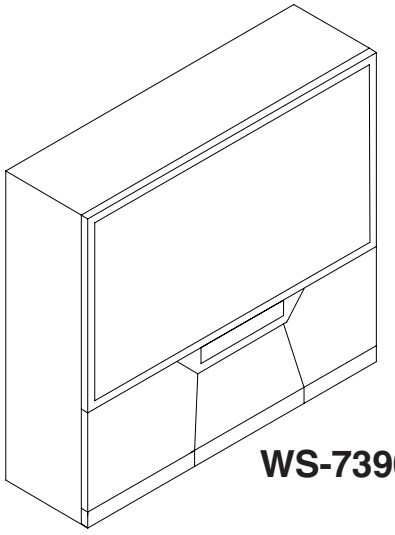
2000

MITSUBISHI ELECTRIC

Service Manual



WS-73907

PROJECTION TELEVISION
V17 / V17+ / V17++ CHASSIS

V17 MODELS	V17+ MODELS	V17++ MODELS
WT-46807	WS-55857	WS-55907
WS-55807	WS-65857	WS-65907
WS-65807		WS-73907

CAUTION:
Before servicing this chassis, it is important that the service person read the "SAFETY PRECAUTIONS" and "PRODUCT SAFETY NOTICE" contained in this manual.

PART 2
SCHEMATIC DIAGRAMS

CONTENTS **Page**

Overall PCB Block Diagram 1
PCB-POWER 2
PCB-MAIN 3
PCB-SIGNAL (AV/I-O) 4
PCB-SIGNAL (MICRO) 5
PCB-SIGNAL (VC/SW) 6
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PCBs - CRT/CONTROL/PREAMP/DBF/ FRONT/DISPLAY 13
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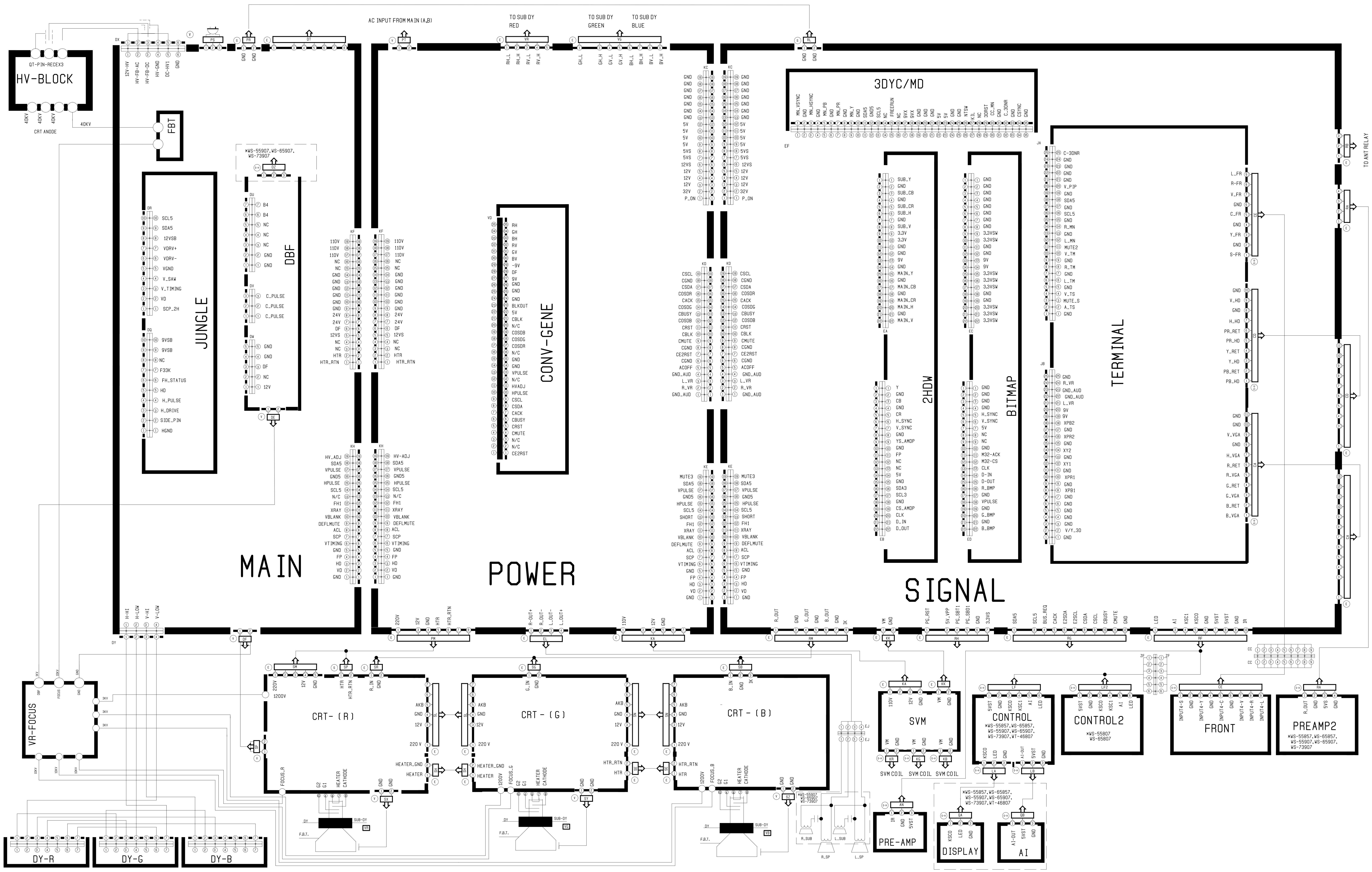
Refer to PART 1 for:

- Specifications
- Safety Precautions
- Disassembly
- CRT Replacement
- Electrical Adjustments
- Parts List
- Block Diagrams

MITSUBISHI DIGITAL ELECTRONICS AMERICA, INC.
9351 Jeronimo Road, Irvine, CA 92618-1904



* NOTES

1. DC voltages were measured from points indicated to the circuit ground with a high-Z voltmeter.
2. Waveforms were taken with standard color bar signal
3. TP13, etc. show Test Points
4. CAPACITORS

Value	Not indicated [PF, for numbers more than 1; μF, for numbers less than 1]			
Dielectric Strength	Not indicated :50V			
Tolerance	Not indicated = ±10% [No tolerance is indicated for electrolytic capacitors and ± 20%] G = ±2% P = +100% -0% Q = +30% -10% C = ±0.25PF J = ±5% Z = +80% -20% T = +200% -0% D = ±0.5PF K = ±10% F = ±1PF M = ±20% D = ±2PF			
Type	I	Parts except for chips	Not indicated	:Ceramic capacitor
			(MF)	:Polyester capacitor
			(PP)	:Polypropylene film capacitor
			(ALM)	:Aluminus electrolytic capacitor
			(TF)	:Twin film capacitor
			(SC)	:Semiconductor Ceramic capacitor
			(MP)	:Metalized paper
			(MPP)	:Metalized plastic film capacitor
			(MMF)	:Metalized polyester capacitor
			(MF.PP)	:Polyester polypropylene film capacitor
			(PS)	:Styrol capacitor
			(TAN) or (TANT)	:Tantalum capacitor
			+‖	:Electrolytic capacitor
			(NP)	:Non polarized electrolytic capacitor
	II	Chips	Not indicated	:Ceramic capacitor chip
			+‖	:Electrolytic capacitor
			(NP)	:Non polarized electrolytic capacitor chip
Characteristic (only ceramic capacitor)	Not indicated CH, SL, etc.			:F or B (high dielectric percentage) :Temperature compensating types

5. RESISTORS

Value	Not indicated = Ohm K = 1,000 Ohm M = 1,000,000 Ohm			
Wattage	Parts except for chips	Not indicated = 1/4W or 1/6W		
	Chips	Not indicated = 1/10W		
Tolerance	Not indicated = ±5% D = ±0.5% J = ±5% F = ±1% K = ±10%			
Type	I	Parts except for chips	Not indicated	:Carbon resistor
			(S)	:Fixed composition resistor
			(MB)	:Metal oxide film resistor (type B)
			(CE)	:Cemented resistor
			(W)	:Wire wound resistor
			(M)	:Metal film resistor
			(MPC)	:Metal plate cement resistor
			(ML)	:Metal liner resistor
	II	Chip	Not indicated	:Chip resistor

6. This is a basic schematic diagram. Some sets may be subject to modification according to engineering improvement.

SHADED COMPONENTS HAVE SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. BEFORE REPLACING ANY OF THESE COMPONENTS READ CAREFULLY THE PRODUCT SAFETY NOTICE IN THE SERVICE MANUAL. DON'T DEGRADE THE SAFETY OF THE RECEIVERS THROUGH IMPROPER SERVICING.

SERVICE TECHNICIAN WARNING:
X-RADIATION PRECAUTION
THIS PRODUCT INCLUDES CRITICAL ELECTRICAL AND MECHANICAL PARTS ESSENTIAL FOR X-RADIATION PROTECTION.
TO AVOID POSSIBLE EXPOSURE TO X-RADIATION TAKE X-RADIATION PROTECTIVE MEASURES FOR PERSONNEL DURING SERVICING.
SEE SERVICE INSTRUCTIONS FOR SPECIFIED REPLACEMENT PARTS AND SERVICE ADJUSTMENTS.

CONTENTS

PG.1.... BLOCK DIAGRAM
PG.2.... MAIN
PG.3.... POWER
PG.4.... TERMINAL
PG.5.... SIGNAL-1 (AV I/O)
PG.6.... SIGNAL-2 (MICRO)
PG.7.... SIGNAL-3 (VC/SW)
PG.8.... 3DYC
PG.9.... CONV GEN / JUNGLE
PG.10.. CRT/CONTROL/AI/SVM/DBF
PG.11.. 2HDW-1
PG.12.. 2HDW-2
PG.13.. 2HDW-3
PG.14.. BITMAP-1
PG.15.. BITMAP-2

WS-55807
WS-65807
WT-46807
WS-55857
WS-65857
WS-55907
WS-65907
WS-73907

LIVE COLD

PCB-SIGNAL-3 KC

ICBCD1 STK392-570

ICBCD2 STK392-570

CONV-GEN

PCB-SVM KA

PCB-CRT (R) SM

PCB-MAIN KF

PCB-MAIN KH

PCB-SIGNAL-3 KD

PCB-SIGNAL-3 KE

RED/V

GREEN/BLUE/DY

SPEAKERS

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PG.1	BLOCK DIAGRAM	WS-65807
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PG.4	TERMINAL	WS-65857
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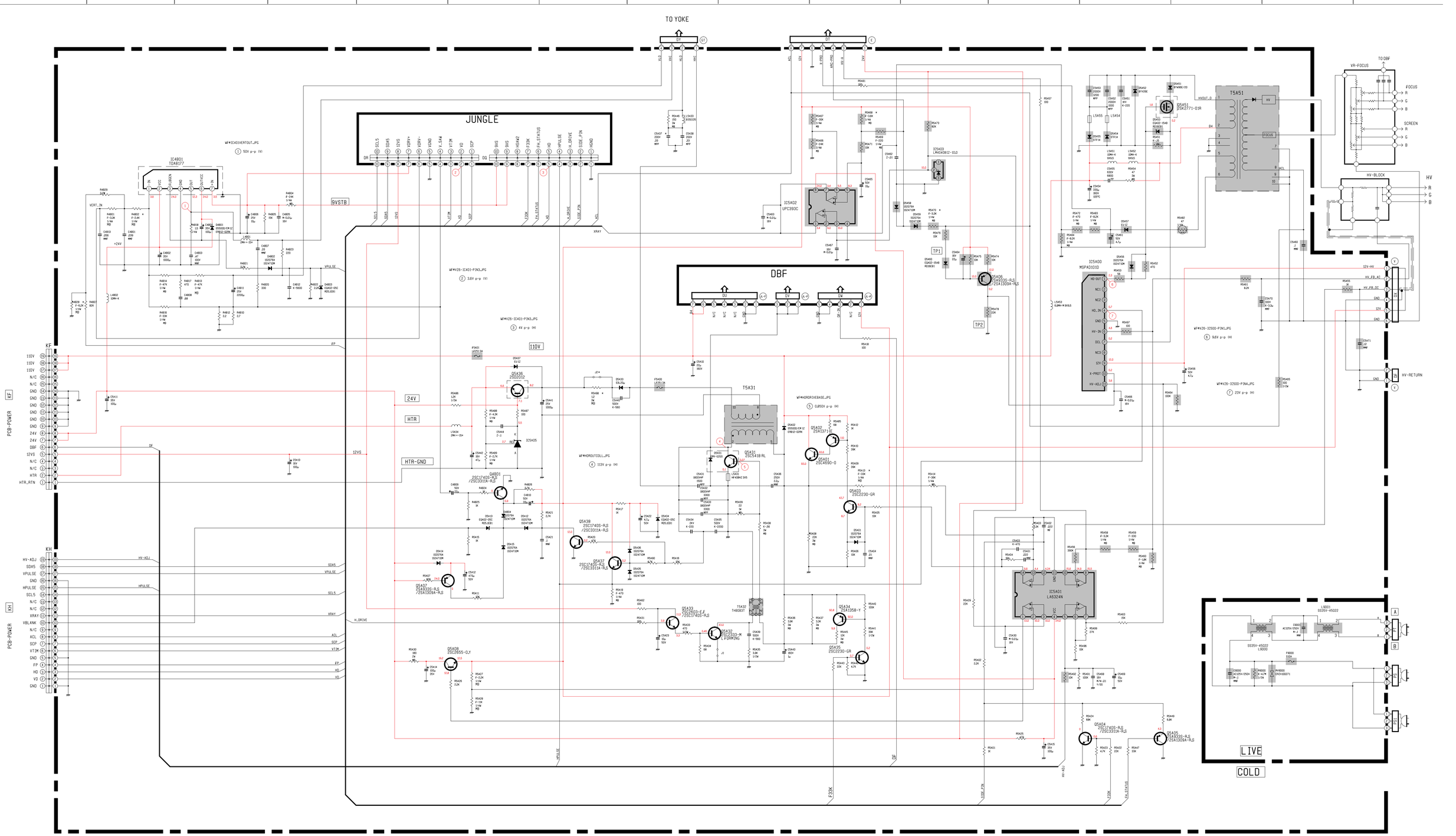
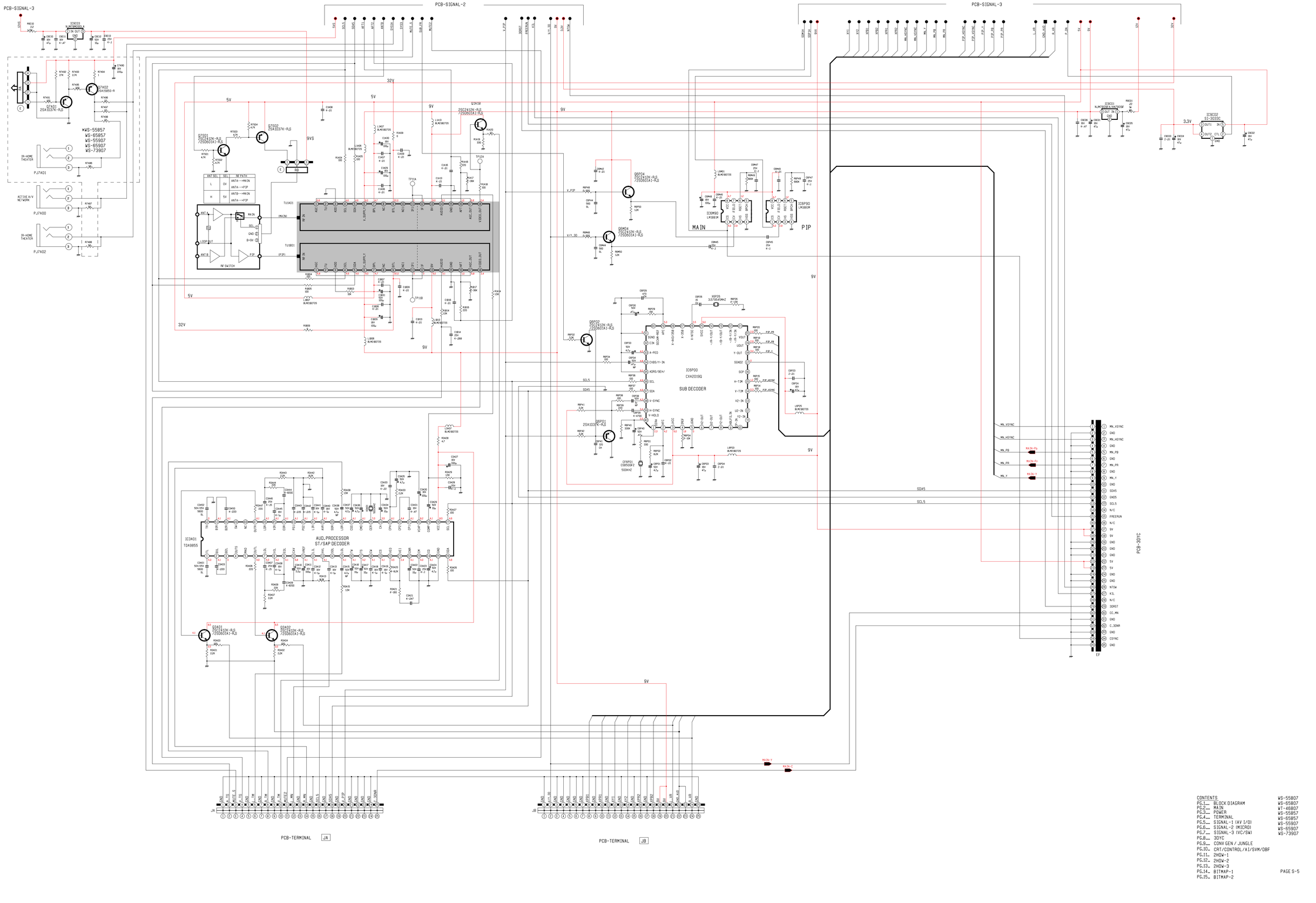
PG.7	SIGNAL-3 (VC/SW)	WS-73907
PG.8	3DYC	
PG.9	CONV GEN / JUNGLE	
PG.10	CRT/CONTROL/A1/SVM/DBF	
PG.11	2HDW-1	
PG.12	2HDW-2	
PG.13	2HDW-3	
PG.14	BITMAP-1	
PG.15	BITMAP-2	



MODELS	C5A37×	R5A68×	R5A70×	R5A13×	R5A98×	J2×	R4B02×	R4B28×
WT-46807	200V .39 MPP	F-3.6K	F-3K	F-33K	X	0	F-3.0K	F-7.5K
55",65"	200V .33 MPP	F-3.6K	F-3K	F-39K	3W .82-J	X	F-2.4K	F-6.2K
WS-73907	200V .33 MPP	F-2.4K	F-2.4K	F-39K	3W 1.2-J	X	F-2.4K	F-6.2K

CONTENTS — WS-55807
PG.1 BLOCK DIAGRAM — WS-65807
PG.2 MAIN — WT-46807
PG.3 POWER — WS-55857
PG.4 TERMINAL — WS-65857
PG.5 SIGNAL-1 (AV I/O) — WS-55907
PG.6 SIGNAL-2 (MICRO) — WS-65907
PG.7 SIGNAL-3 (VC/SW) — WS-73907
PG.8 3DYC
PG.9 CONV GEN / JUNGLE
PG.10 CRT/CONTROL/A1/SVM/DBF
PG.11 2HDW-1
PG.12 2HDW-2
PG.13 2HDW-3
PG.14 BITMAP-1 — PAGE S-2
PG.15 BITMAP-2



CONTENTS

PG.1	BLOCK DIAGRAM	WS-55807
PG.2	MAIN	WS-65807
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PG.5	SIGNAL-1 (AV I/O)	WS-55907
PG.6	SIGNAL-2 (MICRO)	WS-65907
PG.7	SIGNAL-3 (VC/SW)	WS-73907
PG.8	3DYC	
PG.9	CONV GEN / JUNGLE	
PG.10	CRT/CONTROL/A1/SVM/DBF	
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PG.12	2HDW-2	
PG.13	2HDW-3	
PG.14	BITMAP-1	PAGE S-5
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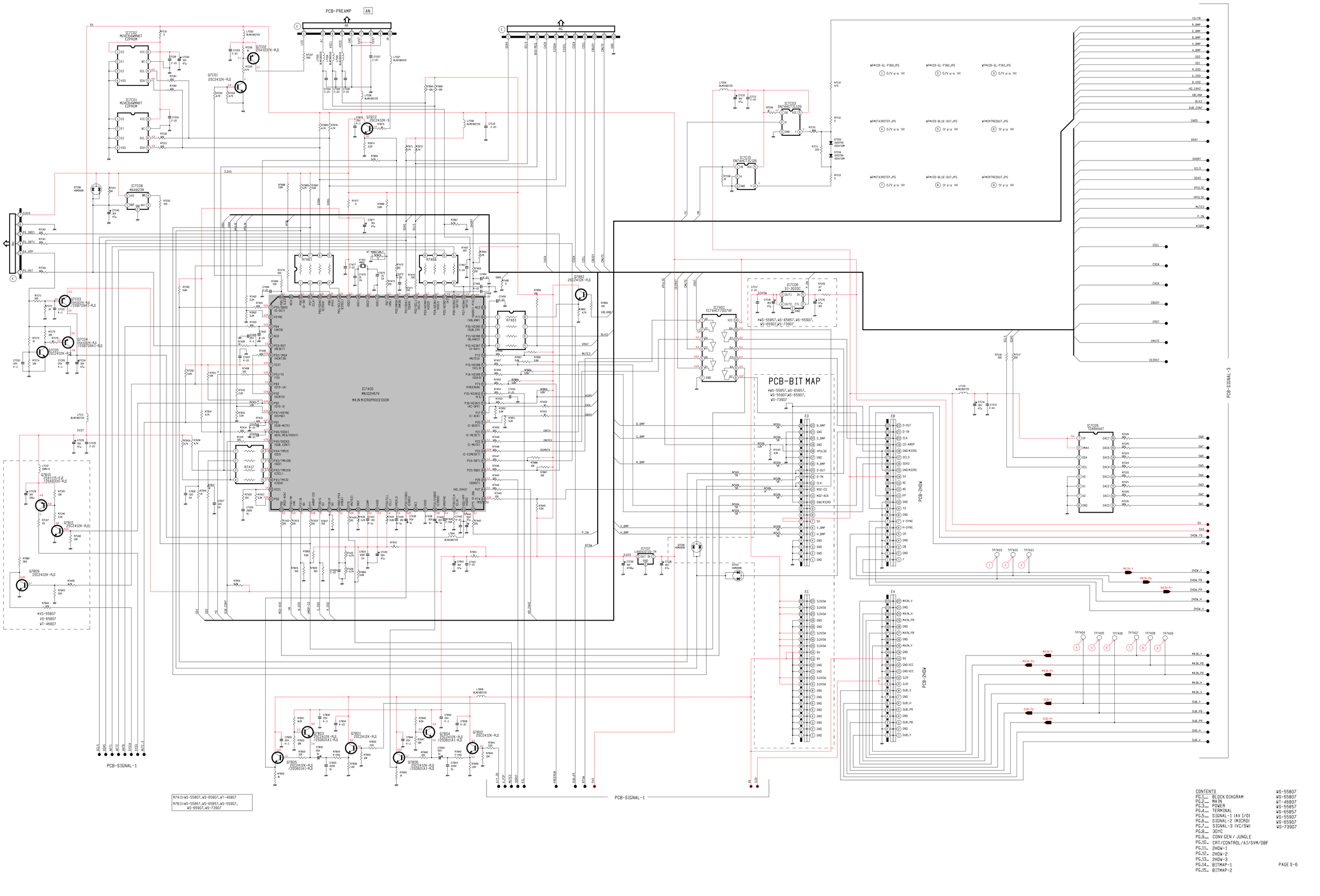
PCB-PREAMP
AN
RF
RG
IC7C02 M24C64-WMNBT E2PROM
IC7C01 M24C64-WMNBT E2PROM
Q7C01 2SC2412K-RLS
Q7C02 2SA1037K-R/S
IC7C08 MAX823R
IC7A00 MN102H57K MAIN MICROPROCESSOR
Q7B72 2SC2412K-S
Q7B62 2SC2412K-RLS
IC7A01 TC74HCT7007AF
IC7C06 S1-3033C
IC7C09 SN74HCT1G126
IC7C10 SN74HCT1G126
IC7C05 TD4884AFT
Q7C03 2SA1037K-R/S 2SB709AT-RLS
Q7C04 2SA1037K-R/S 2SB709AT-RLS
Q7C05 2SC2412K-RLS
Q7809 2SC2412K-RLS
Q7810 2SA1115-E/F /2SA933S-RLS
Q7811 2SC2412K-RLS
Q7803 2SC2412K-R/S /2SD601A1-RLS
Q7801 2SC2412K-RLS
Q7804 2SC2412K-R/S /2SD601A1-RLS
Q7802 2SC2412K-RLS
Q7805 2SC2412K-R/S /2SD601A1-RLS
Q7806 2SC2412K-R/S /2SD601A1-RLS
WT-46807,2NLY
WS-55857,WS-65857,WS-55907, WS-65907,WS-73907
PCB-BIT MAP
WS-55857,WS-65857, WS-55907,WS-65907, WS-73907
ED
EB
EC
EA
PCB-2HDW
PCB-SIGNAL-1
PCB-SIGNAL-2
PCB-SIGNAL-3
R7A11:WS-55807,WS-65807,WT-46807
R7B11:WS-55857,WS-65857,WS-55907, WS-65907,WS-73907
CONTENTS
PG.1 BLOCK DIAGRAM WS-55807
PG.2 MAIN WS-65807
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PG.4 TERMINAL WS-55857
PG.5 SIGNAL-1 (AV I/O) WS-55907
PG.6 SIGNAL-2 (MICRO) WS-65907
PG.7 SIGNAL-3 (VC/SW) WS-73907
PG.8 3DYC
PG.9 CONV GEN / JUNGLE
PG.10 CRT/CONTROL/A1/SVM/DBF
PG.11 2HDW-1
PG.12 2HDW-2
PG.13 2HDW-3
PG.14 BITMAP-1
PG.15 BITMAP-2
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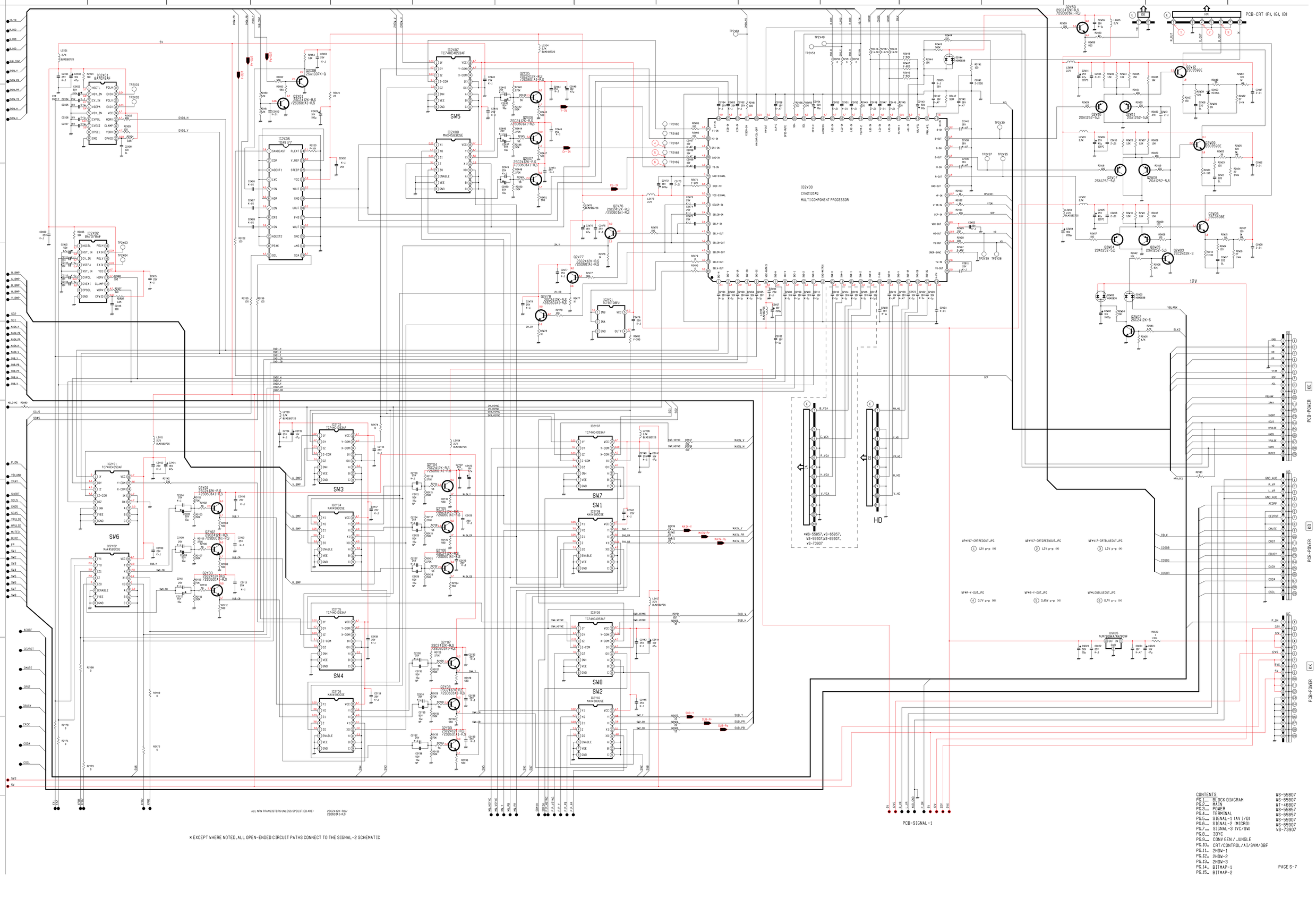

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PG.1	BLOCK DIAGRAM	WS-55807
PG.2	MAIN	WS-65807
PG.3	POWER	WT-46807
PG.4	TERMINAL	WS-55857
PG.5	SIGNAL-1 (AV I/O)	WS-65857
PG.6	SIGNAL-2 (MICRO)	WS-55907
PG.7	SIGNAL-3 (VC/SW)	WS-65907
PG.8	3DYC	WS-73907
PG.9	CONV GEN / JUNGLE	
PG.10	CRT/CONTROL/AI/SVM/DBF	
PG.11	2HDW-1	
PG.12	2HDW-2	
PG.13	2HDW-3	
PG.14	BITMAP-1	PAGE S-7
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PCB-SIGNAL-2

EA

EA

SHD

SVD

MVD

SUB-Y

SUB-CB

SUB-CR

SUB-H

3.3V

5V

MAIN-Y

MAIN-CB

MAIN-CR

MAIN-H

M-Y

M-CB

M-CR

S-Y

S-CB

S-CR

M-CLAMP

M-ADC

M-MPX

M-MPXCLK

M-ADCLK

M-CLP

S-ADC

S-MPX

S-CLAMP

ADS931E

IC74AC157FN

IC74HC4066AFN

IMZ1

LF7000 14MHZ SMD

LF7001 14MHZ SMD

LF7002 14MHZ SMD

LF7E00 14MHZ SMD

LF7E01 14MHZ SMD

LF7E02 14MHZ SMD

2SA1037K-Q

2SC2413K-Q

ELAS103FA

BLM21A121S

× ALL OPEN-ENDED CIRCUIT PATHS CONNECT TO THE 2HDW-2 SCHEMATIC

CONTENTS

PG.1	BLOCK DIAGRAM	WS-55807
PG.2	MAIN	WS-55807
PG.3	POWER	WT-46807
PG.4	TERMINAL	WS-55857
PG.5	SIGNAL-1 (AV I/O)	WS-55957
PG.6	SIGNAL-2 (MICRO)	WS-55907
PG.7	SIGNAL-3 (VC/SW)	WS-55907
PG.8	3DYC	WS-73907
PG.9	CONV GEN / JUNGLE	
PG.10	CRT/CONTROL/A1/SVM/OBF	
PG.11	2HDW-1	
PG.12	2HDW-2	
PG.13	2HDW-3	
PG.14	BITMAP-1	PAGE S-11
PG.15	BITMAP-2	

IC7H02
TMX57127

IC7H07
SLA4028F3N

IC7H00
MSM56V16160-10TS-K

IC7H01
MSM56V16160-10TS-K

IC7H03
MSM534031E

IC7H04
MS1795/18FP

IC7H05
TC74HC221AF

IC7H06
TLC2932IPW

IC7H08
TLC2932IPW

IC7H09
TC74HCT7007AF

IC7H11
TC74AC157FN

IC7H12
TC74AC157FN

IC7H13
TC74AC157FN

IC7H14
TC74AC157FN

Q7H1D
2SC2412K-Q

Q7H6D
2SC2412K-Q

X7HD1
12007519Y
32.000MHz

CONTENTS

PG.1	BLOCK DIAGRAM	WS-55807
PG.2	MAIN	WT-46807
PG.3	POWER	WS-55857
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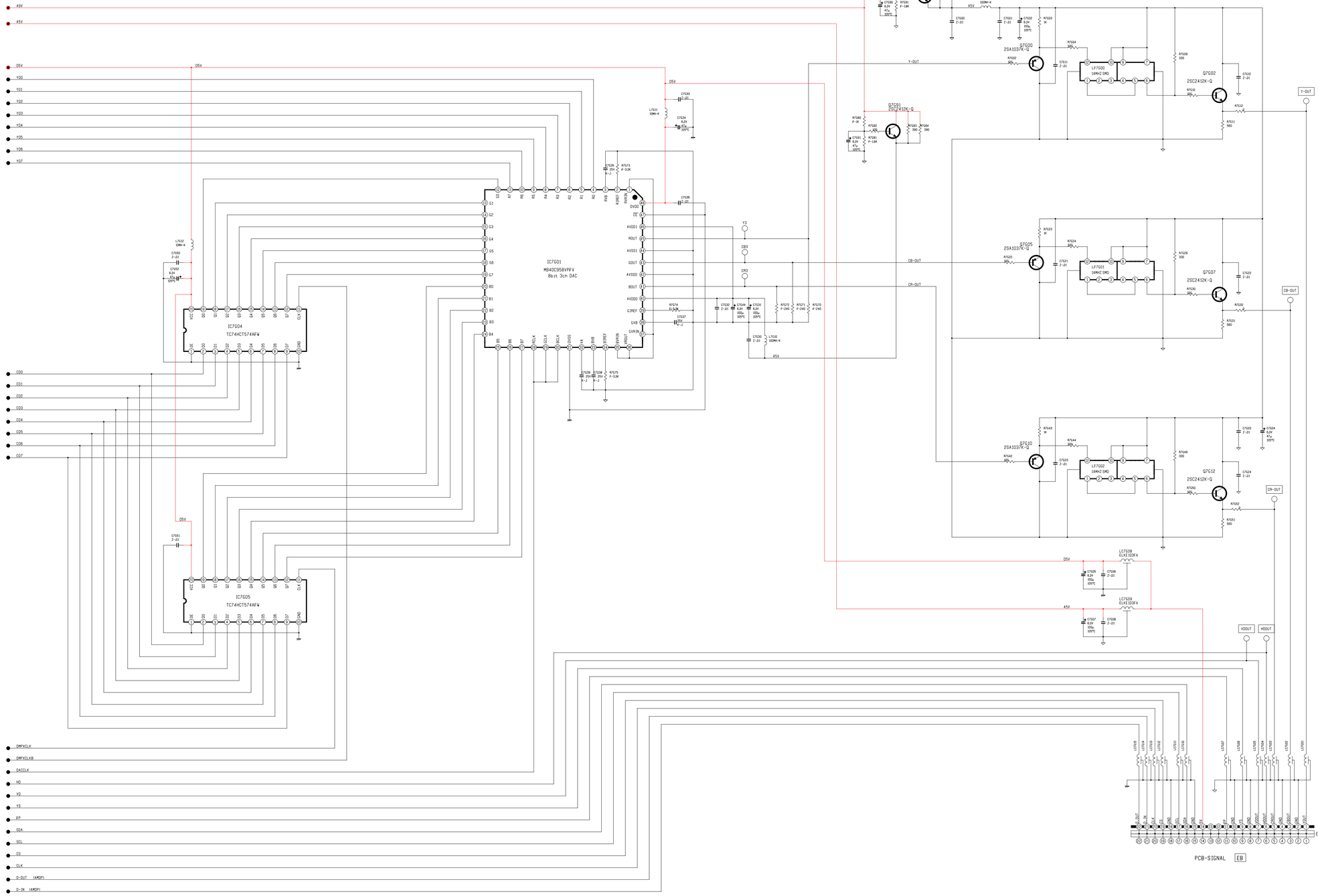
PG.7	SIGNAL-3 (VC/SW)	WS-73907
PG.8	3DYC	
PG.9	CONV GEN / JUNGLE	
PG.10	CRT/CONTROL/A1/SVM/DBF	
PG.11	2HDW-1	
PG.12	2HDW-2	
PG.13	2HDW-3	
PG.14	BITMAP-1	PAGE S-12
PG.15	BITMAP-2	

* ALL OPEN-ENDED CIRCUIT PATHS CONNECT TO THE 2HDW-1 SCHEMATIC



× ALL OPEN-ENDED CIRCUIT PATHS CONNECT TO THE 2HDW-2 SCHEMATIC

CONTENTS		
PG.1	BLOCK DIAGRAM	WS-55807
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PG.3	POWER	WT-46807
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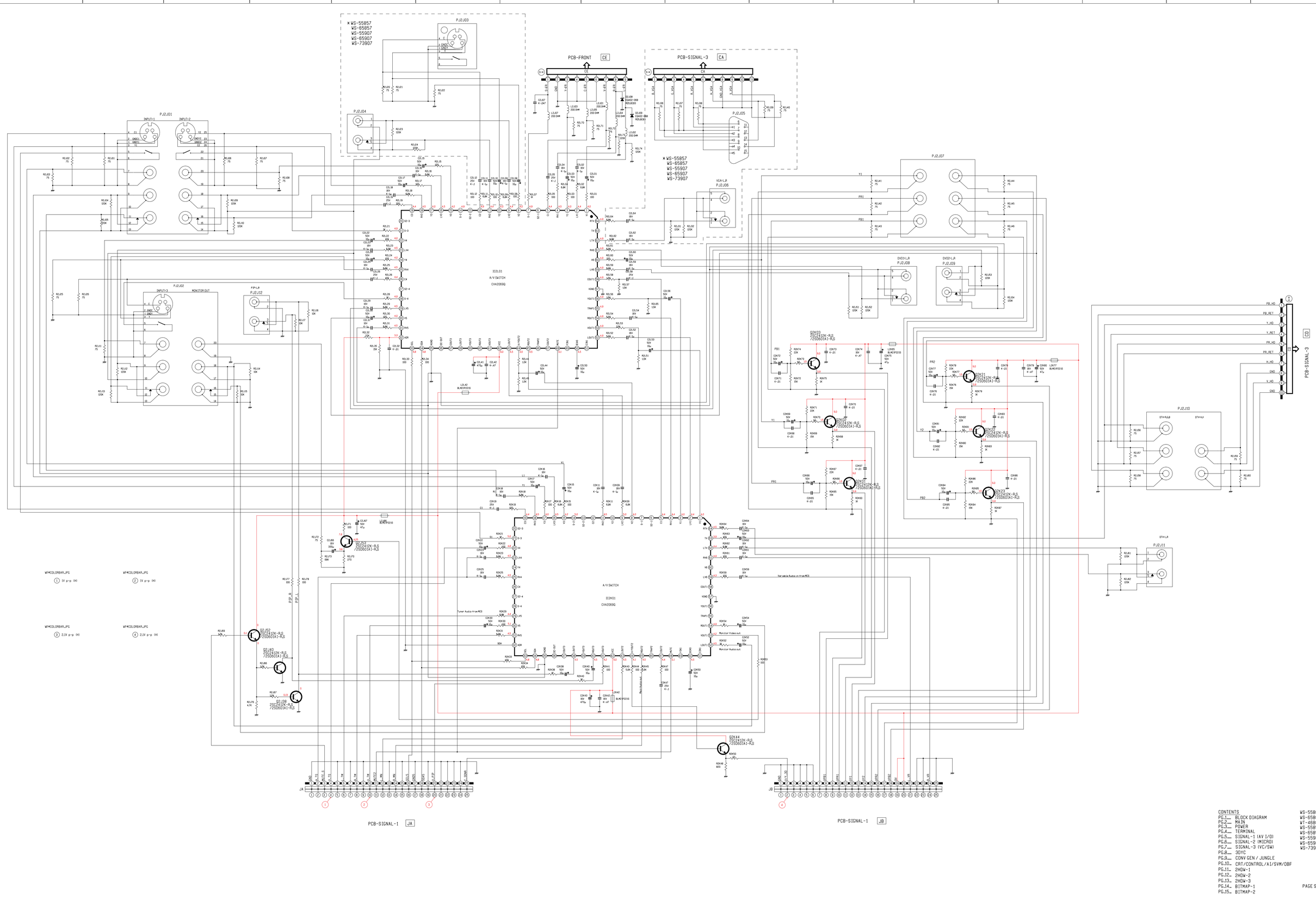
PG.10	CRT/CONTROL/A1/SVM/DBF	
PG.11	2HDW-1	
PG.12	2HDW-2	
PG.13	2HDW-3	
PG.14	BITMAP-1	
PG.15	BITMAP-2	



CONTENTS		
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PG.8	3DYC	WS-73907
PG.9	CONV GEN / JUNGLE	
PG.10	CRT/CONTROL/A1/SVM/DBF	
PG.11	2HDW-1	
PG.12	2HDW-2	
PG.13	2HDW-3	
PG.14	BITMAP-1	PAGE S-4
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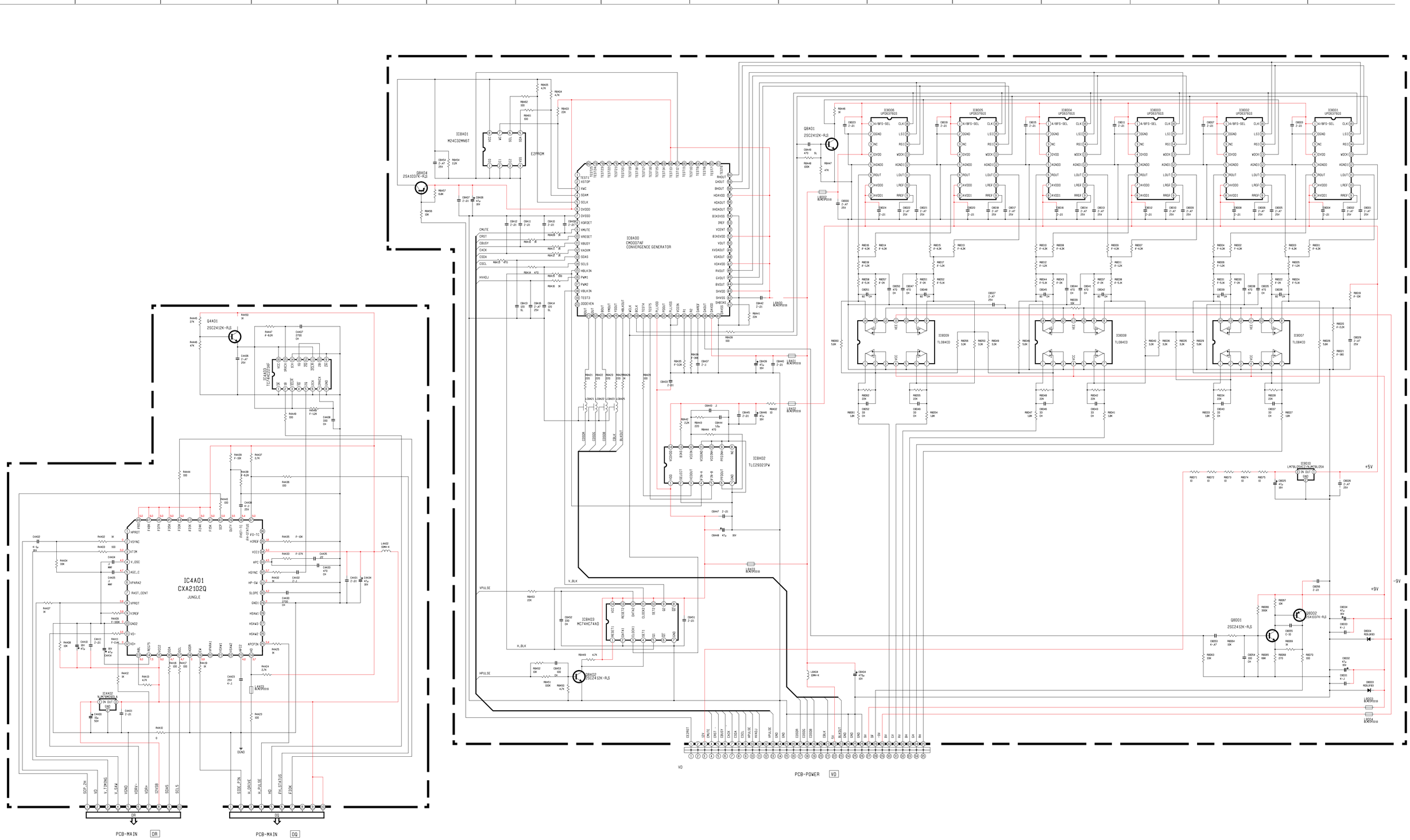

CONTENTS

PG.1	BLOCK DIAGRAM	WS-55807
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PG.10	CRT/CONTROL/A1/SVM/DBF	
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PG.12	2HDW-2	
PG.13	2HDW-3	
PG.14	BITMAP-1	
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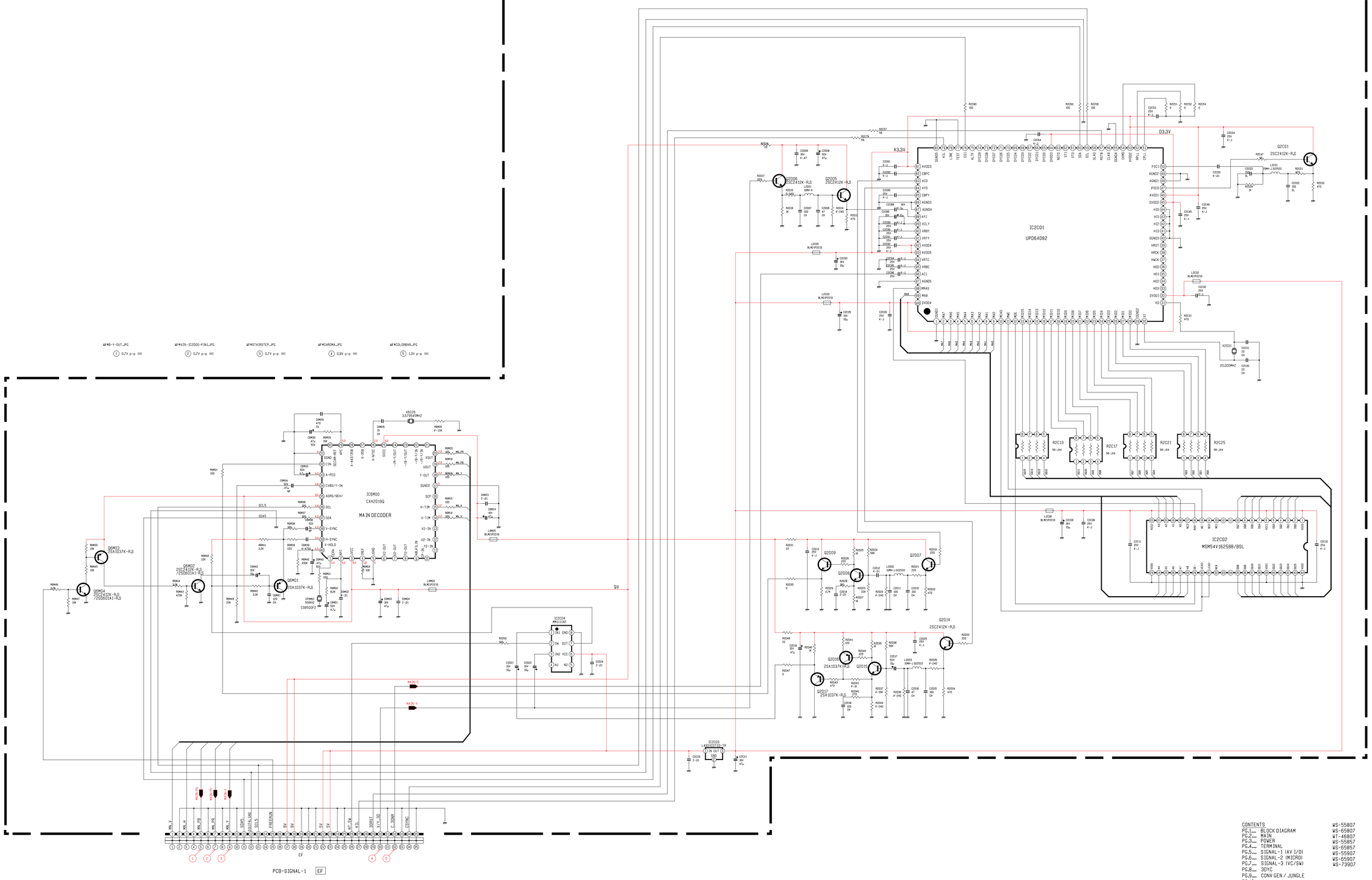

CONTENTS		
PG.1	BLOCK DIAGRAM	WS-55807
PG.2	MAIN	WS-65807
PG.3	POWER	WT-46807
PG.4	TERMINAL	WS-55857
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PG.7	SIGNAL-3 (VC/SW)	WS-65907
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PG.11	2HDW-1	
PG.12	2HDW-2	
PG.13	2HDW-3	
PG.14	BITMAP-1	
PG.15	BITMAP-2	

PCB-CONTROL LB

PCB-AI

PCB-PREAMP

PCB-CONTROL LA

PCB-DISPLAY

PCB-SIGNAL-2 RF

PCB-CONT

PCB-TERMINAL CB

PCB-FRONT

PCB-CONT2

PCB-CRT (R)

PCB-CRT (G)

PCB-CRT (B)

PCB-SVM

PCB-DBF

PCB-PREAMP2

CONTENTS WS-55807

PG.1 BLOCK DIAGRAM WS-65807
PG.2 MAIN WT-46807
PG.3 POWER WS-55857
PG.4 TERMINAL WS-65857
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PG.11 2HDW-1
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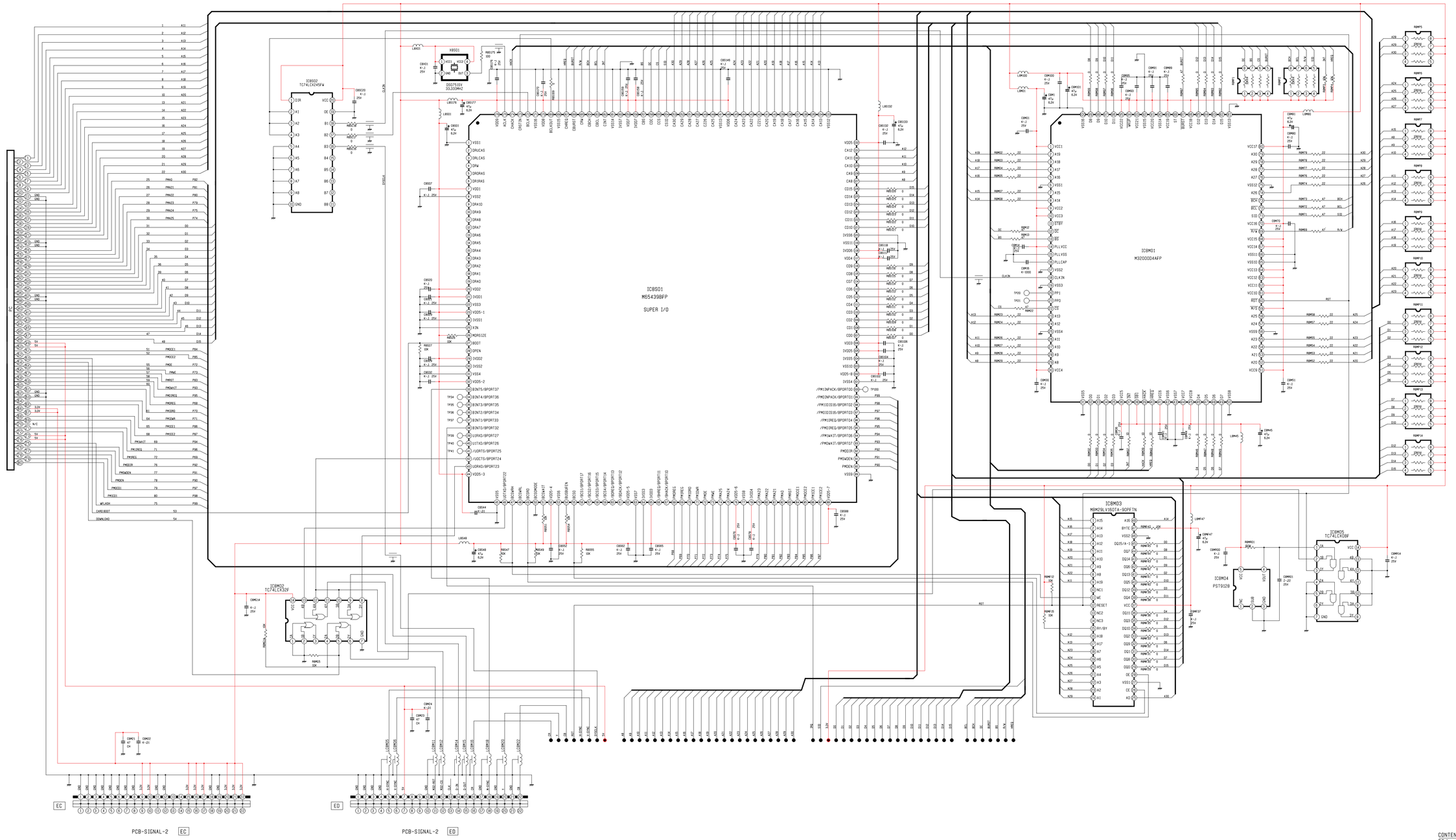

× ALL OPEN-ENDED CIRCUIT PATHS CONNECT TO THE BITMAP-2 SCHEMATIC

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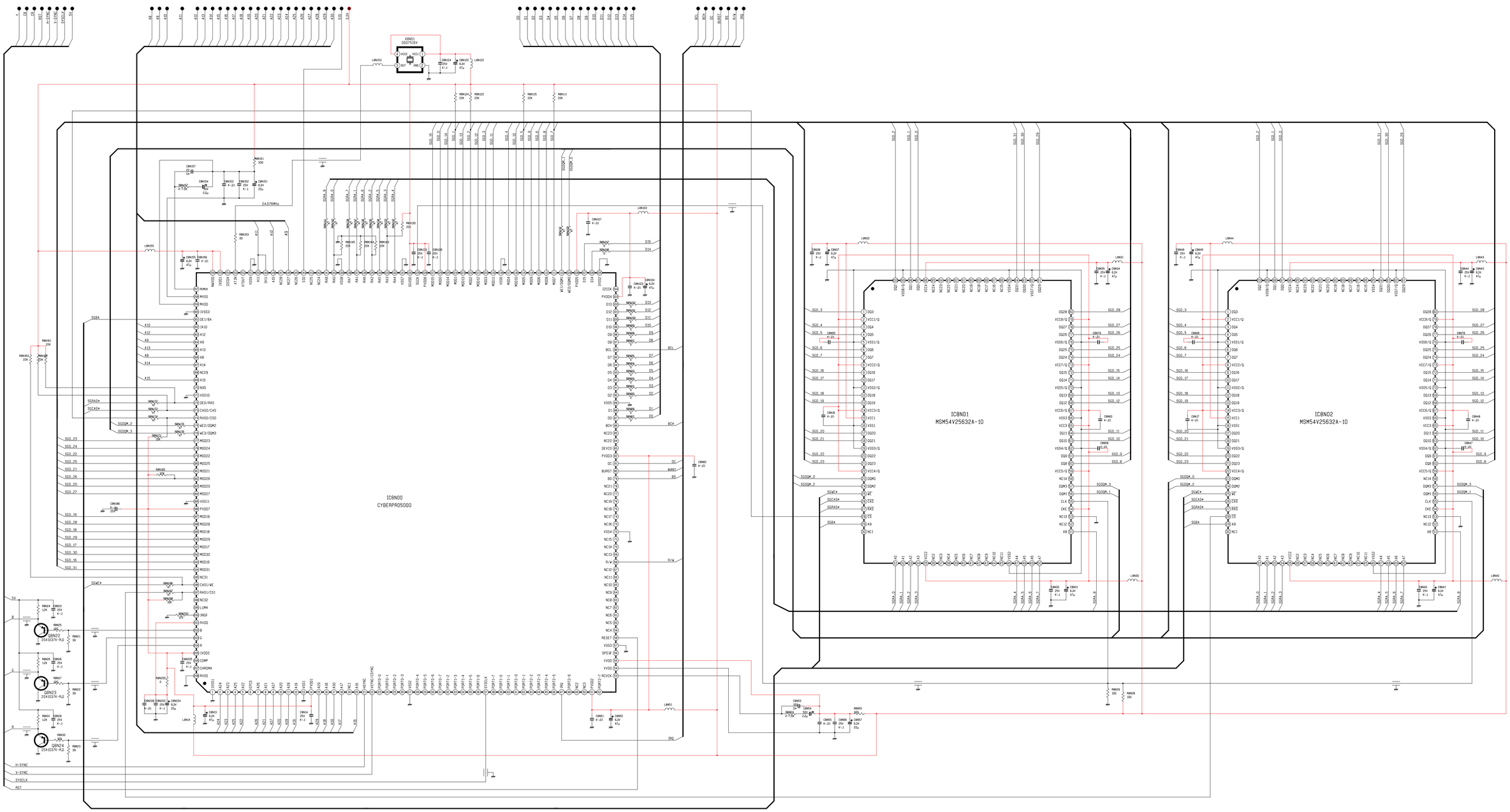
P6.1	BLOCK DIAGRAM	WS-55807
P6.2	MAIN	WS-65807
P6.3	POWER	WT-46807
P6.4	TERMINAL	WS-55857
P6.5	SIGNAL-1 (AV I/O)	WS-65857
P6.6	SIGNAL-2 (MICRO)	WS-55907
P6.7	SIGNAL-3 (VC/SW)	WS-65907
P6.8	3DYC	WS-73907
P6.9	CONV GEN / JUNGLE	
P6.10	CRT/CONTROL/A1/SVM/DBF	
P6.11	2HDW-1	
P6.12	2HDW-2	
P6.13	2HDW-3	
P6.14	BITMAP-1	
P6.15	BITMAP-2	



× ALL OPEN-ENDED CIRCUIT PATHS CONNECT TO THE BITMAP-1 SCHEMATIC

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PG.1	BLOCK DIAGRAM	WS-55807
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PG.10	CRT/CONTROL/A1/SVM/DBF	
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