route	Routing table for: Corporate Network LCR
1	04711	-	1	
2	8765487	-	4	
3	5465465	-	4	
4	089722	900	3	
5	0211	04	2	
6	55	08972255	2	
7				
8				
25				

- Standard or not relevant

Table 8-2 Routing table

LCR variants 1-4 are defined on a system-wide basis with the relevant configuration parameters. If this were not the case, a separate table would have to be drawn up for each route. LCR is activated on a route-by-route basis.

The routing table must be run through before seizing a trunk line. Nevertheless, in order to signal the ready-to-dial condition to the user, a CO dial tone simulated in the system is applied (if necessary, a B-tone can be applied if a line is busy after LCR has been carried out). The digits dialled are buffered until both the toll restriction has been confirmed and the LCR tables run through and subsequently rejected (interrupted by toll restriction) or routed accordingly or dialled without change.

### Cross-references to other features:

- The toll restriction is applied at the same time irrespective of LCR.  
A line is seized only after all the numbers entered have been checked.
- If least cost routing is active, the check is run after each line is seized (trunk code, prime line, line code, route code, call key, line key, CAD, IAD, number redial, ENB).
- No external calls are permitted if a terminal is locked (code lock).
- Abbreviated dialling numbers can be sent after the network has been selected. If abbreviated dialling numbers are used without selecting the network beforehand, the main network is used.

### Preconfiguration for UK:

This involves the most recent national Mercury exception table before implementation. Special references are made to the two emergency numbers; the traditional "999" and the new EC standard "112".

The exception table can be configured and entries made or deleted as required. An option may also be included which enables the system administrator to activate and deactivate the feature "selecting the network provider" on a system-wide basis.

## 8.1 Single-stage LCR

All numbers are routed apart from those explicitly entered in an exception table, see [Table 8-1](#). In this type of LCR, the network provider desired is selected via a configurable prefix (e.g. "132" in GBR) and the number then dialled. Selection takes place in the D-channel (for ISDN) or as standard for analogue trunks.

The following configurations are necessary or possible for this type of LCR:

- Prefix for selecting the network provider
- Authorization code

Codes	Meaning
<b>27</b>	Call up least cost routing
<b>27 1</b>	Routing on/off: activate
<b>27 2</b>	Network names: name of provider can be entered here
<b>27 3</b>	Set routing type to "single-stage"
<b>27 4</b>	Access code: enter telephone number of attendant's processor (prefix, connection number and trunk code are not entered)
<b>27 5</b>	Authorization code: enter PIN or code number (PIN no. is required as an access code and to calculate charges on an individual customer basis)
<b>27 6</b>	Exception table: enter numbers which are not routed, e. g. all numbers without a prefix Possible entries: Pos. 1: 1; Pos. 2: 2; Pos. 3: 3; Pos. 4: 4; Pos. 5: 5; Pos. 6: 6; Pos. 7: 7; Pos. 8: 8; Pos.9: 9
Only numbers containing prefixes can be routed. For this reason, the exception table should be completed as described above.	

Table 8-3 Configuration example for single-stage LCR

## Least Cost Routing (LCR)

### Two-stage LCR

## 8.2 Two-stage LCR

In the case of two-stage LCR, the network provider desired is also selected using a configurable prefix (e.g. "131"). CONNECT is then waited for and an authorization code (also configurable), and subsequently the destination number, sent in the B-channel as a DTMF signal. Numbers not to be routed, on the other hand, are entered in an exception table, see [Table 8-1](#) .

The following configurations are necessary or possible for this type of LCR:

- Prefix for selecting the network provider
- Authorization code

Codes	Meaning
<b>27</b>	Call up least cost routing
<b>27 1</b>	Routing on/off: activate
<b>27 2</b>	Network names: name of provider can be entered here
<b>27 3</b>	Set routing type to "two-stage"
<b>27 4</b>	Access code: enter telephone number of attendant's processor (prefix, connection number and trunk code are not entered)
<b>27 5</b>	Authorization code: enter PIN or code number (PIN no. is required as an access code and to calculate charges on an individual customer basis)
<b>27 6</b>	Exception table: enter numbers which are not routed, e. g. all numbers without a prefix Possible entries: Pos. 1: 1; Pos. 2: 2; Pos. 3: 3; Pos. 4: 4; Pos. 5: 5; Pos. 6: 6; Pos. 7: 7; Pos. 8: 8; Pos.9: 9
Only numbers containing prefixes can be routed. For this reason, the exception table should be completed as described above.	

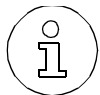
Table 8-4 Configuration example for two-stage LCR

## 8.3 Dial-in procedure (previously T-Net) as of V2.1

### 8.3.1 Background/General

Siemens offers a comprehensive package for operators of Corporate Networks (**CN**) which allows external users and branch offices to use the corporate network. To this end, the CN is equipped with several dial-in nodes which are controlled by what is known as a **DICS** (Dial-In Control Server). These dial-in nodes comprise PCs which are connected to the public ISDN network via one or several  $S_{2M}$  (or  $S_0$ ) interfaces.

On the network operator-customer side, a so-called "Remote Access Unit" (**RAU**) is installed which is connected downstream of existing PABXs or terminals (available for ISDN systems). This RAU evaluates the number dialled by the customer and, on the basis of integrated LCR tables, decides whether or not the call should be sent over the CN or directly via the Telecom network.



In the dial-in procedure on offer, it is assumed that the corporate network in question comprises Hicom 300 systems.

The dial-in control server (DICS) contains:

- $S_{2M}$  interface(s) for standard connections
- $S_0$  interface for error and stay-alive messages (not relevant for Hicom 100 E).

This procedure originated with the development of the Thyssen corporate network called T-Net (nowadays known as Plus-Net). Consequently, this name may still appear in certain documents. Interest in this method has already been expressed by several carriers and corporate network operators (e.g. CNI, RWE Telliance, Thyssen Plus-Net, Viag, SCN, DATEV, LG OES...).

### 8.3.2 Implementation with Hicom 100 E

This LCR functionality available to customers has now been integrated into the Hicom 100 E systems thus doing away with the need for the remote access unit (RAU) if a Hicom 100 E is used. The existing LCR table containing 50 entries is used as an exception table (see [Table 8-1](#)).

On the basis of the exception table, the system decides whether or not a call should be set up via the normal (Telecom) or corporate network. All numbers not entered in the exception table are routed to the CN via the DICS. All numbers not to be routed via the CN must be listed in the exception table.

## Least Cost Routing (LCR)

Dial-in procedure (previously T-Net) as of V2.1

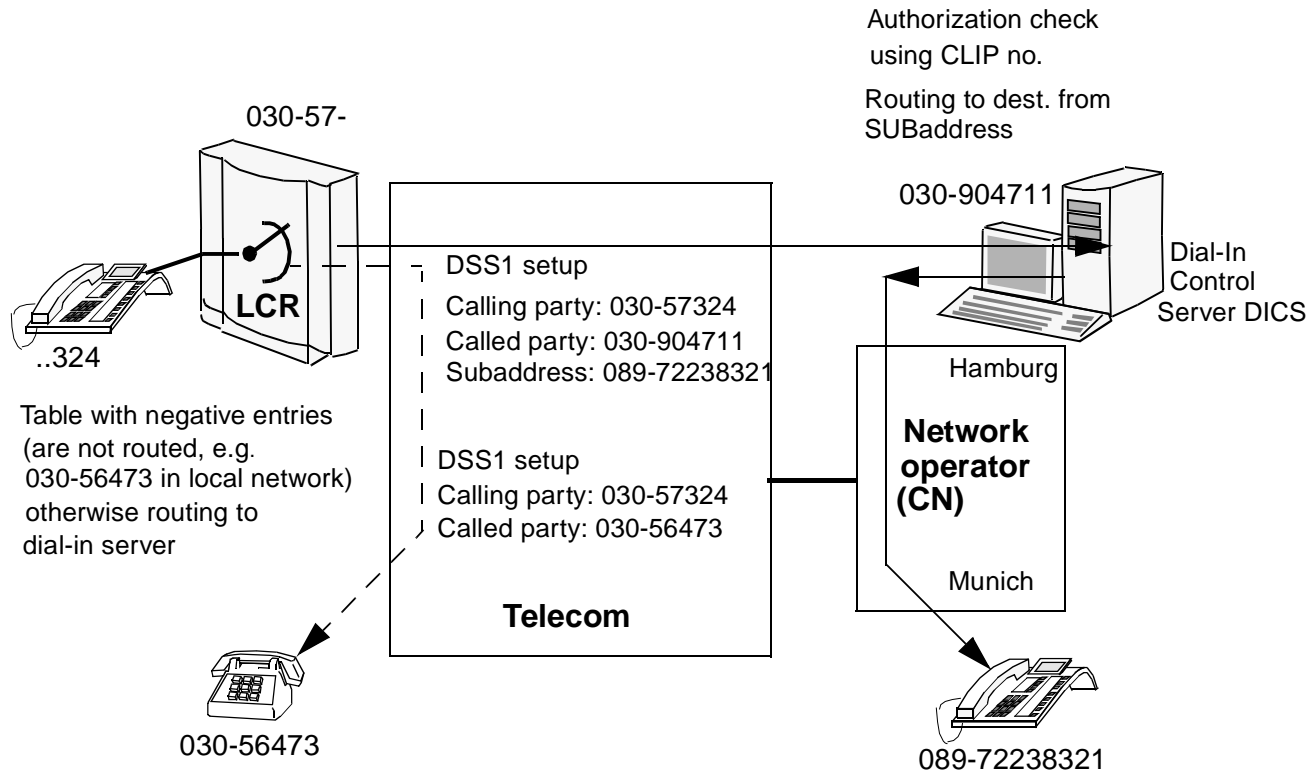


Figure 8-1 Routing with different network providers (example)

A check can be run again in the network to see if routing a call via the CN is less expensive or if it would make more sense to do so via the normal network (Telecom). If routing via the CN is neither feasible nor practical, the call is rejected citing cause 21 (call rejected). In this instance, the Hicom system must route the call via the normal network (Telecom).

### 8.3.3 Dialling into the CN

Max. 20 octets=20 byte=160 bit can be transferred in a SUBAddress for each call setup. Outgoing SUBAddressing is always possible.

#### 8.3.3.1 Signalling method

If, on the basis of the exception table, it was decided to send the call via the CN, the number dialled by the internal user is first completed by Hicom 100 E.

To this end, a timer (4s) is started after each digit. If another digit is dialled within this period, the digit is appended and the timer restarted. If no suffix dialling takes place within this time, the DICS S<sub>2M</sub> interface is selected and the number dialled thus far sent to the DICS as a SUB-address.

If further digits are subsequently dialled by Hicom users, these are sent to the DICS in "info" elements. A maximum of 8 suffix dialling digits can be dialled (restriction at S12 exchange).

The configured  $S_{2M}$  number of the dial-in server (DICS) is used as a "called party number". The CLIP number is used as the "calling party number".

The DICS forwards the digits, waits for ALERT from the destination terminal and then through-connects the call.

If it is not possible to set up a connection to the DICS or via the CN (user busy, call rejected etc.), the call is then set up as a normal connection.

Using the CLIP information and the transferred ID, the DICS verifies that the user is entitled to use the CN and, if necessary, routes the call to the number indicated in the SUBaddress. For this to take place, the DICS must be notified of the calling party number via CLIP (permanent or temporary suppression of the number display can either be circumvented or must not be activated).

If an internal  $S_0$  user of Hicom 100 E implements the SUBaddressing feature in connection set-up, the call is not routed via the CN. As a result, the SUBaddressing feature can continue to be used. As a rule, connections requiring data services in the D-channel are not routed via the CN.

As is the case with RAU, Hicom 100 E can also be used, if necessary, as a downstream "access box" for other PABXs (e.g. analogue technology) thus enabling users to access the CN.

### **8.3.4 Remote maintenance of LCR functions**

In the dial-in procedure, the LCR functions should be administered by the operator of the corporate network rather than by the customers themselves.

It has yet to be confirmed whether or not a pure LCR variant of the "Assistant L" PC tool can be made available thus restricting network operator access to the Hicom system.

The LCR functions can be administered via the standard remote maintenance procedures ("Assistant L" PC tool via  $S_0$  or modem).

### **8.3.5 Parameters for the dial-in procedure**

- The following configurations are necessary or possible for this type of LCR:
- Separate ID for Hicom 100 E authorization at the DICS.  
The 1st byte is a fixed code for the network operator (3-digit input 001-255). The next two bytes can be selected as desired by the customer (to be entered left justified 1-65535). The network operator is responsible for assigning the ID.
- $S_{2M}$  interface number of the DICS to be used.
- Entries in exception table (please ask the network operator if this has not already been indicated)
- DICS is only supported for ISDN lines

## Least Cost Routing (LCR)

*Dial-in procedure (previously T-Net) as of V2.1*

Codes	Meaning
<b>27</b>	Select least cost routing
<b>27 1</b>	Routing on/off: ON
<b>27 3</b>	Routing type: set to DICS
<b>27 4</b>	Access code: enter number of DICS server
<b>27 5</b>	Authorization code: to be entered personally
<b>27 6</b>	Exception table: <u>Table 8-6</u>

Table 8-5 Configuration example for DICS

Entry no.	Entry	Entry no.	Entry	Entry no.	Entry	Entry no.	Entry	Entry no.	Entry
1	1	11 *		21		31		41	
2	2	12 **		22		32		42	
3	3	13		23		33		43	
4	4	14		24		34		44	
5	5	15		25		35		45	
6	6	16		26		36		46	
7	7	17		27		37		47	
8	8	18		28		38		48	
9	9	19		29		39		49	
10	01	20		30		40		50	
* Entry no. 11: Own local network ** Entry no. 12-50: Additional area codes locally									

Table 8-6 Exception table for DICS

Entries 1-10 and 11 (local network) are mandatory!

Entries 12-50 must be made for each user.

## 8.4 Corporate Network LCR (as of V2.0.2)

This type of LCR differs from the others in that, in this instance, all the numbers to be routed are entered in the LCR table ([Table 8-2](#)). The number of possible entries is only half that of the exception table as all others are used for the substitute numbers. The following actions can be defined for each individual entry:

- Replacing the character selected with another character string (column 2)
- Subsequent dialling of a number via a specific route (column 3). 2 columns are added to the LCR table for this type of LCR.

If a specific route has been selected and all the lines are busy in the case of a call attempt after LCR, no route overflow is implemented and a B-tone is signalled to the user.

Apart from the 3 table columns, no other configurations are necessary for this type of LCR.

Codes	Meaning
<b>27</b>	Call up least cost routing
<b>27 1</b>	Activate/deactivate least cost routing
<b>27 2</b>	Network names, name of provider is not entered
<b>27 3</b>	Set routing type to "conversion table"
<b>27 7</b>	Digits dialled: enter digits to be converted (e. g. 900 converted to 805900)
<b>27 8</b>	Converted digits: enter digits actually dialled
<b>27 9</b>	Route: indication of route for each individual conversion (simplified dialling must be "off")

Table 8-7 Configuration example for conversion table



## Least Cost Routing (LCR)

Corporate Network LCR (as of V2.0.2)

### 8.4.1 Examples of corporate networks

	1. Characters selected (max. 7 digits)	2. Replace with (max. 7 digits)	3. Route
1	04711	-	1
2	8765487	-	4
3	5465465	-	4
4	089722	900	3
5	0211	04	2
6	55	08972255	2
7			
8			
50			

- Standard or not relevant

In order to allow all calls to be set up via a specific trunk group (e.g. networked main PBX or dedicated connection) for certain number groups, the route to be used for the outgoing call can be selected for each entry.

Line 4 shows a setting in the case of which all calls for the site "089722=MchH" are routed via route 3 (main PBX). At the same time, the digits dialled are replaced with another character string (e.g. number of a dedicated connection in the main PBX).

An internal user can be prevented from selecting a specific network provider by replacing the prefix of this particular network provider with that of another. This is set centrally. In line 5, the alternative network provider "0211" is always replaced with "04" (Telecom) and the subsequent digits forwarded transparently.

Line 6 shows how it can be set that all numbers beginning with the digits "55..." are routed via route 2 and replaced with the dial string "08972255...". DDI numbers belonging to a different site can thus be dialled in the same way as internal numbers.

## **9 Maintenance and repair**

### **9.1 Maintenance**

The systems require no preventive maintenance. Hardware modifications are performed on-site.

### **9.2 Repair**

Repairs are always performed by replacing system components or modules.

### **9.3 Spare parts**

Spare parts are provided only for peripherals connected to the system. Expansion cards and modules may be replaced as required but can only be repaired by the manufacturer Section 3.1.

## **Maintenance and repair**

### *Spare parts*

## 10 Programming guide

Ensure that the system unit and all necessary components/modules have been correctly installed, the line network has been set up and the terminal devices and external lines have been connected. Then put the system into service by simply plugging in the power plug.

**The next step entails initialisation**

Input sequence		Meaning	Display
A	* 95 62 65 93 21	Initialisation password (detection of available cards)	System administration
B	SERVICE key	Deactivate device	Time          Date
C	* 95 54 72 14 45	Country code, UK	Please wait
D	. . . wait	Country-specific default data is loaded	System administration
E	Remove power plug	Reset system	blank
F	Plug in power plug	Boot system	blank
G	. . . wait	Boot system	Time          Date
		Check ISDN lines	S <sub>0</sub> interfaces in use
		System operational	Time          Date
- Enter the system number in the case of an ISDN point-to-point connection, <u>Section 10.1.1.1</u> .			
- Enter the MSN numbers assigned by Telecom in the case of an ISDN multi-device connection, <u>Section 10.1.2.1</u> .			
- Enter the extension number of the main PBX in the case of a Cornet-N network, <u>Section 10.3.1</u> .			

### 10.1 Programming ISDN lines

One or more STLS 2 or STLS 4 modules (for 2 or 4 ISDN basic connections) must be present for connecting ISDN lines.

#### 10.1.1 Point-to-point system connection (P P)

##### 10.1.1.1 Entering the system extension number

The system extension number is to be entered **without a prefix** and **without a console code**. Direct dialling in is not possible if the system extension number has not been programmed. The system extension number is assigned for each route (up to SW 2.0.2 only).

**Example:** the system extension number is 471147 (all ISDN lines in one route), up to SW 2.0.2 only.

Input sequence		Meaning	Display
<b>A</b>	<b>1 9 2</b>	System extension number route 1 (select route 1–4 with "+" and "-" or directly with "#")	Route 1: –
<b>B</b>	<b>*</b>	Change input	Route 1
<b>C</b>	<b>4 7 1 1 4 7</b>	System extension number (without prefix or console code!)	Route 1: 471147
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Route 1: 471147
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

If an extension number is changed, you can enter the new number under point C or delete the number by pressing the F3 key, [Section 10.3.5](#).

#### 10.1.1.2 Changing port configuration

Set the default entry "0" (automatic port recognition) to "1" to use the relevant port exclusively as a Euro-ISDN trunk (point-to-point).

Example: ISDN port 1 is to be used exclusively as a point-to-point Euro trunk.

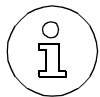
Input sequence		Meaning	Display
<b>A</b>	<b>1 9 3</b>	Port configuration Port 1 (select port 1–16 with "+" and "-" or directly with "#")	Port 1: default
<b>B</b>	<b>*</b>	Change input	Port 1
<b>C</b>	<b>1</b>	P-P Euro-ISDN trunk (example)	Port 1: P-P Euro trunk
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Port 1: P-P Euro trunk
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

Other port types can also be specified, if necessary, by entering other values under point C. The following values are possible:  
0 = default ("automatic" as of 2.0.2.), 1 = P-P Euro trunk, 2 = QSIG network, 3 = CorNet network (as of 2.0.2 CorNet 1), 4 = Euro bus, 5 = VN (FRA only), 6 = PMP Euro trunk (as of 2.0.2), 7 = CorNet 2 (as of 2.0.2)

### 10.1.1.3 Activating call number suppression

Provided the "permanent call number suppression" feature has been released for the Telecom ISDN access, you can permanently suppress your number on the display of ISDN extensions dialled by entering the appropriate value here.

Input sequence		Meaning	Display
A	1 9 1	Call number suppression	Status: off
B	*	Change input	Status:
C	1	Call number suppression active	Status: on
D	<OK>	Confirm input	Status: on
E	<F8>	Return to Start menu	System administration
Activated call number suppression can be deactivated by entering "0" under point C.			



Temporary call number suppression can also be set up in the case of Telecom. Press \*86 (per telephone) to activate and #86 to deactivate.

## 10.1.2 ISDN multi-device connection (point-to-multipoint)

### 10.1.2.1 Entering MSN

Unlike the point-to-point system connection, no **system extension number** is entered in the case of multi-device connection.

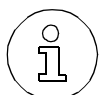
The **extension number/MSN (without prefix)** must be entered, however, as the **DDI number** for the corresponding extension.

Example: ext. no.

334455 41 = DDI no. 33445541 for ext. 11 (telephone)

334455 42 = DDI no. 33445542 for ext. 12 (telephone)

334455 43 = DDI no. 33445543 for ext. 26 (fax machine)



The default internal numbering scheme is ext. 11-74 in the system. If one of the MSNs assigned by Telecom to the customer begins with 11-74, a collision will occur when the MSN is entered in the "DDI numbers" table with "1511 DDI numbers".

Programming sequence, see [Section 10.6.1](#).

### 10.1.2.2 Programming an ISDN port as a multi-device connection

The relevant port must be configured as a Euro-ISDN point-to-multipoint port in the case of a multi-device connection.

**Example:** a multi-device connection is to be connected to ISDN port 1 of an STLS 2 or 4 module.

Input sequence		Meaning	Display
<b>A</b>	<b>1 9 3</b>	Port configuration of port 1 (select port 1–16 with "+" and "-" or directly with "#")	Port 1: default
<b>B</b>	<b>*</b>	Change input	Port 1
<b>C</b>	<b>6</b>	PMP Euro-ISDN trunk	Port 1: PMP Euro exch.
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Port 1: PMP Euro exch.
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
If necessary, the ISDN port is reset to "default" ("automatic" as of SW version 2.0.2) by entering "0" under point C.			

## 10.2 Analogue trunk

A TLA 2 or TLA 4 module is the minimum requirement to connect analogue trunk lines (for 2 or 4 lines).

### 10.2.1 Setting analogue signalling method

The system is equipped by default with a mechanism for automatically recognising the signalling method when connecting the system to analogue trunk lines. The signalling method can also be permanently configured for each route.

**Example:** defining the signalling method for line 1 to DTMF or DP.

Input sequence		Meaning	Display
<b>A</b>	<b>201</b>	Signalling method line 1 (select line 1–32 with "+" and "-" or directly with "#")	Line 1: automatic
<b>B</b>	<b>*</b>	Change input	Line 1
<b>C</b>	<b>1 or 2</b>	1 for DTMF or 2 for DP	Line 1: DTMF or Line 1: DP
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Line 1: DTMF or Line 1: DP
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
Automatic recognition of the signalling method can be set by entering "0" under point C.			

## 10.2.2 Setting a dial pause

It may be necessary to insert a pause before transmitting the dialling signal at analogue attendant consoles (e.g. if there is a delay in the ready-to-record-digit status at the attendant console). The pause can be defined for each route.

**Example:** a 3-second pause is to be observed between line seizure and transmitting the dialling signal to route 1 lines.

Input sequence		Meaning	Display
<b>A</b>	<b>202</b>	Dial pause for route 1 (select route 2–4 with "+" and "-" or directly with "#")	Route 1: no pause
<b>B</b>	*	Change input	Route 1
<b>C</b>	2	Pause = 3 seconds	Route 1: 3 s
<b>D</b>	<OK>	Confirm input	Route 1: 3 s
<b>E</b>	<F8>	Return to Start menu	System administration
If necessary, other pause durations can be set by entering other values under point C. The following values are possible: 0 = no pause, 1 = 1 s, 2 = 3 s, 3 = 6 s, 4 = 9 s			

## 10.2.3 Changing a trunk call interval

The trunk call interval must be increased to 13 seconds for Hicom 100E if the system is connected to analogue attendant consoles with 10-second ringing. The interval duration can be defined for each route.

Input sequence		Meaning	Display
<b>A</b>	<b>203</b>	Trunk call interval for route 1 (select route 1- 4 with "+" and "-" or directly with "#")	Route 1: 6 s
<b>B</b>	*	Change input	Route 1
<b>C</b>	2	Trunk call interval = 13 seconds	Route 1: 13 s
<b>D</b>	<OK>	Confirm input	Route 1: 13 s
<b>E</b>	<F8>	Return to Start menu	System administration
The trunk call interval can be reset to 6 by entering "1" under point C.			



## 10.2.4 Changing line length

The default entry "Short line" may have to be replaced by "Long line" in order to match the level of the relevant line(s) when the attendant console and the system are very far apart. Description of error: invalid selection or call inaudible. This entry can be assigned per analogue trunk line.

**Example:** analogue trunk line 1 is to be defined as a "long line".

Input sequence		Meaning	Display
<b>A</b>	<b>204</b>	Length of line 1 (select line 1- 32 with "+" and "-" or directly with "#")	Line 1: short
<b>B</b>	<b>*</b>	Change input	Line 1
<b>C</b>	<b>1</b>	1 for "long line"	Line 1: long
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Line 1: long
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
The "short line" status can be reset by entering "0" under point C.			

## 10.3 Networking

### 10.3.1 CorNet-N networking

In general, Hicom 100E is configured as the slave (satellite system) when it is networked with a Hicom 150E/300 system (as of SW 3.3) via the CorNet-N ISDN protocol. This requires at least one STLS 2 or STLS 4 module.

For mixed operation (ISDN trunk and CorNet network) and also for connection with separate extension number plans, **the Hicom 300 tie line number is to be entered as the Hicom 100E system extension number** for the route in which a CorNet-N line is located.

**Example (up to SW 2.0.2 only):** the connection number of a CorNet line in a Hicom 300 system is "33" and is assigned to route 2 in the Hicom 100E system, Section 10.3.5

Input sequence		Meaning	Display
<b>A</b>	<b>1 9 2</b>	System extension number route 1 (select route 1–4 with "+" and "-" or directly with "#")	Route 1: –
<b>B</b>	<b>+</b>	Scroll to route 2	Route 2: –
<b>C</b>	<b>*</b>	Change input	Route 2:
<b>D</b>	<b>3 3</b>	Trunk number of main PBX	Route 2: 33
<b>E</b>	<b>&lt;OK&gt;</b>	Confirm input	Route 2: 33
<b>F</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

**Example:** system extension number (as of SW 2.1)

Input sequence		Meaning	Display
<b>A</b>	<b>19 21</b>	Terminal number (call number of the S <sub>0</sub> connection)	
<b>B</b>	<b>19 22</b>	National number (prefix without leading "0")	
<b>C</b>	<b>19 23</b>	International number (national code, e.g. 49 for GER)	
<b>D</b>	<b>19 24</b>	Outgoing call number (this defines how the Hicom 100E call number is transferred to Telecom*)	

\* DDI number not displayed at called party's extension if activated indefinitely.

In the case of connections with shared extension number plans (no mixed operation), **no** system extension numbers are to be entered for these routes. For each Hicom 100E extension, however, the **tie line number and the relevant extension number** must be entered as the direct dialling in number.

**Example:** the CorNet route code of the Hicom 300 system is "33"; the DDI number to be entered for ext. 11 is, therefore, "3311". For ext. 12, the DDI no. is "3312" and so on.

See "Direct dialling in numbers" for the programming sequence, [Section 10.6.1](#)

The Hicom 100E internal numbers can be changed, where necessary, with the PC tool "Assistant L" (e.g. "11" to "3311").

In both cases, the route in which the line to the main PBX is located is to be programmed as the "PBX", see [Section 10.3.6](#) and [Figure 6-8](#).

Input sequence		Meaning	Display
<b>A</b>	<b>1 6 4 (up to SW2.0.2)</b> 1 6 14 (as of SW 2.1)	Route 1 type (select route 1–4 with "+" and "-" or directly with "#")	Route 1: trunk
<b>B</b>	*	Change input	Route 1:
<b>C</b>	1	PBX	Route 2: PBX
<b>D</b>	<OK>	Confirm input	Route 1: PBX
<b>E</b>	<F8>	Return to Start menu	System administration

## 10.3.2 Rerouting

Call diversion via CorNet-N is carried out using "partial rerouting" in order to optimise the use of the B-channel.

### 10.3.2.1 Active rerouting

The rerouting feature can be activated for each route in an ISDN network (CorNet/QSig). Rerouting must also be activated in the remote system. The rerouting settings are as follows: **never, if path is known or always**.

**Example:** rerouting is to be performed for route 1 (path known).

Input sequence		Meaning	Display
<b>A</b>	<b>1 6 81 (up to SW 2.0.2)</b> 1 6 181(as of SW2.1)	Rerouting active route 1 (select route 1–4 with "+" and "-" or directly with "#")	Route 1: no
<b>B</b>	*	Change input	Route 1:
<b>C</b>	1	If path known	Route 2: if path known
<b>D</b>	<OK>	Confirm input	Route 1: if path known
<b>E</b>	<F8>	Return to Start menu	System administration

Rerouting can be deactivated by entering "0" under point C and can be permanently activated by entering "2".

### 10.3.2.2 Changing a route

In the case of rerouting, you can define (for each route) whether the route can be changed.

**Example:** enable route change for route 1.

Input sequence		Meaning	Display
<b>A</b>	<b>1 6 82 (up to SW2.0.2)</b> 1 6 182(as of SW2.1)	Route change for route 1 (select route 1-4 with "+" and "-" or directly with "#")	Route 1: not enabled
<b>B</b>	*	Change input	Route 1:
<b>C</b>	1	If path known	Route 1: enabled
<b>D</b>	<OK>	Confirm input	Route 1: enabled
<b>E</b>	<F8>	Return to Start menu	System administration
Route change enabling can be blocked again by entering "0" under point C.			

### 10.3.3 Analogue networking

Hicom 100E can be configured as the master (main PBX) or the slave (satellite system) in an analogue network with another telephone system.

#### 10.3.3.1 Connection as master

In this type of network, at least one free Hicom 100E analogue extension interface is connected to the trunk interface (DTMF flash necessary) of the satellite system. The satellite system is treated by Hicom 100E as a normal analogue a/b extension.

### 10.3.3.2 Connection as slave

In this type of network, at least one TLA 2 or TLA 4 module is required in the Hicom 100E system. At least one trunk interface is to be connected to an analogue extension interface (DTMF flash necessary) of the main PBX.

The route in which the lines to the main PBX are located is to be programmed as a "PBX".

**Example:** the line to the main PBX is located in route 2

For the input sequence for the route assignment, see [Section 10.3.5](#)

Route 2 is programmed as a PBX.

Input sequence		Meaning	Display
<b>A</b>	<b>1 6 4 (up to SW2.0.2)</b> 1 6 14(as of SW2.1)	Line type route 1 (select route 1–4 with "+" and "-" or directly with "#")	Route 1: trunk
<b>B</b>	<b>+</b>	Line type route 2	Route 2: trunk
<b>C</b>	<b>*</b>	Change input	Route 2:
<b>D</b>	<b>1</b>	PBX type	Route 2: PBX
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Route 2: PBX
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

The line type of a route can be reprogrammed as a "trunk" by entering "0" under point D.

### 10.3.4 Automatic line seizure (Simplified dialling)

The line is seized automatically when an outgoing external call is set up from an "optiset..." system telephone. All lines are therefore located in one and the same route.

Automatic line seizure must be deactivated if lines are to be distributed to two or more different routes. In this case, it is necessary to prefix the number with the appropriate route code in order to set up an external call.

Input sequence		Meaning	Display
<b>A</b>	<b>1 6 1 (up to SW2.0.2)</b> 1 6 11(as of SW2.1)	Simplified dialling	Status: on
<b>B</b>	<b>*</b>	Change input	Status:
<b>C</b>	<b>0</b>	Simplified dialling OFF	Status: on
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Status: on
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

Deactivated automatic line seizure can be reactivated by entering "1" under point C.

### 10.3.5 Route assignment

When different line types are simultaneously used in the Hicom 100E system (e.g. trunk lines and PBX lines), each different line type is to be assigned to a separate route.  
Automatic line seizure must first be deactivated!

**Example:** lines 1 and 2 are to be assigned to route 1 (default status). Line 3 is to be assigned to route 2.

Input sequence		Meaning	Display
<b>A</b>	<b>1 6 2 (up to SW2.0.2)</b> 1 6 12(as of SW2.1)	Assignment of line 1 to route 1 (select line 1–32 with "+" and "-" or directly with "#")	Line 1: 1
<b>B</b>	<b>+</b>	Assignment of line 2 to route 1	Line 2: 1
<b>C</b>	<b>+</b>	Assignment of line 3 to route 1	Line 3: 1
<b>D</b>	<b>*</b>	Change input	Line 3:
<b>E</b>	<b>2</b>	Assignment of line 3 to route 2	Line 3: 2
<b>F</b>	<b>&lt;OK&gt;</b>	Confirm input	Line 3: 2
<b>G</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
One line can be assigned to one of the four routes by entering the route number 1 to 4 under point E.			

### 10.3.6 Route type

Each of the 4 possible routes can be defined either as "trunk" line types (default) or as "PBX" line types.

In the case of the "trunk" line type, Hicom 100E checks for the (continuous) dial tone before transmitting the dialling signal. A flash pulse is transmitted for 300 ms.

In the case of the "PBX" line type, the system does not check for a dial tone. Toll restriction is only implemented if the trunk code of the main PBX is entered for the route in question. A flash pulse is transmitted for 80 ms.

**Example:** change the line type of route 2 from "trunk" to "PBX"

Input sequence		Meaning	Display
<b>A</b>	<b>1 6 4 (up to SW2.0.2)</b> 1 6 14(as of SW2.1)	Line type of route 1 (select route 1–4 with "+" and "-" or directly with "#")	Route 1: trunk
<b>B</b>	<b>+</b>	Scroll to route 2	Route 2: trunk
<b>C</b>	<b>*</b>	Change input	Route 2:
<b>D</b>	<b>1</b>	Line type route 2 = PBX	Route 2: PBX
<b>E</b>	<b>&lt;OK&gt;</b>	Confirm input	Route 2: PBX
<b>F</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
The "trunk" line type can be programmed by entering "0" under point D.			

### 10.3.7 Route overflow

If programmed, the route overflow feature permits the system to automatically access free lines in another route when all lines in a specific route have been seized. Route overflow is only supported within routes of the same type, see also [Section 10.3.5](#).

**Example:**

Route 1 = ISDN, line 1 to 4

Route 2 = PBX, line 5 and 6

Route 3 = analogue trunk, line 7 and 8

Lines from route 1 are to overflow to route 3.

Based on trunk code "9", lines 1 to 4 are first seized. Once these have been seized, lines 7 and 8 are then seized with "9".

Input sequence		Meaning	Display
<b>A</b>	<b>1 6 3 (up to SW2.0.2)</b> 1 6 13(as of SW2.1)	Overflow routing from route 1 (select route 1–4 with "+" and "-" or directly with "#")	from route 1: –
<b>B</b>	*	Change input	from route 1:
<b>C</b>	<b>3</b>	Overflow from route 1 to route 3	from route 1: 3
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	from route 1: 3
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
The overflow route can be defined by entering 1, 2, 3 or 4 under point C. The overflow feature can be deactivated by pressing the F3 key.			

### 10.3.8 Digit repetition

Digit repetition for a route (PBX only) is to be configured if automatic line seizure has been deactivated and the trunk code(s) for this route is/are to be automatically transmitted to the main PBX as first digit(s).

This is necessary if, within a network, the main PBX and Hicom 100E are to share an extension number plan.

**Example:**

Lines to the main PBX in route 2

Main PBX extension numbers from 200 to 299, 300 to 399

First of all, (using the "Assistant L" PC tool,) the Hicom 100E internal numbers and DDI numbers are to be changed from "11", "12" etc. to "411", "412" etc.



The digits "2" and "3" are then entered as route codes for route 2 (see "Route codes" [Section 10.7.13.4](#)).

Now activate digit repetition for route 2, see [Figure 6-8](#).

Input sequence		Meaning	Display
<b>A</b>	<b>1 6 6 (up to SW2.0.2)</b> 1 6 16 (as of SW 2.1)	Digit repetition for route 1 (select route 1–4 with "+" and "-" or directly with "#")	Route 1: off
<b>B</b>	<b>+</b>	Digit repetition for route 2	Route 2: off
<b>C</b>	<b>*</b>	Change input	Route 2:
<b>D</b>	<b>1</b>	Digit repetition ON	Route 2: on
<b>E</b>	<b>&lt;OK&gt;</b>	Confirm input	Route 2: on
<b>F</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
Activated digit repetition can be deactivated by entering "0" under point D.			

All Hicom 100E extensions can now reach the main PBX extensions simply by dialling the appropriate 3-digit number (e.g. 256 or 402).

### 10.3.9 Route seizure

Linear route seizure (default) can be changed to cyclical route seizure for each route.

**Example:** lines in route 1 are to be seized in a cyclical manner.

Input sequence		Meaning	Display
<b>A</b>	<b>1 6 7 (up to SW2.0.2)</b> 1 6 17 (as of SW 2.1)	Route seizure for route 1 (select route 1–4 with "+" and "-" or directly with "#")	Route 1: linear
<b>B</b>	<b>*</b>	Change input	Route 1:
<b>C</b>	<b>0</b>	Cyclical seizure	Route 1: cyclical
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Route 1: cyclical
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
Seizure can be changed from cyclical to linear by entering "1" under point C.			

### 10.3.10 Route names

Each of the 4 routes can be assigned a name which appears on system telephone displays. An optiset(E) memory telephone is required to enter route names.

**Example:** route 1 is to be called "trunk".

Input sequence		Meaning	Display
<b>A</b>	<b>1 6 5 (up to SW2.0.2)</b> 1 6 15 (as of SW 2.1)	Name for route 1 (select route 1–4 with "+" and "-" or directly with "#")	Route 1: –
<b>B</b>	*	Change input	Route 1:
<b>C</b>	<b>Trunk</b>	Name for route 1 = "trunk"	Route 1: trunk
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Route 1: trunk
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
An assigned name can be deleted by pressing the F3 key under point C.			

## 10.4 Programming extensions

### 10.4.1 Station types

#### 10.4.1.1 Stations connected to the U<sub>p0/E</sub> port

In general, optiset or optiset E telephones are connected as stations at U<sub>p0/E</sub> ports. The "default" entry is not to be changed.

**Example:** query the station type

Input sequence		Meaning	Display
<b>A</b>	<b>1 3 1 (up to 2.0.1+)</b> 1 3 11 (as of 2.0.2)	Station type for ext. 11 (select ext. 11 to 74 with "+" and "-" or directly with "#")	Ext. 11: automatic
<b>B</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

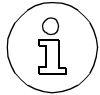
#### 10.4.1.2 Stations connected to the a/b port

All kinds of analogue terminals can be connected as stations at the a/b-ports. In the case of analogue telephones, the "default" entry remains unchanged. Fax machines, answering machines, modems, loudspeakers and phone mail systems must be defined as such.

**Example:** a fax machine is connected as analogue ext. 23.

Input sequence		Meaning	Display
<b>A</b>	<b>1 3 1 (up to 2.0.2+)</b> 1 3 1 1 (as of 2.0.2)	Station type for ext.11 (select ext.11 to 74 with "+" and "-" or directly with "#")	Ext. 11: automatic
<b>B</b>	<b>#</b>	Initiate extension selection	Extension
<b>C</b>	<b>23</b>	Select ext. 23	Ext.: 23
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm selection of ext. 23	Ext. 23: automatic
<b>E</b>	<b>*</b>	Change station type	Ext. 23:
<b>F</b>	<b>1</b>	Station type "Fax"	Ext. 23: fax
<b>G</b>	<b>&lt;OK&gt;</b>	Confirm input	Ext. 23: fax
<b>H</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

Other terminal types can be specified where necessary by entering other values under point F. The following values are possible:  
0 = automatic, 1 = fax/modem, 2 = phone mail, 3 = loudspeaker, 4 = answering machine  
(the continuous tone is the ring tone for the fax ext.)



The port only uses DTMF dialling if the station type is set to "answering machine"– required for announcement equipment, e.g. "Genius".

#### 10.4.1.3 Stations connected to the S<sub>0</sub> bus

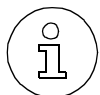
At least one free ISDN port (module STLS 2 or 4) is necessary to connect an internal ISDN extension. A maximum of 8 ISDN extensions (stations) can be connected to an internal S<sub>0</sub> bus (see installation instructions "S<sub>0</sub> ext." in the Service Manual). The station type is programmable for each of these 8 possible extensions (input sequence see "Stations at the a/b port" [Section 10.4.1.2](#))

The required extension number is to be programmed on the ISDN terminal as its own MSN and is accepted by Hicom 100E. Collisions with other Hicom 100E internal extension numbers are to be avoided when selecting the extension number! The ISDN port in question is to be programmed as a "Euro bus".

**Example:** ISDN port 4 is to become an internal S<sub>0</sub> bus, [Section 10.1.1.2](#)

Input sequence		Meaning	Display
<b>A</b>	<b>1 9 3</b>	Port configuration of port 1 (select port 1 to 16 with "+" and "-" or directly with "#")	Port 1: automatic
<b>B</b>	<b>+</b>	Port configuration of port 2	Port 2: automatic
<b>C</b>	<b>+</b>	Port configuration of port 3	Port 3: automatic
<b>D</b>	<b>+</b>	Port configuration of port 4	Port 4 automatic
<b>E</b>	<b>*</b>	Change input	Port 4:
<b>F</b>	<b>4</b>	Euro bus	Port 4: Euro bus
<b>G</b>	<b>&lt;OK&gt;</b>	Confirm input	Port 4: Euro bus
<b>H</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

As of SW 2.0.2, the "Default" display will be replaced by "Automatic".



A supplementary PSU is required for an ISDN telephone.

## 10.5 Station attributes

### 10.5.1 Individual classes of service

#### 10.5.1.1 Intrusion

When released, this feature enables a user to override an external call made by another user.

**Example:** the intrusion feature is released for ext.11

Input sequence		Meaning	Display
<b>A</b>	<b>1 3 3 (up to 2.0.1+)</b> 1 3 1 3 (as of 2.0.2)	Intrusion class of service for ext. 11 (select ext. 11 to 74 with "+" and "-" or directly with "#")	Ext. 11: not enabled
<b>B</b>	*	Change input	Ext. 11:
<b>C</b>	1	Intrusion enabled	Ext. 11: enabled
<b>D</b>	<OK>	Confirm input	Ext. 11: enabled
<b>E</b>	<F8>	Return to Start menu	System administration
If activated, the intrusion feature can be deactivated by entering "0" under point C.			

#### 10.5.1.2 Associated dialling

When released, this feature enables a user to dial on behalf of another user.

As of SW 2.0.2, this feature will also enable a user to activate or deactivate a service for another user.

**Example:** ext. 24 (analogue modem) may perform associated dialling

Input sequence		Meaning	Display
<b>A</b>	<b>1 3 4 (up to 2.0.1+)</b> 1 3 1 4 (up to 2.0.2)	Associated dialling for ext. 11 (select ext. 11 to 74 with "+" and "-" or directly with "#")	Ext. 11: not enabled
<b>B</b>	#	Initiate extension selection	Ext.:
<b>C</b>	24	Select ext. 24	Ext.: 24
<b>D</b>	<OK>	Confirm extension selection	Ext. 24: not enabled
<b>E</b>	*	Change input	Ext. 24:
<b>F</b>	1	Associated dialling enabled	Ext. 24: enabled
<b>G</b>	<OK>	Confirm input	Ext. 24: enabled
<b>H</b>	<F8>	Return to Start menu	System administration
If activated, the associated dialling feature can be deactivated by entering "0" under point F.			

### 10.5.1.3 Camp-on rejection (Data security/Call waiting)

The default camp-on feature (acoustic call knocking) is suppressed when "camp-on rejection" (privacy) is activated for Hicom 100E extensions.

If "Camp-on OFF" is activated, calls are immediately forwarded on "busy".

**Example:** ext. 12 is assigned camp-on rejection.

Input sequence		Meaning	Display
<b>A</b>	<b>1 3 5 (up to 2.0.1+)</b> 1 3 1 5 (as of 2.0.2)	Camp-on rejection for ext. 11 (select ext. 11 to 74 with "+" and "-" or directly with "#")	Ext. 11: off
<b>B</b>	<b>#</b>	Camp-on rejection for ext. 12	Ext. 12: off
<b>C</b>	<b>*</b>	Change input	Ext. 12:
<b>D</b>	<b>1</b>	Activate camp-on rejection	Ext. 12: on
<b>E</b>	<b>&lt;OK&gt;</b>	Confirm input	Ext. 12: on
<b>F</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

Activated camp-on rejection can be deactivated by entering "0" under point D.

### 10.5.1.4 Overriding do-not-disturb

When released, this feature permits a user to override the "do-not-disturb" feature activated by another user.

**Example:** ext.11 may override the do-not-disturb feature activated by other users.

Input sequence		Meaning	Display
<b>A</b>	<b>1 3 9 (up to 2.0.1+)</b> 1 3 1 9 (as of 2.0.2)	Override do-not-disturb for ext. 11 (select ext. 11 to 74 with "+" and "-" or directly with "#")	Ext. 11: no
<b>B</b>	<b>*</b>	Change input	Ext. 11:
<b>C</b>	<b>1</b>	Release do-not-disturb override	Ext. 11: yes
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Ext. 11: yes
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

An activated do-not-disturb override feature can be deactivated by entering "0" under point C.

### 10.5.1.5 Headset

If released, this feature enables every optiset and optiset E system telephone to be equipped with a headset.

The system automatically detects a headset adapter for optiset E telephones (applicable as of SW 2.0.2). Class-of-service release is not required in this instance.

**Example:** ext.11 is equipped with a headset

Input sequence		Meaning	Display
<b>A</b>	<b>1 3 6 (up to 2.0.1+)</b> 1 3 1 6 (as of 2.0.2)	Headset for ext. 11 (select ext. 11 to 74 with "+" and "-" or directly with "#")	Ext. 11: off
<b>B</b>	*	Change input	Ext. 11:
<b>C</b>	1	Release headset	Ext. 11: on
<b>D</b>	<OK>	Confirm input	Ext. 11: on
<b>E</b>	<F8>	Return to Start menu	System administration

An activated headset feature can be cancelled by entering "0" under point C.



Telephones with headsets must have a release key.

### 10.5.1.6 Call pickup groups

Call pickup groups with up to 16 extensions can be set up in Hicom 100E. An extension can only belong to one call pickup group.

Up to SW 2.0.1+, there were 2 call pickup groups, as of SW 2.0.2, 8 call pickup groups will be available.

**Example:** ext. 12 and 13 are to be assigned to "call pickup group 1".

Input sequence		Meaning	Display *)
<b>A</b>	<b>1 3 7 (up to 2.0.1+)</b> 1 3 1 7 (as of 2.0.2)	Call pickup group for ext. 11 (select ext. 11–74 with "+" and "-" or directly with "#")	Ext. 11: –
<b>B</b>	+	Call pickup group for ext. 12	Ext. 12: –
<b>C</b>	*	Change input	Ext. 12:
<b>D</b>	1	Call pickup group 1 for ext. 12	Ext. 12: group 1
<b>E</b>	<OK>	Confirm input	Ext. 12: group 1
<b>F</b>	+	Call pickup group for ext. 13	Ext. 13: –
<b>G</b>	*	Change input	Ext. 13:

Input sequence		Meaning	Display *)
<b>H</b>	1	Call pickup group 1 for ext. 13	Ext. 13: group 1
<b>J</b>	<OK>	Confirm input	Ext. 13: group 1
<b>K</b>	<F8>	Return to Start menu	System administration
Extensions can be deleted from a call pickup group by pressing the F3 key under points D and H.			
*) as of SW 2.0.2, the term "group" will no longer appear in the display (group number only).			

### 10.5.1.7 Resetting active individual code lock

You can reset an extension's individual telephone lock code number (PIN) to the default PIN ("00000"). You can, therefore, unlock a locked extension if you forget your PIN. As of SW 2.0.2, it will also be possible to reset the code number of an entrance telephone with the DTMF opener.

**Example:** set PIN for ext.12 to "00000".

Input sequence		Meaning	Display
<b>A</b>	<b>1 3 8 (up to 2.0.1+)</b> 1 3 1 8 (as of 2.0.2)	Reset PIN for ext. 11? (select ext. 11–74 with "+" and "-" or directly with "#")	Ext. 11: *****
<b>B</b>	<b>+</b>	Reset PIN for ext. 12?	Ext. 12: *****
<b>C</b>	<b>*</b>	Initiate reset	Ext. 12:
<b>D</b>	<b>0</b>	Perform reset	Ext. 12: 0
<b>E</b>	<OK>	Confirm input	Ext. 12: *****
<b>F</b>	<F8>	Return to Start menu	System administration



### 10.5.1.8 Caller list (as of SW version 2.0.2)

Each extension is authorised (default) to use an individual caller list.  
This class of service can be blocked.

**Example:** block caller list for ext. 12.

Input sequence		Meaning	Display
<b>A</b>	<b>1 3 2 0</b>	Caller list for ext. 11 (select ext. 11–74 with "+" and "-" or directly with "#")	Ext. 11: yes
<b>B</b>	<b>+</b>	Caller list for ext. 12	Ext. 12: yes
<b>C</b>	<b>*</b>	Change input	Ext. 12:
<b>D</b>	<b>0</b>	Block call list	Ext. 12: no
<b>E</b>	<b>&lt;OK&gt;</b>	Confirm input	Ext. 12: no
<b>F</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

A caller list can be released again by entering "1" under point D.

### 10.5.1.9 Call trace (as of SW version 2.0.2)

If the "call trace" feature (tracing nuisance/malicious callers) has been released by Telecom, this class of service can be assigned to all extensions.

**Example:** ext. 13 is assigned call trace class of service

Input sequence		Meaning	Display
<b>A</b>	<b>1 3 2 1</b>	Call trace class of service for ext. 11 (select ext. 11–74 with "+" and "-" or directly with "#")	Ext. 11: not enabled
<b>B</b>	<b>+</b>	Call trace class of service for ext. 12	Ext. 12: not enabled
<b>C</b>	<b>+</b>	Call trace class of service for ext. 13	Ext. 13: not enabled
<b>D</b>	<b>*</b>	Change input	Ext. 13:
<b>E</b>	<b>1</b>	Enable call trace	Ext. 13: enabled
<b>F</b>	<b>&lt;OK&gt;</b>	Confirm input	Ext. 13: enabled
<b>G</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

Call trace class-of-service can be deactivated by entering "0" under point E.

#### 10.5.1.10 Diversion, external (as of SW version 2.0.2)

Call diversion to an external destination is enabled for all extensions (default setting). This class of service can be blocked on an extension-specific basis as of SW 2.0.2.

**Example:** blocking call diversion for ext. 12.

Input sequence		Meaning	Display
<b>A</b>	<b>1 3 2 2</b>	External diversion for ext. 11 (select ext. 11–74 with "+" and "-" or directly with "#")	Ext. 11: enabled
<b>B</b>	<b>+</b>	Caller list for ext. 12	Ext. 12: enabled
<b>C</b>	<b>*</b>	Change input	Ext. 12:
<b>D</b>	<b>0</b>	Block caller list	Ext. 12: not enabled
<b>E</b>	<b>&lt;OK&gt;</b>	Confirm input	Ext. 12: not enabled
<b>F</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
A call list can be released again by entering "1" under point D.			

#### 10.5.1.11 Setting up executive-secretary groups

Up to 4 executive-secretary groups (gp 1-4) can be set up. A group consists of a maximum of 2 executive and 2 secretary telephones.

Group calls are identified by a particular ring cadence.

Members of a group can reach the other members directly using DSS keys, thus circumventing call management.

An extension entered as an "executive" is not called during a system search operation.

Within each group, stations 1 and 2 can be assigned the **executive** function and stations 3 and 4 can be assigned the **secretary** function.

**Example:** group 1 is to consist of 1 secretary telephone (ext.16) and 1 executive telephone (ext.13).

Input sequence		Meaning	Display
<b>A</b>	<b>1 7 1</b>	Group 1, ext. station 1 (select station 1–4 with "+" and "-", group 1–4 with "+" and "-" or directly with "#")	Group 1, station 1: –
<b>B</b>	<b>+</b>	Change input	Group 1, station 1:
<b>C</b>	<b>13</b>	Executive tel. is ext. 13	Group 1, station 1: 13
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Group 1, station 1: 13
<b>E</b>	<b>+</b>	Scroll to the next station	Group 1, station 2: –

Input sequence		Meaning	Display
<b>F</b>	+	Scroll to the next station	Group 1, station 3: -
<b>G</b>	*	Change input	Group 1, station 3:
<b>H</b>	14	Secretary telephone is ext. 14	Group 1, station 3: 14
<b>J</b>	<OK>	Confirm input	Group 1, station 3: 14
<b>K</b>	<F8>	Return to Start menu	System administration
Members can be deleted from an executive-secretary group by pressing the F3 key under points C and H.			

#### 10.5.1.12 Station names

Each extension can be assigned a name which then appears on the system telephone's display.

An optiset (E) memory telephone is necessary to enter station names.

**Example:** ext. 11 is to be called "CO"

Input sequence		Meaning	Display
<b>A</b>	<b>1 3 2 (up to 2.0.1+)</b> 1 3 1 2 (as of 2.0.2)	Name for ext. 11 (scroll through ext. 12–74 using "+" and "-" or call directly with "#")	Ext. 11: -
<b>B</b>	*	Change input	Ext. 11:
<b>C</b>	<b>CO</b>	Name for ext.11 = CO	Ext. 11: CO
<b>D</b>	<OK>	Confirm input	Ext. 11: CO
<b>E</b>	<F8>	Return to Start menu	System administration
An existing extension name can be deleted by pressing the F3 key under point C.			

## 10.5.2 Doorphone setup

### 10.5.2.1 Setting up an entrance telephone (up to SW 2.0.1+)

An entrance telephone can be connected to a free a/b extension port. The number of the entrance telephone extension is programmed for this purpose.

The entrance telephone must be connected via a door opener adapter if the receiving extension for the doorbell and the door opener features are to be used.

**Example:** ext. 26 is to be set up as the entrance telephone.

Input sequence		Meaning	Display
<b>A</b>	<b>2 3 1</b>	Entrance telephone	Ext. no: –
<b>B</b>	<b>*</b>	Change input	Ext. no.
<b>C</b>	<b>26</b>	26 is to be set up as entrance tel.	Ext. no.: 26
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Ext. no.: 26
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
An existing entrance telephone can be deactivated by pressing the F3 key under point C.			

### 10.5.2.2 Setting up the entrance telephones (as of SW version 2.0.2)

An entrance telephone can be connected to each free a/b extension port (max. 4). The number of the entrance telephone extension is programmed for each door (1 to 4).

The entrance telephone must be connected via a door opener adapter if the receiving extension for the doorbell and the door opener features are to be used.

Example: ext. 25 is programmed as entrance telephone 1, ext. 26 is programmed as entrance telephone 2

Input sequence		Meaning	Display
<b>A</b>	<b>2 3 1</b>	Entrance telephone 1 (select door 1–4 with "+" and "-" or directly with "#")	Door 1: –
<b>B</b>	<b>+</b>	Change input	Door 1:
<b>C</b>	<b>25</b>	Ext. 25 is entrance telephone 1	Door 1: 25
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Door 1: 25
<b>E</b>	<b>+</b>	Scroll to entrance telephone 2	Door 2: –
<b>F</b>	<b>*</b>	Change input	Door 2:
<b>G</b>	<b>26</b>	Ext. 26 is entrance telephone 2	Door 2: 26
<b>H</b>	<b>&lt;OK&gt;</b>	Confirm input	Door 2: 26
<b>J</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
An existing entrance telephone can be cancelled by pressing the F3 key under points C and G.			

### 10.5.2.3 Programming the receiving extension for the doorbell (up to SW 2.0.1+)

A call can be signalled at an extension or a group of extensions by pressing a de-energized doorbell connected to the door opener adapter. The number of an extension or a pre-programmed extension group must be entered as the receiving extension of the doorbell.

**Example:** ext.15 should ring when the doorbell is pressed.

Input sequence		Meaning	Display
<b>A</b>	<b>2 3 2</b>	Receiving extension for doorbell	Ext. no.: –
<b>B</b>	<b>*</b>	Change input	Ext. no..
<b>C</b>	<b>15</b>	15 is receiving extension for doorbell	Ext. no.: 15
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Ext. no.: 15
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

An activated doorphone destination can be deactivated by pressing the F3 key under point C.

### 10.5.2.4 Programming a receiving extension for the doorbell (as of SW version 2.0.2)

A call can be signalled at an extension or a group of extensions by pressing a de-energized doorbell connected to the door opener adapter. The number of an extension or a pre-programmed extension group must be entered as the receiving extension for the doorbell for each door (1–4).

**Example:** ext. 11 should ring when the doorbell on door 1 is pressed, ext. 12 should ring when the doorbell on door 2 is pressed

Input sequence		Meaning	Display
<b>A</b>	<b>2 3 2</b>	Receiving extension for door 1 doorbell (select door 1–4 with "+" and "-" or directly with "#")	Door 1: –
<b>B</b>	<b>+</b>	Change input	Door 1:
<b>C</b>	<b>11</b>	11 is receiving extension for door 1 doorbell	Door 1: 11
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Door 1: 11
<b>E</b>	<b>+</b>	Scroll to door 2	Door 2: –
<b>F</b>	<b>*</b>	Change input	Door 2:
<b>G</b>	<b>12</b>	12 is receiving extension for door 2 doorbell	Door 2 12
<b>H</b>	<b>&lt;OK&gt;</b>	Confirm input	Door 2: 12
<b>J</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

Input sequence	Meaning	Display
An activated receiving extension for the doorbell can be deactivated by pressing the F3 key under points C and G.		

## 10.5.3 Setting up the door opener

### 10.5.3.1 Controlling the door opener with actuators

Actuators (relays) on a connected STRB module can be used to control one or more door openers, irrespective of the existence of a entrance telephone (connection without door opener).

The programming sequence is described in [Section 10.8.1](#)

### 10.5.3.2 Controlling the door opener with a door opener adapter (up to SW version 2.0.1+)

An existing power source can be connected to an electromagnetic door opener via a floating contact on a door opener adapter. The door opener feature must be released.

**Example:** release door opener feature via door opener adapter.

Input sequence		Meaning	Display
<b>A</b>	<b>2 3 3</b>	Door opener	Configuration: off
<b>B</b>	<b>*</b>	Change input	Configuration:
<b>C</b>	<b>1</b>	Door opener feature ON	Configuration: on
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Configuration: on
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
An activated door opener feature can be deactivated by entering "0" under point C.			

### 10.5.3.3 Controlling the door opener via a door opener adapter (as of SW version 2.0.2)

An existing power source can be connected to an electromagnetic door opener via a floating contact on a door opener adapter. A door opener can be set up for each door (1 to 4). "DTMF" must be released for the door opener in question if it is also to be operated by entering a code at the entrance telephone.

**Example:** a door opener with DTMF is set up for door 2.

Input sequence		Meaning	Display
<b>A</b>	<b>2 3 3</b>	Door opener for door 1 (select door 1 to 4 with "+" and "-" or directly with "#")	Door 1: not available
<b>B</b>	<b>+</b>	Scroll to door 2	Door 2: not available
<b>C</b>	<b>*</b>	Change input	Door 2:
<b>D</b>	<b>2</b>	Door opener feature with DTMF ON	Door 2: with DTMF
<b>E</b>	<b>&lt;OK&gt;</b>	Confirm input	Door 2: with DTMF
<b>F</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
A door opener feature without DTMF can be activated by entering "1" under point D. An activated door opener feature can be deactivated by entering "0" under point D.			

### 10.5.3.4 Diverting calls to receiving extension for the doorbell (as of SW version 2.0.2)

Even if an external diversion destination has been programmed for the receiving extension of a doorbell, incoming calls at this extension are not automatically diverted to the external destination. Diversion of calls from the entrance telephone to an external destination can be released for each door (1–4).

**Example:** calls from door 2 should also be diverted to external destinations set for the receiving extension for the doorbell.

Input sequence		Meaning	Display
<b>A</b>	<b>2 3 4</b>	Doorbell diversion for door 1 (select door 1 to 4 with "+" and "-" or directly with "#")	Door 1: do not activate
<b>B</b>	<b>+</b>	Scroll to door 2	Door 2: do not activate
<b>C</b>	<b>*</b>	Change input	Door 2:
<b>D</b>	<b>1</b>	Doorbell diversion ON	Door 2: activate
<b>E</b>	<b>&lt;OK&gt;</b>	Confirm input	Door 2: activate
<b>F</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
Doorbell diversion can be blocked again by entering "0" under point D.			

### 10.5.3.5 DTMF release class of service

Each individual extension can be assigned authorisation to release/cancel the DTMF door opener feature.

**Example:** ext. 13 is authorised to release/cancel the DTMF feature.

Input sequence		Meaning	Display
<b>A</b>	<b>2 3 5</b>	Door release, DTMF for door 11 (select door 11 to 74 with "+" and "-" or directly with "#")	Door 11: not enabled
<b>B</b>	<b>+</b>	Release class of service for ext. 12	Door 12: not enabled
<b>C</b>	<b>+</b>	Release class of service for ext. 13	Door 13: not enabled
<b>D</b>	<b>*</b>	Change input	Door 13:
<b>E</b>	<b>1</b>	Door release, enable DTMF	Door 13: enabled
<b>F</b>	<b>&lt;OK&gt;</b>	Confirm input	Door 13: enabled
<b>G</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
Authorisation to release the DTMF door opener feature can be cancelled by entering "0" under point E.			



## **10.5.4 Trunk access**

### **10.5.4.1 Classes of service up to SW version 2.0.1+**

In Hicom 100E (up to SW 2.0.1+), 5 levels of trunk access are available for each extension. These five levels are:

- <0> No trunk access. \*)
- <1> Outward restricted (+ central abb. dialling dests.). \*)
- <2> Access restricted to the numbers in the allowed numbers list. \*)
- <3> Access restricted for the numbers in the barred numbers list. \*)
- <4> Trunk access, no restrictions.

\*) Central abbreviated dialling destinations can be dialled without restriction.

### **10.5.4.2 Classes of service as of SW version 2.0.2**

In Hicom 100E (up to SW 2.0.2), 15 levels of trunk access are available for each extension. These 15 levels are:

- <0> No trunk access. \*)
- <1> Outward restricted. \*)
- <2-7> Access restricted to the numbers in one of the allowed numbers lists (1 to 6). \*)
- <8-13> Access restricted for the numbers in one of the barred numbers lists (1 to 6). \*)
- <14> Trunk access, no restrictions.

\*) Central abbreviated dialling destinations can be dialled without restriction.

### **10.5.4.3 Allowed numbers list up to SW version 2.0.1+**

The numbers in this list can be dialled by an extension with class-of-service level <2>. Suffix dialling of additional numbers is not restricted.

45 items are available for allowed numbers.

**Example:** extensions with level <2> class of service may only access the emergency numbers (110 and 112).

Input sequence		Meaning	Display
<b>A</b>	<b>1 4 3</b>	Allowed numbers item 1 (Select item 1 to 45 with "+" and "-" or directly with "#")	Item 1: –
<b>B</b>	<b>+</b>	Change input	Item 1:
<b>C</b>	<b>110</b>	First allowed number = 110	Item 1: 110
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Item 1: 110
<b>E</b>	<b>+</b>	Scroll to item 2	Item 2: –
<b>F</b>	<b>*</b>	Change input	Item 2:
<b>G</b>	<b>112</b>	Second allowed number = 112	Item 2: 112
<b>H</b>	<b>&lt;OK&gt;</b>	Confirm input	Item 2: 112
<b>J</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
An allowed number can be deleted from the list by pressing the F3 key under point C or G.			

#### 10.5.4.4 Allowed numbers list as of SW version 2.0.2

As of SW 2.0.2, an allowed numbers list (list 1) with 45 items plus 5 additional allowed numbers lists (lists 2 to 6), each with 10 items, are available.

Class-of-service level <2> corresponds to allowed numbers list 1, while class-of-service level <3> corresponds to allowed numbers list 2, and so on.

**Example:** the extensions with class-of-service level <3> may only access the emergency numbers (110 and 112).

Input sequence		Meaning	Display
<b>A</b>	<b>1 4 3 2</b>	Allowed numbers list 2, short, item 1 (select item 1 to 10 with "+" and "-" or directly with "#")	Item 1: –
<b>B</b>	<b>+</b>	Change input	Item 1:
<b>C</b>	<b>110</b>	First allowed number = 110	Item 1: 110
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Item 1: 110
<b>E</b>	<b>+</b>	Scroll to item 2	Item 2: –
<b>F</b>	<b>*</b>	Change input	Item 2:
<b>G</b>	<b>112</b>	Second allowed number = 112	Item 2: 112
<b>H</b>	<b>&lt;OK&gt;</b>	Confirm input	Item 2: 112
<b>J</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
An allowed number can be deleted from the list by pressing the F3 key under point C or G.			

### 10.5.4.5 Barred numbers list up to SW version 2.0.1+

The numbers entered in this list cannot be dialled by extensions with class-of-service level <3>. No other numbers are subject to restriction.

25 items are available for barred numbers.

**Example:** the extensions with class-of-service level <3> are to be authorised to telephone within Germany only (no "00" prefix) but they may not access any 0190 numbers.

Input sequence		Meaning	Display
<b>A</b>	<b>1 4 4</b>	Barred numbers item 1 (select item 1 to 25 with "+" and "-" or directly with "#")	Item 1: –
<b>B</b>	<b>+</b>	Change input	Item 1:
<b>C</b>	<b>00</b>	First barred number = 00	Item 1: 00
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Item 1: 00
<b>E</b>	<b>+</b>	Scroll to item 2	Item 2: –
<b>F</b>	<b>*</b>	Change input	Item 2:
<b>G</b>	<b>0190</b>	Second barred number = 0190	Item 2: 0190
<b>H</b>	<b>&lt;OK&gt;</b>	Confirm input	Item 2: 0190
<b>J</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
A barred number can be deleted from the list by pressing the F3 key under point C or G.			

### 10.5.4.6 Barred numbers list as of SW version 2.0.2

As of SW 2.0.2, a barred numbers list (list 1) with 45 items plus 5 additional barred numbers lists (2 to 6), each with 10 items, are available.

The class-of-service level <8> corresponds to barred numbers list 1, while the class-of-service level <9> corresponds to barred numbers list 2 ... and so on.

**Example:** the extensions with class-of-service level <9> are to be authorised to telephones within Germany only (no "00" prefix), but they may not access any 0190 numbers.

Input sequence		Meaning	Display
<b>A</b>	<b>1 4 4 2</b>	Barred numbers list 2, short, item 1 (select item 1 to 10 with "+" and "-" or directly with "#")	Item 1: –
<b>B</b>	<b>+</b>	Change input	Item 1:
<b>C</b>	<b>00</b>	First barred number = 00	Item 1: 00
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Item 1: 00
<b>E</b>	<b>+</b>	Scroll to item 2	Item 2: –
<b>F</b>	<b>*</b>	Change input	Item 2:
<b>G</b>	<b>0190</b>	Second barred number = 0190	Item 2: 0190
<b>H</b>	<b>&lt;OK&gt;</b>	Confirm input	Item 2: 0190
<b>J</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
A barred number can be deleted from the list by pressing the F3 key under point C or G.			

#### 10.5.4.7 Trunk access, day, up to SW version 2.0.1+

Individual daytime trunk access per line can be defined for up to **4** extensions. Each of these 4 extensions can be a reference extension for any other Hicom 100E extension. Thus, there can be up to 4 different groups of extensions with the same daytime trunk access.

#### 10.5.4.8 Trunk access, day, as of SW version 2.0.2

Individual daytime trunk access per line can be defined for up to **15** extensions. Each of these 15 extensions can be a reference extension for any other Hicom 100E extension. Thus, there can be up to 15 different groups of extensions with the same daytime trunk access.

### 10.5.4.9 Reference extensions

Classes of service are assigned on a line-specific basis for a reference extension, [Section 10.5.4](#).

**Example:** during the day, ext. 11 has "unrestricted trunk access" and is the reference extension for all other extensions with "unrestricted trunk access" during the day. Ext. 13 is authorised to telephone in accordance with the allowed numbers list (as of SW 2.0.2 = list 1) and is the reference extension for all other extensions restricted to the numbers in the allowed numbers list (as of SW 2.0.2 = list 2). Two lines are connected.

Input sequence		Meaning	Display
<b>A</b>	<b>1 4 1</b>	Trunk access during the day for ext. 11 on line 1 (select ext. 11–74 directly with "#", and lines 1–32 by scrolling with "+" and "-")	Ext. 11, line 1: seized
<b>B</b>	<b>#</b>	Select extension	Ext.:
<b>C</b>	<b>13</b>	Enter ext. 13	Ext.: 13
<b>D</b>	<b>&lt;OK&gt;</b>	Trunk access during the day for ext. 13	Ext. 13: as for ext. 11
<b>E</b>	<b>*</b>	Change input	Change for ext. 13:
<b>F</b>	<b>2</b>	Enter new data	Ext. 13, line 1: seized
<b>G</b>	<b>*</b>	Change input	Ext. 13, line 1:
<b>H</b>	<b>3</b>	Up to 2.0.1+ authorized in accordance with allowed numbers list as of 2.0.2 authorized in acc. with allowed numbers list 1	Ext.: 13, line 1: allowed numbers list or allowed nos. list 1
<b>J</b>	<b>&lt;OK&gt;</b>	Confirm input	Ext. 13, line 1: allowed numbers list or allowed nos. list 1
<b>K</b>	<b>+</b>	Scroll to line 2	Ext. 13, line 2: seized
<b>L</b>	<b>*</b>	Change input	Ext. 13, line 2:
<b>M</b>	<b>3</b>	Up to 2.0.1+ authorised in acc. with allowed numbers list as of 2.0.2 authorised in acc. with allowed numbers list 1	Ext. 13, line 2: allowed numbers list or allowed nos. list 1
<b>N</b>	<b>&lt;OK&gt;</b>	Confirm input	Ext. 13, line 2: allowed numbers list or allowed nos. list 1
<b>O</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

Classes of service <0> to <4> or <0> to <14> can be assigned by entering a value from "0"–"4" or "0"–"14" under points H or M.

#### 10.5.4.10 Normal extensions

The normal extensions are assigned to one of the 4 (up to SW 2.0.1+) or 15 (as of SW 2.0.2) possible day reference extensions and thus have the same trunk access during the day as these reference extensions.

**Example:** ext. 12 should correspond to reference extension 11 and ext. 14 to reference extension 13, see also [Section 10.5.4.9](#).

Input sequence		Meaning	Display
<b>A</b>	<b>1 4 1</b>	Trunk access during the day for ext. 11 on line 1 (select ext. 11–74 directly with "#", lines 1–32 by scrolling with "+" and "-")	Ext. 11, line 1: seized
<b>B</b>	<b>#</b>	Select extension	Ext.:
<b>C</b>	<b>12</b>	Enter extension 12	Ext.: 12
<b>D</b>	<b>&lt;OK&gt;</b>	Trunk access during the day for ext. 12	Ext. 12: as for ext. 11
<b>E</b>	<b>#</b>	Select extension	Ext.:
<b>F</b>	<b>14</b>	Enter extension 14	Ext.: 14
<b>G</b>	<b>&lt;OK&gt;</b>	Trunk access during the day for ext. 14	Ext. 14: as for ext. 11
<b>H</b>	<b>*</b>	Change input	Change for ext. 14:
<b>J</b>	<b>1</b>	Select reference ext.	Ref. for ext. 14:
<b>K</b>	<b>13</b>	Enter reference ext.	Ref. for ext. 14: 13
<b>L</b>	<b>&lt;OK&gt;</b>	Input	Ref. for ext. 14: 13
<b>M</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
The class-of-service assignment can be changed by entering another reference extension under point K.			

#### 10.5.4.11 Trunk access, night, up to SW version 2.0.1+

Individual night-time trunk access per line can be defined for up to **4** extensions. Each of these 4 extensions can be a reference extension for any other Hicom 100E extension. Thus, there can be up to 4 different groups of extensions with the same night-time trunk access.

#### 10.5.4.12 Trunk access, night, up to SW version 2.0.2

Individual night-time trunk access per line can be defined for up to 15 extensions. Each of these 15 extensions can be a reference extension for any other Hicom 100E extension. Thus, there can be up to 15 different groups of extensions with the same night-time trunk access.

### 10.5.4.13 Reference extensions

One class of service is assigned per line for a reference extension, see [Section 10.5.4](#).

**Example:** ext. 11 is "outward restricted" at night and is the reference extension for all other extensions with night-time "outward restriction". Ext. 12 is assigned "unrestricted trunk access" at night and is the reference extension for all other extensions with "unrestricted trunk access" at night. Two lines are connected.

Input sequence		Meaning	Display
<b>A</b>	<b>1 4 2</b>	Trunk access at night for ext. 11 on line 1 (select ext. 11–74 directly with "#", lines 1–32 by scrolling with "+" and "-")	Ext. 11, line 1: seized
<b>B</b>	<b>*</b>	Change input	Change for ext. 11:
<b>C</b>	<b>2</b>	Enter new data	Ext. 11, line 1:
<b>D</b>	<b>1</b>	Class of service: outward restricted	Ext. 11, line 1: outw.rest.
<b>E</b>	<b>&lt;OK&gt;</b>	Confirm input	Ext. 11, line 1: outw.rest.
<b>F</b>	<b>+</b>	Scroll to line 2	Ext. 11, line 2: seized
<b>G</b>	<b>*</b>	Change input	Ext. 11, line 2:
<b>H</b>	<b>1</b>	Class of service: outward restricted	Ext. 11, line 2: outw.rest.
<b>J</b>	<b>&lt;OK&gt;</b>	Confirm input	Ext. 11, line 2: outw.rest.
<b>K</b>	<b>#</b>	Select extension	Ext.:
<b>L</b>	<b>12</b>	Enter extension 12	Ext.: 12
<b>M</b>	<b>&lt;OK&gt;</b>	Confirm input	Ext. 12, line 1: seized
<b>N</b>	<b>+</b>	Scroll to 2	Ext. 12, line 2: seized
<b>O</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

Classes of service <0> to <4> or <0> to <14> can be assigned by entering a value from "0"–"4" or "0"–"14" under points D or H.

#### 10.5.4.14 Normal extensions

The normal extensions are assigned to one of the 4 (up to SW 2.0.1+) or 15 (as of SW 2.0.2) possible night reference extensions and thus have the same trunk access at night as these reference extensions.

**Example:** ext. 13 and 14 should correspond to reference extension 11 and ext. 12 is the only extension with unrestricted trunk access at night, see also [Section 10.5.4.13](#).

Input sequence		Meaning	Display
<b>A</b>	<b>1 4 2</b>	Trunk access at night for ext. 11 on line 1 (select ext. 11–74 directly with "#", lines 1–32 by scrolling with "+" and "-")	Ext. 11, line 1: outward restricted
<b>B</b>	<b>#</b>	Select extension	Ext.:
<b>C</b>	<b>13</b>	Enter extension 13	Ext.: 13
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Ext. 13: as for ext. 12
<b>E</b>	<b>*</b>	Change input	Change for ext. 13:
<b>F</b>	<b>1</b>	Select reference ext.	Ref. for ext. 13:
<b>G</b>	<b>11</b>	Enter reference ext.	Ref. for ext. 13: 11
<b>H</b>	<b>*</b>	Confirm input	Ext. 13: as for ext. 11
<b>J</b>	<b>#</b>	Select extension	Ext.:
<b>K</b>	<b>14</b>	Enter extension 14	Ext.: 14
<b>L</b>	<b>&lt;OK&gt;</b>	Confirm input	Ext. 14: as for ext. 12
<b>M</b>	<b>*</b>	Change input	Change for ext. 14:
<b>N</b>	<b>1</b>	Select reference ext.	Ref. for ext. 14:
<b>O</b>	<b>11</b>	Enter reference ext.	Ref. for ext. 14: 11
<b>P</b>	<b>&lt;OK&gt;</b>	Confirm input	Ext. 14: as for ext. 11
<b>R</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
The class-of-service assignment can be changed by entering another reference extension under point G or O.			

#### 10.5.4.15 Trunk access with active code lock (as of SW version 2.0.2)

Trunk access for extensions with active code locks can be set for the entire system as of SW version 2.0.2. The classes of service correspond to the values specified in the chapter "Classes of service as of SW 2.0.2", see [Section 10.5.4.2](#).



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### Station attributes

**Example:** locked telephones are to be authorised to dial the numbers entered in the allowed numbers list 1.

Input sequence		Meaning	Display
A	1 4 6	Code lock	COS: outward restricted
B	+*	Change input	Class of service:
C	2	Enter allowed numbers list 1	COS: allowed nos. list 1
D	<OK>	Confirm input	COS: allowed nos. list 1
E	<F8>	Return to Start menu	System administration
A class of service <0> to <4> can be assigned by entering a value (<0>—<14>) under point C.			

#### 10.5.4.16 Dialling signal transmission mode (as of SW version 2.0.2)

The trunk line is initially seized if an outgoing external call in "step-by-step" mode is subject to toll restriction. Dialling is interrupted and the trunk line is released if the extension is not authorised for the numbers in question.

In "block-by-block" mode, the trunk line is only seized if the extension is authorised to dial the number in question.

**Example:** activate "block-by-block" mode

Input sequence		Meaning	Display
A	1 4 7	Dialling signal transmission	Mode: per digit
B	+*	Change input	Mode:
C	1	Activate block-by-block mode	Mode: en-bloc
D	<OK>	Confirm input	Mode: en-bloc
E	<F8>	Return to Start menu	System administration
"Step-by-step" mode can be reactivated by entering "0" under point C.			

## 10.6 Call management

### 10.6.1 DDI numbers

Each Hicom 100E extension and call group is assigned a DDI number. In general, this DDI number corresponds to the internal number of an extension or a call group.  
An extension or a call group can be assigned another DDI number comprising up to 11 digits.

**Example:** the DDI number for ext. 23 in the case of incoming ISDN DDI calls is to be set to 999.

Input sequence		Meaning	Display
<b>A</b>	<b>1 5 1 1</b>	DDI number for ext. 11 (select ext.11 to 74 and group 881 to 888 by scrolling with "+" and "-" or directly with "#")	Ext. no. 11: 11
<b>B</b>	<b>#</b>	Select extension	Ext. no.
<b>C</b>	<b>23</b>	Enter ext. 23	Ext. no.: 23
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Ext. no. 23: 23
<b>E</b>	<b>*</b>	Change input	Ext. no. 23:
<b>F</b>	<b>999</b>	DDI number 999	Ext. no. 23: 999
<b>G</b>	<b>&lt;OK&gt;</b>	Confirm input	Ext. no. 23: 999
<b>H</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
An ext. cannot be reached with direct dialling in if a DDI number has been deleted by pressing the F3 key.			

### 10.6.2 Call groups

#### 10.6.2.1 Group members

Up to 8 extensions (destinations) can be combined in a group with its own group extension number (extensions retain their individual ext. numbers).  
A maximum of 8 groups of this kind can be set up. The default group extension numbers are "881" to "888".

**Example:** extensions 13, 14, and 21 are to be members (destinations) of the shared call group 883.

Input sequence		Meaning	Display
<b>A</b>	<b>1 5 1 6 1</b>	Members (destinations) of group 881 (select group 881 to 888 directly with "#", scroll to destinations within a group with "+" and "-")	Group 881, dest.1: –
<b>B</b>	<b>#</b>	Select group	Group:
<b>C</b>	<b>883</b>	Enter group 883	Group: 883
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Group 883, mbr.1: –
<b>E</b>	<b>*</b>	Change input	Group 883, mbr.1:
<b>F</b>	<b>13</b>	First destination = ext. 13	Group 883, mbr. 1: 13
<b>G</b>	<b>&lt;OK&gt;</b>	Confirm input	Group 883, mbr. 1: 13
<b>H</b>	<b>+</b>	Scroll to destination 2	Group 883, mbr. 2: –
<b>J</b>	<b>*</b>	Change input	Group 883, mbr. 2:
<b>K</b>	<b>14</b>	Second dest. = ext. 14	Group 883, mbr. 2: 14
<b>L</b>	<b>&lt;OK&gt;</b>	Confirm input	Group 883, mbr. 2: 14
<b>M</b>	<b>+</b>	Scroll to dest. 3	Group 883, mbr. 3: –
<b>N</b>	<b>*</b>	Change input	Group 883, mbr. 3:
<b>O</b>	<b>21</b>	Third dest. = ext. 21	Group 883, mbr. 3: 21
<b>P</b>	<b>&lt;OK&gt;</b>	Confirm input	Group 883, mbr. 3: 21
<b>R</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
Members (destinations) of a call group can be deleted by pressing the F3 key under point F, K or O.			

### 10.6.2.2 Group ringing mode

A group ringing mode can be defined for each of the 8 call groups.

The following ringing modes are possible:

- |                                      |  |
|--------------------------------------|--|
| Type 1 – Cyclical group call":       | All idle destinations ring consecutively, starting with the ext. after the last destination called.                        |
| Type 2 – "Linear group call":        | All idle destinations ring consecutively, always starting with the first destination in the group.                         |
| Type 3 – "Group ringing":            | All idle extensions ring simultaneously.   |
| Type 4 – "Group ringing, no answer": | All idle extensions ring simultaneously.<br>If an ext. is busy, however, the incoming call is camped-on at this ext. only. |

**"Group ringing" is preprogrammed for all call groups (default setting).**

Example overleaf.

**Example:** call group 883 is to be programmed as a "linear group call".

Input sequence		Meaning	Display
<b>A</b>	<b>1 5 1 6 2</b>	Ringing mode for group 881 (select group 881–888 by scrolling with "+" and "-" or directly with "#")	Group 881: group ringing
<b>B</b>	<b>#</b>	Select group	Group:
<b>C</b>	<b>883</b>	Enter group 883	Group: 883
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Group 883: grp ringing
<b>E</b>	<b>*</b>	Change input	Group 883:
<b>F</b>	<b>2</b>	Linear group call	Group 883: lin. grp. call
<b>G</b>	<b>&lt;OK&gt;</b>	Confirm input	Group 883: lin. grp. call
<b>H</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
One of the three possible ringing modes can be defined for a group by entering the ringing mode types 1, 2 or 3 under point F.			

### 10.6.2.3 Group names

A name can be assigned for each call group. This name will then appear on the caller's display when this group is dialled.

**An optiset (E) memory telephone is necessary for entering names!**

**Example:** call group 883 is to be named "Sales".

Input sequence		Meaning	Display
<b>A</b>	<b>1 5 1 6 3</b>	Ringing mode of group 881 (select group 881 to 888 with "+" and "-" or directly with "#")	Group 881:
<b>B</b>	<b>#</b>	Select group	Group:
<b>C</b>	<b>883</b>	Enter group 883	Group: 883
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Group 883: –
<b>E</b>	<b>*</b>	Change input	Group 883:
<b>F</b>	<b>Sales</b>	Name for group 883 = "Sales"	Group 883: Sales
<b>G</b>	<b>&lt;OK&gt;</b>	Confirm input	Group 883: Sales
<b>H</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
An assigned name can be deleted by pressing the F3 key under point F.			

#### 10.6.2.4 Signalling type

Three different ringing modes can be set per telephone for incoming external calls.

**Example:**

Input sequence		Meaning	Display
<b>A</b>	<b>15 21</b>	Signalling type: 0=ringing mode 1, 1=ringing mode 2, 2=ringing mode 3	
<b>B</b>	<b>#</b>	Select ext.	
<b>C</b>	<b>13 ext.</b>	Enter extension 13	
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	
<b>E</b>	<b>*</b>	Change input	
<b>F</b>	<b>2</b>	Ringling mode 2	
<b>G</b>	<b>&lt;OK&gt;</b>	Confirm input	

#### 10.6.3 Call allocation with ISDN DDI

In general, ISDN DDI takes place in accordance with the DDI numbers entered (default setting).

**Each extension dialled by means of DDI is assigned a call destination list which specifies the exact call procedure (e.g. forwarding, forwarding time, etc.).**

The layout and programming of the 16 possible call destination lists is described in Section 10.6.7.

#### 10.6.4 Reference to call destination lists

##### 10.6.4.1 Reference for day

Call destination list 14 is assigned by default to all extensions or call groups which receive external calls during the day (destination list 1 up to SW status 2.0.1).

If the incoming calls for two or more different extensions or call groups are to be processed differently, individual call destination lists (each with their own specific criteria) are necessary, see Section 10.6.7.

**Example:** the extension with extension number 23 is to be assigned a call forwarding destination (additional forw. ext.) that differs from that of the other extensions for external daytime calls. This ext. must be assigned to a specific call destination list (call destination list 11 in this example).

Input sequence		Meaning	Display
<b>A</b>	<b>1 5 1 9 3</b>	List assignment for ext.11 during the day (select ext. 11–74 or group 881–888 with "+" and "-" or directly with "#")	List for ext. no. 11: 14
<b>B</b>	<b>#</b>	Select ext.	List for ext. no.:
<b>C</b>	<b>23</b>	Enter ext. 23	List for ext. no.: 23
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	List for ext. no. 23: 14
<b>E</b>	<b>*</b>	Change input	List for ext. no.: 23
<b>F</b>	<b>11</b>	Assignment to list 11	List for ext. no. 23: 11
<b>G</b>	<b>&lt;OK&gt;</b>	Confirm input	List for ext. no. 23: 11
<b>H</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

#### 10.6.4.2 Reference for night

Call destination list 15 is assigned by default to all extensions or call groups which receive external calls at night (destination list 1 up to SW status 2.0.1).

If the incoming calls for two or more different extensions or call groups are to be processed differently, individual call destination lists (each with their own specific criteria) are necessary, see [Section 10.6.7](#).

**Example:** the extension with extension number 11 is to be assigned a call forwarding destination (additional forw. ext.) that differs from that of the other extensions for external night-time calls. This ext. must be assigned to a specific call destination list (call destination list 10 in this example).

Input sequence		Meaning	Display
<b>A</b>	<b>1 5 1 9 3</b>	List assignment for ext.11 at night (select ext. 11–74 or group 881–888 with "+" and "-" or directly with "#")	List for ext. no. 11: 15
<b>B</b>	<b>#</b>	Change input	List for ext. no. 11:
<b>C</b>	<b>10</b>	Assignment to list 10	List for ext. no. 11: 10
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	List for ext. no. 11: 10
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

## 10.6.5 Call allocation for incoming analogue trunk calls

In contrast to incoming ISDN calls, it is not possible to reach extensions using direct dialling in with analogue trunk calls.

Each analogue trunk line is, therefore, permanently assigned to an destination extension (an extension or a call group). In default, this destination extension is extension 11.

**Each analogue destination extension is assigned a call destination list which specifies the exact call procedure (e.g. call forwarding, forwarding time, etc.).**

The layout and programming of the 16 possible call destination lists is described in [Section 10.6.7](#).

### 10.6.5.1 Changing the analogue destination extension during the day

In the case of incoming analogue trunk calls during the day, each analogue trunk line can be assigned any destination extension.

**Example:** extension 23 is programmed as the analogue destination extension for line 3.

Input sequence		Meaning	Display
<b>A</b>	<b>1 5 1 7</b>	Call allocation per line, day (select line 1–32 with "+" and "-" or directly with "#")	Line 1: 11
<b>B</b>	<b>#</b>	Select line	Line:
<b>C</b>	<b>3</b>	Select line	Line: 3
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Line 3: 11
<b>E</b>	<b>*</b>	Change input	Line 3:
<b>F</b>	<b>23</b>	Destination extension = 23	Line 3: 23
<b>G</b>	<b>&lt;OK&gt;</b>	Confirm input	Line 3: 23
<b>H</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
The new analogue destination extension for line 3 during the day is now extension 23.			

**Example:** extension 23 is to be assigned a call forwarding destination (additional forw. ext.) that differs from that of the other extensions for external daytime calls. This ext. must be assigned to a specific call destination list (call destination list 11 in this example), see also [Section 10.6.7](#).

Input sequence		Meaning	Display
<b>A</b>	<b>1 5 1 9 3</b>	List assignment for ext.11 during the day (select ext.11–74 or group 881–888 with "+" and "-" or directly with "#")	List for ext. no. 11: 14
<b>B</b>	<b>#</b>	Select extension	List for ext. no.:

Input sequence		Meaning	Display
<b>C</b>	<b>23</b>	Enter extension 23	List for ext. no.: 23
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	List for ext. no. 23: 14
<b>E</b>	<b>*</b>	Change input	List for ext. no.: 23
<b>F</b>	<b>11</b>	Assignment to list 11	List for ext. no. 23: 11
<b>G</b>	<b>&lt;OK&gt;</b>	Confirm input	List for ext. no. 23: 11
<b>H</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

### 10.6.5.2 Changing analogue destination extensions at night

In the case of incoming analogue trunk calls at night, each analogue trunk line can be assigned any destination extension.

**Example:** call group 883 is to be programmed as an analogue destination extension at night for lines 2 and 3, see also [Section 10.6.2](#).

Input sequence		Meaning	Display
<b>A</b>	<b>1 5 1 8</b>	Call allocation per line, night (select line 1–32 with "+" and "-" or directly with "#")	Line 1: 11
<b>B</b>	<b>+</b>	Scroll to line 2	Line 2: 11
<b>C</b>	<b>*</b>	Change input	Line 2:
<b>D</b>	<b>883</b>	Destination extension = group 883	Line 2: 883
<b>E</b>	<b>&lt;OK&gt;</b>	Confirm input	Line 2: 883
<b>F</b>	<b>+</b>	Scroll to line 3	Line 3: 11
<b>G</b>	<b>*</b>	Change input	Line 3:
<b>H</b>	<b>883</b>	Destination extension = group 883	Line 3: 883
<b>J</b>	<b>&lt;OK&gt;</b>	Confirm input	Line 3: 883
<b>K</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

Call group 883 is now the new analogue destination extension at night for lines 2 and 3.

The default call destination list assigned to call group 883 at night remains 15.

### 10.6.6 Call allocation for internal calls

In general, extensions are dialled internally in accordance with the internal extension numbers entered. (The PC tool "Assistant L" is required to change internal extension numbers.)

**Each internally dialled extension is assigned a call destination list which specifies the exact call procedure (e.g. call forwarding, forwarding time, etc.).**



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### Station attributes

The layout and programming of the 16 possible call destination lists is described in [Section 10.6.7](#).

Call destination list 16 is assigned by default to all extensions or call groups which receive internal calls (destination list 1 up to SW status 2.0.1).

If the incoming calls for two or more different extensions or call groups are to be processed differently, individual call destination lists (each with their own specific criteria) are necessary, see [Section 10.6.7](#).

**Example:** extension 26 is to be assigned a call forwarding destination (additional forw. ext.) that differs from that of the other extensions for internal calls. This ext. must be assigned to a specific call destination list (call destination list 13 in this example), see [Section 10.6.7](#)

Input sequence		Meaning	Display
<b>A</b>	<b>1 5 1 9 2</b>	List assignment for ext.11 during the day (select ext. 11–74 or group 881–888 with "+" and "-" or directly with "#")	List for ext. no. 11: 16
<b>B</b>	<b>#</b>	Select ext.	List for ext. no.:
<b>C</b>	<b>26</b>	Enter ext. 26	List for ext. no.: 26
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	List for ext. no. 26: 16
<b>E</b>	<b>*</b>	Change input	List for ext. no.: 26
<b>F</b>	<b>13</b>	Assignment to 13	List for ext. no. 26: 13
<b>G</b>	<b>&lt;OK&gt;</b>	Confirm input	List for ext. no. 26: 13
<b>H</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

### 10.6.7 Call destination lists

There are three different call types:

1. External call during the day (ISDN and analogue trunk)
2. External call at night (ISDN and analogue trunk)
3. Internal call (CorNet/QSig)

A called destination extension (extension or call group) for each of these three call types is assigned to one of the 16 possible call destination lists. The default assignments are as follows:

1. External call during the day to call destination list **14** (up to SW 2.0.1: call destination list 1)
2. External call at night to call destination list **15** (up to SW 2.0.1: call destination list 1)
3. Internal call to call destination list **16** (up to SW 2.0.1: call destination 1)

The contents of a call destination list describes the exact procedure of the call and clarifies the following questions:

1. Which ext. or which call group is actually being called? (1st dest. index)
2. To which ext./call group is the call first forwarded? (2nd dest. index)
3. To which 2nd ext./call group is the call then forwarded? (3rd dest. index)
4. To which 3rd ext./call group is the call then forwarded? (4th dest. index)
5. After how many rings should a call be forwarded?
6. Is a common ringer connected?
7. When should a connected common ringer also start ringing?

#### 10.6.7.1 Destination indexes

Up to 4 destination indexes can be assigned for each call destination list.

The 1st destination index specifies the extension or call group first called.

The 2nd destination index specifies the 2nd ext./call group to be called (1st FWD dest.)

The 3rd destination index specifies the 3rd ext./call group to be called (2nd FWD dest.)

The 4th destination index specifies the 4th ext./call group to be called (3rd FWD dest.)

The indexes can have the following meanings:

"*"	<b>Dialled</b> extension or call group is called	("Dial")
"#"	System search operation, all exts. are called consecutively	("Search") #9 as of SW2.1
Ext. no.	<b>Entered</b> extension or call group is called.	("11", "12" etc.)

**Example:** in the case of an external call during the day, ext. 20 is to be the first extension to ring, followed by ext. 11, and then the members of call group 888 (ext. 11 to 18) ring simultaneously.

Three programming steps are necessary:

- In the first step, a call destination list which has **not yet been assigned** (in this example, CDL 13) is to be assigned the required destination indexes.

Input sequence		Meaning	Display
<b>A</b>	<b>1 5 1 9 1</b>	Dest. index 1 for CDL 1 (select dest. index 1-4 with "+" and "-", and call destination list 1–16 directly with "#")	List 1, dest. 1: dial
<b>B</b>	<b>#</b>	Select CDL	List:
<b>C</b>	<b>13</b>	Enter CDL 13	List: 13
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	List 13, dest. 1: dial
<b>E</b>	<b>+</b>	Scroll to dest. index 2	List 13, dest. 2: –

Input sequence		Meaning	Display
<b>F</b>	*	Change input	List 13, dest. 2:
<b>G</b>	11	Dest index 2 = ext. no. 11 (ext. 11)	List 13, dest. 2: 11
<b>H</b>	<OK>	Confirm input	List 13, dest. 2: 11
<b>J</b>	+	Scroll to dest. index 3	List 13, dest. 3: –
<b>K</b>	*	Change input	List 13, dest. 3:
<b>L</b>	888	Dest. index 3 = ext. no. 888 (grp.888)	List 13, dest. 3: 888
<b>M</b>	<OK>	Confirm input	List 13, dest. 3: 888
<b>N</b>	<F8>	Return to Start menu	System administration

A destination index can be deleted by pressing the F3 key under point G or L.

- The second step entails assigning call destination list 13 to ext. 20 for external calls during the day, see "Reference for day", Section 10.6.4.1.
- The third step entails entering extensions 11 to 18 as group members of call group 888, see "Group members", Section 10.6.2.1.

### 10.6.7.2 Call forwarding times

The number of rings per destination index can be modified for each call destination list. The default value for all 16 call destination lists is 3. A ring attempt lasts approx. 5 seconds.

**Example:** a call is to be forwarded to the next destination index in call destination list 13 after 30 seconds. The number of rings must be set to 6 (6 x 5 sec. = 30 sec.).

Input sequence		Meaning	Display
<b>A</b>	<b>1 5 1 9 5</b>	Number of rings for call dest. list 1 (select list 1–16 with "+" and "-" or directly with "#")	for list 1: 3
<b>B</b>	<b>#</b>	Select CDL	for list:
<b>C</b>	<b>13</b>	Enter CDL 13	for list: 13
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	for list 13: 3
<b>E</b>	*	Change input	for list: 13
<b>F</b>	6	Number of rings = 6	for list 13: 6
<b>G</b>	<OK>	Confirm input	for list 13: 6
<b>H</b>	<F8>	Return to Start menu	System administration

The number of rings can be programmed by entering a value between 1 and 15 under point F.

### 10.6.7.3 Common ringer

A common ringer can be connected to the PBX. This common ringer is connected as an analogue a/b extension to an a/b interface. Alternatively, it is possible to control a common ringer via a relay contact of an actuator. An STRB module is necessary for this purpose.

A common ringer connected to the Hicom 100E system can be programmed to ring simultaneously for each of the 16 call destination lists. To this end, the extension number of the a/b extension used or the number of the control actuator is to be entered in the appropriate call destination list.

**Example:** a common ringer should ring simultaneously in the event of calls for extensions assigned to call destination list 13. The ringer is connected to the a/b interface with internal extension number 25. 25 must be entered as the PEN of the common ringer for call destination list 13.

Input sequence		Meaning	Display
<b>A</b>	<b>1 5 1 9 6</b>	PEN of common ringer for CDL 1 (select list 1–16 with "+" and "-" or directly with "#")	for list 1: –
<b>B</b>	<b>#</b>	Select CDL	for list:
<b>C</b>	<b>13</b>	Enter CDL 13	for list: 13
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	for list 13: –
<b>E</b>	<b>*</b>	Change input	for list: 13
<b>F</b>	<b>25</b>	Common ringer PEN = 25	for list 13: 25
<b>G</b>	<b>&lt;OK&gt;</b>	Confirm input	for list 13: 25
<b>H</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
<p>An entered common ringer can be cancelled by pressing the F3 key under point F. If an actuator is used to control the common ringer, the number of the actuator used is to be entered as follows under point F: 1 = actuator 1, 2 = actuator 2, 3 = actuator 3, 4 = actuator 4</p>			

### 10.6.7.4 Setting the common ringer mode

The common ringer mode can be set to "immediate" (rings simultaneously with the first destination index) or "after timeout" (rings simultaneously with the second destination index) for each call destination list with a common ringer.

"Immediate" is the default mode for all 16 call destination lists.

**Example:** a common ringer entered in call destination list 13 should only ring after the call has been forwarded to the second destination index in the call destination list.

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*Station attributes*

Input sequence		Meaning	Display
<b>A</b>	<b>1 5 1 9 7</b>	PEN for common ringer for CDL 1 (select list 1–16 with "+" and "-" or directly with "#")	for list 1: immediate
<b>B</b>	<b>#</b>	Select CDL	for list:
<b>C</b>	<b>13</b>	Enter CDL 13	for list: 13
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	for list 13: immediate
<b>E</b>	<b>*</b>	Change input	for list: 13
<b>F</b>	<b>2</b>	Mode = after timeout	for list 13: after timeout
<b>G</b>	<b>&lt;OK&gt;</b>	Confirm input	for list 13: after timeout
<b>H</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
"After timeout" mode can be changed to "immediate" mode by entering "1" under point F.			

## 10.6.8 ISDN DDI settings

### 10.6.8.1 Intercept console during the day

In Hicom 100E, ext. 11 is defined as the intercept console by default. All incoming calls during the day which were not dialled using an extension DDI number but with the console code (Section 10.6.8.3) are signalled at the intercept console. Moreover, incoming calls which could not be switched can also be signalled at the intercept console (see "Defining intercept criteria", Section 10.6.9).

An extension or a call group can be an intercept console during the day.

Since the intercept console during the day is assigned to a call destination list (Section 10.6.4), the call settings defined in this call destination list are applicable.

**Example:** extension 12 is to act as the intercept console during the day.

Input sequence		Meaning	Display
<b>A</b>	<b>1 5 1 3</b>	Intercept console during the day	Ext. no.: 11
<b>B</b>	<b>*</b>	Change input	Ext. no.:
<b>C</b>	<b>12</b>	Select intercept console	Ext. no.: 12
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Ext. no.: 12
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

A different extension or call group can be programmed as the intercept console during the day by entering another extension number under point C.

**As of SW version 2.0.1+, the following is also applicable:**

The intercept console during the day can be cancelled by pressing the F3 key under point C. In this way, it is possible to assign an individual daytime intercept console to each line (e.g. in the case of different basic accesses).

**Example:** ext. 11 is the intercept console during the day for the 1st basic access (line 1 and 2). Ext. 15 is the intercept console during the day for the 2nd basic access (line 3 and 4).

1. The actual "intercept console during the day" under code <1513> is deleted, see above.
2. The required intercept console extensions are assigned to lines 1 to 4.  
The assignment is made in CDM 15 17.



Lines in a shared basic access must always be assigned the same intercept console extension.

Input sequence		Meaning	Display
<b>A</b>	<b>1 5 1 7</b>	Intercept console per line during the day (select line 1–32 with "+" and "-" or directly with "#")	Line 1: 11
<b>B</b>	<b>+</b>	Scroll to line 2	Line 2: 11
<b>C</b>	<b>+</b>	Scroll to line 3	Line 3: 11
<b>D</b>	<b>*</b>	Change input	Line 3:
<b>E</b>	<b>15</b>	Select intercept console	Line 3: 15
<b>F</b>	<b>&lt;OK&gt;</b>	Confirm input	Line 3: 15
<b>G</b>	<b>+</b>	Scroll to line 4	Line 4: 11
<b>H</b>	<b>*</b>	Change input	Line 4:
<b>J</b>	<b>15</b>	Select intercept console	Line 4: 15
<b>K</b>	<b>&lt;OK&gt;</b>	Confirm input	Line 4: 15
<b>L</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

### 10.6.8.2 Intercept console at night

In Hicom 100E, ext. 11 is defined as the intercept console during the night by default. All incoming calls at night which were not dialled using an extension DDI number but with the console code ([Section 10.6.8.3](#)) are signalled at the intercept console. Moreover, incoming calls which could not be switched can also be signalled at the intercept console (see "Defining intercept criteria", [Section 10.6.9](#)).

An extension or a call group can be an intercept console during the night.

Since the intercept console during the night is assigned to a call destination list ([Section 10.6.4](#)), the call settings defined in this call destination list are applicable.

**Example:** call group 881 is to act as the intercept console at night.

Input sequence		Meaning	Display
<b>A</b>	<b>1 5 1 4</b>	Intercept console at night	Ext. no.: 11
<b>B</b>	<b>*</b>	Change input	Ext. no.:
<b>C</b>	<b>881</b>	Select intercept console	Ext. no.: 881
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Ext. no.: 881
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

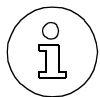
A different extension or call group can be programmed as the intercept console at night by entering another extension number under point C.

**As of SW version 2.0.1+, the following also applies:**

The intercept console at night can be cancelled by pressing the F3 key under point C. In this way, it is possible to assign an individual night-time intercept console to each line (e.g. in the case of different basic accesses).

**Example:** ext. 12 is the night intercept console for the 1st basic access (line 1 and 2).  
Call group 882 is the night intercept console for the 2nd basic access (line 3 and 4).

1. The actual "night intercept console" under code <1514> is deleted, see above.
2. The required intercept console extensions are assigned to lines 1 to 4.



Lines in a shared basic access must always be assigned the same intercept console extension!

Input sequence		Meaning	Display
<b>A</b>	<b>1 5 1 8</b>	Intercept console per line at night (select line 1–32 with "+" and "-" or directly with "#")	Line 1: 11
<b>B</b>	<b>*</b>	Change input	Line 1:
<b>C</b>	<b>12</b>	Select intercept console	Line 1: 12
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Line 1: 12
<b>E</b>	<b>+</b>	Scroll to line 2	Line 2: 11
<b>F</b>	<b>*</b>	Change input	Line 2:
<b>G</b>	<b>12</b>	Select intercept console	Line 2: 12
<b>H</b>	<b>&lt;OK&gt;</b>	Confirm input	Line 2: 12
<b>J</b>	<b>+</b>	Scroll to line 3	Line 3: 11
<b>K</b>	<b>*</b>	Change input	Line 3:
<b>L</b>	<b>882</b>	Select intercept console	Line 3: 882
<b>M</b>	<b>&lt;OK&gt;</b>	Confirm input	Line 3: 882
<b>N</b>	<b>+</b>	Scroll to line 4	Line 4: 11
<b>O</b>	<b>*</b>	Change input	Line 4:
<b>P</b>	<b>882</b>	Select intercept console	Line 4: 882
<b>R</b>	<b>&lt;OK&gt;</b>	Confirm input	Line 4: 882
<b>S</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration



### 10.6.8.3 Defining the console code

External ISDN calls are directly signalled at the intercept console if the console code is dialled instead of the DDI number. The console code (by default "0") applies to the entire system and can be changed.

**Example:** the console code is to be changed to "9".

Input sequence		Meaning	Display
A	1 5 1 2	Console code with DDI	Ext. no.: 0
B	*	Change input	Ext. no.:
C	9	Select console code	Ext. no.: 9
D	<OK>	Confirm input	Ext. no.: 9
E	<F8>	Return to Start menu	System administration
The console code can be deleted by pressing the F3 key under point C.			

### 10.6.9 Defining intercept criteria

#### 10.6.9.1 Defining intercept, no answer

An ISDN call from a directly dialled extension which was not answered is automatically forwarded to the intercept console after a set period of time. The amount of time that elapses before the call is forwarded (intercepted) corresponds to the number of ring attempts entered in the call destination list for this extension [Section 10.6.7.2](#).

The intercept feature can be deactivated by appropriate programming. The modification applies to the entire system.

**Example:** programming intercept override, no answer.

Input sequence		Meaning	Display
A	1 5 1 5 1	Intercept, no answer	Intercept: yes
B	*	Change input	Intercept:
C	0	Select intercept override	Intercept: no
D	<OK>	Confirm input	Intercept: no
E	<F8>	Return to Start menu	System administration
Intercept, no answer can be reactivated by entering "1" under point C.			

### 10.6.9.2 Defining intercept, busy

If a DDI extension called via ISDN is busy, the **camp-on** feature is activated by default at this extension. If the camped-on ISDN call is not picked up, the "Intercept, no answer" criterion applies, see [Section 10.6.9.1](#).

Provided the "camp-on rejection" feature (data security) has been enabled for the dialled busy DDI extension, see [Section 10.5.1.3](#), and the call destination list does not contain a forwarding extension, the external ISDN caller receives the "busy" tone by default.

For this purpose, an **intercept to console, busy** feature can be defined. Such a modification applies to the entire system.

**Example:** programming intercept to console, busy.

Input sequence		Meaning	Display
<b>A</b>	<b>1 5 1 5 2</b>	Intercept, busy	Intercept: no
<b>B</b>	<b>*</b>	Change input	Intercept:
<b>C</b>	<b>1</b>	Select intercept	Intercept: yes
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Intercept: yes
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
Intercept, busy can be deactivated by entering "0" under point C.			

### 10.6.9.3 Defining intercept, unavailable DDI number

If an external ISDN caller dials an unavailable or invalid DDI number, this call is automatically forwarded to the intercept console immediately. This intercept feature can be deactivated by appropriate programming so that the external ISDN caller hears the "busy" tone. This definition applies to the entire system.

**Example:** programming intercept override, unavailable DDI number.

Input sequence		Meaning	Display
<b>A</b>	<b>1 5 1 5 3</b>	Intercept, unavailable DDI no.	Intercept: yes
<b>B</b>	<b>*</b>	Change input	Intercept:
<b>C</b>	<b>0</b>	Select intercept override	Intercept: no
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Intercept: no
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
Intercept, unavailable DDI number can be reactivated by entering "1" under point C.			

### 10.6.9.4 Defining intercept, incomplete DDI number

If an external ISDN caller dials an incomplete DDI number, this call is automatically forwarded to the intercept console after approx. 20 seconds. This intercept feature can be deactivated by appropriate programming, so that an external ISDN caller hears the "busy" tone (after approx. 20 seconds in this case). The definition applies to the entire system.

**Example:** programming intercept override, incomplete DDI number.

Input sequence		Meaning	Display
<b>A</b>	<b>1 5 1 5 4</b>	Intercept, incomplete DDI no.	Intercept: yes
<b>B</b>	<b>*</b>	Change input	Intercept:
<b>C</b>	<b>0</b>	Select intercept override	Intercept: no
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Intercept: no
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
Intercept, incomplete DDI number can be reactivated by entering "1" under point C.			

### 10.6.9.5 Defining intercept, recall (as of SW version 2.0.2)

A recall request for an extension can be automatically forwarded to the intercept console if the extension is busy or if there is no answer after a set period of time.

**Example:** programming intercept console, recall.

Input sequence		Meaning	Display
<b>A</b>	<b>1 5 1 5 5</b>	Intercept, recall	Intercept: no
<b>B</b>	<b>*</b>	Change input	Intercept:
<b>C</b>	<b>1</b>	Select intercept	Intercept: yes
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Intercept: yes
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
The intercept feature can be reactivated by entering "0" under point C.			

## 10.7 System settings

### 10.7.1 Music on hold

Music on hold (MOH) is activated by default for calls that have been parked or placed on consultation hold. It can be deactivated.

**Example:** deactivating music on hold.

Input sequence		Meaning	Display
<b>A</b>	<b>2 1 1 (up to SW2.0.2)</b> 2 1 11 (as of SW2.1)	Music on hold	Status: always MOH
<b>B</b>	*	Change input	Status:
<b>C</b>	0	Deactivate music on hold	Status: off
<b>D</b>	<OK>	Confirm input	Status: off
<b>E</b>	<F8>	Return to Start menu	System administration
Music on hold can be reactivated by entering "1" under point C.			

**The following applies as of SW version 2.0.1:**

Music on hold is activated for the park or hold duration by entering "2" under point C. For the duration of a recall, the party on hold hears the ring tone.

### 10.7.2 Telephone directory

Extensions which have been assigned names can be selected from optiset telephones with a display via an integrated telephone directory.

As of SW 2.0.2, central abbreviated dialling destinations which have been assigned names will also appear in this telephone directory and will be available for selection.

The telephone directory can be deactivated.

**Example:** deactivating the telephone directory.

Input sequence		Meaning	Display
<b>A</b>	<b>2 1 2 (up to SW2.0.2)</b> 2112 (as of SW2.1)	Telephone directory	Status: on
<b>B</b>	*	Change input	Status:
<b>C</b>	0	Deactivate telephone directory	Status: off
<b>D</b>	<OK>	Confirm input	Status: off
<b>E</b>	<F8>	Return to Start menu	System administration
The telephone directory can be reactivated by entering "1" under point C.			

### 10.7.3 Setting the V.24 interface baud rate (as of SW 2.0.1+)

The V.24 interface baud rate on the MB is set to 2400 by default. The maximum setting is 9600.

**Example:** changing the baud rate to 9600.

Input sequence		Meaning	Display
<b>A</b>	<b>2 1 3 (SW 2.0.2)</b> 2 1 3 1 (as of SW2.1)	Baud rate V.24	Value: 2400 baud
<b>B</b>	*	Change input	Value:
<b>C</b>	<b>2</b>	Select 9600 baud	Value: 9600 baud
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Value: 9600 baud
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
The baud rate can be set to 2400 by entering "1" under point C.			

### 10.7.4 V.24 port allocation for data output (as of SW version 2.0.2)

By installing SIB modules, up to 4 extra V.24 interfaces with a permanent baud rate of 2400 are available in addition to the V.24 interface on the MB as of SW version 2.0.2. All 5 possible ports allow customer data to be uploaded and downloaded with the help of the PC tool "Assistant L". The printout of different types of call charge data and the customer data can be assigned to individual ports.

#### 10.7.4.1 V.24 port for CDRC (Call Detail Recorder)

The CDRC (call detail recording, central) printout is not released by default and may only be assigned to a port if a call charge printer or computer is connected to this port.

**Example:** assigning the CDRC printout to V.24 port 2 (1st SIB module)

Input sequence		Meaning	Display
<b>A</b>	<b>2 1 3 2 1(up to SW2.0.2)</b> 2 1 1 3 21 (as of SW2.1)	V.24 port for CDRC	Port: –
<b>B</b>	*	Change input	Port:
<b>C</b>	<b>2</b>	Select port 2	Port: 2
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Port: 2
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
The CDRC printout can be deactivated by pressing the F3 key under point C. Entries 1 to 5 refer to the port number.			

#### 10.7.4.2 V.24 port for call charges/extension

The call charges/ext. printout is assigned to V.24 port 1 (MB) by default.

**Example:** assigning the call charges/ext. printout to V.24 port 3 (2nd SIB module)

Input sequence		Meaning	Display
<b>A</b>	<b>2 1 3 2 2 (up to SW 2.0.2)</b> 2 1 13 22 (as of SW 2.1)	V.24 port for call charges/ext.	Port: 1
<b>B</b>	*	Change input	Port:
<b>C</b>	3	Select port 3	Port: 3
<b>D</b>	<OK>	Confirm input	Port: 3
<b>E</b>	<F8>	Return to Start menu	System administration
The call charges/ext. printout can be assigned to the appropriate port number by entering a number from 1 to 5 under point C.			

#### 10.7.4.3 V.24 port for call charges/line

The call charges/line printout is assigned to V.24 port 1 (MB) by default.

**Example:** assigning the call charges/line printout to V.24 port 4 (3rd SIB module)

Input sequence		Meaning	Display
<b>A</b>	<b>2 1 3 2 3 (up to SW 2.0.2)</b> 2 1 13 23 (as of SW 2.1)	V.24 port for call charges/line	Port: 1
<b>B</b>	*	Change input	Port:
<b>C</b>	4	Selecting port 4	Port: 4
<b>D</b>	<OK>	Confirm input	Port: 4
<b>E</b>	<F8>	Return to Start menu	System administration
The call charges/line printout can be assigned to the appropriate port number by entering a number from 1 to 5 under point C.			

#### 10.7.4.4 V.24 port for customer data printout

The customer data printout is assigned to V.24 port 1 (MB) by default.

**Example:** assigning the customer data printout to V.24 port 4 (3rd SIB module)

Input sequence		Meaning	Display
<b>A</b>	<b>2 1 3 2 4 (up to SW 2.0.2)</b> 2 1 13 24 (as of SW 2.1)	V.24 port for customer data memory	Port: 1
<b>B</b>	*	Change input	Port:
<b>C</b>	4	Select port 4	Port: 4
<b>D</b>	<OK>	Confirm input	Port: 4
<b>E</b>	<F8>	Return to Start menu	System administration
The customer data printout can be assigned to the appropriate port number by entering a number from 1 to 5 under point C.			

#### 10.7.4.5 V.24 port for call information

The transmission of activated call information data records is assigned to V.24 port 1 (MB) by default.

**Example:** assigning call information to V.24 port 2 (1st SIB module)

Input sequence		Meaning	Display
<b>A</b>	<b>2 1 3 2 5 (up to SW 2.0.2)</b> 2 1 13 25 (as of SW 2.1)	V.24 port for call information	Port: 1
<b>B</b>	*	Change input	Port:
<b>C</b>	2	Select port 2	Port: 2
<b>D</b>	<OK>	Confirm input	Port: 2
<b>E</b>	<F8>	Return to Start menu	System administration
The call information data can be assigned to the appropriate port number by entering a number from 1 to 5 under point C.			

### 10.7.5 External diversion (as of SW 2.0.1+)

In the case of call diversion to an external destination, the caller is not connected to the call diversion destination extension until the call has been answered. It is possible to configure the system so that the caller is immediately connected to the outgoing external line.

**Example:** changing to immediate connection in the case of external call diversion.

Input sequence		Meaning	Display
<b>A</b>	<b>2 1 4 (up to SW 2.0.1+)</b> 2 1 4 1 (as of SW 2.1)	Connection with call diversion, external	Connection: when call is answered
<b>B</b>	*	Change input	Connection:
<b>C</b>	1	Select immediate connection	Connection: immediate
<b>D</b>	<OK>	Confirm input	Connection: immediate
<b>E</b>	<F8>	Return to Start menu	System administration
"Connection: when call is answered" can be set by entering "0" under point C.			

### 10.7.6 Call forwarding in the case of external diversion (as of SW version 2.0.2)

If external call diversion has been activated for an extension, an incoming call is no longer forwarded to the subsequent internal call forwarding destinations. The call remains at the external call diversion destination.

You must activate the appropriate mode if you wish to forward a call received by the external call diversion destination.

**Example:** call forwarding is to be activated.

Input sequence		Meaning	Display
<b>A</b>	2 1 4 1	Call forwarding mode	Mode: disabled
<b>B</b>	*	Change input	Mode:
<b>C</b>	1	Select enable	Mode: enabled
<b>D</b>	<OK>	Confirm input	Mode: enabled
<b>E</b>	<F8>	Return to Start menu	System administration
The "disabled" mode can be reset by entering "0" under point C.			



### 10.7.7 Caller list display mode (as of SW version 2.0.2)

Up to 10 internal and external calls are stored and displayed in the caller list.  
 Alternatively, the caller list can be set to external calls only.

**Example:** external calls only are to be displayed in the caller list.

Input sequence		Meaning	Display
<b>A</b>	2 1 5 (up to SW2.0.2) 2 1 15 (as of SW2.1)	Caller list mode	Call types: external, internal
<b>B</b>	*	Change input	Call types:
<b>C</b>	1	Select enable	Call types: only external
<b>D</b>	<OK>	Confirm input	Call types: only external
<b>E</b>	<F8>	Return to Start menu	System administration
"Display external and internal calls" can be set by entering "2" under point C.			

### 10.7.8 Automatic line reservation (as of SW version 2.0.2)

All optiset telephones are equipped with a feature to reserve an external line which is currently seized.

**Example:** releasing automatic line reservation

Input sequence		Meaning	Display
<b>A</b>	2 1 6 (up to SW2.0.2) 2 1 16 (as of SW2.1)	Automatic line reservation	Status: off
<b>B</b>	*	Change input	Status:
<b>C</b>	1	Select reservation ON	Status: on
<b>D</b>	<OK>	Confirm input	Status: on
<b>E</b>	<F8>	Return to Start menu	System administration
Automatic line seizure can be deactivated by entering "0" under point C.			

### 10.7.9 Alerting tone during conference (as of SW version 2.0.2)

The alerting tone can be deactivated during a conference.

Input sequence		Meaning	Display
<b>A</b>	2 1 7 1 (up to SW2.0.2) 2 1 171 (as of SW2.1)	Conference tone	Alerting tone: on
<b>B</b>	*	Change input	Alerting tone:
<b>C</b>	0	Select tone OFF	Alerting tone: off
<b>D</b>	<OK>	Confirm input	Alerting tone: off
<b>E</b>	<F8>	Return to Start menu	System administration
The conference tone can be reactivated by entering "1" under point C.			

### 10.7.10 Alerting tone and ring in call pickup groups

The alerting tone and ring can be deactivated within a call pickup group as of SW version 2.0.2.

Input sequence		Meaning	Display
<b>A</b>	2 1 7 2 (up to SW2.0.2) 2 1 172 (as of SW2.1)	Call pickup ring/tone	Alerting tone: on
<b>B</b>	*	Change input	Alerting tone:
<b>C</b>	0	Select tone OFF	Alerting tone: off
<b>D</b>	<OK>	Confirm input	Alerting tone: off
<b>E</b>	<F8>	Return to Start menu	System administration
The ring and tone can be reactivated by entering "1" under point C.			

### 10.7.11 Signal key mode (as of SW version 2.0.2)

A call from a DTMF or entry telephone is retrieved after being placed on consultation hold by pressing the signal key once (default setting) and timeout. If necessary, you can set the number of times the signal key is to be pressed to two. This means that the waiting time before retrieval can be avoided.

Input sequence		Meaning	Display
<b>A</b>	2 1 8 (up to SW2.0.2) 2 1 18 (as of SW2.1)	Signal key mode	Retrieve: press once
<b>B</b>	*	Change input	Retrieve:
<b>C</b>	2	Select press twice	Retrieve: press twice
<b>D</b>	<OK>	Confirm input	Retrieve: press twice
<b>E</b>	<F8>	Return to Start menu	System administration
The system can be reset to "press once" by entering "1" under point C.			

### 10.7.12 Night service (as of SW version 2.0.2)

It is possible to limit the number of extensions with night service. Up to 5 authorised extensions can be defined (stations 1–5).

**If no extension is defined, all stations have night service.**

**Example:** night service is to be enabled for extensions 11 and 23.

Input sequence		Meaning	Display
<b>A</b>	2 1 9 1 (up to SW2.0.2) 2 1 191 (as of SW2.1)	Night service, station 1 (select station 1-5 with "+" and "-" or directly with #)	Station 1: –
<b>B</b>	*	Change input	Station 1:
<b>C</b>	11	Enter ext. 11	Station 1: 11
<b>D</b>	<OK>	Confirm input	Station 1: 11
<b>E</b>	+	Scroll to station 2	Station 2: –
<b>F</b>	*	Change input	Station 2:
<b>G</b>	23	Enter ext. 23	Station 2: 23
<b>H</b>	<OK>	Confirm input	Station 2: 23
<b>J</b>	<F8>	Return to Start menu	System administration
Night service can be enabled for other stations by entering other ext. numbers under point C and G.			

## 10.7.13 Codes

### 10.7.13.1 Substitute code for \*

Since DP terminals cannot transmit "\*", a substitute code of up to 2 digits is needed to activate services. The default substitute code is "75".

This code can be changed (on the basis of the remaining code plan).

**Example:** changing the substitute code for "\*" to "78"

Input sequence		Meaning	Display
<b>A</b>	<b>2 2 1</b>	Substitute codes for *	Code: 75
<b>B</b>	<b>*</b>	Change input	Code
<b>C</b>	<b>78</b>	Select substitute code 78	Code: 78
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Code: 78
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
The code can be deleted by pressing the F3 key under point C.			

### 10.7.13.2 Substitute code for #

Since DP terminals cannot transmit "#", you need a substitute code of up to 2 digits to activate services. The default substitute code is "76".

This code can be changed (on the basis of the remaining code plan).

**Example:** change the substitute code for "#" to "79"

Input sequence		Meaning	Display
<b>A</b>	<b>2 2 2</b>	Substitute code for #	Code: 76
<b>B</b>	<b>*</b>	Change input	Code
<b>C</b>	<b>79</b>	Select substitute code 79	Code: 79
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Code: 79
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
The code can be deleted by pressing the F3 key under point C.			

### 10.7.13.3 Line codes

Each line is assigned a line code by default. The codes "801" to "832" are assigned to lines 1 to 32.

Taking the remaining code plans into consideration, these codes can be changed (they may comprise up to 3 digits).

**Example:** changing the code for line 1 to "833"

Input sequence		Meaning	Display
<b>A</b>	<b>2 2 3</b>	Line codes (select line 1–32 with "+" and "-", or directly with "#")	Line 1: 801
<b>B</b>	<b>*</b>	Change input	Line 1:
<b>C</b>	<b>833</b>	Select line code 833	Line 1: 833
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Line 1: 833
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
A line code can be deleted by pressing the F3 key under point C.			

### 10.7.13.4 Route codes

Each route is assigned a route code by default:

code "9" for route 1, code "84" for route 2,

code "85" for route 3, code "86" for route 4.

A route can be assigned up to 10 codes, each containing a maximum of 3 digits. Several codes may be necessary if digit repetition is configured for this route in a network, see [Section 10.3.8](#). Taking the remaining code plan into consideration, route codes can be changed or additional codes assigned.

Precondition: digit repetition is activated, automatic line assignment is deactivated, route assignment is performed.

**Example:** the code for route 1 is to be changed to "9", the codes "2" and "3" are to be assigned to route 2.

Input sequence		Meaning	Display
<b>A</b>	<b>2 2 4</b>	Route code, route 1 item 1 (select item 1–10 with "+" and "-", route 1–4 directly with "#")	Route 1, item 1: 0
<b>B</b>	<b>*</b>	Change input	Route 1, item 1:
<b>C</b>	<b>9</b>	Select route code "9"	Route 1, item 1: 9
A route code can be deleted by pressing the F3 key under point C, H or M.			

Input sequence		Meaning	Display
<b>D</b>	<OK>	Confirm input	Route 1, item 1: 9
<b>E</b>	#	Select route	Route
<b>F</b>	2	Enter route 2	Route 2, item 1: 84
<b>G</b>	*	Change input	Route 2, item 1:
<b>H</b>	2	Select route code "2"	Route 2, item 1: 2
<b>J</b>	<OK>	Confirm input	Route 2, item 1: 2
<b>K</b>	+	Scroll to item 2	Route 2, item 2: –
<b>L</b>	*	Change input	Route 2, item 2:
<b>M</b>	3	Select route code "3"	Route 2, item 2: 3
<b>N</b>	<OK>	Confirm input	Route 2, item 2: 3
<b>O</b>	<F8>	Return to Start menu	System administration
A route code can be deleted by pressing the F3 key under point C, H or M.			

#### 10.7.13.5 Trunk code of main PBX

If Hicom 100E is configured as the satellite station in a network, the trunk code of the main PBX is to be entered as a "secondary trunk code" for the route containing the lines to the main PBX. Only then is toll restriction implemented in this route.

**Example:** route 2 lines are networked with a main PBX. The trunk code of the main PBX is "8".

Input sequence		Meaning	Display
<b>A</b>	2 2 3	Secondary trunk code (select route 1–4 with "+" and "–" or directly with "#")	Route 1: –
<b>B</b>	+	Scroll to route 2	Route 2: –
<b>C</b>	*	Change input	Route 2:
<b>D</b>	8	Select secondary trunk code	Route 2: 8
<b>E</b>	<OK>	Confirm input	Route 2: 8
<b>F</b>	<F8>	Return to Start menu	System administration
The secondary trunk code can be deleted by pressing the F3 key under point D.			

## 10.7.14 Displays

### 10.7.14.1 Changing message texts

The default message texts (0 to 9) can be changed. An optiset E memory telephone is required for this purpose.

Maximum text length: 24 digits.

**Example:** change message text 7 from "Please join me" to "Call taxi".

	Input sequence	Meaning	Display
<b>A</b>	<b>1 81 (up to SW2.0.1+)</b> <b>1 8 1 1(as of SW2.0.2)</b>	Message text (select text 0–9 with "+" and "-" or directly with "#")	0: Please call back
<b>B</b>	#	Select text	:
<b>C</b>	7	Enter message text	: 7
<b>D</b>	<OK>	Confirm input	7: Please join me
<b>E</b>	*	Change input	7:
<b>F</b>	Call taxi	Enter text	7: Call taxi
<b>G</b>	<OK>	Confirm input	7: Call taxi
<b>H</b>	<F8>	Return to Start menu	System administration
A message text can be deleted by pressing the F3 key under point F.			

### 10.7.14.2 Changing absence messages

The default absence messages (0 to 9) can be changed. An optiset (E) memory telephone is required for this purpose.

A colon placed after an absence message signifies that additional digits can be entered for this message.

Maximum message length: 24 digits.

**Example:** change absence message 4 from "Gone to lunch" to "Away from office".

	Input sequence	Meaning	Display
<b>A</b>	<b>1 8 2 (up to SW 2.0.1+)</b> <b>1 8 1 2(as of SW2.0.2)</b>	Absence message (select text 0–9 with "+" and "-" or directly with "#")	0: Back at:
<b>B</b>	#	Select message	:
<b>C</b>	4	Enter absence message	: 4
<b>D</b>	<OK>	Confirm input	4: Gone to lunch
<b>E</b>	*	Change input	4:
An absence message can be deleted by pressing the F3 key under point F.			

Input sequence		Meaning	Display
<b>F</b>	<b>away from office</b>	Enter message	4: Away from office
<b>G</b>	<b>&lt;OK&gt;</b>	Confirm input	4: Away from office
<b>H</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

An absence message can be deleted by pressing the F3 key under point F.

#### 10.7.14.3 Changing the display language throughout the system (up to SW 2.0.1+)

The display language can be changed. A system-wide language setting is available for the following languages up to and including SW version 2.0.1+:

1 - German, 2 - English, 3 - French, 4 - Spanish, 5 - Italian, 6- Dutch, 7 - Portuguese, 8 - Finnish

**Example:** change the display language to Spanish.

Input sequence		Meaning	Display
<b>A</b>	<b>1 8 1 5</b>	Language setting	Language: German
<b>B</b>	<b>*</b>	Change input	Language:
<b>C</b>	<b>4</b>	Select language	Language: Spanish
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Language: Spanish
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

#### 10.7.14.4 Changing the display language for each extension (as of SW version 2.0.2)

The display language can be set for each extension as of version 2.0.2. The following languages are available:

11 - German, 12 - English, 13 - French, 14 - Spanish, 15 - Italian, 16 - Dutch, 17 - Portuguese, 18 - Finnish, 19 - Czech, 20 - Danish, 21 - Swedish, 22 - Norwegian, 23 - Turkish

**Example:** the display language at extension 13 is to be set to Turkish.

Input sequence		Meaning	Display
<b>A</b>	<b>1 8 1 5</b>	Display language for ext. 11 (select ext. 11 to 74 with "+" and "-" or directly with #)	ext. 11: German
<b>B</b>	<b>+</b>	Display language for ext. 12	ext. 12: German
<b>C</b>	<b>+</b>	Display language for ext. 13	ext. 13: German
<b>D</b>	<b>*</b>	Change input	ext. 13:
<b>E</b>	<b>23</b>	Select Turkish	ext. 13: Turkish
<b>F</b>	<b>&lt;OK&gt;</b>	Confirm input	ext. 13: Turkish
<b>G</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration



Input sequence	Meaning	Display
Another language can be selected by entering one of the other codes (see above) under point D.		

#### 10.7.14.5 Displaying the call duration

If an external call is in progress and call charge information is not recorded at the station, the call duration is displayed by default on optiset telephones. Call duration display can be deactivated.

The modification applies to the entire system.

**Example:** deactivate call duration display.

Input sequence	Meaning	Display
<b>A</b> 1 8 6 (up to SW 2.0.1+) 1 8 1 6 (as of SW 2.0.2)	Call duration display	Status: on
<b>B</b> *	Change input	Status:
<b>C</b> 0	Display = OFF	Status: off
<b>D</b> <OK>	Confirm input	Status: off
<b>E</b> <F8>	Return to Start menu	System administration
Call duration display can be activated by entering "1" under point C.		

#### 10.7.14.6 Name display (as of SW version 2.0.2)

Names entered for internal extensions or central abbreviated dialling destinations are displayed by default. It is also possible to display the extension number only or the name with the extension number.

**Example:** only the extension numbers are to be displayed.

Input sequence	Meaning	Display
<b>A</b> 1 8 1 7	Display name/ext. number	Display: name
<b>B</b> *	Change input	Display:
<b>C</b> 0	Select ext. number only	Display: ext. no. only
<b>D</b> <OK>	Confirm input	Display: ext. no. only
<b>E</b> <F8>	Return to Start menu	System administration
The display can also be set to name and ext. number by entering "2" under point C.		

#### 10.7.14.7 Display during recall (as of SW version 2.0.2)

In the case of a recall, the transfer destination appears on the display. Alternatively, the caller can also be displayed.

**Example:** change to caller display.

	Input sequence	Meaning	Display
<b>A</b>	1 8 1 8	Recall display	Display: transfer dest.
<b>B</b>	*	Change input	Display:
<b>C</b>	1	Select caller display	Display: caller
<b>D</b>	<OK>	Confirm input	Display: caller
<b>E</b>	<F8>	Return to Start menu	System administration
The transfer destination can be displayed by entering "2" under point C.			

#### 10.7.14.8 Transfer without notification display (as of SW version 2.0.2)

In the case of transfer without notification, the transferring party is displayed on the called party's extension.

Alternatively, the transferred party can also be displayed.

**Example:** display of the transferred party

	Input sequence	Meaning	Display
<b>A</b>	1 8 1 9	Transfer without notification display	Display: transferring pty
<b>B</b>	*	Change input	Display:
<b>C</b>	2	Select transferred party	Display: transferred pty
<b>D</b>	<OK>	Confirm input	Display: transferred pty
<b>E</b>	<F8>	Return to Start menu	System administration
The transferring party is displayed by entering "1" under point C.			

### 10.7.14.9 Data compression/extension (as of SW version 2.0.2)

It is possible to output non-compressed display data for applications at the "Data adapter". The compression can be (de)activated for each extension.

**Example:** ext. 13 is to output non-compressed display data.

Input sequence		Meaning	Display
<b>A</b>	1 8 2 0	Data compression for ext. 11 (select ext. 11 to 74 with "+" and "-" or directly with "#")	ext. 11: yes
<b>B</b>	+	Data compression for ext. 12	ext. 12: yes
<b>C</b>	+	Data compression for ext. 13	ext. 13: yes
<b>D</b>	*	Change input	ext. 13:
<b>E</b>	0	Select compression NO	ext. 13: no
<b>F</b>	<OK>	Confirm input	ext. 13: no
<b>G</b>	<F8>	Return to Start menu	System administration
Data compression is reactivated by entering "1" under point E.			

## 10.7.15 Call detail recording

The CDRC data (call detail recording, central) in Hicom 100E can be changed as required.

### 10.7.15.1 Changing the data record output format

You can choose between two data record formats that can be output via a V.24 interface. If a call charge computer is connected, the default compressed output format is required, whereas if a call charge printer is connected, the full output format is required.

**Example:** change to non-compressed output format.

Input sequence		Meaning	Display
<b>A</b>	1 1 3 1	Output format	Output: compressed
<b>B</b>	*	Change input	Output:
<b>C</b>	1	Non-compressed output format	Output: full
<b>D</b>	<OK>	Confirm input	Output: full
<b>E</b>	<F8>	Return to Start menu	System administration
The compressed output format can be activated by entering "0" under point C.			

### 10.7.15.2 Digit suppression

The dialled extension number output in the data record is displayed in full and without digit suppression by default. Digit suppression can be activated if you want the last three digits of the dialled extension number to be replaced by a "?".

**Example:** digit suppression is to be activated.

Input sequence		Meaning	Display
<b>A</b>	<b>1 1 3 2</b>	Ext. number display	Digit suppression: no
<b>B</b>	<b>*</b>	Change input	Digit suppression:
<b>C</b>	<b>1</b>	Non-compressed output format	Digit suppression: yes
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Digit suppression: yes
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

Digit suppression can be deactivated by entering "0" under point C.

### 10.7.15.3 Recording incoming calls

Incoming calls are not output in the data record (default setting). These calls can be included in the output.

**Example:** incoming calls are to be output in the data record.

Input sequence		Meaning	Display
<b>A</b>	<b>1 1 3 3</b>	Output of incoming calls	Output: no
<b>B</b>	<b>*</b>	Change input	Output:
<b>C</b>	<b>1</b>	Output incoming calls	Output: yes
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Output: yes
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

The output of incoming calls can be overridden by entering "0" under point C.

#### 10.7.15.4 Recording the call duration

If incoming calls are output in the data record, the call duration before the call is answered is also output. Output of the call duration can be deactivated if required.

**Example:** the call duration is not to be output.

Input sequence		Meaning	Display
<b>A</b>	<b>1 1 3 4</b>	Call duration output	Output: yes
<b>B</b>	<b>*</b>	Change input	Output:
<b>C</b>	<b>0</b>	No call duration output	Output: no
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Output: no
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
The call duration output can be activated by entering "1" under point C.			

#### 10.7.15.5 Output on ringing

If incoming calls are output in the data record, each call received is logged in the data record as an additional information line. Output can be deactivated if you do not want this information line to be logged.

**Example:** the information line for incoming calls is not to be logged (SW 2.0.2 only).

Input sequence		Meaning	Display
<b>A</b>	<b>1 1 3 5 (up to SW2.0.2) 11 7 (as of SW2.1)</b>	on ringing	Output: yes
<b>B</b>	<b>*</b>	Change input	Output:
<b>C</b>	<b>0</b>	Do not output information line	Output: no
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Output: no
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
Output of the information line is activated by entering "1" under point C.			

#### 10.7.15.6 Changing the charge factor

The charge factor is set to "5" by default (to "12" as of SW version 2.0.1+). It can be changed to any value up to 65535.

**Example:** the charge factor is to be set to 50.

Input sequence		Meaning	Display
<b>A</b>	<b>1 1 4</b>	Charge factor	Factor: 5
<b>B</b>	<b>*</b>	Change input	Factor:
<b>C</b>	<b>50</b>	Change charge factor to 50	Factor: 50
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Factor: 50
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
The charge factor can be changed to a selected value by entering a value from "0" to "65535" under point C.			

#### 10.7.15.7 Changing the currency unit

The default currency unit is "GBP". An optiset (E) memory telephone is necessary to change the currency unit.

**Example:** the currency unit is to be set to "SFr".

Input sequence		Meaning	Display
<b>A</b>	<b>1 1 5</b>	Currency unit	Currency:GBP
<b>B</b>	<b>*</b>	Change input	Currency:
<b>C</b>	<b>SFr</b>	Change currency unit to SFr	Currency: SFr
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Currency: SFr
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
Any unit can be programmed by entering a unit comprising up to 3 digits under point C.			

#### 10.7.15.8 Changing the ISDN factor (as of SW version 2.0.2)

The default ISDN factor is "5" (for transferring the charge factor from the network provider). This can be changed to any value up to 65535.

**Example:** the charge factor is to be set to 50.

Input sequence		Meaning	Display
<b>A</b>	<b>1 1 6</b>	ISDN factor	Factor: 5
<b>B</b>	<b>*</b>	Change input	Factor:
<b>C</b>	<b>50</b>	Change charge factor to 50	Factor: 50
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Factor: 50
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
The ISDN factor can be changed to any value from "0" to "65535" entered under point C.			

## 10.8 Programming expansion modules

### 10.8.1 Programming actuators

If an STRB module is connected, the 4 built-in actuators (relays) can be programmed in accordance with their functions.

#### 10.8.1.1 Defining the actuator type

An actuator can be programmed to perform one of the following functions:

1. On/off switch: manual on/off (as of SW 2.0.2)
2. On/off switch: automatic after timeout (as of SW 2.0.2)
3. Door opener: door opener control
4. Entrance tel.: automatic activation and deactivation of an entrance doorphone (loudspeaker, amplifier, also of a loudspeaker amplifier as of SW 2.0.2 amplifier)
5. Busy lamp: door busy lamp control
6. Music on hold: automatic activation and deactivation of an external music source
7. Call charge pulse: renewal of the call charge pulse (with 16kHz generator only)
8. Second ringer: controlling the second ringer at an extension (W2 simulation)
9. Common ringer: up to SW 2.0.1: common ringer control as of SW 2.0.2: active extension

**Example:** actuator 1 is to be programmed as a door opener.

Input sequence		Meaning	Display
<b>A</b>	<b>2 5 1</b>	Actuator type (select actuator 1–4 with "+" and "-" or directly with "#")	Actuator no. 1: –
<b>B</b>	<b>*</b>	Change input	1: manual on and off
<b>C</b>	<b>3</b>	Select actuator function	Act. no.1: door opener
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Act. no.1: door opener
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

An actuator can be deactivated by pressing the F3 key under point C.

#### 10.8.1.2 Defining actuator response time

The response time can be defined for actuators which require a response time (2, 3 and 7 > [Section 10.8.1.1](#)).

The value entered x100 ms gives the response time.

The maximum value permitted is 255, i.e. 25.5 seconds.

**Example:** the response time for actuator 1 is to be set to 5 seconds – value to be entered is 50.

Input sequence		Meaning	Display
<b>A</b>	<b>2 5 2</b>	Actuator response time (select actuator 1–4 with "+" and "-" or directly with "#")	Actuator no. 1: 255
<b>B</b>	<b>*</b>	Change input	Actuator no. 1:
<b>C</b>	<b>50</b>	Select response time factor	Actuator no. 1: 50
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Actuator no. 1: 50
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
A different response time can be defined by entering another value under point C.			

### 10.8.1.3 Allocating extensions and actuators

An extension must be allocated in the case of actuators 5 and 8.

The entrance telephone must be allocated in the case of actuator 4.

The other actuator types can be activated from all extensions (no ext. no. assigned) or from one extension or the members of a call group (ext. or group no. assigned).

**Example:** it should be possible for members of call group 883 to activate actuator 1.

Input sequence		Meaning	Display
<b>A</b>	<b>2 5 3</b>	Ext. assigned for each actuator (select actuator 1–4 with "+" and "-" or directly with "#")	Actuator no. 1: –
<b>B</b>	<b>*</b>	Change input	Actuator no. 1:
<b>C</b>	<b>883</b>	Select ext. number	Actuator no. 1: 883
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Actuator no. 1: 883
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
An assigned extension can be deleted by pressing the F3 key under point C.			



**10.8.1.4 Assigning actuator names**

A name which is displayed on the optiset display can be assigned for each actuator. An optiset (E) memory telephone is necessary for this purpose.

**Example:** actuator 1 is to be called "Lamp".

Input sequence		Meaning	Display
<b>A</b>	<b>2 5 3</b>	Actuator names (select actuator 1–4 with "+" and "-" or directly with "#")	Actuator no. 1: –
<b>B</b>	<b>*</b>	Change input	Actuator no. 1:
<b>C</b>	<b>Lamp</b>	Enter name	Actuator no. 1: Lamp
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Actuator no. 1: Lamp
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

An actuator name can be deleted with the F3 key under point C.

**10.8.2 Programming sensors**

The functions described below can be released in Hicom 100E by closing an external contact connected to a sensor (control input).

**10.8.2.1 Defining the destination number**

Closing an external contact results in a signal being transmitted at a defined destination. This destination can be an internal extension, an internal call group or an external extension number.

**Example:** a message from sensor 1 is to be signalled at ext. 12.

Input sequence		Meaning	Display
<b>A</b>	<b>2 6 1</b>	Destination number for sensor (select sensor 1–4 with "+" and "-" or directly with "#")	Sensor no. 1: –
<b>B</b>	<b>*</b>	Change input	Sensor no. 1:
<b>C</b>	<b>12</b>	Enter destination number	Sensor no. 1: 12
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Sensor no. 1: Lamp
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

A destination number can be deleted with the F3 key under point C.

### 10.8.2.2 Defining the number for recorded announcement device

A signal sent by a sensor to a destination can include acoustic information from a recorded announcement device which is connected at an a/b extension. The extension number of this a/b extension or its call group is to be programmed.

**Example:** a recorded announcement device for messages from sensor 1 is to be connected as ext. 24.

Input sequence		Meaning	Display
<b>A</b>	<b>2 6 2</b>	Rec. announce. device for sensors (select sensor 1–4 with "+" and "-" or directly with "#")	Sensor no. 1: –
<b>B</b>	<b>*</b>	Change input	Sensor no. 1:
<b>C</b>	<b>24</b>	Enter the rec. announce. device no.	Sensor no. 1: 24
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Sensor no. 1: 24
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
A recorded announcement device number can be deleted with the F3 key under point C.			

### 10.8.2.3 Defining voice mail control data

Up to 24 characters (0–9, \*, #) can be defined for each sensor to control voice mail in the case of a sensor message.

**Example:** the data record for voice mail control is to be "\*11#".

Input sequence		Meaning	Display
<b>A</b>	<b>2 6 3</b>	Voice mail control data (select sensor 1–4 with "+" and "-" or directly with "#")	Sensor no. 1: –
<b>B</b>	<b>*</b>	Change input	Sensor no. 1:
<b>C</b>	<b>*11#</b>	Enter control data	Sensor no. 1: *11#
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Sensor no. 1: *11#
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
Control data can be deleted with the F3 key under point C.			

**10.8.2.4 Defining the call duration**

Call duration defines how long a sensor message is signalled at a destination extension.

The value entered x 5 seconds gives the call duration.

The maximum value is 255, i.e. 1275 seconds.

**Example:** the call duration for messages from sensor 1 is to be set to 2 minutes, the time factor to be entered is 24.

Input sequence		Meaning	Display
<b>A</b>	<b>2 6 4</b>	Call duration for sensors (select sensor 1–4 with "+" and "-" or directly with "#")	Sensor no. 1: 255
<b>B</b>	*	Change input	Sensor no. 1:
<b>C</b>	<b>24</b>	Enter the call duration time factor	Sensor no. 1: 24
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Sensor no. 1: 24
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
A recorded announcement device number can be deleted with the F3 key under point C.			

**10.8.2.5 Defining the number of calls**

The number of calls defines how often a destination extension is called for a sensor message. Up to 255 calls are possible.

**Example:** 10 calls are to be signalled at the destination extension for messages from sensor 1.

Input sequence		Meaning	Display
<b>A</b>	<b>2 6 6</b>	Number of calls for sensors (select sensor 1–4 with "+" and "-" or directly with "#")	Sensor no. 1: 255
<b>B</b>	*	Change input	Sensor no. 1:
<b>C</b>	<b>10</b>	Enter number of calls	Sensor no. 1: 10
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Sensor no. 1: 10
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
Another number of calls can be entered by entering a value from 1 to 255 under point C.			

### 10.8.2.6 Defining the call interval

The interval between two calls can be defined if there are several calls from a sensor message to a destination extension.

The value entered x 10 minutes gives the call interval.

The maximum value is 255, i.e. 2550 minutes.

**Example:** the call interval for messages from sensor 1 is to be set to 20 minutes.

Input sequence		Meaning	Display
<b>A</b>	<b>2 6 5</b>	Call duration for sensors (select sensor 1–4 with "+" and "-" or directly with "#")	Sensor no.1: 255
<b>B</b>	*	Change input	Sensor no. 1:
<b>C</b>	<b>10</b>	Enter the number of calls	Sensor no.1: 10
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Sensor no. 1: 10
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
An interval can be overridden by entering "0" under point C.			

### 10.8.2.7 Defining the disable time

The disable time entered for each sensor defines the period of time after which a new sensor message is recognised and forwarded by the system.

The value entered x 10 minutes gives the disable time.

The maximum value is 255, i.e. 2550 minutes

**Example:** the disable time for sensor 1 is to be set to 30 minutes.

Input sequence		Meaning	Display
<b>A</b>	<b>2 6 7</b>	Disable time for sensors (select sensor 1–4 with "+" and "-" or directly with "#")	Sensor no.1: 255
<b>B</b>	*	Change input	Sensor no. 1:
<b>C</b>	<b>3</b>	Enter disable time factor	Sensor no. 1: 3
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Sensor no. 1: 3
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
The disable time can be deactivated by entering "0" under point C.			

#### 10.8.2.8 Assigning sensor names

A name which will appear in the optiset display of the destination extension called can be assigned for each sensor. An optiset (E) memory telephone is necessary for this purpose.

**Example:** sensor 1 is to be called "Water".

Input sequence		Meaning	Display
<b>A</b>	<b>2 6 8</b>	Sensor names (select sensor 1–4 with "+" and "-" or directly with "#")	Sensor no.1: –
<b>B</b>	<b>*</b>	Change input	Sensor no.1:
<b>C</b>	<b>Water</b>	Enter name	Sensor no. 1: Water
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Sensor no. 1: Water
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration

A sensor name can be deleted with the F3 key under point C.

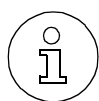
#### 10.8.3 Programming the fax/DDI module

A connected fax/DDI module which is recognised by the system (see Chap. 5 "Installation" in the Service Manual) can be programmed to perform the following functions:

1. Fax option: fax recognition function for analogue trunk lines and the autofax function
2. DDI option: pseudo-DTMF DDI for analogue trunk lines
3. Fax/DDI option: combination of fax recognition and pseudo-DTMF DDI
4. Announcement without notification: announcement without notification feature  
(as of SW 2.0.2)
5. Autofax: additional fax signals from lines that are not assigned to a fax option.

Up to 4 fax/DDI modules can be connected to the system.

The following programming procedures should be performed step by step.



The **first** step entails defining the planned option type as well as the number of modules.

### 10.8.3.1 Defining the number of fax options

The number of fax/DDI modules specified as the fax option is to be entered.

**Example:** a fax/DDI module is to be programmed as a fax option.

Input sequence		Meaning	Display
<b>A</b>	<b>2 4 1</b>	Number of fax options (any sequence)	Number: 0
<b>B</b>	*	Change input	Number
<b>C</b>	1	Enter number	Number: 1
<b>D</b>	<OK>	Confirm input	Number: 1
<b>E</b>	<F8>	Return to Start menu	System administration
A fax option can be deleted by entering "0" under point C.			

### 10.8.3.2 Defining the number of DDI options

The number of fax/DDI modules specified as the DDI option is to be entered.

**Example:** a fax/DDI module is to be programmed as a DDI option.

Input sequence		Meaning	Display
<b>A</b>	<b>2 4 2</b>	Number of DDI options	Number: 0
<b>B</b>	*	Change input	Number
<b>C</b>	1	Enter number	Number: 1
<b>D</b>	<OK>	Confirm input	Number: 1
<b>E</b>	<F8>	Return to Start menu	System administration
A DDI option can be deleted by entering "0" under point C.			

### 10.8.3.3 Defining the number of fax/DDI options

The number of the fax/DDI modules specified as the fax/DDI option is to be entered.

**Example:** a fax/DDI module is to be programmed as a fax/DDI option.

Input sequence		Meaning	Display
<b>A</b>	<b>2 4 3</b>	Number of fax/DDI options	Number: 0
<b>B</b>	*	Change input	Number
<b>C</b>	1	Enter number	Number: 1
<b>D</b>	<OK>	Confirm input	Number: 1
<b>E</b>	<F8>	Return to Start menu	System administration
A fax/DDI option can be deleted by entering "0" under point C.			

### 10.8.3.4 Defining the number of announcement without notification options (as of SW version 2.0.2)

The number of fax/DDI modules specified as "announcement without notification options" is to be entered.

**Example:** a fax/DDI module is to be programmed as an announcement without notification option.

Input sequence		Meaning	Display
<b>A</b>	<b>2 4 4(as of SW 2.0.2)</b>	Number of announcement options	Number: 0
<b>B</b>	<b>*</b>	Change input	Number
<b>C</b>	<b>1</b>	Enter number	Number: 1
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Number: 1
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
A fax/DDI option can be deleted by entering "0" under point C.			



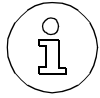
The **second** step entails defining analogue access to the system.

### 10.8.3.5 Defining analogue access for each option

Each fax/DDI module requires individual access (wiring) to the system via an a/b interface. The extension number of the relevant a/b interface is to be entered.

**Example:** a connected fax/DDI module has system access to the a/b interface with extension number 23.

Input sequence		Meaning	Display
<b>A</b>	<b>2 4 4 (up to SW2.0.1+) 2 4 5 (as of SW2.0.2)</b>	Terminal ports (select option 1–4 with "+" and "-" or directly with "#")	Ext. no. for option 1: –
<b>B</b>	<b>*</b>	Change input	Ext. no. for option 1:
<b>C</b>	<b>23</b>	Enter access extension number	Ext. no. for option 1: 23
<b>D</b>	<b>&lt;OK&gt;</b>	Confirm input	Ext. no. for option 1: 23
<b>E</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
An access extension number can be deleted with the F3 key under point C.			



The **third** step entails selecting the lines to be monitored (does not apply to autofax).

### 10.8.3.6 Allocating to a line

The line to be monitored is to be assigned to the planned function type for all function types of a fax/DDI module (exception: autofax feature).

**Example:** a connected fax/DDI module with the option number 1 is to monitor the 5th line with a fax/DDI feature.

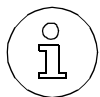
Input sequence		Meaning	Display
<b>A</b>	<b>2 4 5 (up to SW2.0.1+)</b> 2 4 6 (as of SW2.0.2)	Assignment of type to a line (select line 1–32 with "+" and "-" or directly with "#")	Line 1: –
<b>B</b>	#	Line selection	Line 1:
<b>C</b>	5	Select line 5	Line: 5
<b>D</b>	<OK>	Confirm input	Line 5: –
<b>E</b>	*	Change input	Line: 5
<b>F</b>	3	Select fax/DDI feature	Line 5: fax/DDI
<b>G</b>	<OK>	Confirm input	Line 5: fax/DDI
<b>H</b>	<F8>	Return to Start menu	System administration
Other feature types can be assigned by entering the following values under point F: 1 = Fax feature; 2 = DDI feature; 3 = Fax/DDI feature 4 = Announcement without notification ( <b>as of SW 2.0.2</b> )			

The entries must be compatible with the values of the **first** programming step.

Assignment can be deleted at this point with the F3 key.

No assignment is entered to implement the "autofax" feature!

In the case of S<sub>0</sub> lines, the associated lines must always be assigned the same option.



The **fourth** step is to be performed with the fax, fax/DDI and autofax feature types: allocation of the internal fax extension number to a line.



### 10.8.3.7 Defining the fax destination

The internal extension number (extension or call group number) of the fax machine is to be assigned to the lines to be monitored for the fax, fax/DDI and autofax feature types.

**Example:** fax calls on line 5 detected by the fax/DDI module are to be transferred to the fax machine with extension number 24.

Input sequence		Meaning	Display
<b>A</b>	<b>2 4 6 (up to SW2.0.1+)</b> 2 4 7 (as of SW 2.0.2)	Fax destination per line (select line 1–32 with "+" and "-" or directly with "#")	Line 1: –
<b>B</b>	#	Line selection	Line:
<b>C</b>	5	Select line 5	Line: 5
<b>D</b>	<OK>	Confirm input	Line 5: –
<b>E</b>	*	Change input	Line: 5
<b>F</b>	24	Select fax extension number	Line 5: 24
<b>G</b>	<OK>	Confirm input	Line 5: 24
<b>H</b>	<F8>	Return to Start menu	System administration

A fax extension number can be deleted with the F3 key under point F.  
It is necessary to assign the fax extension number to all lines to be monitored for the autofax function.



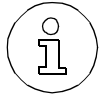
The **fifth** step entails the "initialisation".

### 10.8.3.8 Initialising the fax/DDI module

The fax/DDI module is to be initialised once the programming steps described above have been completed.

**Example:** initialisation procedure

Input sequence		Meaning	Display
<b>A</b>	<b>2 4 8 (up to SW2.0.1+)</b> 2 4 9 (as of SW2.0.2)	Initialisation of the fax/DDI modules	Announcements are deleted
<b>B</b>	<OK>	Confirm input	Initialisation completed
<b>C</b>	<F8>	Return to Start menu	System administration



The **sixth** and final step entails recording announcements.

### 10.8.3.9 Recording announcements

The announcement feature is available to all option types. Announcements should be recorded using the handset for optimum voice quality.

**Example:** recording an announcement

Input sequence		Meaning	Display
<b>A</b>	<b>2 4 7 (up to SW2.0.1+)</b> <b>2 4 8 (as of SW2.0.2)</b>	Record announcements	Record announcements
<b>B</b>	1 or 2 or 3 or 4	Announcement for fax (1) or for DDI (2) or for fax/DDI (3) or select announcement text * (4)	Greeting text and transfer text
Follow the user prompts			
<b>C</b>	<b>&lt;F8&gt;</b>	Return to Start menu	System administration
* = This option type has no transfer text. Option types 1-3 are not taken into account in the case of valid DDI to S <sub>0</sub> .			



## **11 Plus products**

### **11.1 Answering machines**

Answering machines are connected to an a/b port of the PBX. Enter the answering machine (code 4) in the "Extension Data Menu" under code **13 11** (station type) in "System administration".

A call to the answerphone can be intercepted by any optiset phone having a DSS appearance of that answerphone.

An info key can be programmed, i.e. if a call has been recorded by the answering machine, a LED remains lit up until the call is retrieved.

For more information, please refer to the appropriate manufacturer specifications.

### **11.2 Voice mail**

#### **11.2.1 Memo for Hicom**

##### **Conditions:**

Memo connects to the Hicom 100E via a/b ports. The status of the system software should be (at least) J1/J2 in Hicom and S01.00 D in Memo.

##### **General:**

Memo for Hicom is connected to Hicom 108/112/118 via two analogue extension ports. The a/b ports are configured to suit Memo by entering "Voicemail" as the station type. An incoming call is intercepted by Memo. Hicom 100 E then sends a DTMF sequence. This contains information identifying the extension which made the call, for example, and whether the call was forwarded or transferred. Memo, in turn, sends the DTMF character \*68 <extension number> 0 to the extensions to signal that a message is waiting.

When you enter the password "# 5 9 5 " in the Memo Technical support menu (wrench), the DTMF characters are also listed in the upper left-hand corner.

##### **Setup information:**

1. The ports are entered as "Voicemail" (2) under "Station type" (13 11).
2. A cyclic huntgroup must be set up for all ports (15 16 1/2).
3. The hunting group is to be assigned a name (15 16 3).
4. Each extension port is also to be assigned a name (13 12).
5. The hunting group is entered for destination 1 in a free call destination list (15 19 1).

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### *Voice mail*

6. The reference to this new call destination list is changed for both Voicemail ports in each call forwarding list (internal/day/night) (15 19 2).

**Example 1:** a Voicemail is connected to the analogue ports 25 and 26

Station type = 13 1 ext. 25: 2 and 13 1 ext. 26: 2

Hunting group = 15 16 1 group 881, dest. 1: 25 and dest. 2: 26

Call type = 15 16 2 group 881: 2 (linear hunting group)

Group names = 15 16 3 group 881: Memo for Hicom

Station names = 13 2 ext. 25: "Memo for Hicom 1" and ext. 26: "Memo for Hicom 2"

Call dest. lists = 15 19 1 list 13, dest. 1: 881

Internal calls = 15 19 2 list for ext. number 25: 13

Internal calls = 15 19 2 list for ext. number 26: 13

By programming your system in this way, you can also activate call forwarding when you dial the Voicemail port directly. The initiator's terminal is always called back when a display message is received (one of the Voicemail ports and not the group).

Memo for Hicom can now be set up by the users (call internal no. 881 and follow the voice prompting). The box is activated when you leave the workstation by programming diversion to internal no. 881. Call forwarding when busy/free can be set up for individual or all extensions via call management.

**Example 2:** in day mode, the central console and extensions 13 and 14 are to be forwarded to Memo after 4 rings. In night mode, rapid call forwarding should take place.

Call dest. lists = 15 19 1 list 12, dest. 1: dial, dest. 2: 881

No. of ring attempts = 15 19 5 for list 12: 4

External calls, day = 15 19 3 list for ext no. 11: 12

External calls, day = 15 19 3 list for ext no. 13: 12

External calls, day = 15 19 3 list for ext no. 14: 12

Call dest. lists = 15 19 1 list 11, dest. 1: dial, dest. 2: 881

No. of ring attempts = 15 19 5 for list 11: 1

External calls, night = 15 19 4 list for ext no. 11: 11

External calls, night = 15 19 4 list for ext no. 13: 11

External calls, night = 15 19 4 list for ext no. 14: 11

**Important:** calls must always be forwarded to Memo. If call dest. list 11 (item 16) refers directly to the Voicemail group, for example, the box responds in the same way as it would for a direct station call (retrieve messages from box).

Memo programming is described in the attached manual.

**Memo password list:**

Customer password (VOICEMAIL / CENTRAL CONSOLE): **1 2 3 4**

Technical support password (wrench): **5 9 9 1**

DTMF tracer (access via Technical support menu): **# 5 9 5**

## **11.3 Entrance telephones**

### **11.3.1 Direct connection without door opener**

Depending on the features required, the door opener is connected directly (only in exceptional cases).

Voice call to the entrance telephone can be set up from each telephone.

- No direct door opener feature (via actuator only)
- No doorbell signal at Hicom 100 E
- No amplifier trigger contact (via actuator only)

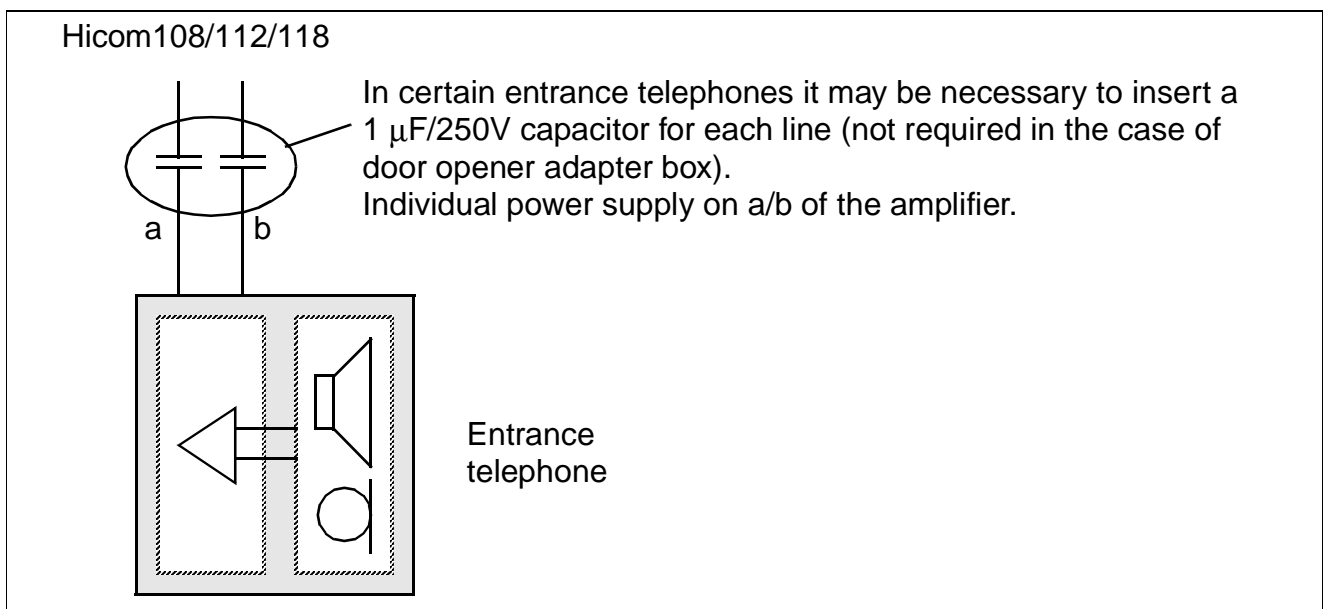


Figure 11-1 Entrance telephone, direct door opener connection

### 11.3.2 Connection via door opener adapter box

Depending on the features required, the door opener may be connected via an entrance telephone (door opener) adapter box (S30817-Q930-A200, with make contact).

- A voice connection call to the entrance telephone can be set up from each telephone.
- Door opener feature possible from each telephone.
- Doorbell signalling in accordance with call allocation, see [Section 6.9.1](#).

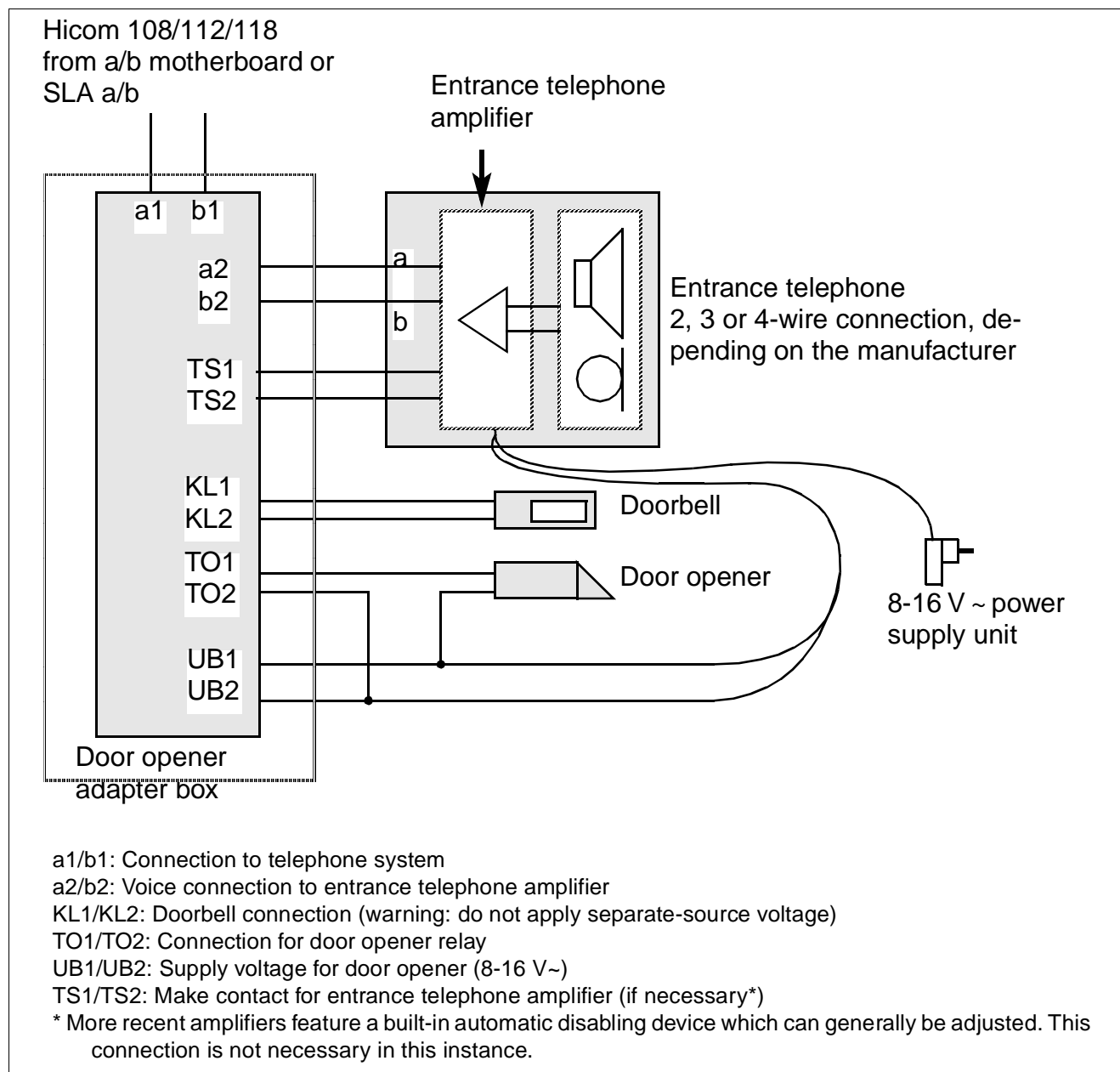


Figure 11-2 Door opener adapter connections

### 11.3.2.1 Connector examples

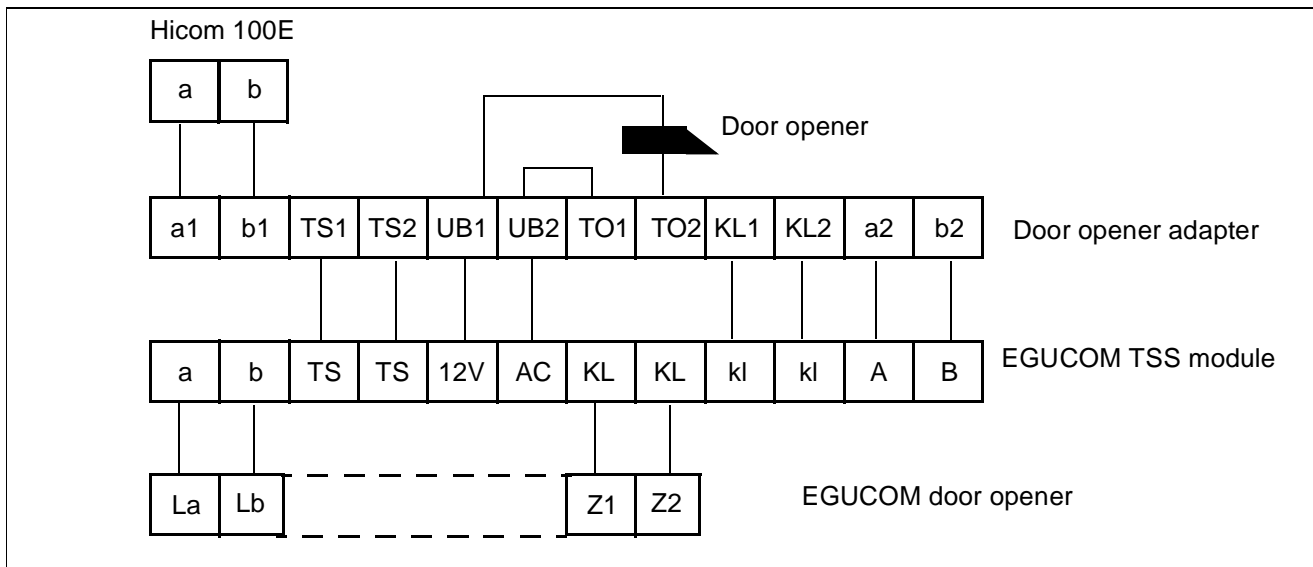


Figure 11-3 EGUCOM door opener system from Ackermann (Emmerich)

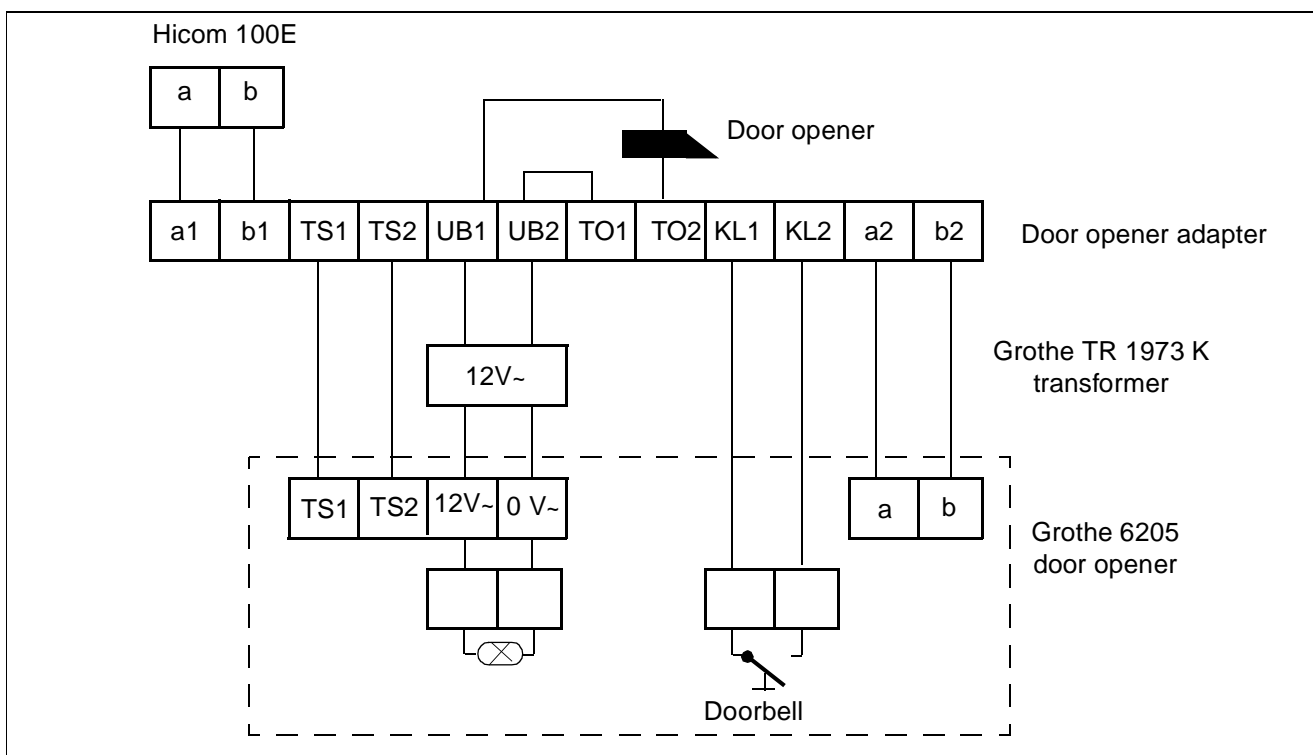


Figure 11-4 Entrance telephone from Grothe



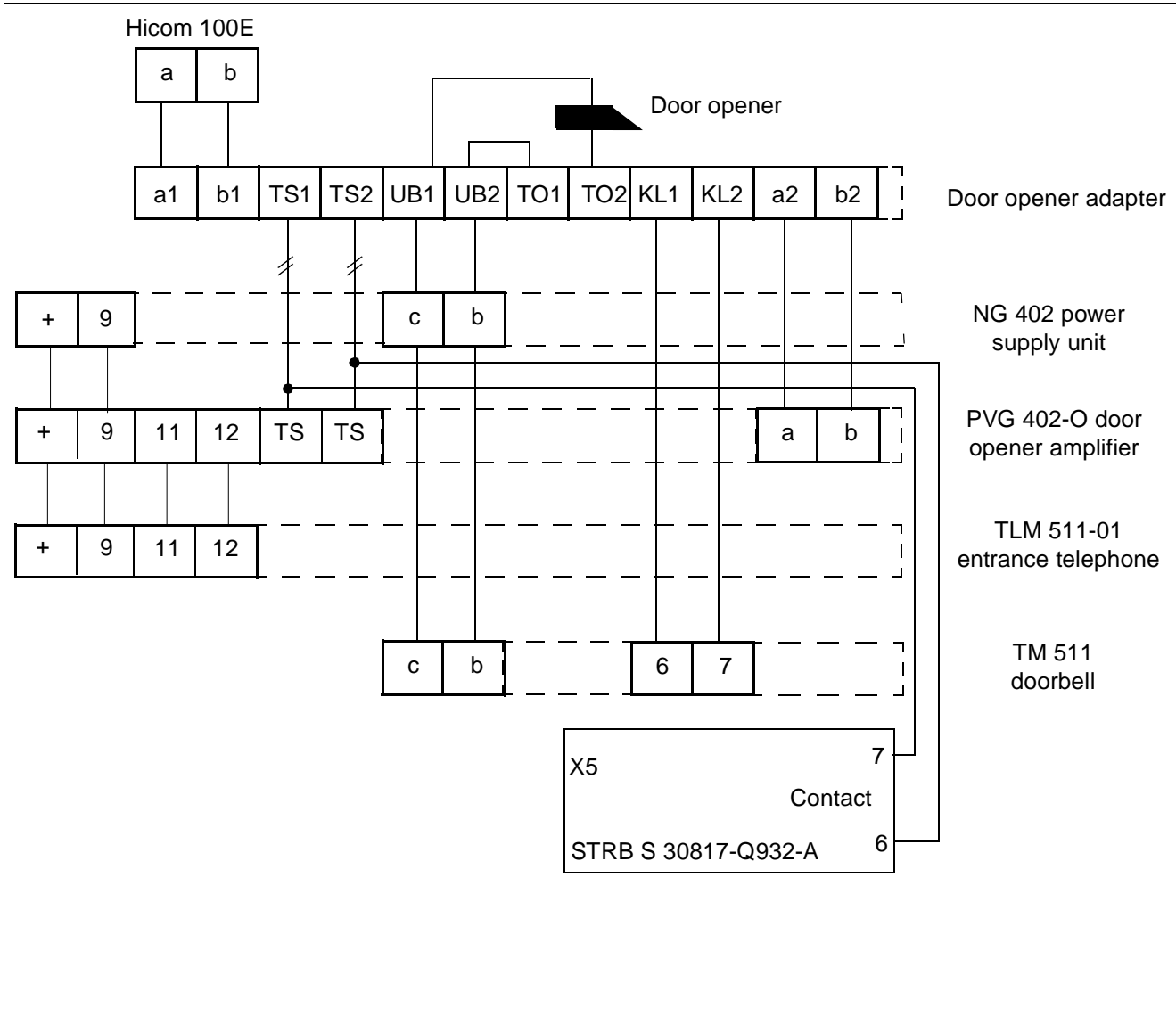


Figure 11-5 Entrance telephone system from Siedle

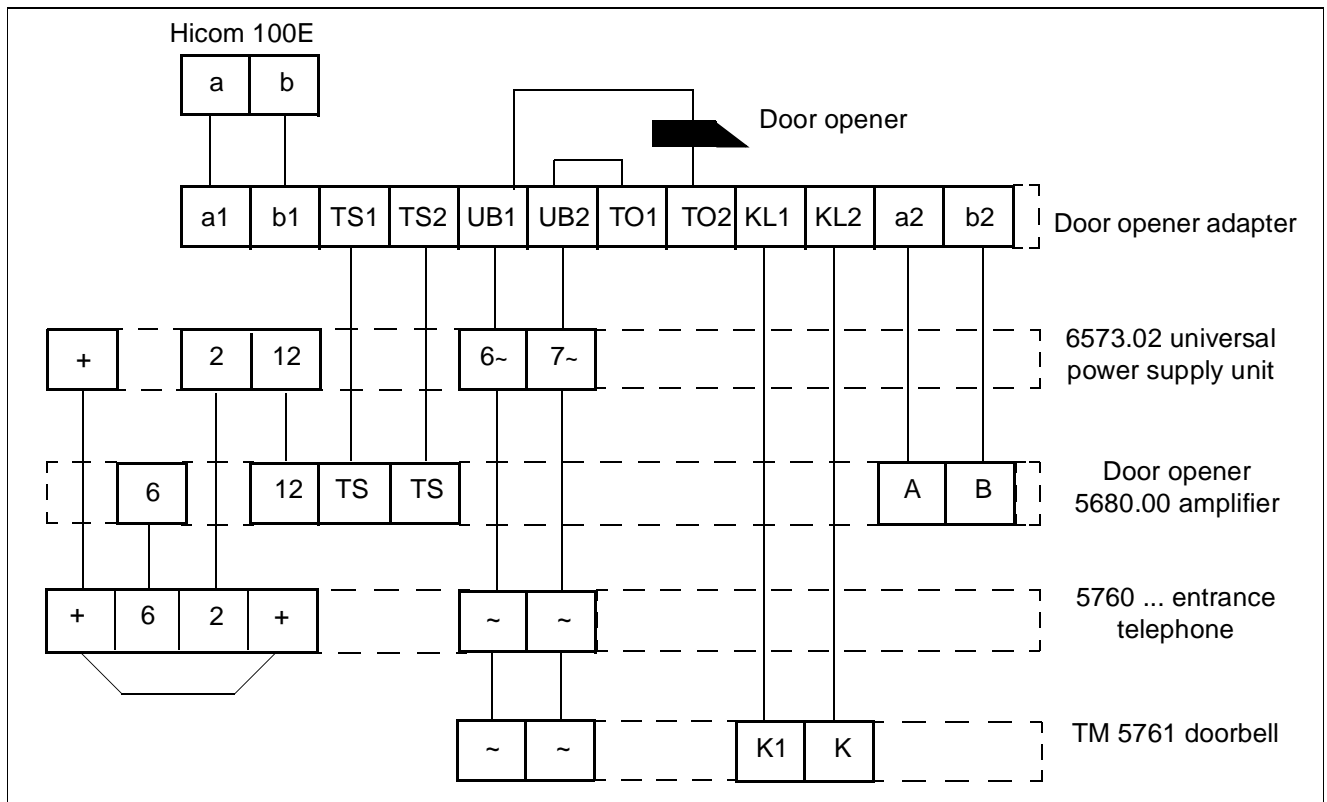


Figure 11-6 Entrance telephone system from Ritto

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Entrance telephones

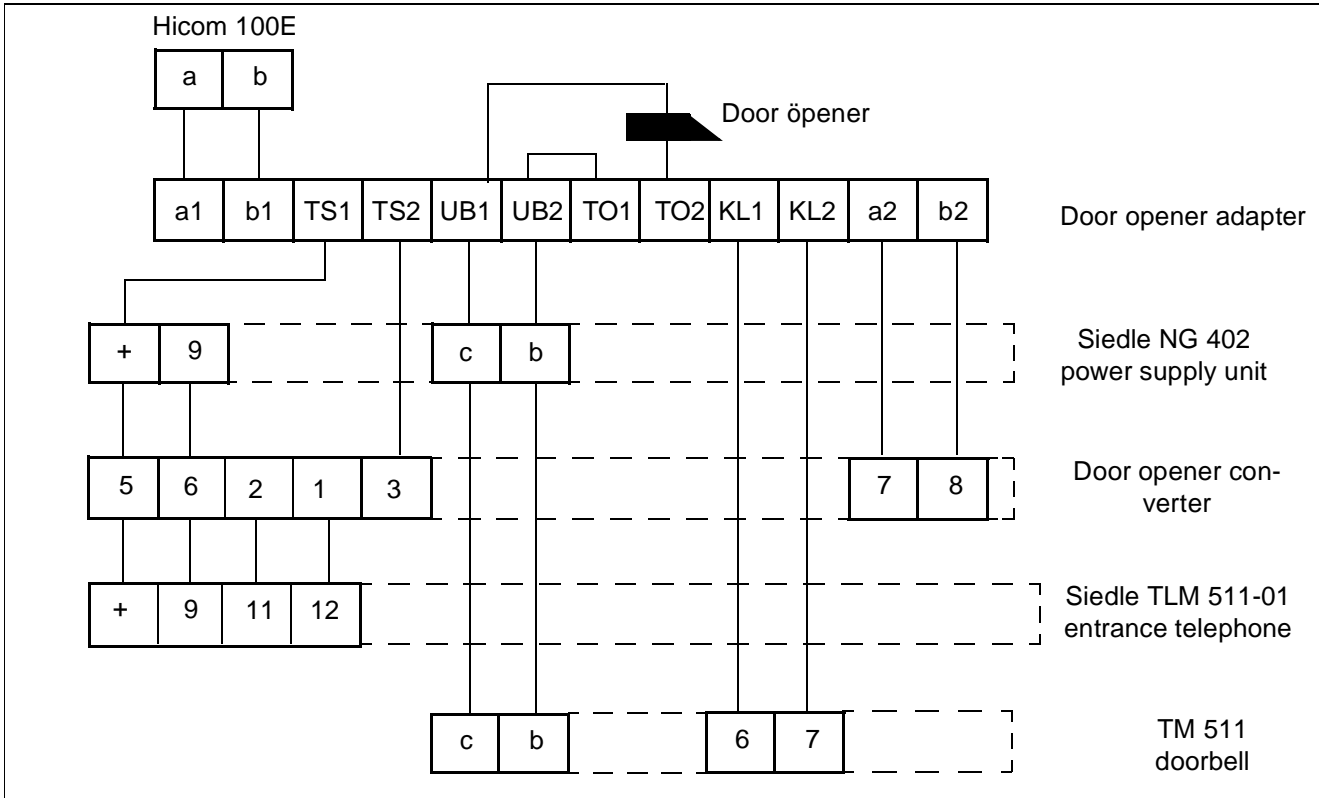


Figure 11-7 Entrance telephone system with Telegärtner amplifier and Siedle entrance telephone

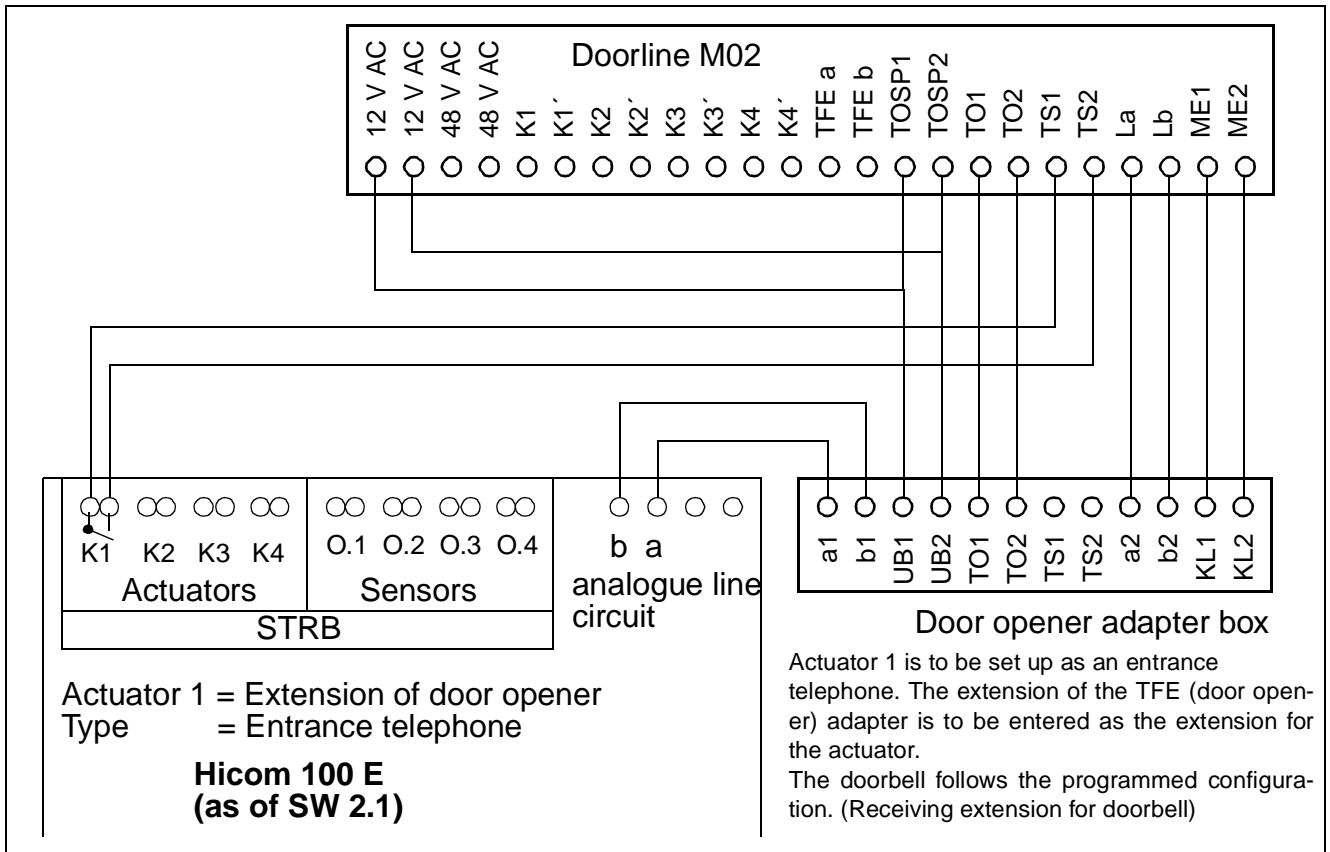


Figure 11-8 Doorline M02 entrance telephone

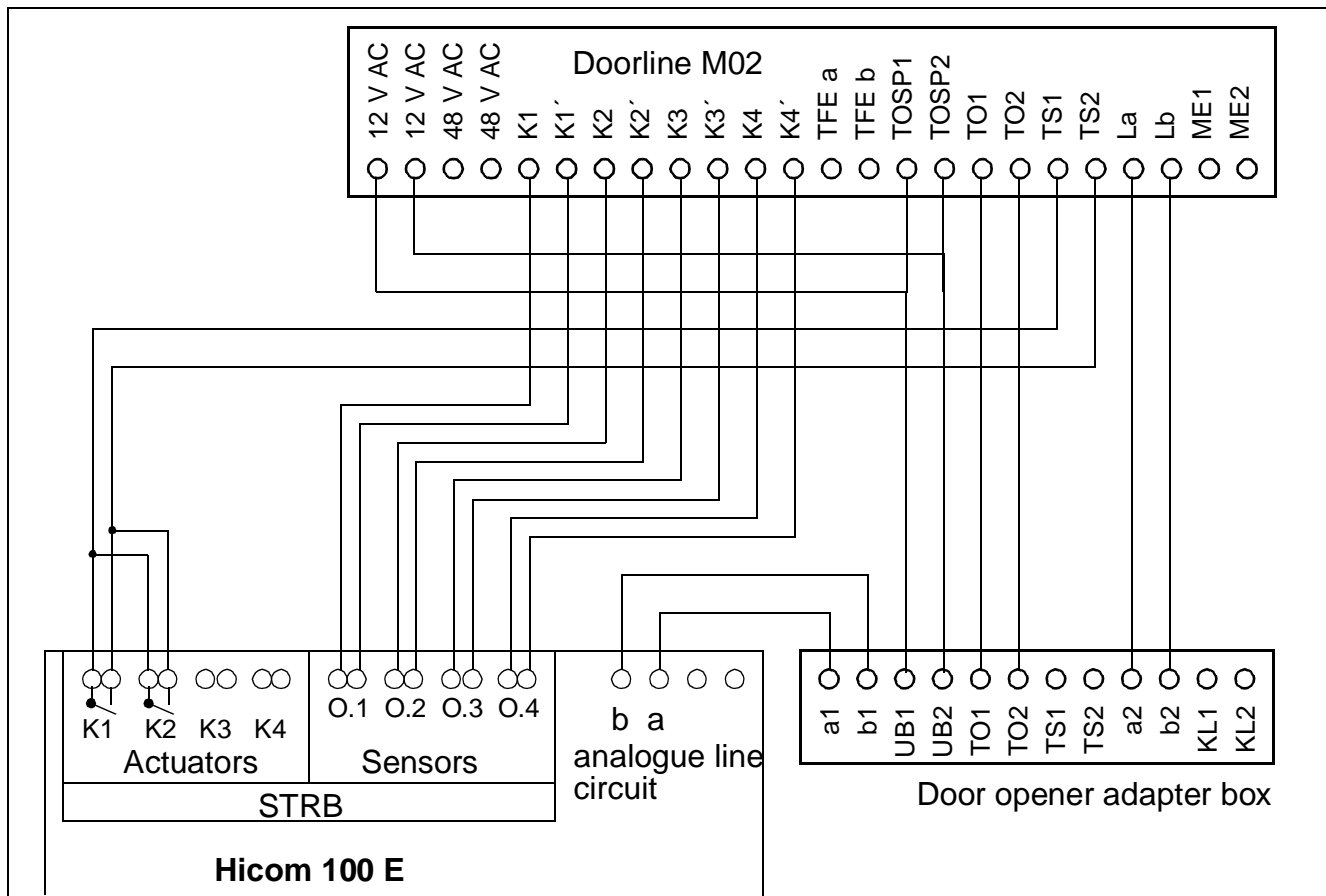


Figure 11-9 Doorline M02 entrance telephone (four receiving extensions for doorbell)

If the receiving extension for the doorbell is busy, the doorbell is only signalled when the extension becomes free. The connection to the entrance telephone is then to be set up by dialling the relevant code.

The doorbell follows the internal call forwarding sequence programmed (V2.0.1+).

Once the cables have been laid, parameters must be set for the control relay module (STRB).

### 11.3.3 TFE/V adapter

This adapter links one of the system's a/b interfaces to an entrance telephone and door opener/doorbell function. This is controlled by the system. Standard active and passive entrance telephones can be connected, see [Section 11.3.4](#).

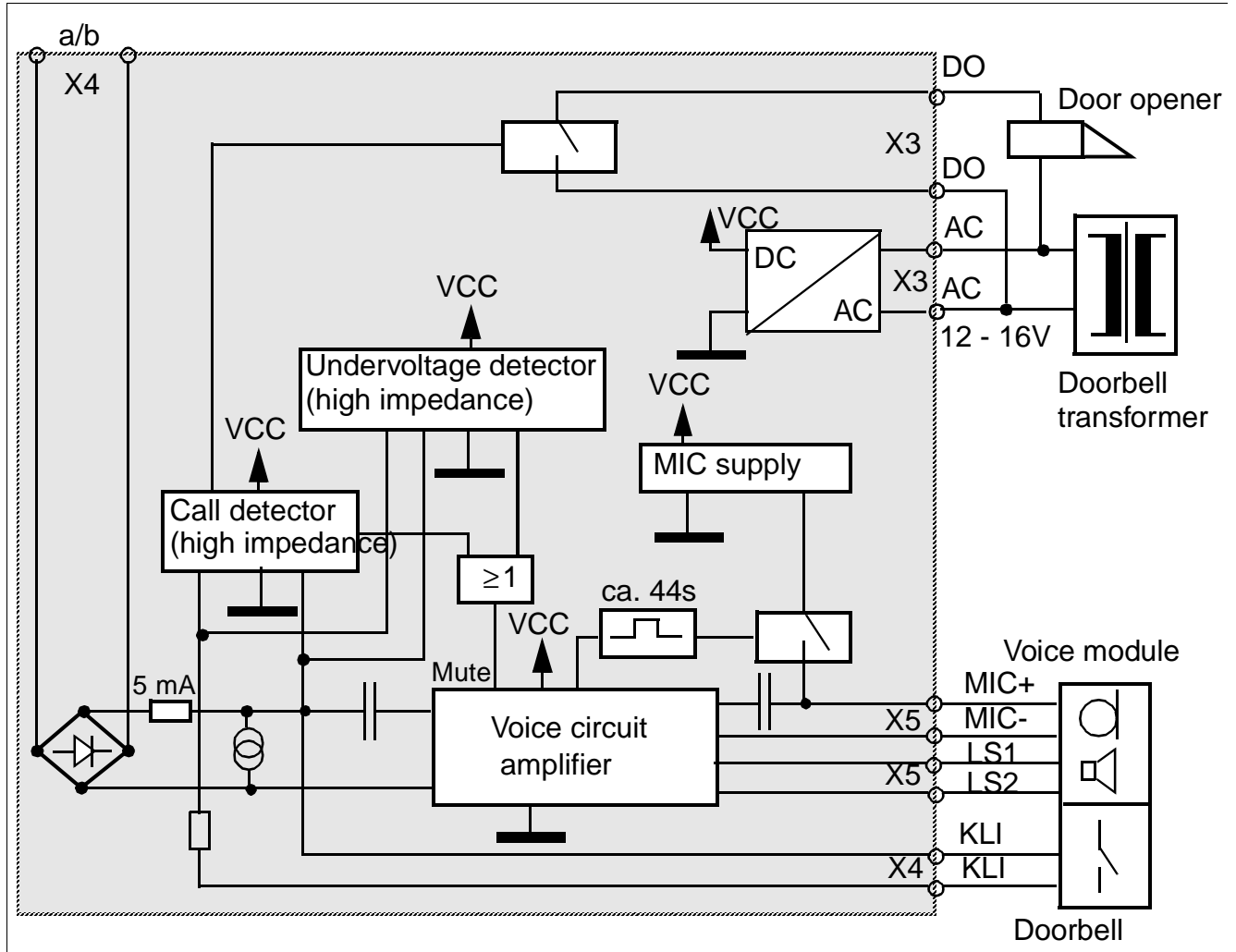


Figure 11-10TFE/V adapter interfaces



#### Caution

In the case of the a/b interface, always connect "minus" to the a-wire and "plus" to the b-wire.

Pin no.	X3 terminal	X4 terminal	X5 terminal
1	AC	(a-wire) -	Loudspeaker (LS1)
2	AC	(b-wire) +	Loudspeaker (LS2)
3	Door opener contact (DO)	Doorbell contact (DB)	Microphone connection (MIC+)
4	Door opener contact (DO)	Doorbell contact (DB)	Microphone connection (MIC-)

Table 11-1 TFE/V contact assignment

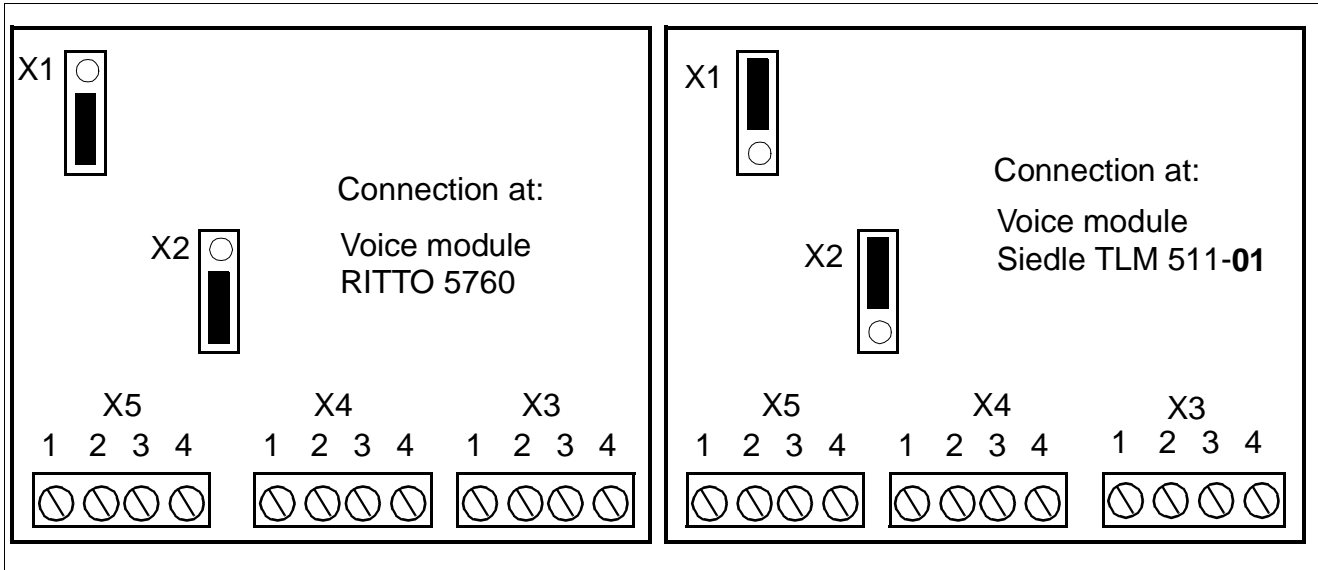


Figure 11-11Contact assignment for possible voice modules

### 11.3.4 Connection via TFE/V adapter box

Depending on the features required, the door opener can be connected via an entrance telephone adapter box with amplifier (TFE/V) (S30817-Q936-A313, with make contact).

**In the case of the a/b interface, the a-wire is always to be connected to minus and the b-wire to plus.**

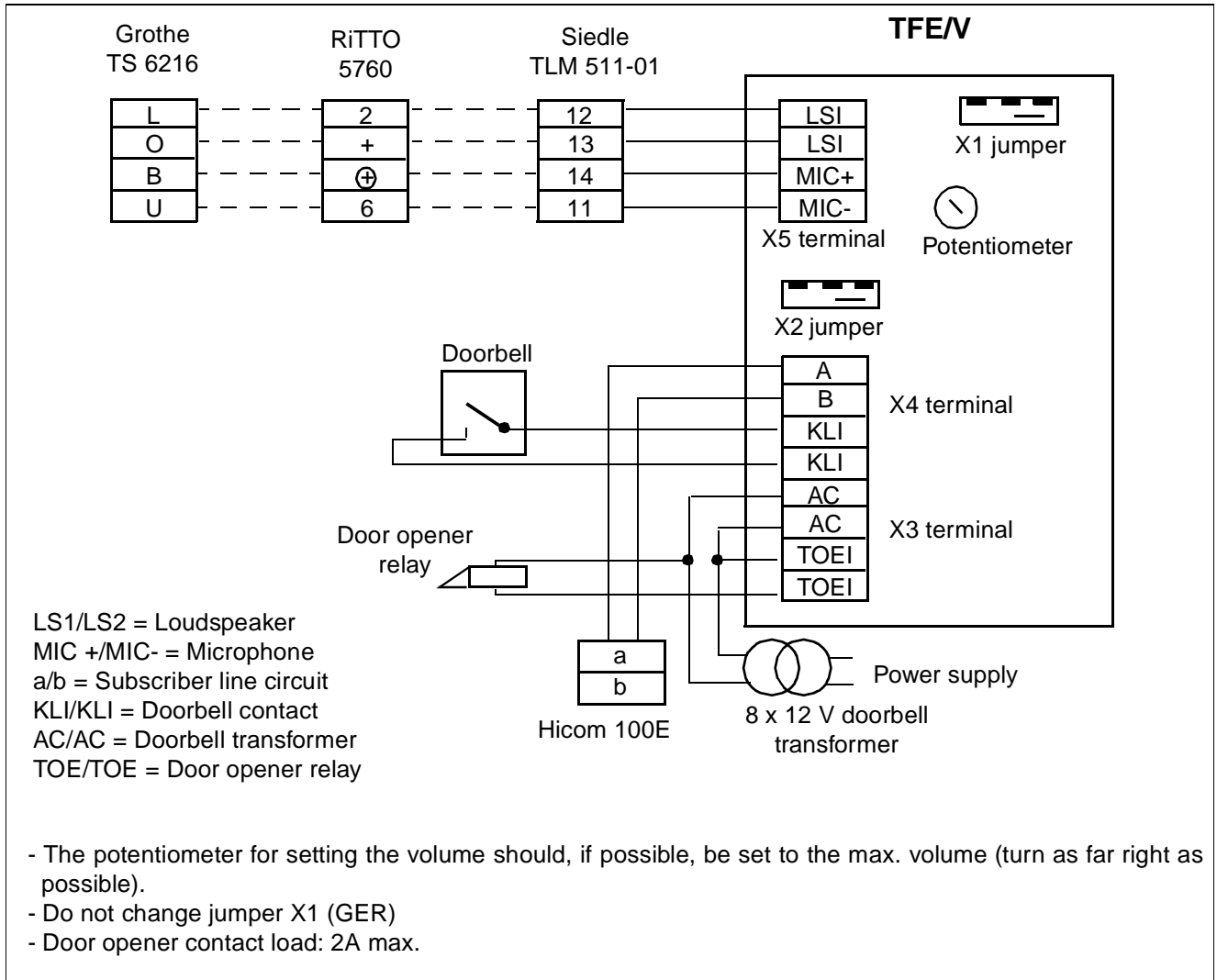


Figure 11-12 Connection to Siedle TLM 511-01, Ritto 5760 or Grothe TS 6216 entrance telephone




## Plus products

### Entrance telephones


**Siedle:** the following changes must be made in the Siedle TLM 511 entrance telephone:

1. Open the Siedle entrance telephone
2. Open jumpers 1, 3 and 4
3. Remove the loudspeaker wire from the "bl" pin and plug it into the "12" pin
4. Close the Siedle entrance station

X2 jumper = 


#### **RiTTO:**

The potentiometer is to be set to maximum volume in the RiTTO 5760 entrance telephone.

X2 jumper = 

#### **Grothe:**

The yellow wire jumper is to be switched from "B" to "0" in the Grothe TS 6216 entrance telephone.

X2 jumper = 

The X1 switch is not changed from the factory setting.

## 11.4 Caracas Desk (as of SW 2.0.2)

The Caracas Desk hotel application is implemented as a system-specific functional expansion for Hicom 118.

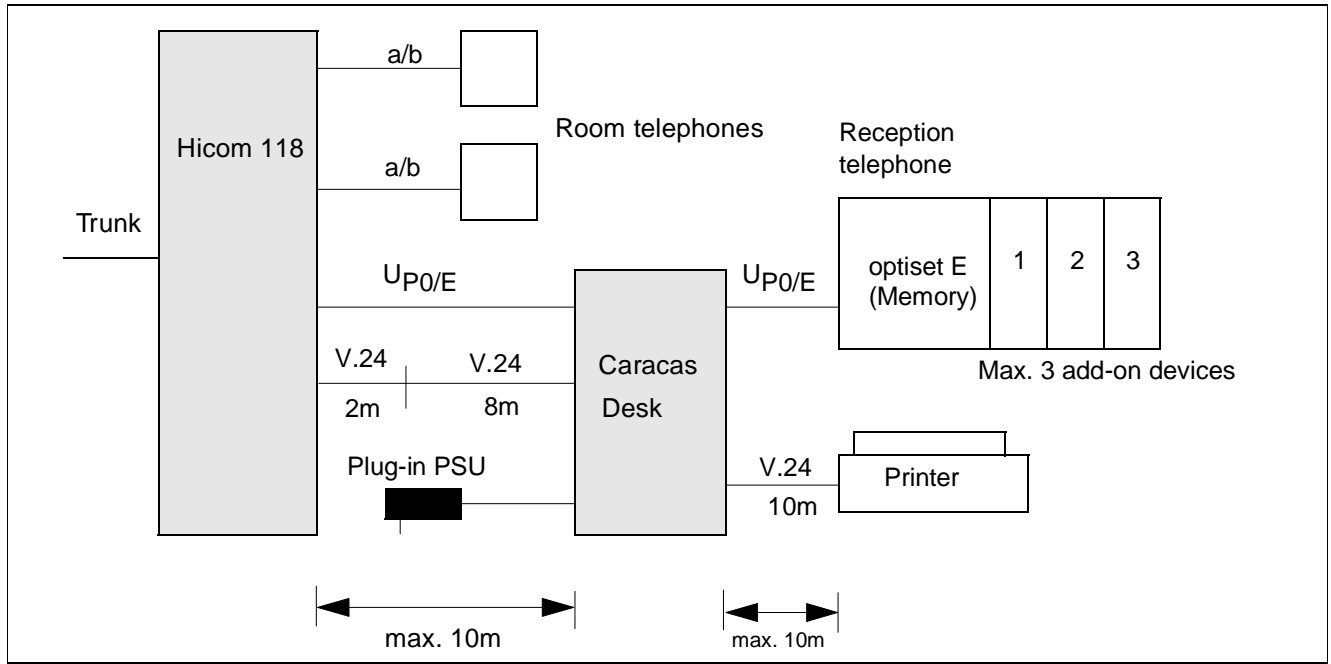


Figure 11-13 Overview of Caracas Desk configuration

Designation	Item code number	Notes
CARACAS DESK	S97238-U3008-X-*	incl. V24 printer cable and V.24 Hicom cable without plug-in PSU
PLUG-IN PSU	C97280-Z3002-C8	12 volts
V.24 PRINTER CABLE	C97195-Z3023-C7	25-pin SubD
V.24 HICOM CABLE	C97195-Z3023-C8	9-pin SubD for connection to Hicom 118 V.24 adapter
V.24 adapter cable	S30122-X5468-X	<b>not</b> supplied, to be ordered separately

Table 11-2 Overview of Caracas Desk item code numbers

### 11.4.1 Installing Caracas Desk

- V.24 line lengths (10m in each case) must be observed.
- Insert the polarized lithium battery in the module slot provided (housing must be open).
- Attach to wall at 2 fixing points (suspend from above, screw in below).
- Cabling to Hicom 118, to printer, connection to plug-in PSU.

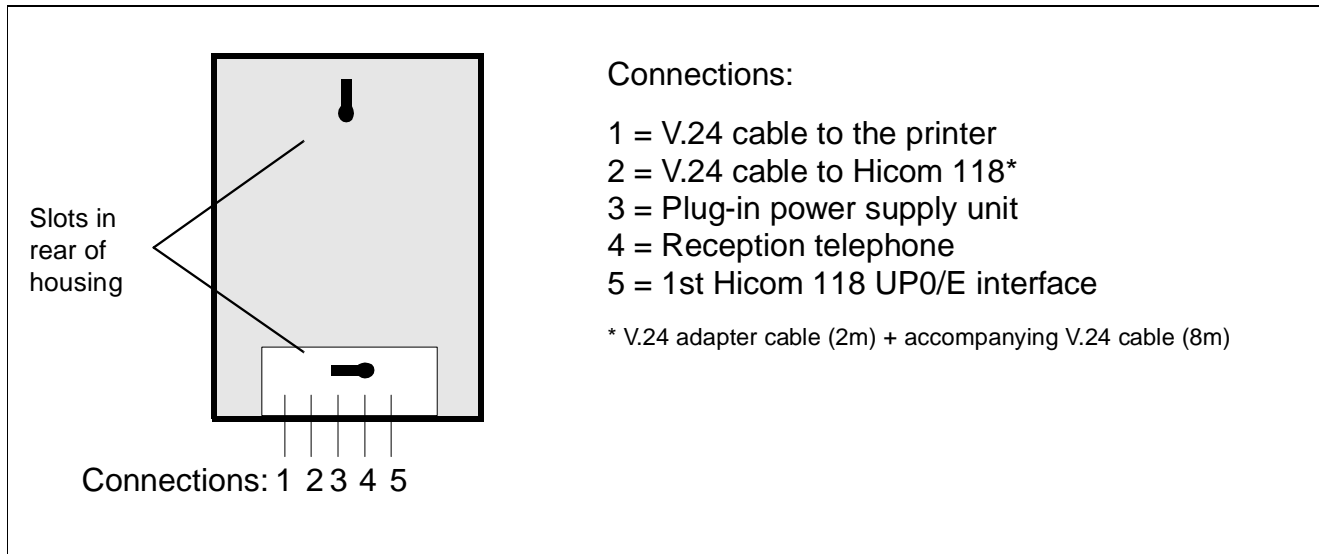


Figure 11-14 Wall mounting with closed housing and opened hinged cover

### 11.4.2 Setting up and initial operation of Caracas Desk

- The  $U_{P0/E}$  to the system must be connected to the 1st Hicom 118  $U_{P0/E}$ .
- Up to three add-on devices (min. one) can be connected to the reception telephone, the 1st for hotel features, the 2nd and 3rd mainly for room keys.
- The printer is to be set to 2400 baud, no parity, 1 stop bit and 8 data bits.
- The Hicom 118 V.24 interface is to be set to 9600 baud.
- Select "Port assignment" 1 for CDRC port under the code 21 32 in the "System settings" menu.
- Central call detail recording in Hicom 118 is to be set to compressed output format, without recording incoming calls and without a On ringing.
- Only use the original plug-in power supply unit.
- The following sequence is recommended when putting the Caracas Desk into operation:

1. Connect the plug-in power supply unit.
2. Connect the V.24 cable to the printer and to Hicom 118.
3. Connect the U<sub>P0/E</sub> to Optiset.
4. Connect the U<sub>P0/E</sub> to Hicom 118.

### **11.4.3 Caracas Desk basic settings**

The basic settings are password-protected. Password: **51695** (cannot be changed!).  
**The password should not be revealed to customers!**

#### **11.4.3.1 Setting the extension number plan in Hicom 118**

The extension numbers are always identical to the room numbers. The extension numbers in Hicom 118 must correspond to the extension numbers set in Caracas Desk.

The extension numbers can be assigned in two manners.

1. Using Assistant L (fbzadmin.exe):

Extension numbers in Hicom 118 can be assigned in the usual manner with Assistant L (directly via the Hicom 118 V.24 interface).

The current extension numbers are loaded into Caracas Desk via the "Settings", "Basic settings", "Load customer data" menus. This procedure lasts approx. 3 minutes. Completion of the loading operation is indicated by a flashing LED beside the "Message" key. The result (OK, error) can be queried and the message deleted by pressing this key. An extension number must be configured for extensions 73 and 74.

2. With Caracas Desk - without using Assistant L

The extension numbers can also be set when defining the extension types.

#### **11.4.3.2 Trunk access for guest telephones in Hicom 118**

The extensions with port numbers **73** and **74** (7th and 8th slave of the 3rd expansion module) are used as "templates" for trunk access. Trunk access cannot, therefore, be set as required for any telephones connected to these ports.

- An extension number which is not required must be assigned to the extensions with port numbers **73** and **74**.  
The extension numbers for extensions with port numbers 73 and 74 must be changed if So buses without separate MSN assignment are used in the system. Otherwise, there will be collisions with the default extension numbers of the So buses.
- The extension with port number **73** in Hicom 118 is to be granted the level of access which a guest telephone without unrestricted trunk access should receive (e.g. all lines outward restricted).
- The extension with port number **74** in Hicom 118 is to be granted the level of access that a guest telephone with unrestricted trunk access should receive (e.g. all line unrestricted trunk access).
- Load the current extension numbers to Caracas Desk via the "Settings", "Basic settings", "Load customer data" menus.

- Once the numbers have been successfully loaded, select the menu item "Settings", "Basic settings", "Extensions".
  - Set the extension types and, if necessary, the extension numbers. All a/b extensions are preconfigured by default as guests and extensions 11-16 as administration. The preconfigured extensions are to be modified in accordance with requirements. Three items of information are necessary for each extension:
    1. Enter the required extension number=room number. The internal extension number and the DDI number of the extension are simultaneously changed.  
In the case of a 3-digit extension number and an S<sub>0</sub> connection, check that DDI has been released by Telecom.
    2. The Hicom number represents the physical connection PEN in Hicom 118. The numbering represents the standard extension number of the extension, e.g.: the U<sub>P0/E</sub> extensions (master) on the motherboard are assigned the Hicom numbers 11-17.  
These numbers cannot be changed. However, they can be removed as required by deleting extensions and specified by adding extensions.
    3. Type:
      - **Guest:** Guest extensions
      - **Booths:** telephone booths. As in the case of "guests", individual calls are itemized. On check-out, the name is not deleted and the status is immediately set to "free". In the event of checks-in without specifying a name, the original name is retained. An individual charge factor and minimum charge can be set for the telephone booth.
      - **Service:** service extensions such as the reception, kitchen, etc. as for "telephone booth". In the event of check-out or payment, however, trunk access is not switched.
      - **Services without charges:** service extensions for which the only charge total is recorded: no details of the individual calls are recorded.
      - **Not used:** for special extensions which cannot use Caracas Desk but which are connected, e.g. entrance telephones, service extensions for which call detail recording is not carried out via Caracas Desk, etc.
- If extensions are deleted in the process, they are not assigned an extension number and cannot be reached! Extensions should only be deleted, therefore, if they are not connected.
- Transfer the extension numbers back to Hicom 118 via the "Settings", "Basic settings", "Save customer data" menus.  
This procedure lasts approx. 3 minutes. Completion of the loading operation is identified by a flashing LED beside the "Message" key. The result (OK, error, conflict) can be queried and the message deleted by pressing this key.

## Plus products

### *Entrance telephones*

- If conflicts arise between the extension numbers, the customer data is not transferred back to Hicom 118 and a message regarding the conflict is output. Please note that conflicts can also arise with codes 7..., 8..., 9... and 0 (for routes by default, etc.). These codes can only be changed with Assistant L.

For reasons of security (old customer data), the data can only be transferred back to Hicom within 30 minutes of loading the extension numbers to Caracas Desk.

A name may not be set in Hicom 118 for the configured extensions. Names are automatically assigned at check-in. Names must also be assigned for service extensions and booths at check-in. Names are only deleted for guests at check-out.

#### **11.4.4 Setting call charges in Caracas Desk with a password**

- Customer-specific password: **123** (default).
- Charge factor guest: with max. 3 digits after the decimal point.
- Charge factor booth: for telephone booths.
- Charge factor service: for service extensions.
- Minimum charge guest (no basic charge).
- Minimum charge booth (no basic charge).
- Standard check-in: trunk access yes/no at check-in.
- Standard check-out: trunk access unchanged/not at check-out.
- Standard payment: trunk access unchanged/not when paying.
- Display format: rounded up 100 - 10 - 1 - 0.10 - 0.01 (GER) - 0.001.
- Value added tax: in % with max. one digit after the decimal point.
- Currency: 3-digit currency unit (max).
- Change call charge settings password.

#### **11.4.5 Caracas Desk features without password**

- Press the <Settings> key.
- Reception telephone: lock the reception telephone.
- Query/delete the call charge total counter (two can be deleted and one cannot be deleted).
- Load room keys: program on reception telephone (S\* 91).

- Line feed : number of linefeeds at the start and end of a page. Single page feed: enter \* to end line feed.
- Automatic query: query the feature statuses, e.g. all occupied rooms.
- Default language: currently only German.
- Acoustic alarm: an alerting tone is output (e.g. guest cannot be woken up).
- Hotel data: hotel name and address for invoices. Maximum four lines with 24 digits each.

## **11.5 Multiplexers**

Within the framework of system networking (branch concept), multiplexers are used to compress calls via a dedicated line from a master PBX (e.g. Hicom 300) to a slave PBX (Hicom 100 E). For more information, please refer to the appropriate manufacturer specifications.

The following multiplexer types are available at present:

<b>Multiplexer</b>	<b>Connection to Hicom 100 E</b>
DATUS 5810 / 20S	Configure S <sub>0</sub> port as CorNet port (code 19 3)
SIMUX 3612	Configure S <sub>0</sub> port as CorNet port (code 19 3)
RAD Kilomux 2000	Configure S <sub>0</sub> port as CorNet port (code 19 3)

## **11.6 PC cards**

PC cards are installed between the PC and Hicom 100 E for video and data communication.

Install an S<sub>0</sub> bus (master only, no slave) in Hicom 100 E. Moreover, configure appropriate MSNs for the picture telephone selection.

The PBX <-> PC card connection is set up using the V.24 adapter cable.

For more information, please refer to the appropriate manufacturer specifications.

The following PC cards are available at present:

- Smart Set
- I-View
- Picture Tel
- Videokit



**Plus products**  
*PC cards*

## 12 Euroset line 36/Hicom 118-2

### 12.1 General system description

The euroset line 36 and Hicom 118-2 systems belonging to the Hicom 100 E product family are compact, digital, telephone systems suitable for analogue network access and for analogue terminals. The basic configuration of each system can be expanded and enhanced in different ways.

The systems are of a flatpack design, i.e. without backplane.

#### 12.1.1 Euroset line 36 hardware overview

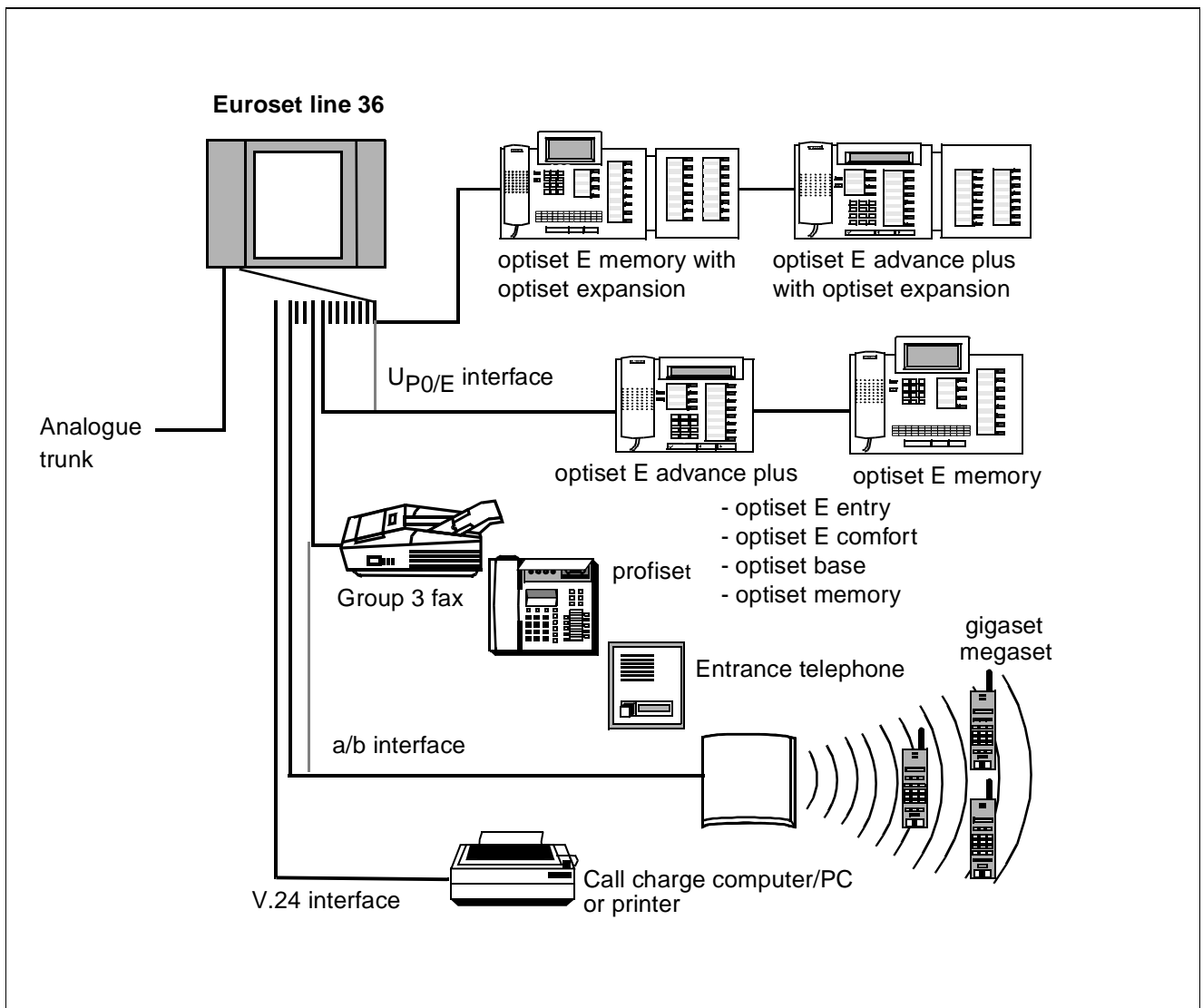


Figure 12-1 Euroset line 36 connection options supported within system environment

### 12.1.2 Hicom 118-2 hardware overview

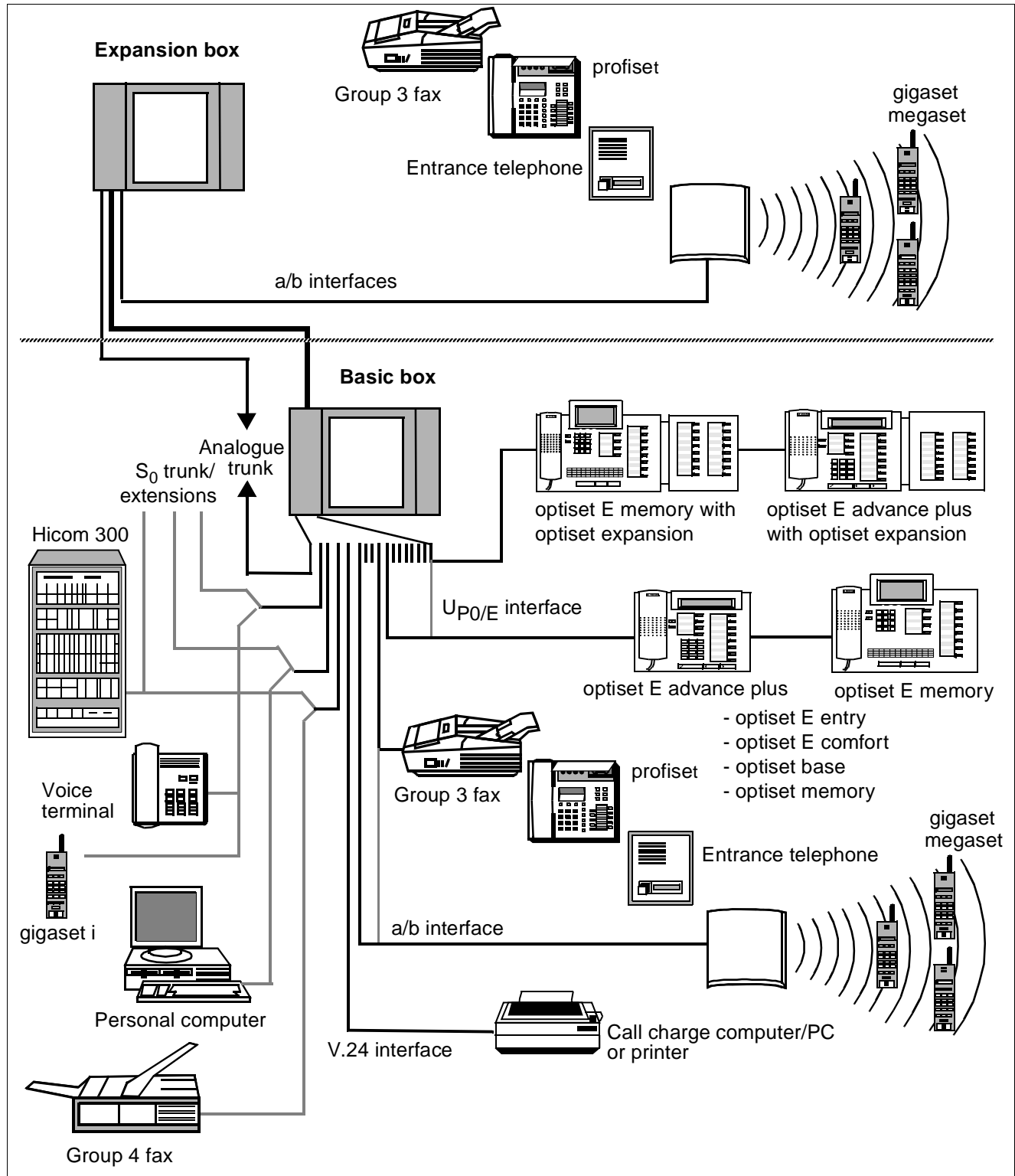
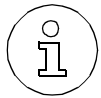


Figure 12-2 Hicom 118-2 connection options supported within system environment

### 12.1.3 Important notes

As regards configuration options, the Euroset line 36/Hicom 118-2 corresponds to the Hicom 100 E. No digital trunk modules or digital expansion modules, however, are used in the Euroset line 36.



The Euroset line 36 does **not** conform to CE guidelines in SW version 2.0.1+.

As in the case of Hicom 118, all modules in Hicom 118-2 are put into operation in the basic box. In the expansion box, however, only the analogue modules can be put into operation.

## 12.2 System data

The configuration of the Euroset line 36 corresponds extensively to that of the Hicom 100 E. The only difference is that an additional (third) expansion level (6 slots in total) is provided in SW version 2.0.1+ for analogue add-on modules (SLAS/TLA). In SW version 2.0.2, only 2 expansion levels (4 slots in total) are provided for analogue modules up to SLAS16 and TLA8. For Hicom 118-2, two expansion levels (4 slots in total) are provided in the basic box for analogue and digital modules.

Four slots, however, are also provided for analogue modules in the Hicom 118-2 optional expansion box.

### 12.2.1 Two-box system assembly

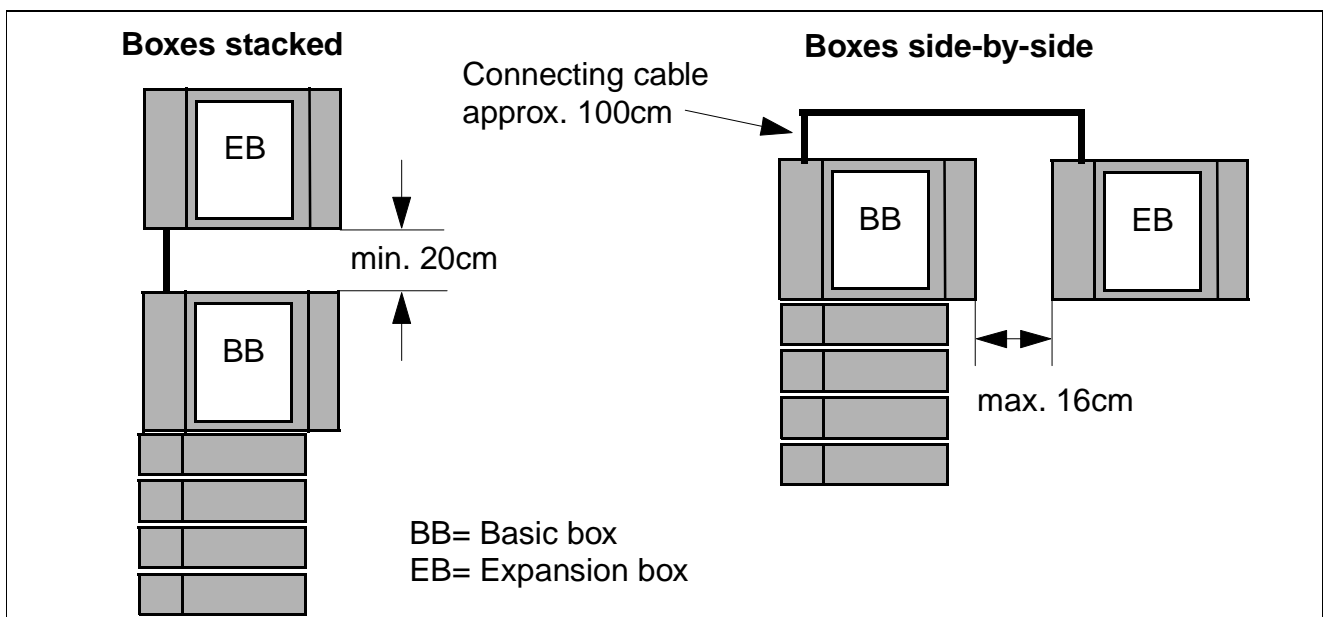


Figure 12-3 Two-box system assembly (minimum/maximum clearances)

### **12.2.2 System types**

The systems are available in the following basic configurations:

**Euroset line 36** with 4 or 6 slots, 4  $U_{P0/E}$  and 4 a/b extension interfaces.

**Hicom 118-2** (basic box) with 4 slots, 6  $U_{P0/E}$  and 4 a/b extension interfaces.

A distinction is made between the following components:

- Basic system, motherboard with V.24 interface via mini-DIN plug.
- Expansion box (Hicom 118-2 only) EB expansion board.
- PSU3 power supply unit for esl 36 (SW 2.0.1+) with intermediate ring.  
UPS3 uninterruptible power supply for esl 36 (SW 2.0.1+) with intermediate ring.  
PSU2 power supply unit for esl 36 (SW 2.0.2)/Hicom 118-2.  
UPS2 uninterruptible power supply for esl 36 (SW 2.0.2)/Hicom 118-2.
- Expansion cards for Euroset line 36:  
The modular design means that the slots can be more or less freely assigned in accordance with requirements.  
SLAS subscriber line analogue with 4, 8 or 16 a/b interfaces (subscriber line module).  
TLA trunk line analogue with 2, 4 or 8 analogue trunk interfaces (line module).
- Expansion modules for Euroset line 36:  
ALUM trunk failure transfer with 4 transfer options for analogue lines  
Fax/DDI with announcement (DTMF)  
GEE call-charge pulse recognition for 4 analogue trunk interfaces  
SIB serial interface board (optional V.24 interface)  
STRB control relay module with 4 control inputs and 4 control outputs
- Expansion cards and expansion modules for Hicom 118-2 (basic box) see [Section 3.5](#) and [Section 3.6](#)

### **12.2.3 Main distribution frame**

The MDF (main distribution frame) expands automatically with the system, since each expansion provides the necessary interfaces. Any space that may be required for future function expansions or an expansion box (Hicom 118-2) must be taken into account in the initial plans.

## 12.2.4 Euroset line 36 system overview (version 2.0.1+)

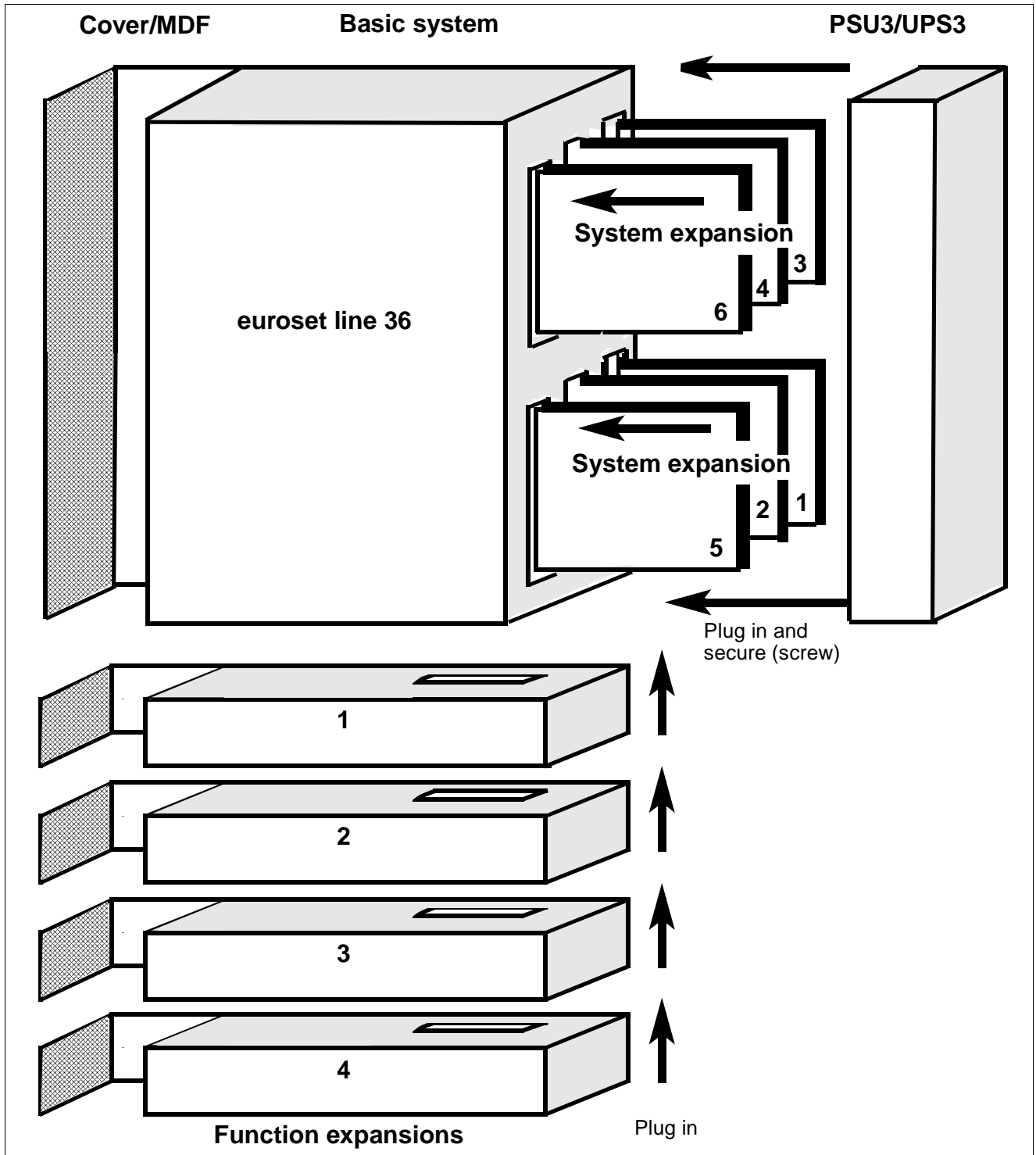


Figure 12-4 Euroset line 36 structural concept (SW 2.0.1+)

All mounting locations can be assigned analogue 8-port modules (max.).

### 12.2.5 Euroset line 36 system overview (version 2.0.2)

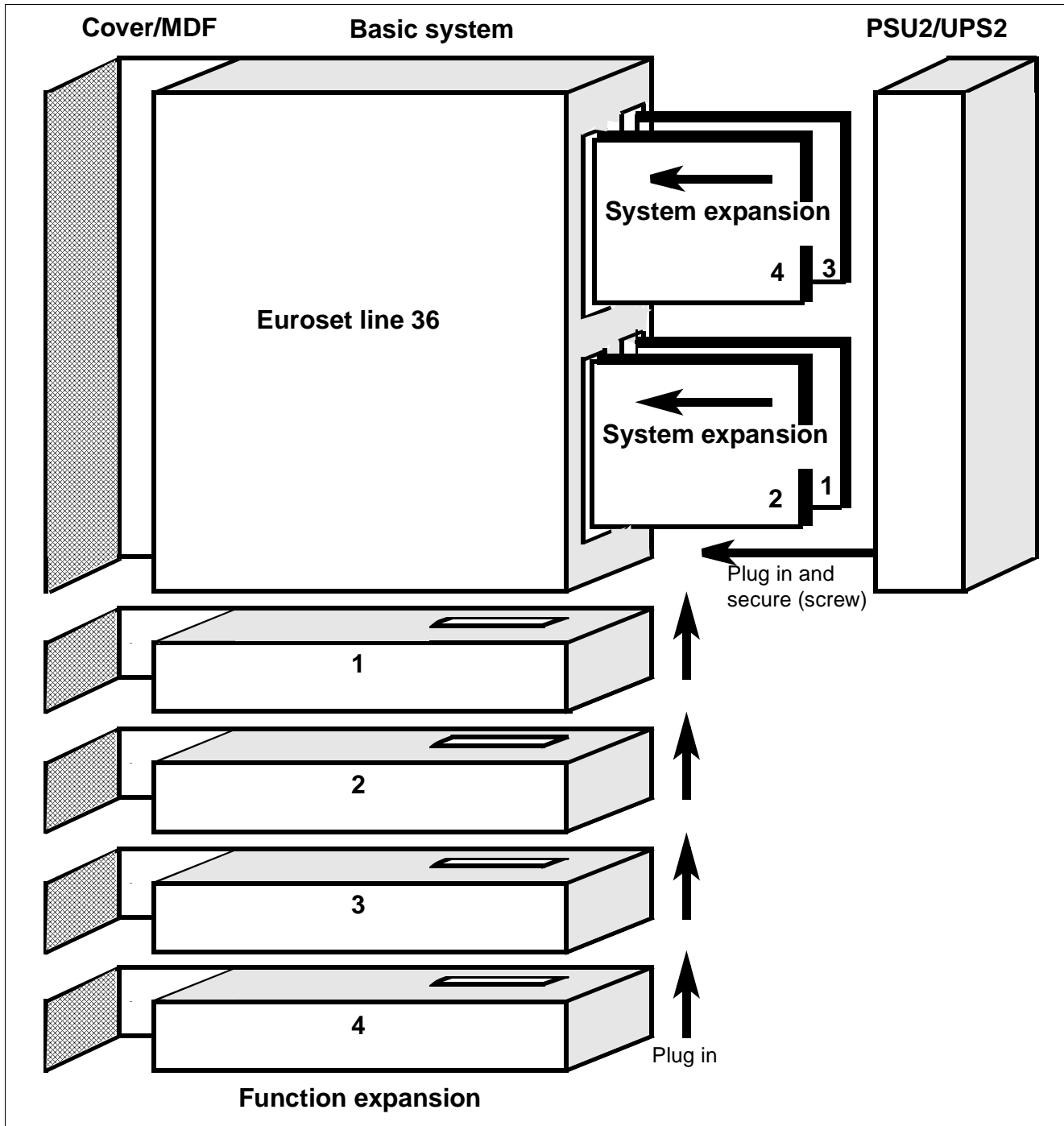


Figure 12-5 Euroset line 36 structural concept (SW 2.0.2)

Freely assignable with analogue line and/or subscriber modules.  
Slots 1 and 2 with 8-port modules, slots 3 and 4 with 16-port modules.

### 12.2.6 Hicom 118-2 system overview (basic box)

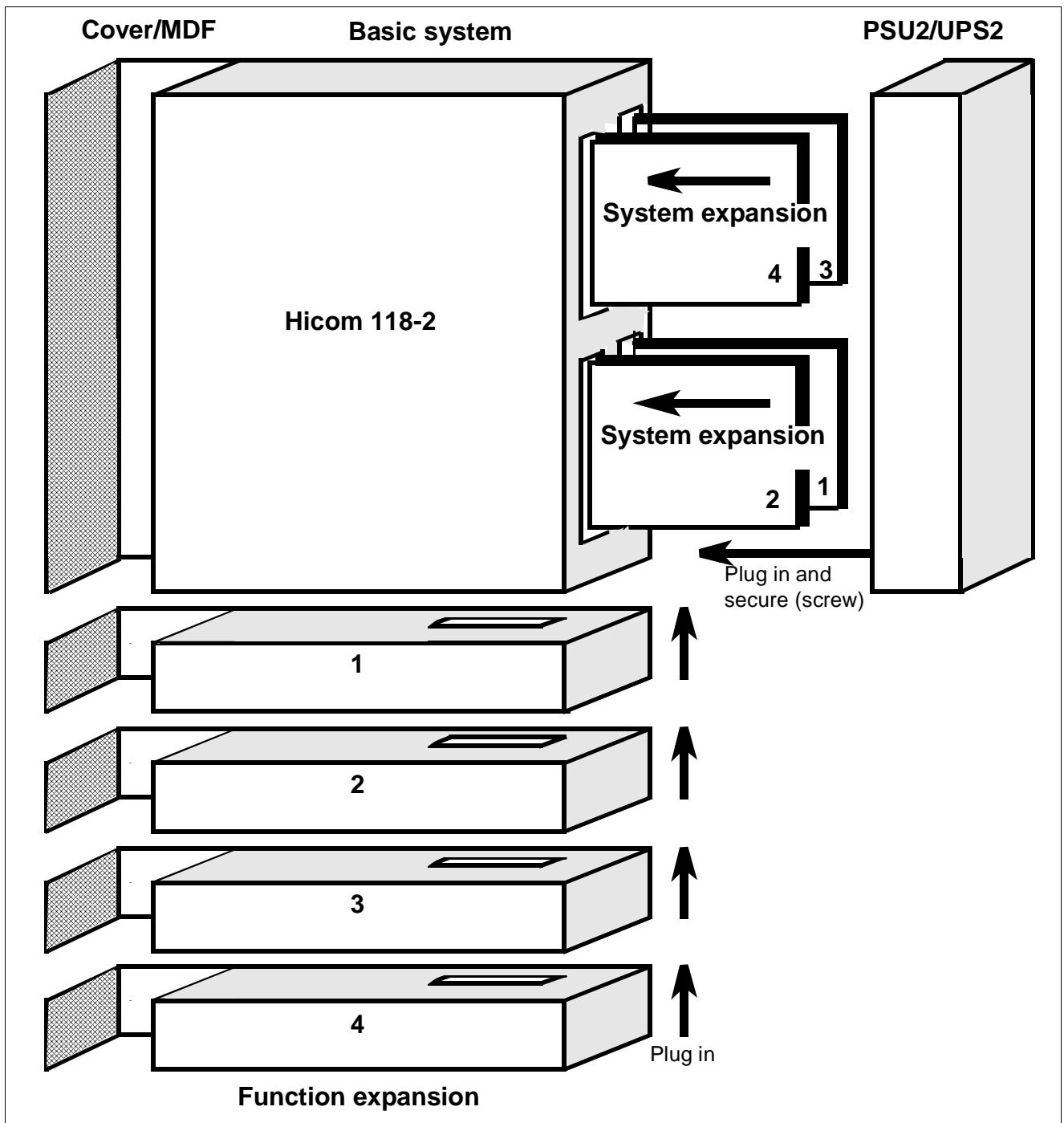


Figure 12-6 Hicom 118-2 basic system structural concept

Freely assignable with analogue and digital line and/or subscriber modules.  
Slots 1 and 2 with 8-port modules, slots 3 and 4 with 16-port modules.



### 12.2.7 Hicom 118-2 system overview (expansion box)

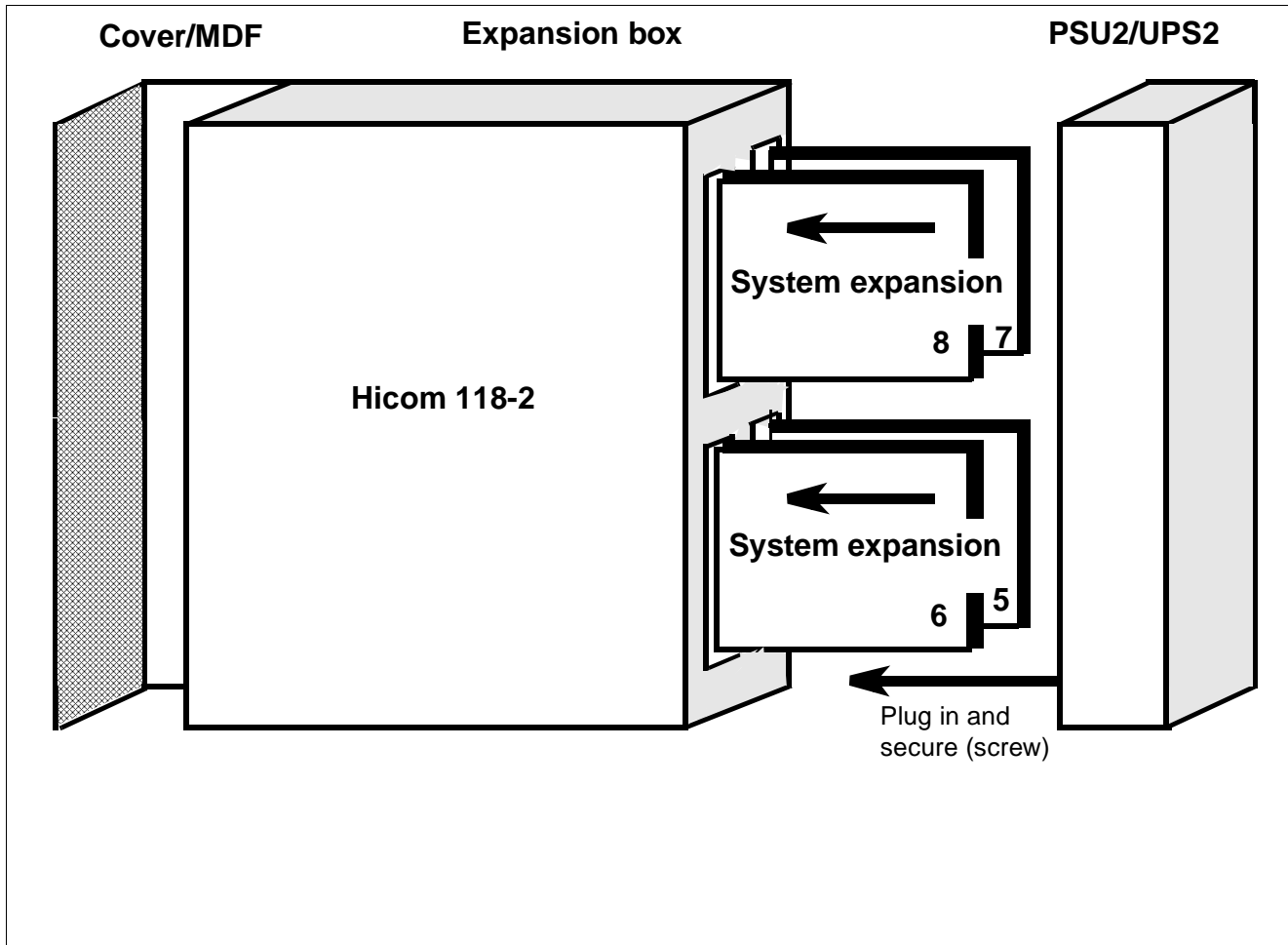


Figure 12-7 Hicom 118-2 expansion box structural concept

Freely assignable with analogue and/or subscriber modules.  
Slots 5 with 8-port modules, slots 6, 7 and 8 with 16-port modules.



The TLA module is to be incorporated preferably in the basic box in order to simplify the GEE module wiring.

## **12.2.8 Hicom 118-2 system expansions**

<b>Module</b>	<b>Hicom 118-2</b>
SLAS16	3, 4, 6, 7, 8
SLAS8	1 - 8
SLAS4	1 - 8
SLU8	3, 4
STLS4	1, 2, 3, 4
STLS2	1, 2, 3, 4
TLA8	1 - 8
TLA4	1 - 8
TLA2	1 - 8

Table 12-1      Add-on modules for Hicom 118-2 system expansions

**12.2.9 Technical data**

<b>System</b>	<b>Width</b>	<b>Height</b>	<b>Depth</b>
Euroset line 36 (2.0.1+) basic configuration	470	370	140
Euroset line 36 (2.0.1+) with max. expansions	470	630	140
Euroset line 36 (2.0.2) basic configuration	470	370	110
Euroset line 36 (2.0.2) with max. expansions	470	630	110
Hicom 118-2 basic box basic configuration	470	370	110
Hicom 118-2 basic box with max. expansions	470	630	110
Hicom 118-2 expansion box	470	370	110

Table 12-2 System dimensions in mm

**Dimensions and interfaces as for Hicom 100 E**, see [Figure 2-5](#) and [Table 2-3](#).

	<b>Operation</b>	<b>Transport</b>	<b>Storage</b>
Ambient temperature in °C	+5 to +40	-40 to +70	-5 to +45
Relative humidity in %	85	95	95

Table 12-3 Climatic conditions

**Caution**

Do not expose to direct sunlight and keep appliance away from heaters to avoid the danger of localised overheating.

If condensation forms, allow the appliance to dry before operation. It is essential to ensure that condensation cannot form while the appliance is in operation.

## 12.2.10 Basic configuration and system expansions

	<b>Euroset line 36 (V2.0.1+)</b>	<b>Euroset line 36 (V2.0.2)</b>	<b>Hicom 118-2 basic box</b>	<b>Hicom 118-2 expansion box</b>
U <sub>P0/E</sub> interfaces - MB	4	4	6	--
a/b interfaces - MB	4	4	4	--
Expansion slots	6	4	4	4

Table 12-4 Basic configuration and system expansions

**Trunk interface with analogue trunk**, see [Section 2.10](#), **S<sub>0</sub>**, see [Section 5.6](#)

**Extension interface for normal telephone (NoFe)**, see [Section 2.10](#)

**Extension interface for U<sub>P0/E</sub>**, see [Section 2.10](#)

## 12.3 Euroset line 36/Hicom 118-2 module overview

Module	Item code number	Remarks
<u>MB 4/4</u>	S30817-Q920-G601	Euroset line 36
<u>MB 6/4</u>	S30817-Q920-K701	Hicom 118-2
<u>EB 118-2</u>	S30817-Q952-A601	Expansion module for Hicom 118-2
Connecting cable	C39195-Z7001-C45	MB <-> EB
<u>PSU 3</u>	S30122-K5449-A312	With intermediate ring
<u>PSU 2</u>	S30122-K5449-X312	
<u>UPS 3</u>	S30122-K5451-A312	With intermediate ring
<u>UPS 2</u>	S30122-K5451-X312	

Table 12-5 Overview of item code numbers

**Expansion modules, option modules and cables, plug connectors and national codes,** see [Section 3.1](#).

### 12.3.1 Euroset line 36 motherboard

El 36	Ext. no.	Int. ext. no.	DDI no.	Port numbering	Type	
<b>MB</b>  U <sub>P0/E</sub>	11	11	11	1	U <sub>P0/E</sub> M	U <sub>P0/E</sub> master
	12	12	12	2	U <sub>P0/E</sub> M	
	13	13	13	3	U <sub>P0/E</sub> M	
	14	14	14	4	U <sub>P0/E</sub> M	
	17	17	17	1	U <sub>P0/E</sub> S	U <sub>P0/E</sub> slave
	18	18	18	2	U <sub>P0/E</sub> S	
	19	19	19	3	U <sub>P0/E</sub> S	
	20	20	20	4	U <sub>P0/E</sub> S	
a/b	23	23	23	1	a/b	
	24	24	24	2	a/b	
	25	25	25	3	a/b	
	26	26	26	4	a/b	

Table 12-6 Standard numbering, MB 4/4 Euroset line 36

The MB 4/4 motherboard is the main board and accommodates 4 digital extension interfaces (U<sub>P0/E</sub>), 4 analogue extension interfaces (a/b), the V.24 interface (SIC - serial interface cable), the signalling unit (SIU), a real-time clock (NC battery only in SW 2.0.2) and a PCM highway controller and conference circuit.

Euroset line 36 MB 4/4 - motherboard with 4 x U<sub>P0/E</sub>, 4 x a/b

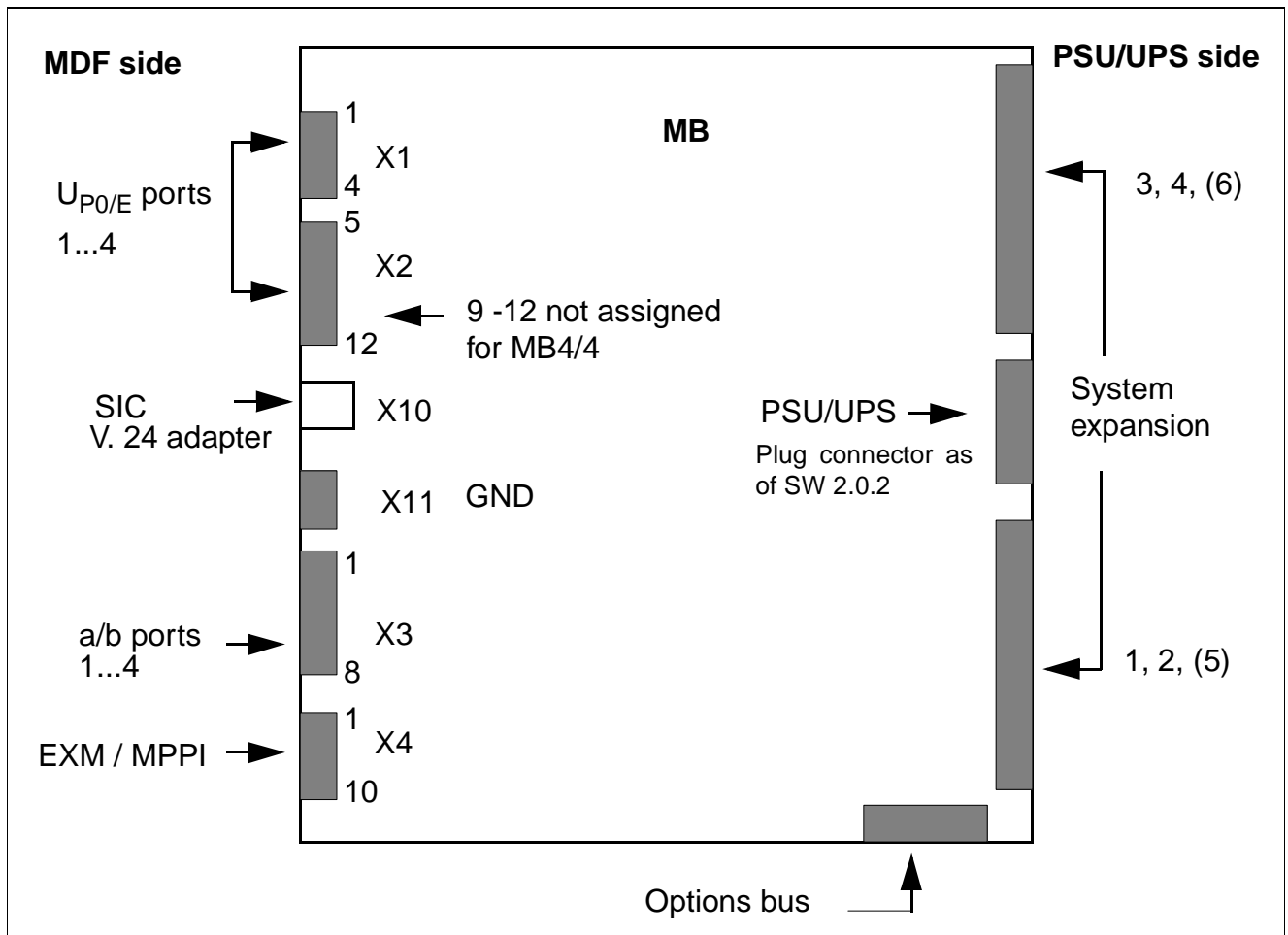


Figure 12-8 Motherboard interfaces – Euroset line 36

Contact	Port X1 UP0/E	Port X2 UP0/E	Port X3 a/b	Port X4
1	a1 - port 1		a 1 - port 1	GND
2	b1 - port 1		b 1 - port 1	not assigned
3	a2 - port 2		a 2 - port 2	not assigned
4	b2 - port 2		b 2 - port 2	EXMCL
5		a3 - port 3	a 3 - port 3	EXMDIR
6		b3 - port 3	b 3 - port 3	HRES
7		a4 - port 4	a 4 - port 4	EXMD
8		b4 - port 4	b 4 - port 4	EXMDET
9				+5V
10				not assigned
11				
12				

Table 12-7 Contact assignment of the MB interfaces - Euroset line 36

### 12.3.2 Hicom 118-2 motherboard

Hicom 118-2	Ext. no.	Int. ext. no.	DDI no.	Port numbering	Type	
<b>MB</b>  U <sub>P0/E</sub>	11	200	200	1	U <sub>P0/E</sub> M	U <sub>P0/E</sub> master
	12	201	201	2	U <sub>P0/E</sub> M	
	13	202	202	3	U <sub>P0/E</sub> M	
	14	203	203	4	U <sub>P0/E</sub> M	
	15	204	204	5	U <sub>P0/E</sub> M	
	16	205	205	6	U <sub>P0/E</sub> M	
	17	206	206	1	U <sub>P0/E</sub> S	U <sub>P0/E</sub> slave
	18	207	207	2	U <sub>P0/E</sub> S	
	19	208	208	3	U <sub>P0/E</sub> S	
	20	209	209	4	U <sub>P0/E</sub> S	
	21	210	210	5	U <sub>P0/E</sub> S	
	22	211	211	6	U <sub>P0/E</sub> S	
a/b	23	212	212	1	a/b	
	24	213	213	2	a/b	
	25	214	214	3	a/b	
	26	215	215	4	a/b	

Table 12-8 Standard numbering, MB 6/4 Hicom 118-2

The MB 6/4 motherboard is the main board and accommodates 6 digital extension interfaces (U<sub>P0/E</sub>), 4 analogue extension interfaces (a/b), the V.24 interface (SIC – serial interface cable), the signalling unit (SIU), a real-time clock and a PCM highway controller and conference circuit.

Hicom 118-2 MB 6/4 - motherboard with 6 x U<sub>P0/E</sub>, 4 x a/b

An EXM or MPPI module can be connected to the appropriate MB for external music on hold. The module also has a V.24 interface with a mini-DIN connector that can be used for outputting or editing call charge data or customer data. Teleservice is possible via the V.24 interface.

U<sub>P0/E</sub> / a/b extensions are connected by means of screw terminals. These terminals can be removed from the module for installation or maintenance purposes, see Figure 12-8 or Figure 12-9

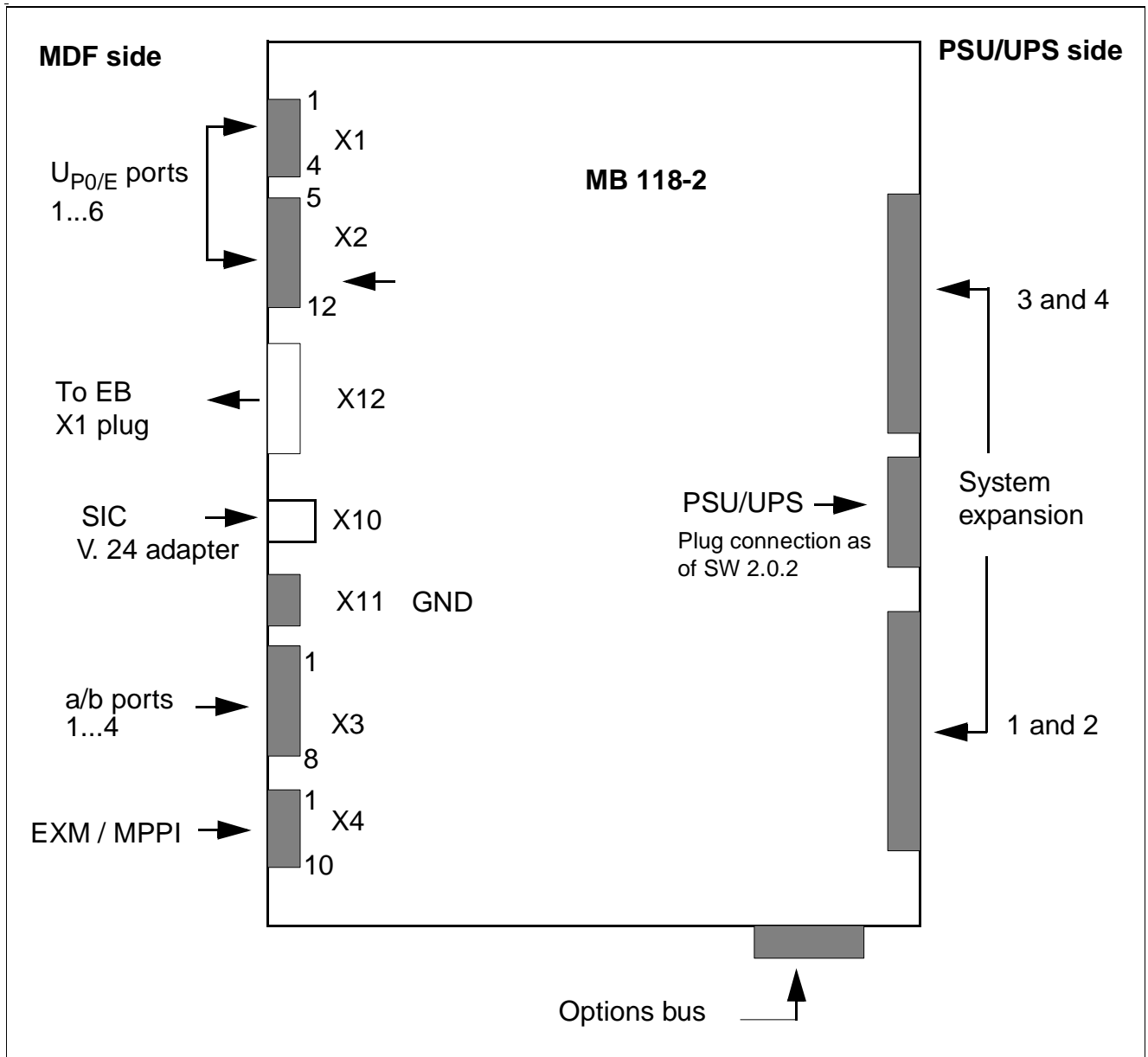


Figure 12-9 MB interfaces, Hicom 118-2 basic box

Contact assignment, see [Table 12-7](#)



Contact	Port X1 UP0/E	Port X2 UP0/E	Port X3 a/b	Port X4
1	a1 - port 1		a 1 - port 1	GND
2	b1 - port 1		b 1 - port 1	not assigned
3	a2 - port 2		a 2 - port 2	not assigned
4	b2 - port 2		b 2 - port 2	EXMCL
5		a3 - port 3	a 3 - port 3	EXMDIR
6		b3 - port 3	b 3 - port 3	HRES
7		a4 - port 4	a 4 - port 4	EXMD
8		b4 - port 4	b 4 - port 4	EXMDET
9		a5 - port 5		+5V
10		b5 - port 5		not assigned
11		a6 - port 6		
12		b6 - port 6		

Table 12-9 Contact assignment of the MB interfaces 6/4 Hicom 118-2'

**\*95**

**16122320**

Enter code for "System ad-Password for two-box system for changing the extension number plan".

Enter the above password to change the extension number plan of the basic box in a two-box system from 3-digits extension numbers (200-319) to 2-digit extension numbers (11–74). This ensures that the extension number plan of the basic box and the expansion box is uniform. The extension numbers in the expansion box remain 3-digit numbers and must be changed with the ASSISTANT L PC tool.

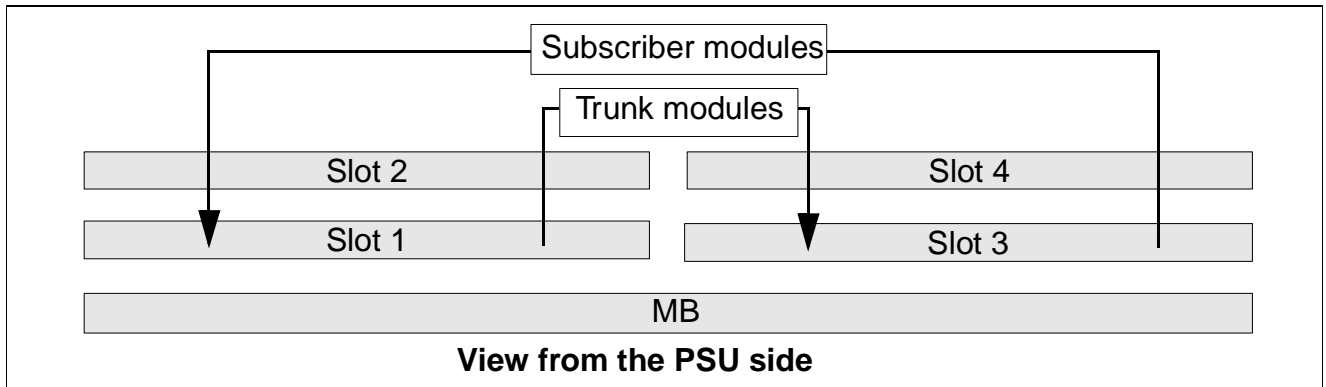


Figure 12-10 Equipping sequence for the basic box

### 12.3.3 EB 118-2 expansion module

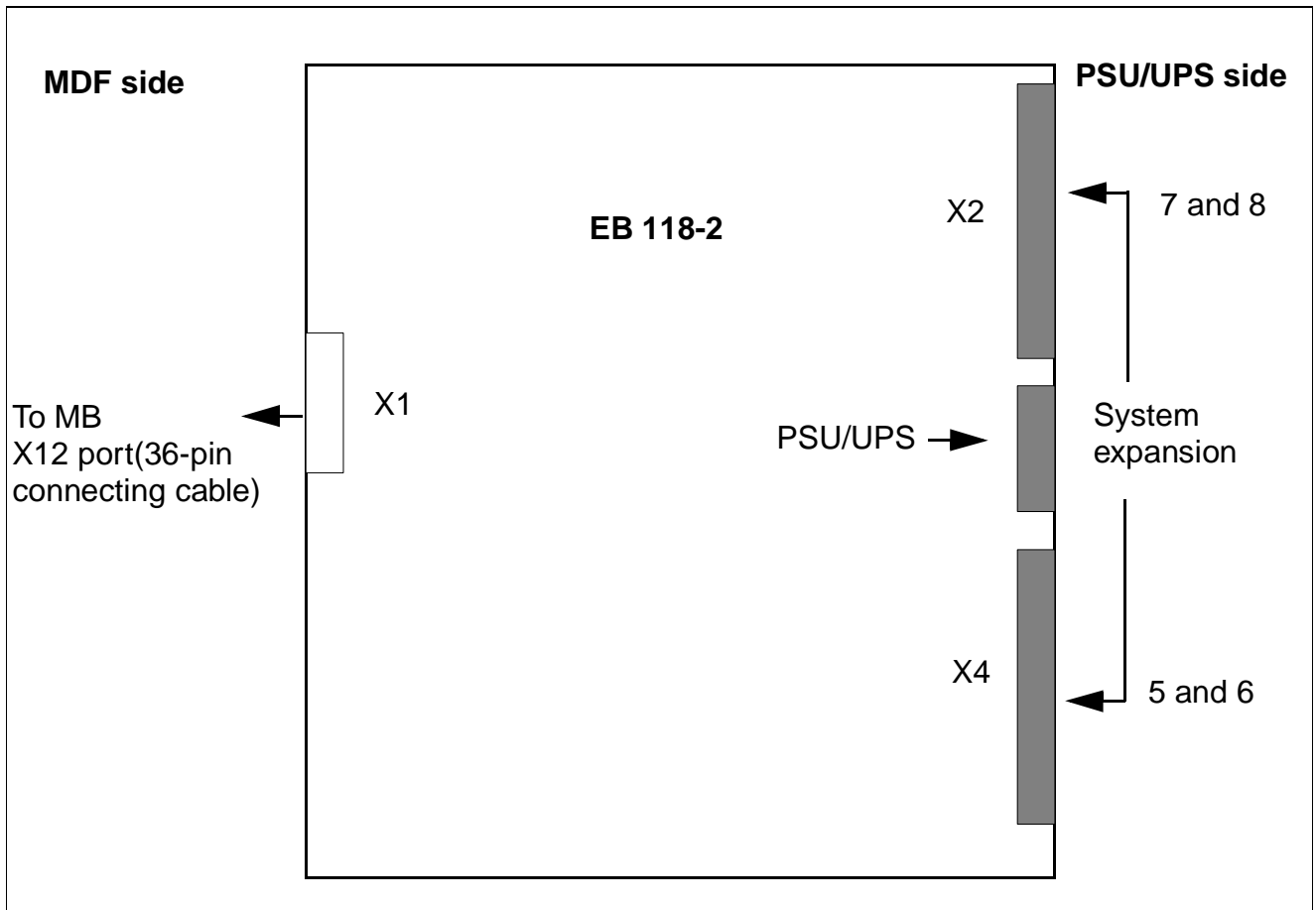


Figure 12-11 EB interfaces, Hicom 118-2 expansion box

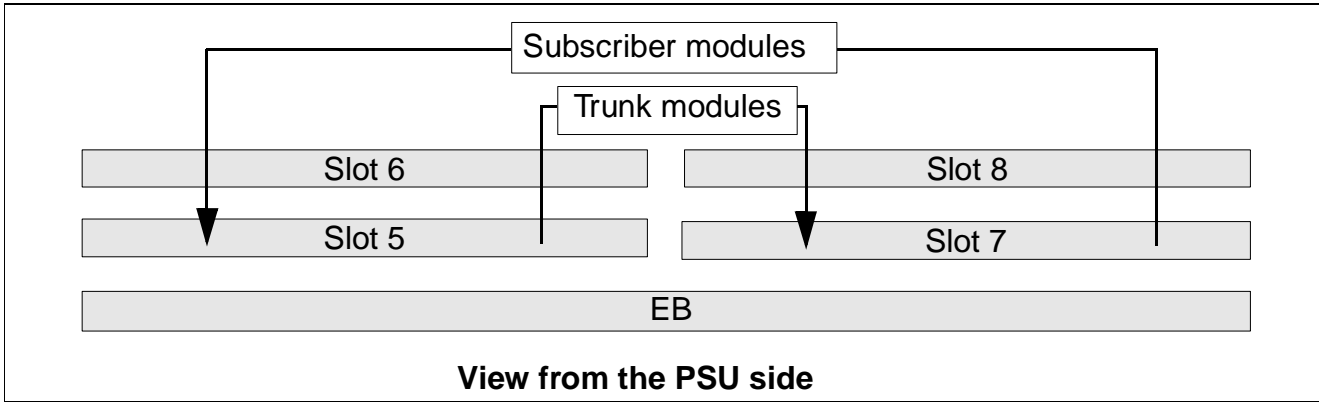


Figure 12-12    Equipping sequence for the expansion box

## 12.4 Power supply

Power supply unit (PSU) with power cable (1.5 m) or uninterruptible power supply unit (UPS) with power cable (1.5 m) and battery connection. Overall rating:

- PSU 3/UPS 3 > 73W
- PSU 2/UPS 2 > 73W

Mains input 230 VAC  $\sim \pm 15\%$  and 115 VAC  $\sim \pm 15\%$  with automatic range switchover (98VAC to 264VAC). Frequency 50/60 Hz.

The ringing voltage can be set (fixed at 75 VAC in German version and cannot be adjusted):

- 45VAC  $\sim \pm 10\%$  at 50 Hz or
- 75VAC  $\sim \pm 10\%$  at 25 Hz

Plug in and secure the PSU or UPS (with screws) when the required add-on modules have been inserted.



### **Danger**

The heat sinks in the power supply unit are directly connected to the mains. Always unplug the mains plug before opening the PSU housing.



### **Caution**

Before commencing work on the system or installing expansions, always pull the power plug, disconnect (screw connections) and pull the PSU or UPS, as otherwise the modules may be damaged

### 12.4.1 PSU3 / UPS3 power supply

Derived voltage	MB and system expansion	Function expansion	Total
+5V DC	10W	5W	15W
-48V DC	48W	2W	50W
-45/75 V DC	8W	—	8W

Table 12-10 PSU3 / UPS3 power distribution for Euroset line 36 (V 2.0.1+)

## **12.4.2 PSU2 / UPS2 power supply**

<b>Derived voltage</b>	<b>MB and system expansion</b>	<b>Function expansion</b>	<b>Total</b>
+5V DC	10W	5W	15W
-48V DC	48W	2W	50W
-45/75 V DC	8W	—	8W

Table 12-11 PSU3 / UPS3 power distribution for Euroset line 36 (V 2.0.2)/Hicom 118-2

For further information on PSU/UPS, see [Section 3.8](#) and [Section 3.5.3](#).

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