SAMSUNG

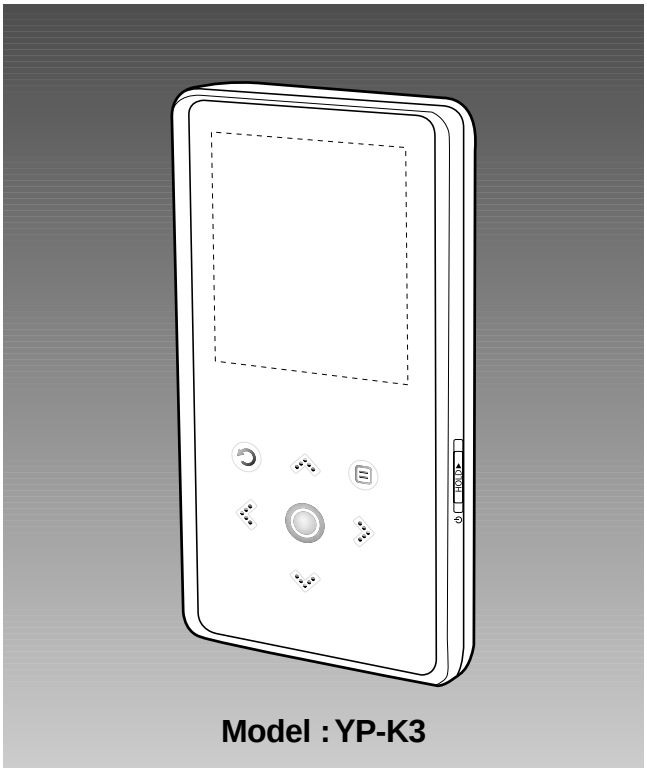
PORTABLE DIGITAL AUDIO PLAYER

Basic Model : YP-K3

* Application : YP-K3 ZB/ K3JZB [1GB]
YP-K3 QB/ K3JQB [2GB]
YP-K3 AB/ K3JAB [4GB]

SERVICE Manual

PORTABLE DIGITAL AUDIO PLAYER



Model : YP-K3

Features

- Touchpad
- Easy & Simple Menu Structure
- Longer Play Time and Shorter Downloading!
- Supporting Various File Formats!
- Convenience

- Confidential -

ELECTRONICS

INDEX

1. Precautions

Follow these safety, servicing and ESD precautions to prevent damage and protect against potential hazards such as electrical shock and X-rays.

1-1 Safety Precautions

1. Be sure that all of the built-in protective devices are replaced.

2. When reinstalling the chassis and its assemblies, be sure to restore all protective devices, including control knobs and compartment covers.

3. Make sure that there are no cabinet openings through which people--particularly children--might insert fingers and contact dangerous voltages. Such openings include the spacing between the picture tube and the cabinet mask, excessively wide cabinet ventilation slots, and improperly fitted back covers.

4. Design Alteration Warning:
   Never alter or add to the mechanical or electrical design of the unit. Example: Do not add auxiliary audio or video connectors. Such alterations might create a safety hazard. Also, any design changes or additions will void the manufacturer's warranty.

5. Leakage Current Hot Check (Figure 1-1):
   Warning: Do not use an isolation transformer during this test. Use a leakage-current tester or a metering system that complies with American National Standards Institute (ANSI C101.1, *Leakage Current for Appliances*), and Underwriters Laboratories (*UL Publication UL1410, 59.7*).

   With the unit completely reassembled, plug the AC line cord directly into a 120V AC outlet. With the unit's AC switch first in the ON position and then OFF, measure the current between a known earth ground (metal water pipe, etc.) and all exposed metal parts. Examples: Handle brackets, metal cabinets, screwheads and control shafts. The current measured should not exceed 0.5 milliamp. Reverse the power-plug prongs in the AC outlet and repeat.

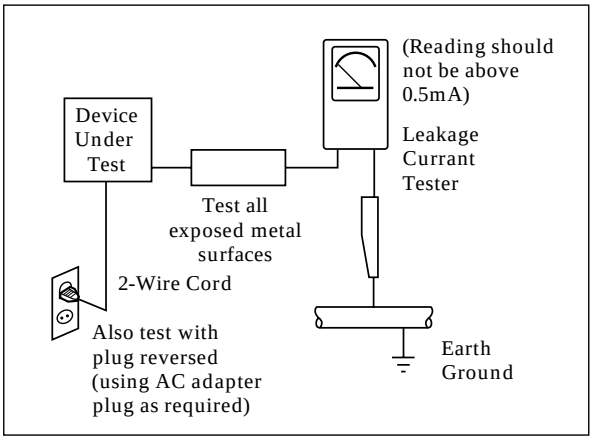


Fig. 1-1 AC Leakage Test

6. Insulation Resistance Cold Check:
   (1) With the unit's AC plug disconnected from the AC source, connect an electrical jumper across the two AC prongs. (2) Set the power switch to ON. (3) Measure the resistance between the shorted AC plug and any exposed metallic parts. Example: Screwheads, antenna, control shafts or handle brackets.

   If any of the exposed metallic parts has a return path to the chassis, the measured resistance should be between 1 and 5.2 megohms. If there is no return path, the measured resistance should be "infinite." If the resistance is outside these limits, a shock hazard might exist. See Figure 1-2

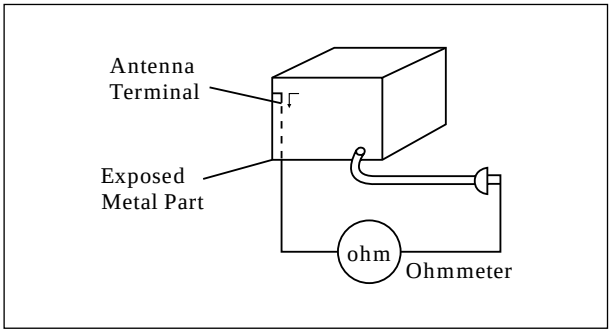


Fig. 1-2 Insulation Resistance Test

1-1 Safety Precautions (Continued)

7. Components, parts and wiring that appear to have overheated or that are otherwise damaged should be replaced with parts that meet the original specifications. Always determine the cause of damage or overheating, and correct any potential hazards

8. Observe the original lead dress, especially near the following areas: Antenna wiring, sharp edges, and especially the AC and high voltage power supplies. Always inspect for pinched, out-of-place, or frayed wiring. Do not change the spacing between components and the printed circuit board. Check the AC power cord for damage. Make sure that no wires or components touch thermally hot parts.

9. Product Safety Notice:
Some electrical and mechanical parts have special safety-related characteristics which might not be obvious from visual inspection. These safety features and the protection they give might be lost if the replacement component differs from the original--even if the replacement is rated for higher voltage, wattage, etc.

10 Components that are critical for safety are indicated in the circuit diagram by shading, ⚠ or ⚠ . Use replacement components that have the same ratings, especially for flame resistance and dielectric strength specifications. A replacement part that does not have the same safety characteristics as the original might create shock, fire or other hazards.

1-2 Servicing Precautions

Warning1: First read the "Safety Precautions" section of this manual. If some unforeseen circumstance creates a conflict between the servicing and safety precautions, always follow the safety precautions.

1. Servicing precautions are printed on the cabinet. Follow them.

2. Always unplug the unit's AC power cord from the AC power source before attempting to: (a) Remove or reinstall any component or assembly, (b) Disconnect an electrical plug or connector, (c) Connect a test component in parallel with an electrolytic capacitor.

3. Some components are raised above the printed circuit board for safety. An insulation tube or tape is sometimes used. The internal wiring may be clamped to prevent contact with thermally hot components. Reinstall all such elements to their original position.

4. After servicing, always check that the screws, components and wiring have been correctly reinstalled. Make sure that the portion around the serviced part has not been damaged.

5. Check the insulation between the blades of the AC plug and accessible conductive parts (examples: metal panels, input terminals and earphone jacks).

6. Insulation Checking Procedure: Disconnect the power cord from the AC source and turn the power switch ON. Connect an insulation resistance meter (500V) to the blades of the AC plug.

   The insulation resistance between each blade of the AC plug and accessible conductive parts (see above) should be greater than 1 megohm.

7. Never defeat any of the B+ voltage interlocks. Do not apply AC power to the unit (or any of its assemblies) unless all solid-state heat sinks are correctly installed.

8. Always connect a test instrument's ground lead to the instrument chassis ground *before* connecting the positive lead; always remove the instrument's ground lead last.

1-3 Precautions for Electrostatically Sensitive Devices (ESDs)

1. Some semiconductor ("solid state") devices are easily damaged by static electricity. Such components are called Electrostatically Sensitive Devices (ESDs). Examples include integrated circuits and some field-effect transistors. The following techniques will reduce the occurrence of component damage caused by static electricity.

2. Immediately before handling any semiconductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging wrist-strap device. (Be sure to remove it prior to applying power--this is an electric shock precaution.)

3. After removing an ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of electrostatic charge.

4. Do not use freon-propelled chemicals. These can generate electrical charges that damage ESDs.

5. Use only a grounded-tip soldering iron when soldering or unsoldering ESDs.

6. Use only an anti-static solder removal device. Many solder removal devices are not rated as "anti-static" (these can accumulate sufficient electrical charge to damage ESDs).

7. Do not remove a replacement ESD from its protective package until you are ready to install it. Most replacement ESDs are packaged with leads that are electrically shorted together by conductive foam, aluminum foil or other conductive materials.

8. Immediately before removing the protective material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.

9. Minimize body motions when handing unpackaged replacement ESDs. Motions such as brushing clothes together, or lifting a foot from a carpeted floor can generate enough static electricity to damage an ESD.

1-4 Special Precautions and Warning Labels for Laser Products

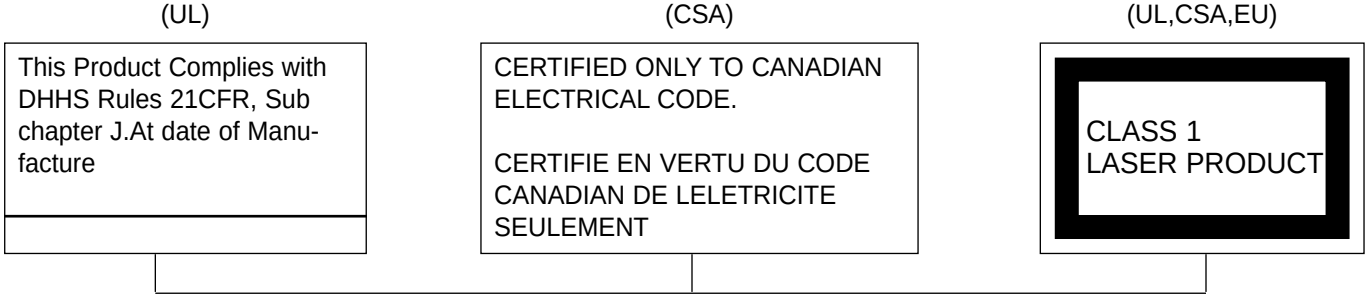


Fig. 1-3 Warning Labels (Location: Enclosure Block)

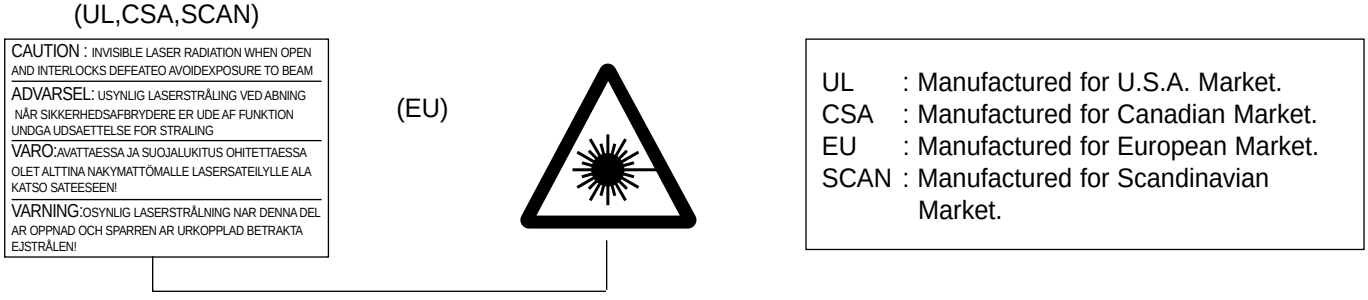


Fig. 1-4 Warning Labels (Location: Disc Clamper, Inner Side of Unit Door or Nearby Unit Chassis)

1-4 Special Precautions and Warning Labels for Laser Products (Continued)

1-4-1 Warnings

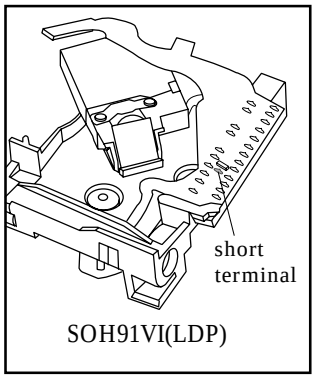
1. When servicing, do not approach the LASER exit with the eye too closely. In case it is necessary to confirm LASER beam emission, be sure to observe from a distance of more than 30 cm from the surface of the objective lens on the optical pick-up block.

2. Do not attempt to handle the objective lens when the DISC is not on the tray.

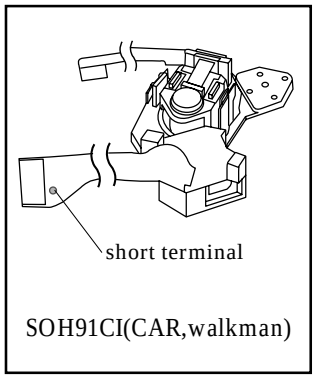
1-4-2 Laser Diode Specifications

Material: GaAs+ GaAlAs
Wavelength: 760-800 nm
Emission Duration: Continuous

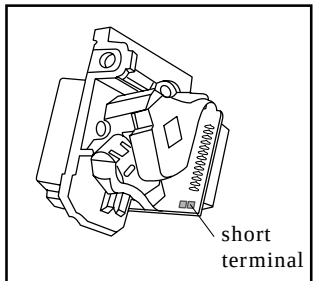
Laser Output: 0.2 mw (measured at a 1.6 mm distance from the objective lens surface on the optical pick-up block.)



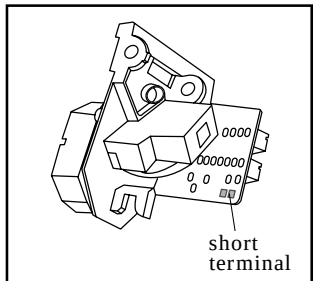
SOH91VI(LDP)



SOH91CI(CAR,walkman)



SOH-A1
(CMS-V10,CMS-V30)



SOH94T4N
(CMS-V10,CMS-V30)

1-4-3 Handling the Optical Pick-up

1. Static electricity from clothing or the body may cause electrostatic breakdown of the laser diode in the Optical Pickup. Follow this procedure:

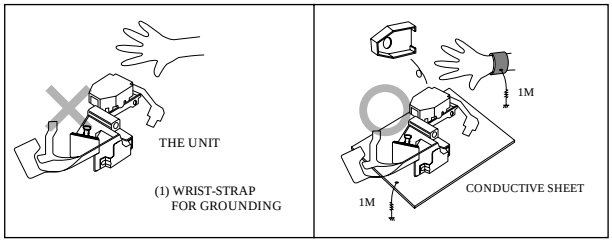
2. Place a conductive sheet on the work bench (i.e., the black sheet used for wrapping repair parts.) Note: The surface of the work bench should be covered by a copper ground plane, which is grounded.

3. The repair technician must wear a wrist strap which is grounded to the copper sheet.

4. To remove the Optical Pickup block: Place the set on the conductive sheet, and momentarily touch the conductive sheet with both hands. (While working, do not allow any electrostatic sources--such as clothes--to touch the unit.)

5. Ground the "Short Terminal" (located on the PCB, inside the Pickup Assembly) before replacing the Pickup. This terminal should be shorted whenever the Pickup Assembly is lifted or moved.

6. After replacing the Pickup, reopen the Short See diagrams below:

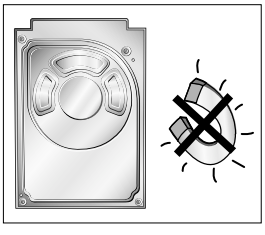


1-5 Special Precautions for HDD

* HDD Data Maintenance Step

1. Since the data on the HDD is weak to mechanical shock, place the HDD in a safe location that is free from mechanical shock once it is removed from the main unit.

2. In order to safe keep the data on the HDD, back up the data before the repair or make sure not to place the HDD near any electrical appliance that generates a strong magnetic field.



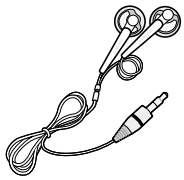
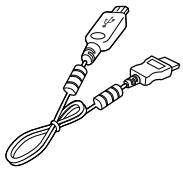
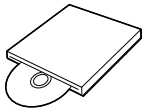
2. Product Descriptions

1. Product Feature

Product Feature	
High-quality Stereo Speaker!	▪ You can share your favorite music anytime and anywhere.
Touchpad	▪ You can tap on the touch pad to navigate through the menus.
Easy & Simple Menu Structure	▪ Easy to use with a simple menu structure.
Longer Play Time and Shorter Downloading!	▪ A fully charged battery can play up to 30 hours of music (when using the earphone). ▪ The player supports USB 2.0 capability, much faster than USB 1.1 to enable faster communication with the PC.
Supporting Various File Formats!	▪ Supports various file formats including MP3, WMA and Ogg. ▪ The image file is converted to JPG format before transmitted to the player.
Convenience	▪ You can take advantage of a variety of features including FM radio, photo view, etc.

Model Name		YP-K3
Power		3.7V (Li-Polymer Rechargeable)
Built-in Battery Power		470mAh
File	Compatibility	Music : MPEG1/2/2.5 Layer3(8kbps~320kbps, 22kHz~48kHz) WMA(48kbps~192kbps, 22kHz~48kHz), Ogg(Q0~Q10) Image : JPEG(ISO/IEC 10918-1/Annex F-Sequential DCT-based mode of operation)
Earphone Output		15mW(16Ω)
Output Frequency Range		20Hz~20KHz
Noise Ratio		88 dB with 20kHz LPF(based on 1KHz 0 dB)
Play Time		Music 20 hrs (based on MP3 128kbps, volume level 15 and normal mode)
Temperature Range for Operation		-5~35 °C (23~95°F)
Case		Stainless, Plastic
Weight		1.76 oz (50g)
Dimension (WxHxD)		1.73 X 3.78 X 0.27 inches (44 X 96 X 6.95 mm)
FM Frequency		87.5~108.0MHz
FM Signal to Noise Ratio		50dB
FM T.H.D		1%
FM Useable Sensitiivity		38dBμ

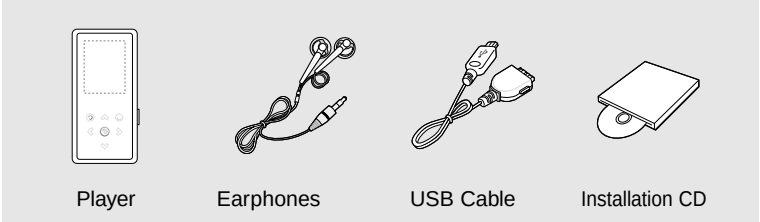
● The contents of this Manual are subject to change without prior notice for further improvement.

Accessories	Name	Code No.
	Earphones	AH30-00087D
	USB Cable	AH39-00899A
	Installation CD	AH80-00139B

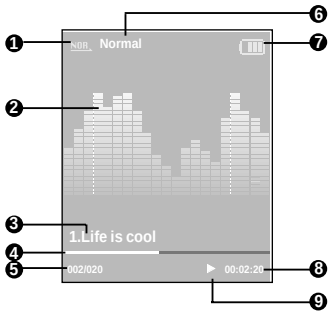
3. Product Functions

1. Basic Functions

Checking the Accessories



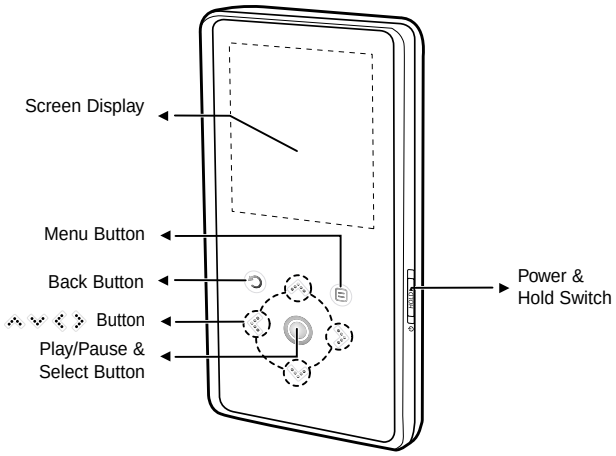
Music



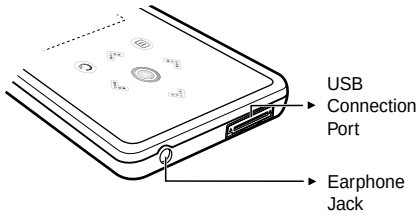
1 Play Mode Display
2 Graphic Equalizer
3 Music Information
4 Play Status Bar
5 Current Music Number/ Total Number Display
6 Sound Effect Display
7 Battery Status Display
8 Play Time Display
9 Play/Pause Display

Components

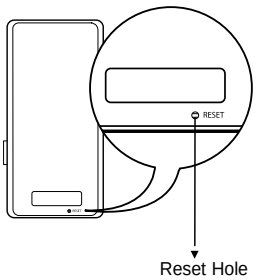
Front, Right Side



Bottom



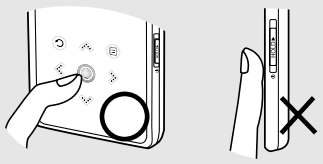
Rear



Button Functions

Buttons	Functions and Use
HOLD	■ **Slide and hold** in the opposite direction of the arrow to turn the power on/off. ■ **Slide** in the arrow direction to lock the buttons.
	■ **Long tap** to move to the main menu. ■ **Short tap** to move to the previous screen.
	■ **Moving up, down, left and right and Function Selection.** **Tap** to move up or down by one selection. **Tap** to move left or right by one selection. **Press and hold** to move up or down continuously. **Short tap** to select the play/pause and function, move to the next screen. ■ **Search for a track and control volume while listening to music.** **Press and hold** to scan to a point on the current track. **Tap** to move to the previous track or to play the current track from the start. **Press and hold** to scan to a point on the current track. **Tap** to move to the next track. **Tap** to reduce/increase the volume.
	■ **Tap to display the option menu.**

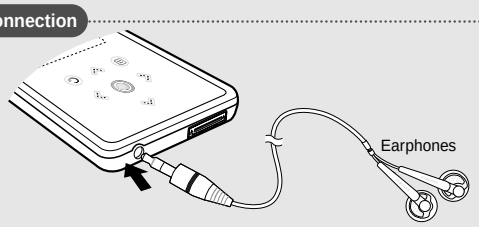
*** Tap on touch screen with your fingertip.**



CAUTION
- Do not use any sharp object other than your fingers to operate the touch screen. Otherwise, touch screen may be damaged.
- Do not tap on the touch screen if your fingers are not clean.
- Do not tap on the touch screen with your gloves on. Otherwise, the button does not operate in any way.

Earphone Connection

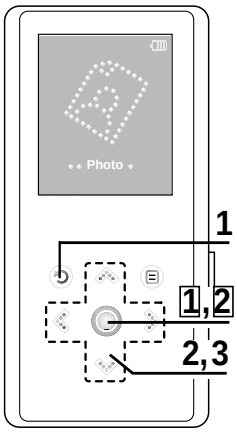
▶Bottom



2. New Functions

Photo Viewing

Before you start! See pages 20-21 to transfer Photo files to your player.



1 **Press and hold [↩] to move to the main menu.**

2 **Tap [◂ ▸] to select <Photo> and then tap [◉].**
- The Photo list will appear.

3 **Tap [▴ ▾ ◂ ▸] to select the photo file of your choice, then tap [◉].**
- The selected file will appear.
- Large photos may take longer to display.

NOTE
- You will see thumbnail photos if the appropriate information is included in the file. For a file with no information, you will see instead.

Slideshow Viewing

You can view your picture files in order as a Slideshow.

1 **Tap [◉] in Photo Viewing mode.**
- The slideshow will start.

2 **Tap [◉] to stop the slideshow.**

To view the previous / next photo

Tap [◂ ▸].
- You can see the previous or next photo on the display.

Using the Photo Option Menu

To listen to music while viewing your photo

You can listen to the song that you last played while viewing your photo.

1 **Tap [▤] while viewing a photo.**
- The photo option menu appears.

2 **Tap [◉] to select <Background Music On> or <Background Music Off>.**
- <Background Music On> : You can listen to the song that you last played while viewing your photo.
- <Background Music Off> : No background music is played while viewing a photo.

To add a photo to the screen saver list

1 **Select a photo file that you want to add to the screen saver list.**

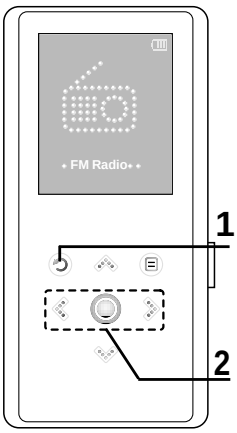
2 **Tap [▤] while viewing a photo.**
- The photo option menu appears.

3 **Tap [▴ ▾] to select <Add to Screen Saver> and then tap [◉].**
- The selected photo file is added to the list.

NOTE
- Select <Photo> from <Settings> → <Display> → <Screen Saver> and the selected photo is displayed on the screen as a screen saver.
- If you set <Default Set>, the screen saver will be initialized to <Analog Clock>.

Listening to FM Radio

Before you start! Connect the earphones, then turn on the player, and check the battery.



1 **Press and hold [ ] to move to the main menu.**

2 **Tap [ ] to select <FM Radio> and then tap [ ].**

- FM radio reception will start.

To use Mute function

Tap [ ] while listening to the FM radio.

- Sound is muted.
- Tap [ ] once again to hear sound.

CAUTION
- Always connect your earphones to the player when searching or setting frequencies. The earphones are used as antennas to receive FM radio reception.

To switch to Manual mode

Select this mode if you want to manually search through the FM band one frequency at a time.

1 **Tap [ ] in <Preset Mode>.**

2 **Tap [ ] to select <Go to Manual Mode> and then tap [ ].**

- You will see <Manual Mode> on the screen.

To switch to Preset Mode

Select this mode if you want to search through your saved FM presets one preset at a time.

1 **Tap [ ] in <Manual Mode>.**

2 **Tap [ ] to select <Go to Preset Mode> and then tap [ ].**

- You will see <Preset Mode> on the screen.

3 **Tap [ ] to select the preset frequency.**

- Once <Preset Mode> appears on the screen, you can select a radio frequency and listen to it.

NOTE
- If no preset frequencies are set, you will see <Preset list does not exist.> and the player will not switch to <Preset Mode>.
- If you set <Default Set>, the saved preset lists are deleted.
- If you select <Preset List> on the FM option menu, you will see the preset frequencies.
- For more information on the preset setup.

To automatically search for frequencies

Press and hold [ ] in <Manual Mode>.

- The broadcast station frequency nearest from the point the button is released will be searched.

To manually search for frequencies

Tap [ ] in <Manual Mode>.

- Moves to next frequency whenever the button is tapped.

Listening to FM Radio

Setting FM Presets

You can set up to 30 presets in FM Radio mode.

To automatically set Presets

1 **Tap [ ] in FM Radio mode.**

2 **Tap [ ] to select <Auto Preset> and then tap [ ].**

- You will see the Auto Preset window on the screen.

3 **Tap [ ] to select <Yes> and then tap [ ].**

- Up to 30 presets are automatically saved.

NOTE
- Using <Auto Preset> deletes all previous presets.

To cancel during setting

Tap [ ] to cancel during auto scanning.

- The auto preset setting is canceled and frequencies set up to then are stored.

Listening to FM Radio

Setting FM Presets (Continued)

To manually set Presets

1 **Tap [◁ ▷] to select the desired frequency in <Manual Mode>.**

2 **Tap [▤].**

3 **Tap [△ ▽] to select <Add Preset> and then tap [●].**

- The selected frequency will be added to the preset list. A maximum of 30 preset numbers are added to the list in sequential order.

4 **To set a preset for other frequencies, follow 1-3 steps above.**

NOTE

- If a frequency that you try to add already exists in the list, you will see <This preset already exists.> and the selected frequency is not added to the preset list.

To search for presets in Preset mode

Tap [◁ ▷] in <Preset Mode>.

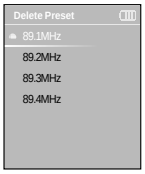
- The preset number is selected and you can listen to the stored radio frequency.

NOTE

- If you want to check the preset list in <Preset Mode>, tap [▤] to select <Preset List> and Tap [●].

Listening to FM Radio

To Delete Presets



1 **Tap [▤] in <Preset Mode>.**

2 **Tap [△ ▽] to select <Delete Preset> and then tap [●].**

- The preset frequencies will appear.

3 **Tap [△ ▽] to select the preset frequency you want to delete and then tap [●].**

- The confirmation window will appear.

4 **Tap [◁ ▷] to select <Yes> and then tap [●].**

- The selected preset will be deleted.

5 **To select and delete other preset numbers, follow 1-4 steps above.**

Listening to FM Radio

Setting FM Radio

To set FM Sensitivity

1 **Tap [▤] in FM Radio mode.**

2 **Tap [△ ▽] to select <FM Sensitivity> and then tap [●].**

- The FM Sensitivity menu appears.

3 **Tap [△ ▽] to select the sensitivity and then tap [●].**

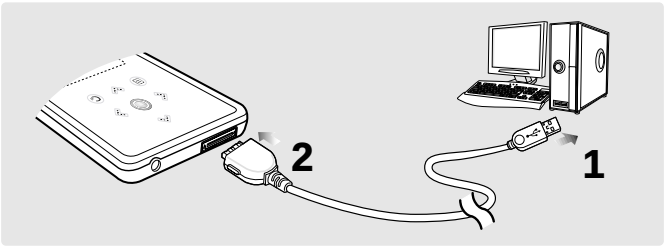
- You can select from <High>, <Middle> and <Low>.
- The higher FM sensitivity is, the more frequencies that can be received.

3. PC Connection

Loading Your Desired File

Connecting to your PC

Before you start! Use the USB Cable provided when connecting the player to your PC.



1 **Connect the USB cable to the USB port (ψ) on your PC.**

2 **Connect the other end of the USB cable to the USB Connection Port on the bottom of the player.**

PC Requirements

The PC system must meet the following minimum specifications:

- **Pentium 300MHz or higher**
- **DirectX 9.0 or higher**
- **100MB of free hard disc space**
- **Windows Media Player 10.0 or higher**
- **Windows 2000/XP**
- **USB Port 2.0**
- **CD Rom Drive (2X or higher)**
- **Resolution 1024 X 768 or higher**

CAUTION

- If you connect the player through a USB hub, the connection may be unstable. Please connect the player to your PC directly.
- If you connect the player to your PC in the low battery condition, the player automatically checks the battery status and charges itself for several minutes before connecting to your PC.

4. Adjustments

1.How to recover the device

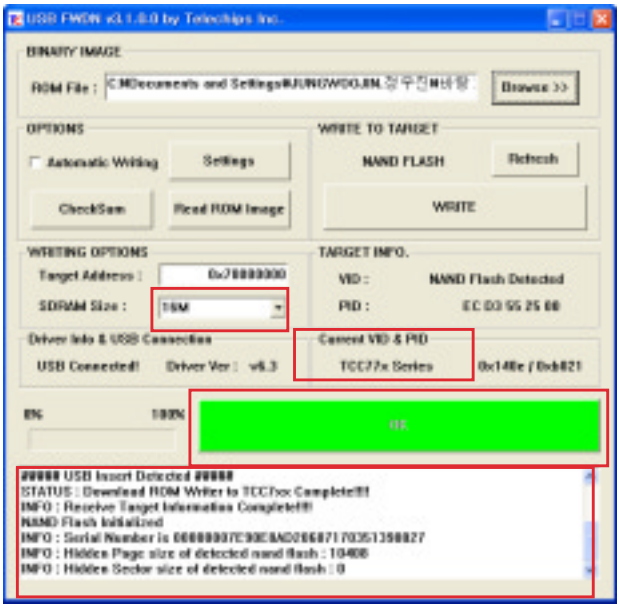
When an error has occurred in downloading a file or the screen display (or when the memory is replaced.)

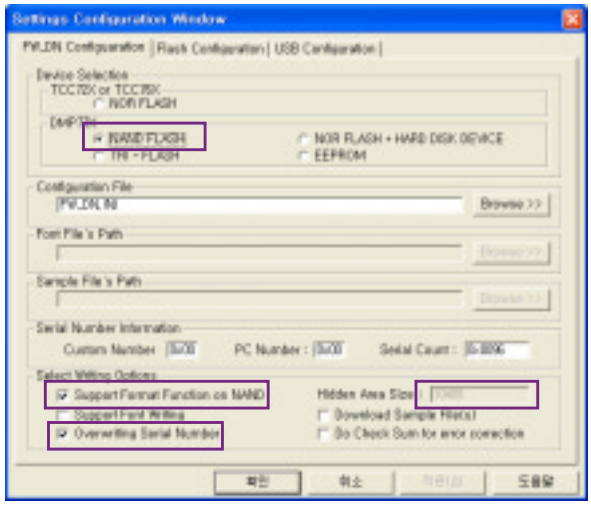
1. If you cannot connect the player to your PC and a broken or blank screen appears, you have to initialize the memory physically.

(1) Pull and hold the Power key down when a USB connection is being made.
(That is, turn the power on and connect the USB interface at the same time)
(2) Press RESET while you are doing step (1).
(3) Restore the Power key and run the update program(FW_DN_V3100.exe)

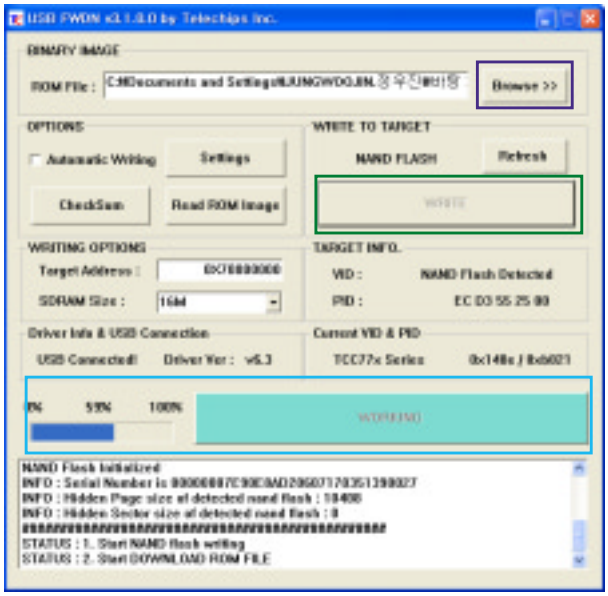
☞ If the K3 model is connected to a computer for the first time, install the appropriate device driver, depending on the operating system running on the computer, by using the driver installation program sent separately.

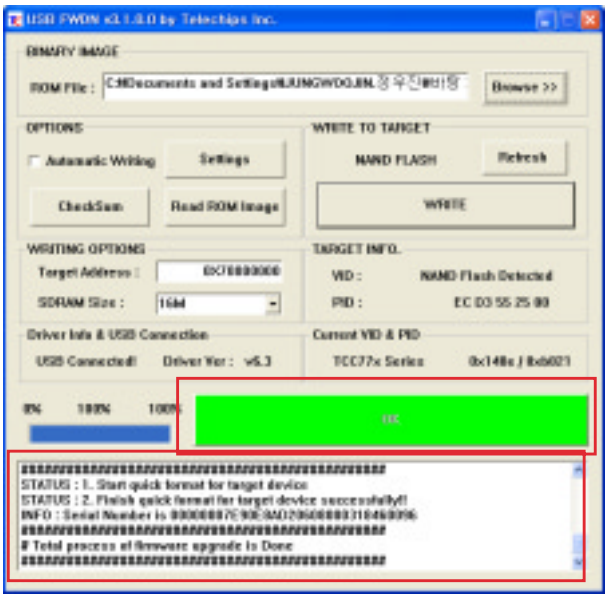
(4) If the window as shown in the figure below appears, check the parts marked by the red squares, click Setting and check the settings marked by the violet squares shown in the right-hand figure to determine whether the player is properly recognized by the computer.





(5) Select the YPK3.rom file by using Browse and click the WRITE button. At this time, check if progress is proceeding normally with the Progress Bar and Status Information. When it is finished, check if it is correctly completed by checking the information marked by the red squares shown in the right-hand figure below.





3. Download the image file.

(1) When the initialization is complete, disconnect the player from the computer.

(2) Reconnect the player to the computer. It is recognized as a YP-K3 by the computer.

(3) Save the YPK3.IMG file in the Data folder.

4. Check if the player operates normally after the update by connecting the power.

2. How to upgrade Firmware

For a normal player (For a player that can be connected to a computer and does not have a hardware problem)

1. If the player is connected to a computer through the USB cable, it is recognized as an MTP device and the model name is displayed

2. Double-click the device and copy the Firmware file (YPK3.rom) and IMAGE file (YPK3.IMG) for upgrade to the Data folder.

3. Disconnect the player from the computer and turn the player on. The firmware ROM file is upgraded, displaying the "Upgrading Firmware..." message and then the player is turned off.

4. If you turn it on again, the IMAGE file is upgraded displaying the "Image Upgrading..." message. After that, the player will operate normally.

#. If the player cannot be connected to a computer or has a hardware problem, you can restore the player according to the procedures described below.

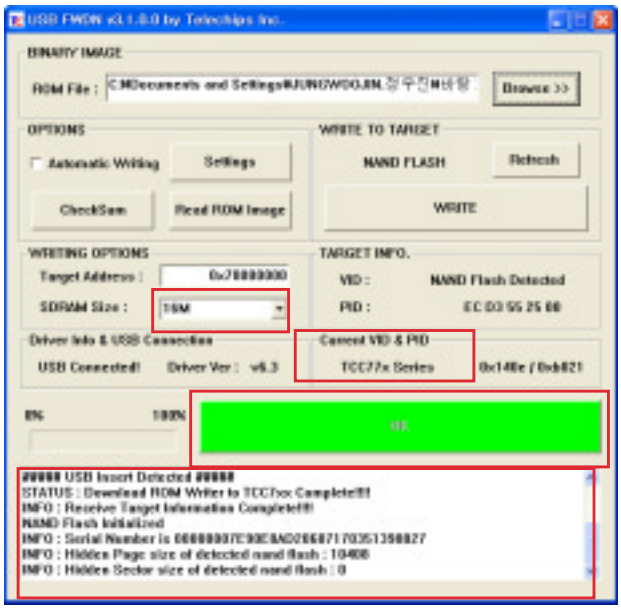
◆ For an abnormal player (when an error has occurred in downloading a file or the screen display)

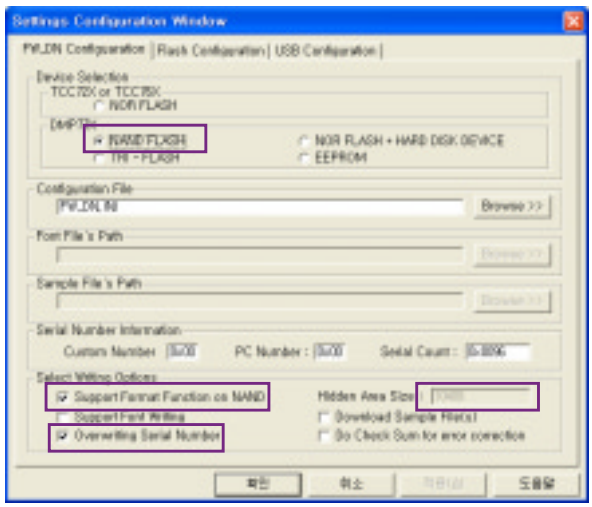
1. If you cannot connect the player to your PC and a broken or blank screen appears, you have to initialize the memory physically.

(1) Pull and hold the Power key down when a USB connection is being made.
(That is, turn the power on and connect the USB interface at the same time)
(2) Press RESET while you are doing step (1).
(3) Restore the Power key and run the update program(FW_DN_V3100.exe) as shown in the figure below.

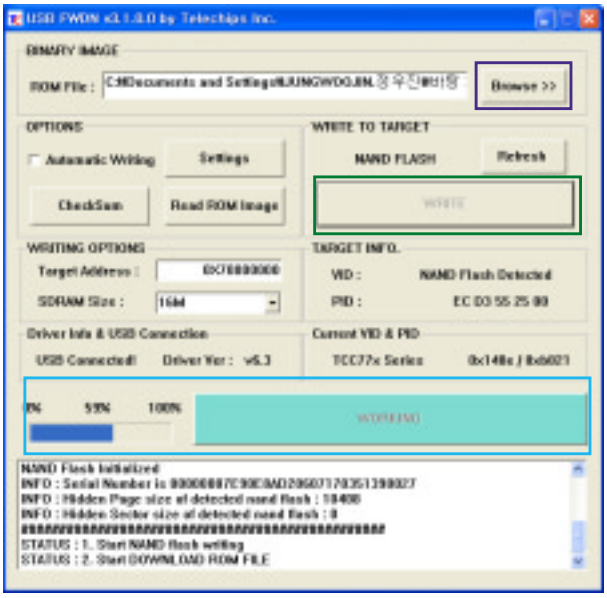
☞ If the K3 model is connected to a computer for the first time, install the appropriate device driver, depending on the operating system running on the computer, by using the driver installation program sent separately.

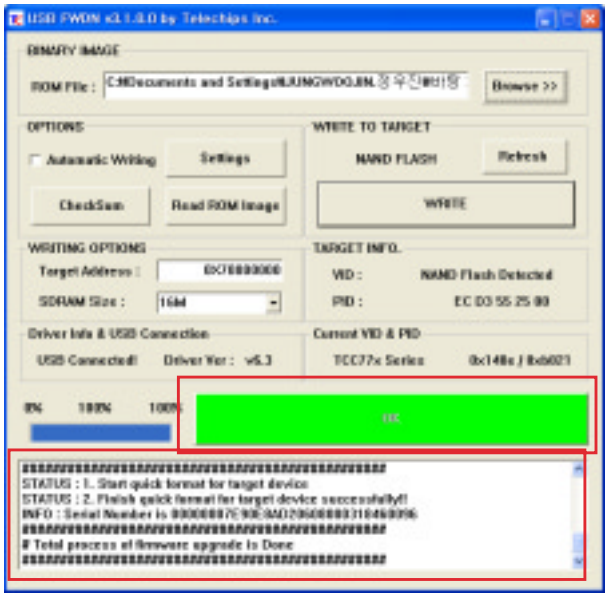
(4) If the window as shown in the figure below appears, check the parts marked by the red squares, click Setting and check the settings marked by the violet squares shown in the right-hand figure to determine whether the player is properly recognized by the computer.





(5) Select the YPK3.rom file by using Browse and click the WRITE button. At this time, check if the progress is proceeding normally with the Progress Bar and Status Information. When it is finished, check if it is correctly completed by checking the information marked by the red square shown in the right-hand figure below.





3. Download the image file

(1) When the initialization is complete, disconnect the player from the computer.

(2) Reconnect the player to the computer. It is recognized as a YP-K3 by the computer.

(3) Save the YPK3.IMG file in the Data folder.

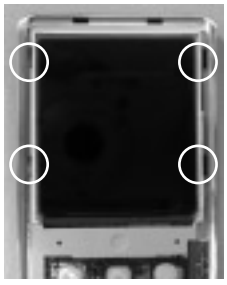
4. Check if the player operates normally after the update by connecting the power.

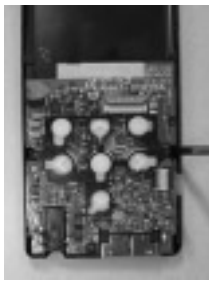
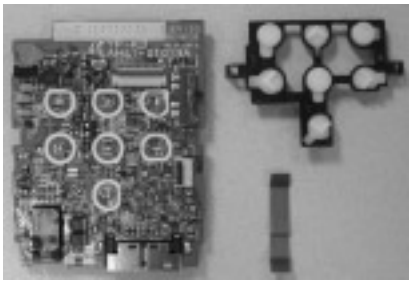
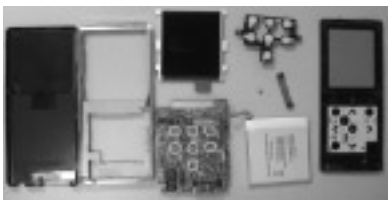
※ If the procedures described above fail, the reason of the failure is to be found through a close examination first before trying another method to repair the player.

5. How to disassemble

* CAUTIONS

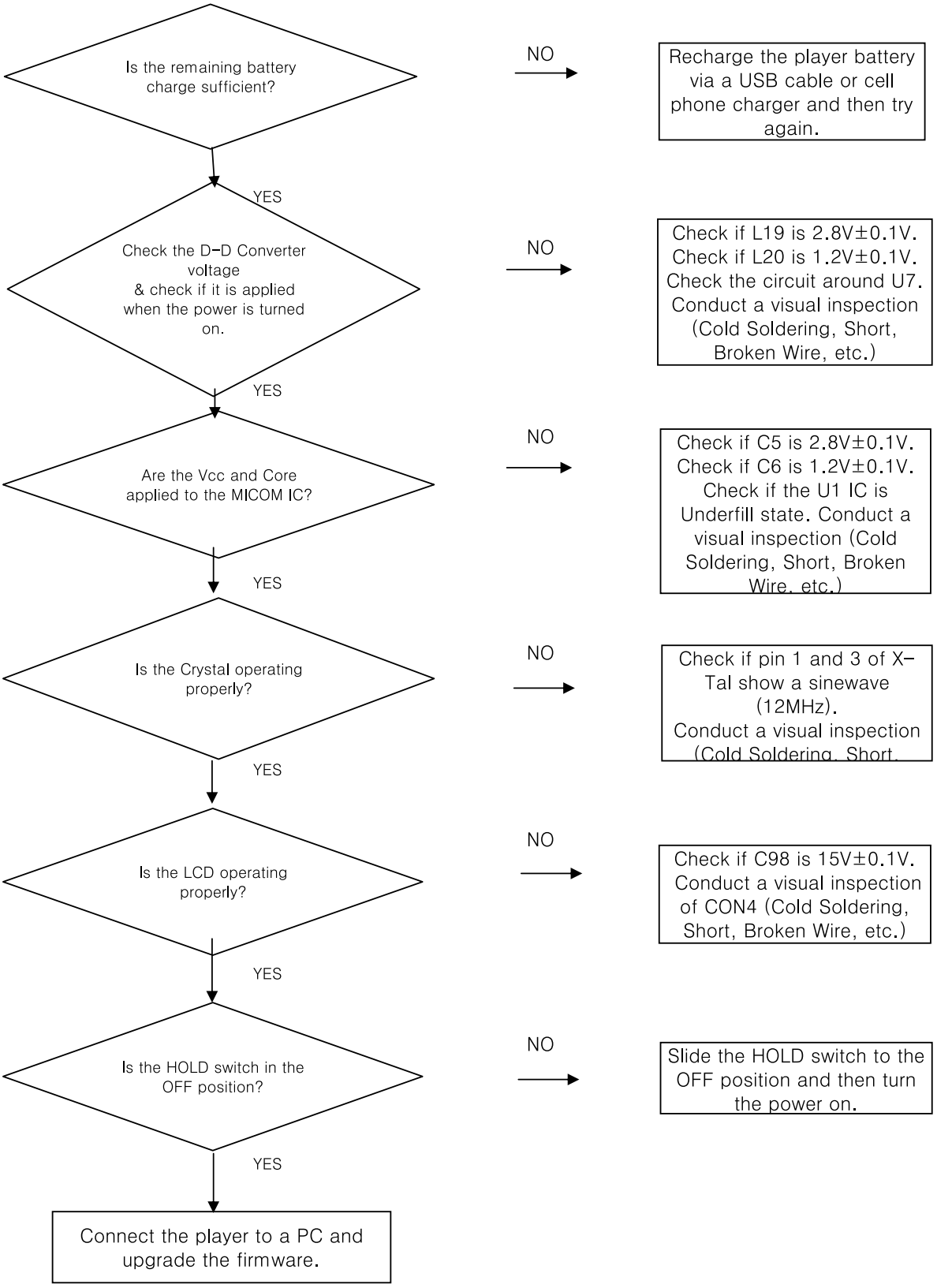
1. To avoid damage to the product, follow the disassembly method in the Service Manual.
2. As some Semiconductor devices are very sensitive to static, ensure that all procedures are adhered to when handling ESD's.

Order(Description)	Picture
1. Picture prior to disassembly	
2. Open up the cover by inserting a screwdriver or your fingernail into the gap and separate the front cover, which is fixed in place by double-sided tape.	 
3. Separate the FPCB of the Touch Pad.	
4. Remove the screws on the bottom side of the player.	
5. Through the 4 holes marked on the figure, release the catch by pulling it forward while opening it outwards.	  

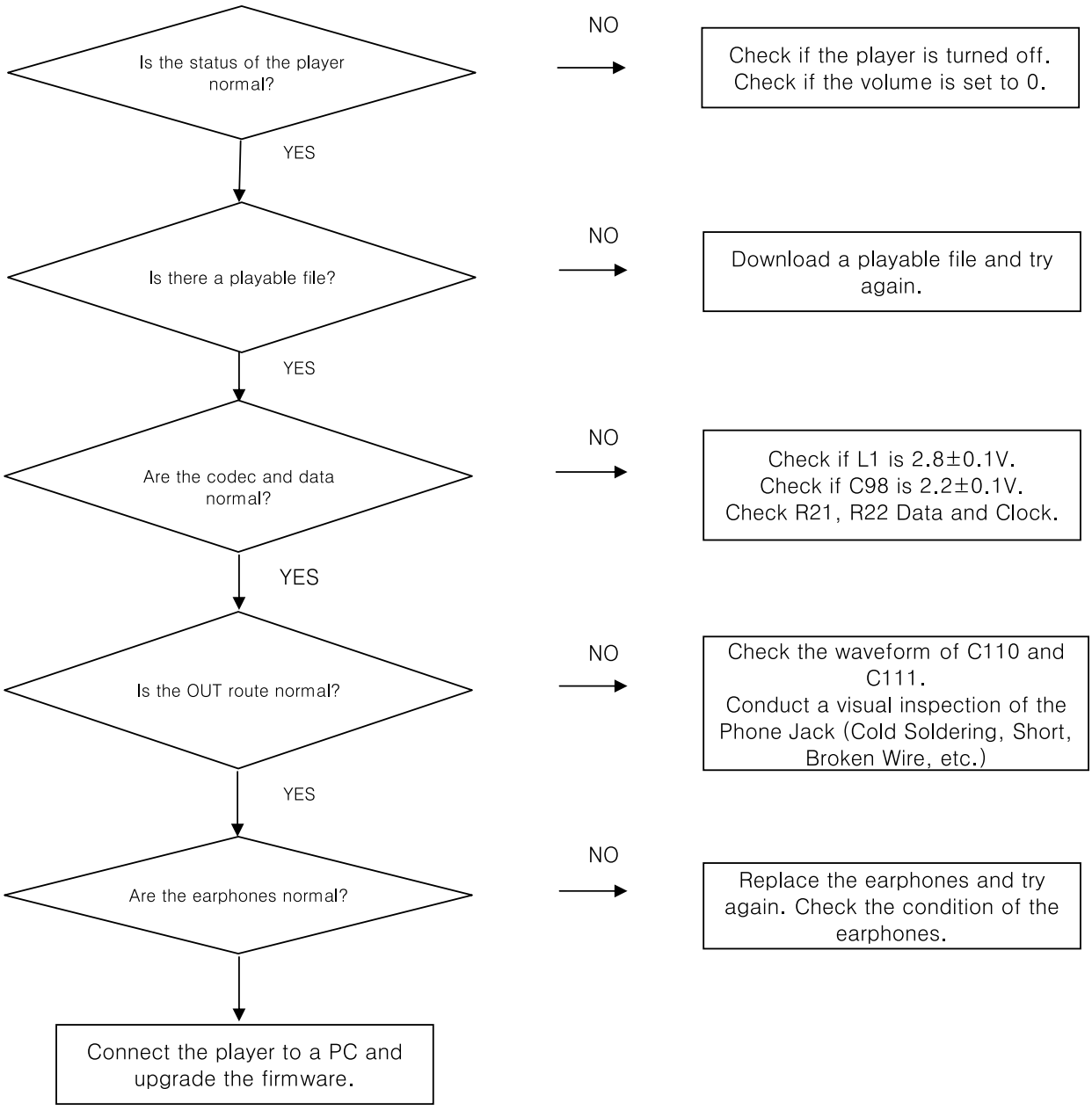
Order(Description)	Picture
6. Separate the Front-Cabinet.	
7. In this step, the Front-Cabinet and Back-Cabinet are easily bent out of shape. If they are bent, it may no longer be possible to use them.	
8. Separate the OLED and battery.	
9. Separate the Main PCB	 
10. Separate the Light-Holder and the FPC	
11. Picture after disassembly.	

6. Troubleshooting

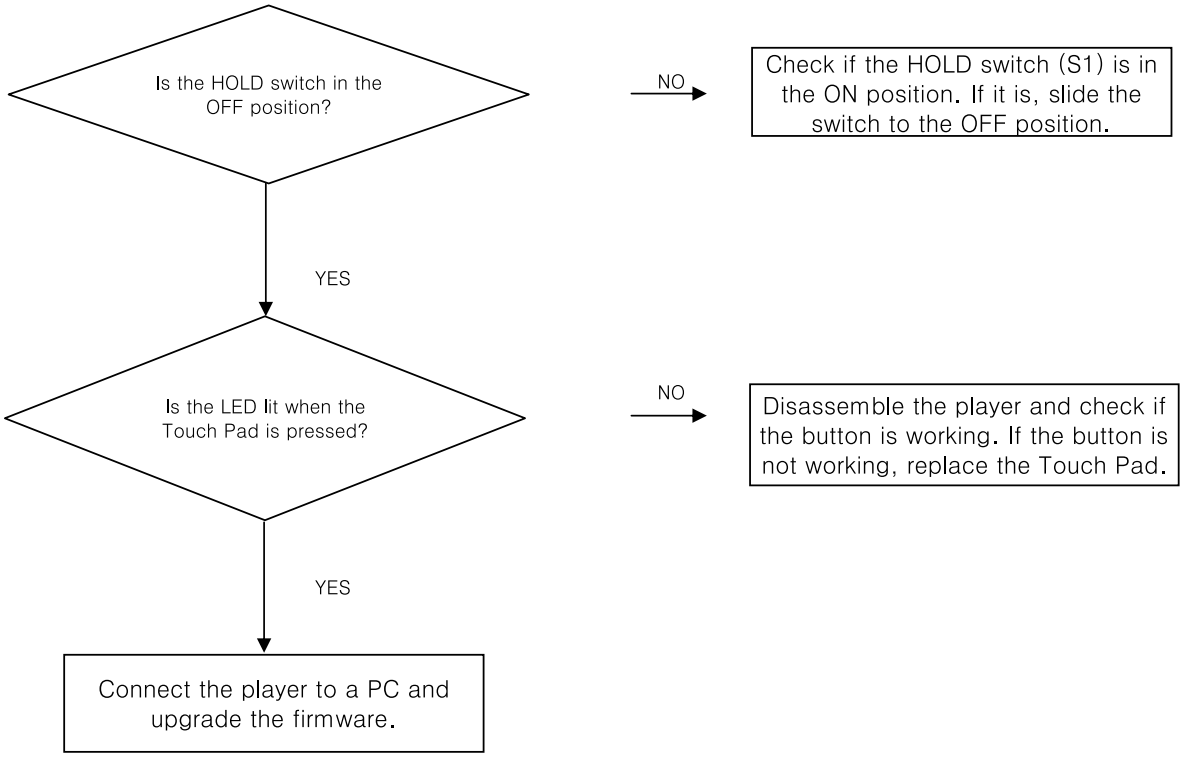
1. Power Failure



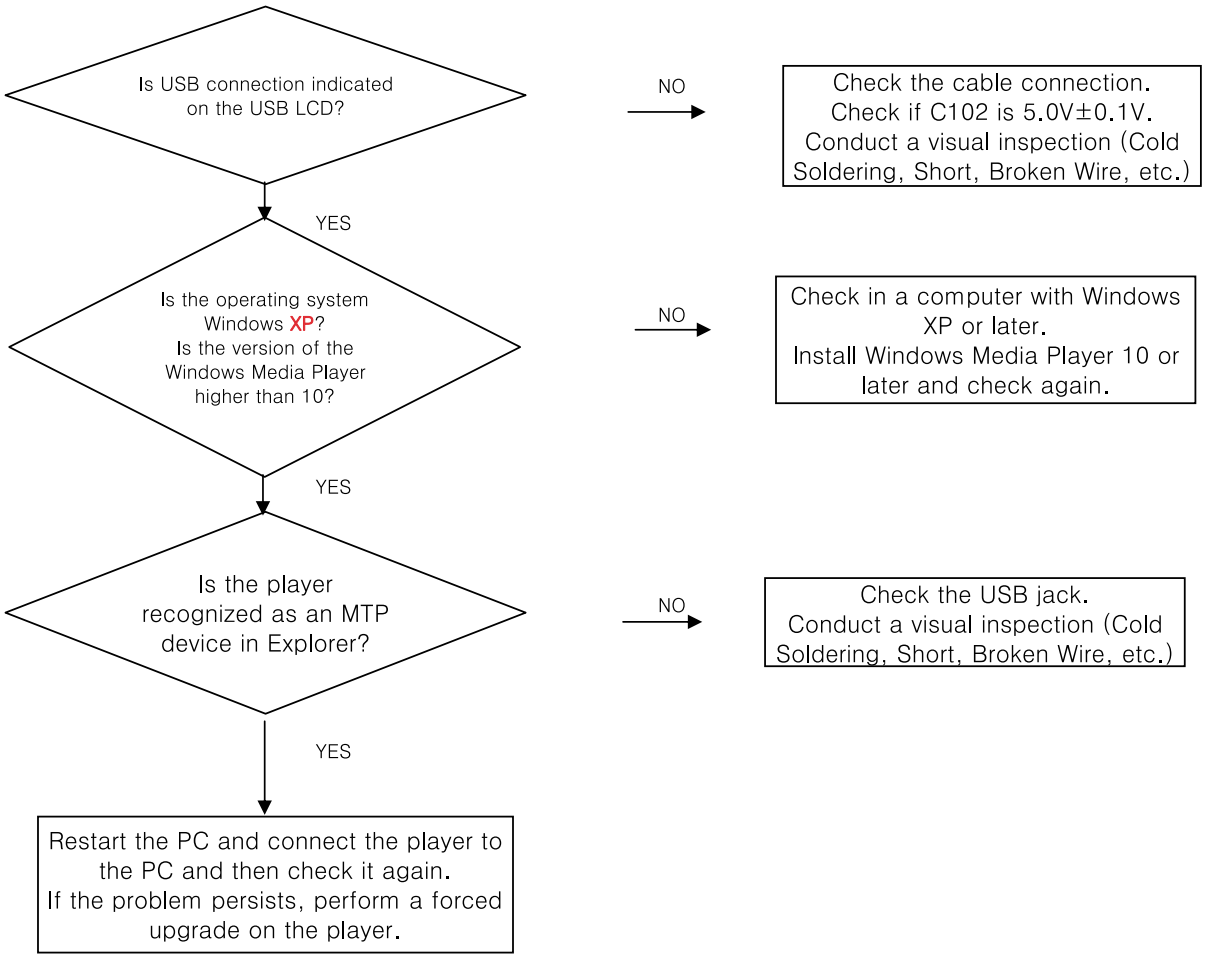
2. No Sound


Is the status of the player normal?
NO
Check if the player is turned off.
Check if the volume is set to 0.
YES
Is there a playable file?
NO
Download a playable file and try again.
YES
Are the codec and data normal?
NO
Check if L1 is 2.8±0.1V.
Check if C98 is 2.2±0.1V.
Check R21, R22 Data and Clock.
YES
Is the OUT route normal?
NO
Check the waveform of C110 and C111.
Conduct a visual inspection of the Phone Jack (Cold Soldering, Short, Broken Wire, etc.)
YES
Are the earphones normal?
NO
Replace the earphones and try again. Check the condition of the earphones.
Connect the player to a PC and upgrade the firmware.

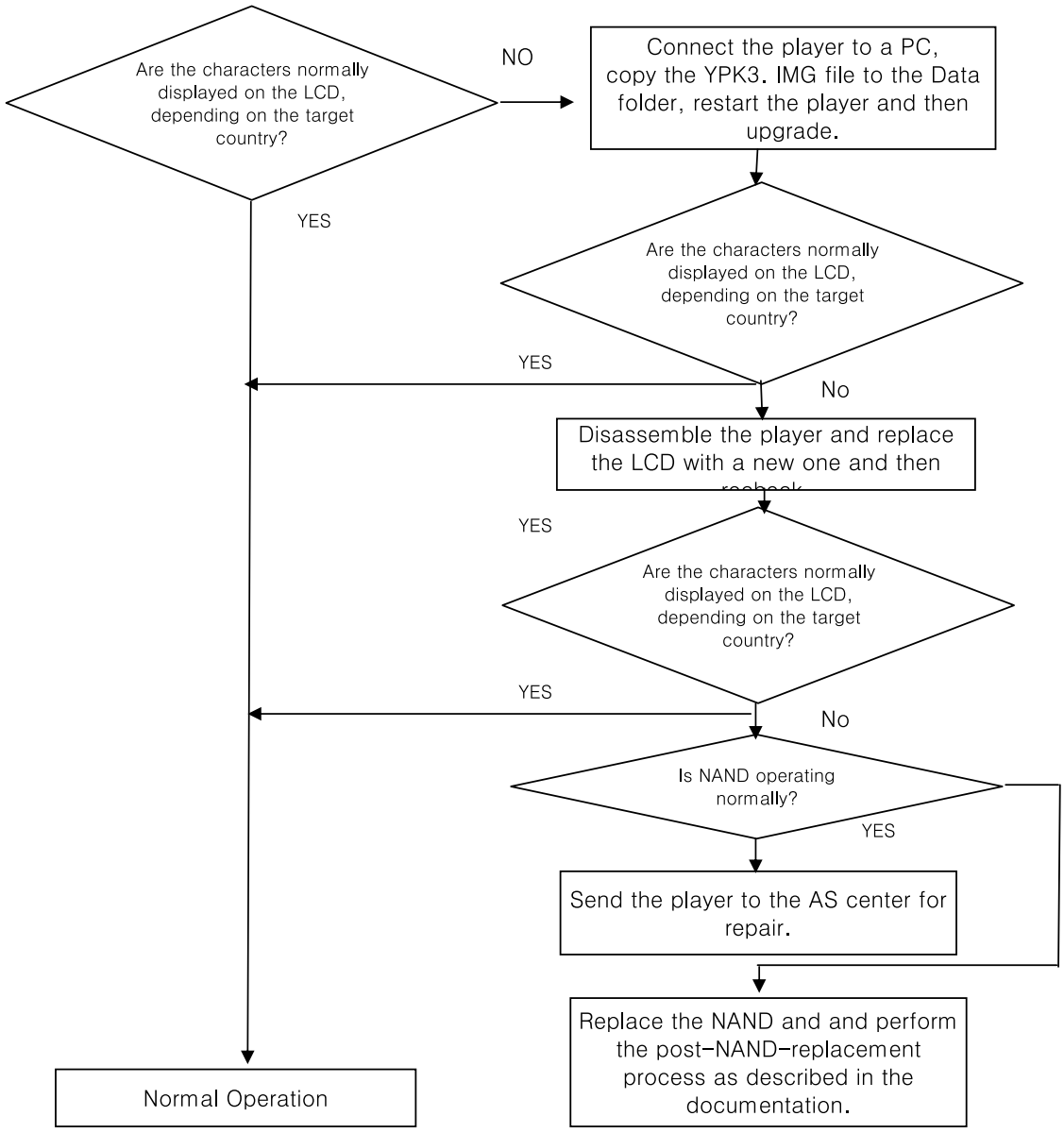
3. Button Operation Failed



4. PC Connection Failed

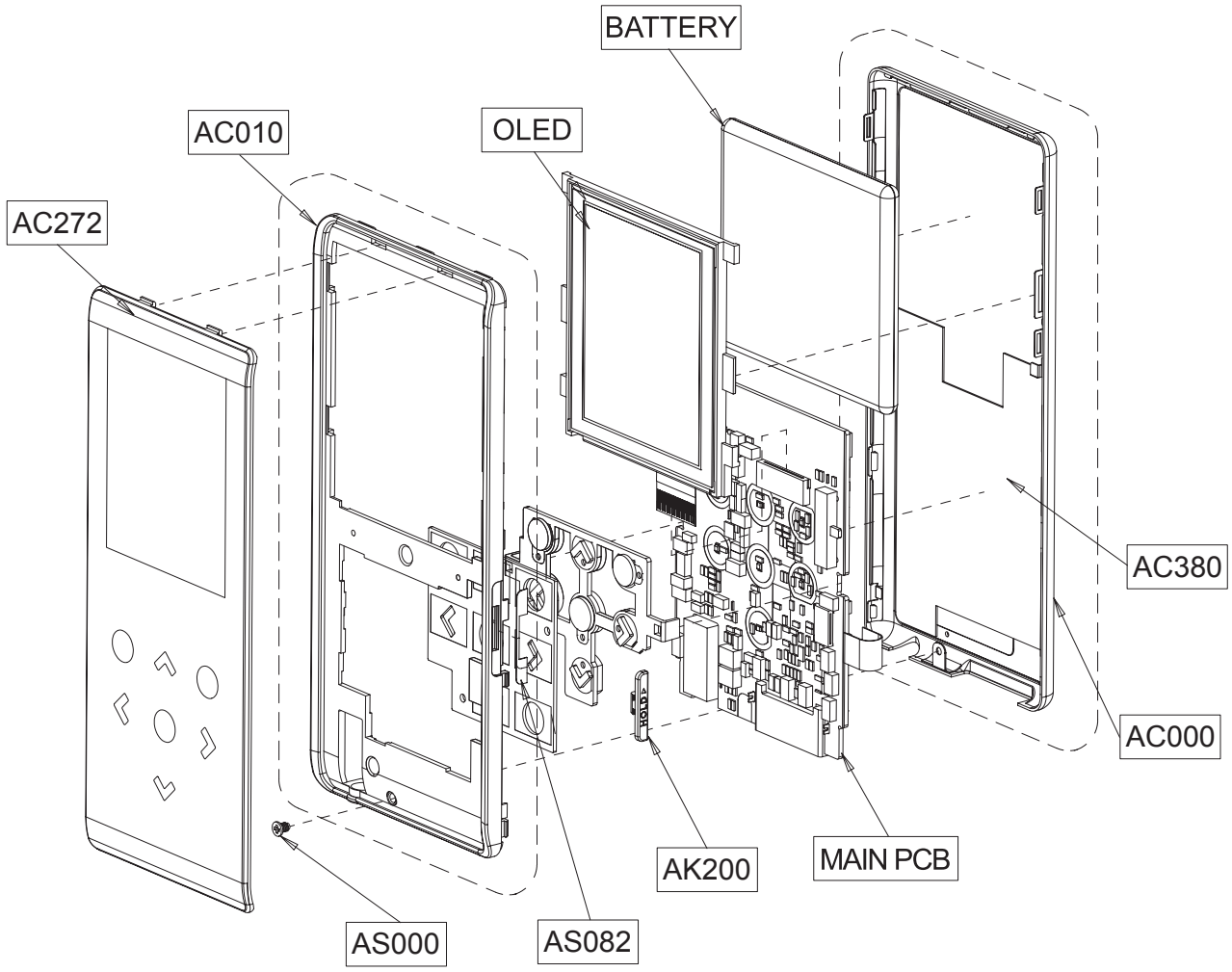


5. Character Display on the LCD Failed



7. Exploded View & Parts List

1-1. Total Exploded View



2. Parts List

Loc. No.	Part No.	Description;Specification	Q'ty	SNA	Remark
AC000	AH64-04144E	CABINET-BACK;YP-K3,SUS, GREEN WINE,SAMSU	1	SNA	
AC010	AH64-04142A	CABINET-FRONT;YP-K3,PC,-,-,-,-,-,-	1	SA	
AC272	AH63-01274C	COVER-WINDOW;YP-K3,INMOLD,GREEN,-,-,-,-,	1	SA	
AC380	AH63-01276A	CUSHION-PCB;YP-K3,PORONT 0.3T,-,-,-,-,-	1	SNA	
AK200	AH64-04143A	KNOB-HOLD;YP-K3,PC+ABS,LEAF PLATING,-,-,	1	SA	
AS000	6001-001677	SCREW-MACHINE;CH,+,M1.4,L2.0,CR PLT,SWRC	1	SA	
AS082	AH63-01277A	SHEET-HOLD;YP-K3,PC 0.15T,-,-,-,-,-	1	SA	
BATTERY	4302-001210	BATTERY-POLYMER;3.7V,470mAH,-,1.5C,4.2V,	1	SA	
MAIN PCB	AH92-02660C	ASSY PCB;-,YP-K3A(4GB) Mai,4GB Main,-	1	SA	
OLED	AH07-00202A	OLED PM;PM12HC002B,16BIT(1DOT DATA),65	1	SA	

8. Electrical Parts List

Loc. No.	Part No.	Description;Specification	Q'ty	SNA	Remark
	AH92-02660C	ASSY PCB;-,YP-K3A(4GB) Mai,4GB Main	1	SA	
BATT101	3710-001436	SOCKET-BOARD TO BOARD;2P,1R,1.27mm,	1	SA	
BOND	0201-001951	ADHESIVE-EPOXY;UNIQUE 305B,BLACK,17	0.05	SNA	
C1	2203-000330	C-CER,CHIP;0.012nF,5%,50V,C0G,1005	1	SA	
C10	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C100	2203-005900	C-CER,CHIP;1000NF,+80-20%,10V,Y5V,1	1	SA	
C102	2203-006474	C-CER,CHIP;22000nF,20%,6.3V,X5R,201	1	SA	
C105	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C107	2203-005900	C-CER,CHIP;1000NF,+80-20%,10V,Y5V,1	1	SA	
C109	2203-006090	C-CER,CHIP;10000nF,10%,6.3V,X5R,TP,	1	SA	
C11	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C110	2404-001407	C-TA,CHIP;330uF,20%,2.5V,-,REEL,352	1	SA	
C111	2404-001407	C-TA,CHIP;330uF,20%,2.5V,-,REEL,352	1	SA	
C112	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C113	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C118	2203-006474	C-CER,CHIP;22000nF,20%,6.3V,X5R,201	1	SA	
C119	2203-006361	C-CER,CHIP;10000nF,10%,10V,X5R,2012	1	SA	
C12	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C120	2203-006093	C-CER,CHIP;1000nF,+80-20%,6.3V,Y5V,	1	SA	
C122	2203-002885	C-CER,CHIP;33nF,+80-20%,50V,Y5V,TP,	1	SA	
C123	2203-002885	C-CER,CHIP;33nF,+80-20%,50V,Y5V,TP,	1	SA	
C124	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C125	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C126	2203-006474	C-CER,CHIP;22000nF,20%,6.3V,X5R,201	1	SA	
C13	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C14	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C15	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C16	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C17	2404-001348	C-TA,CHIP;100UF,20%,6.3V,-,TP,3.2X1	1	SA	
C18	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C19	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C2	2203-001554	C-CER,CHIP;1.8nF,10%,50V,X7R,1608	1	SA	
C20	2203-006474	C-CER,CHIP;22000nF,20%,6.3V,X5R,201	1	SA	
C21	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C22	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C23	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C24	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C25	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C26	2203-006093	C-CER,CHIP;1000nF,+80-20%,6.3V,Y5V,	1	SA	
C27	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C28	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C29	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C3	2203-000330	C-CER,CHIP;0.012nF,5%,50V,C0G,1005	1	SA	
C30	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C31	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C32	2203-002834	C-CER,CHIP;22pF,5%,50V,CH,BK,1005,-	1	SA	
C33	2203-002834	C-CER,CHIP;22pF,5%,50V,CH,BK,1005,-	1	SA	
C34	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C35	2203-006090	C-CER,CHIP;10000nF,10%,6.3V,X5R,TP,	1	SA	
C36	2203-006093	C-CER,CHIP;1000nF,+80-20%,6.3V,Y5V,	1	SA	
C37	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C39	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C4	2404-001225	C-TA,CHIP;10uF,20%,6.3V,GP,TP,1608	1	SA	
C40	2404-001281	C-TA,CHIP;22UF,20%,6.3V,WT,TP,2012	1	SA	
C41	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C44	2203-006093	C-CER,CHIP;1000nF,+80-20%,6.3V,Y5V,	1	SA	
C45	2203-006093	C-CER,CHIP;1000nF,+80-20%,6.3V,Y5V,	1	SA	
C5	2203-006090	C-CER,CHIP;10000nF,10%,6.3V,X5R,TP,	1	SA	
C51	2203-006361	C-CER,CHIP;10000nF,10%,10V,X5R,2012	1	SA	
C52	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C53	2203-006090	C-CER,CHIP;10000nF,10%,6.3V,X5R,TP,	1	SA	
C54	2203-001607	C-CER,CHIP;0.22nF,5%,50V,NP0,1608	1	SA	
C55	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C56	2203-006090	C-CER,CHIP;10000nF,10%,6.3V,X5R,TP,	1	SA	
C57	2404-001348	C-TA,CHIP;100UF,20%,6.3V,-,TP,3.2X1	1	SA	
C59	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C6	2203-006090	C-CER,CHIP;10000nF,10%,6.3V,X5R,TP,	1	SA	
C60	2203-006348	C-CER,CHIP;1000nF,10%,25V,X5R,1608	1	SA	
C61	2203-006348	C-CER,CHIP;1000nF,10%,25V,X5R,1608	1	SA	
C62	2203-006093	C-CER,CHIP;1000nF,+80-20%,6.3V,Y5V,	1	SA	
C63	2203-006474	C-CER,CHIP;22000nF,20%,6.3V,X5R,201	1	SA	
C64	2404-001348	C-TA,CHIP;100UF,20%,6.3V,-,TP,3.2X1	1	SA	
C65	2203-006090	C-CER,CHIP;10000nF,10%,6.3V,X5R,TP,	1	SA	
C66	2203-006093	C-CER,CHIP;1000nF,+80-20%,6.3V,Y5V,	1	SA	
C69	2203-006093	C-CER,CHIP;1000nF,+80-20%,6.3V,Y5V,	1	SA	
C7	2203-006090	C-CER,CHIP;10000nF,10%,6.3V,X5R,TP,	1	SA	
C70	2203-006090	C-CER,CHIP;10000nF,10%,6.3V,X5R,TP,	1	SA	
C71	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C72	2203-006090	C-CER,CHIP;10000nF,10%,6.3V,X5R,TP,	1	SA	
C73	2203-002443	C-CER,CHIP;0.33nF,10%,50V,X7R,1005	1	SA	
C74	2203-002443	C-CER,CHIP;0.33nF,10%,50V,X7R,1005	1	SA	
C75	2203-006361	C-CER,CHIP;10000nF,10%,10V,X5R,2012	1	SA	
C76	2404-001418	C-TA,CHIP;10uF,20%,25V,-,TP,3216	1	SA	
C77	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C78	2203-006474	C-CER,CHIP;22000nF,20%,6.3V,X5R,201	1	SA	
C79	2203-006090	C-CER,CHIP;10000nF,10%,6.3V,X5R,TP,	1	SA	
C8	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C80	2404-001348	C-TA,CHIP;100UF,20%,6.3V,-,TP,3.2X1	1	SA	
C81	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C82	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C83	2404-001348	C-TA,CHIP;100UF,20%,6.3V,-,TP,3.2X1	1	SA	
C84	2203-000233	C-CER,CHIP;0.1nF,5%,50V,C0G,1005	1	SA	
C85	2203-006474	C-CER,CHIP;22000nF,20%,6.3V,X5R,201	1	SA	
C86	2203-005900	C-CER,CHIP;1000NF,+80-20%,10V,Y5V,1	1	SA	
C87	2203-005900	C-CER,CHIP;1000NF,+80-20%,10V,Y5V,1	1	SA	
C89	2203-006090	C-CER,CHIP;10000nF,10%,6.3V,X5R,TP,	1	SA	
C9	2203-002709	C-CER,CHIP;100nF,+80-20%,16V,Y5V,10	1	SA	
C90	2203-005900	C-CER,CHIP;1000NF,+80-20%,10V,Y5V,1	1	SA	
C91	2203-006093	C-CER,CHIP;1000nF,+80-20%,6.3V,Y5V,	1	SA	
C92	2203-006090	C-CER,CHIP;10000nF,10%,6.3V,X5R,TP,	1	SA	
C93	2203-006093	C-CER,CHIP;1000nF,+80-20%,6.3V,Y5V,	1	SA	
C98	2404-001418	C-TA,CHIP;10uF,20%,25V,-,TP,3216	1	SA	
C99	2203-005900	C-CER,CHIP;1000NF,+80-20%,10V,Y5V,1	1	SA	
CON1	3708-002265	CONNECTOR-FPC/FFC/PIC;8P,0.5mm,SMD-	1	SA	
CON4	3708-001971	CONNECTOR-FPC/FFC/PIC;31P,0.3mm,SMD	1	SA	
CON5	3710-002410	CONNECTOR-SOCKET;24P,1R,0.5mm,SMD-A	1	SA	
CUSHION-LIGHT1	AH63-01431A	SHEET-LIGHT1;YP-K3,PORON,T0.5,W7,L1	1	SNA	
CUSHION-LIGHT2	AH63-01432A	SHEET-LIGHT2;YP-K3,PORON,T0.5,W1.9,	1	SNA	
D1	0401-000164	DIODE-SWITCHING;KDS121V,80V,100MA,V	1	SA	
D10	0401-000164	DIODE-SWITCHING;KDS121V,80V,100MA,V	1	SA	
D3	0401-000164	DIODE-SWITCHING;KDS121V,80V,100MA,V	1	SA	
D4	0401-000164	DIODE-SWITCHING;KDS121V,80V,100MA,V	1	SA	

Loc. No.	Part No.	Description;Specification	Q'ty	SNA	Remark
D6	0404-001089	DIODE-SCHOTTKY;RB551V-30,20V,500MA,	1	SA	
D7	0404-001089	DIODE-SCHOTTKY;RB551V-30,20V,500MA,	1	SA	
D8	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA	
D9	0401-000164	DIODE-SWITCHING;KDS121V,80V,100MA,V	1	SA	
IC1	0801-002800	IC-CMOS LOGIC;7SV08,AND GATE,SC-70,	1	SA	
IC2	0505-001893	FET-SILICON;Si1024X,N,20V,515mA,0.7	1	SA	
IC3	0505-001893	FET-SILICON;Si1024X,N,20V,515mA,0.7	1	SA	
J1	3722-002521	JACK-EAR PHONE;3P,AU,BLK,SMD-A	1	SA	
JFET1	0505-001930	FET-SILICON;MCH3319,P,-12V,-2.6A,MA	1	SA	
JFET2	0505-001930	FET-SILICON;MCH3319,P,-12V,-2.6A,MA	1	SA	
L1	3301-001364	BEAD-SMD;1000ohm,1608,150mA,TP,1085	1	SA	
L10	3301-001148	BEAD-SMD;60ohm,1608,TP,-,-	1	SA	
L11	2703-002829	INDUCTOR-SMD;10uH,20%,2828	1	SA	
L13	3301-001364	BEAD-SMD;1000ohm,1608,150mA,TP,1085	1	SA	
L14	3301-001364	BEAD-SMD;1000ohm,1608,150mA,TP,1085	1	SA	
L17	2703-002653	INDUCTOR-SMD;4.7UH,20%,2828	1	SA	
L18	2703-002653	INDUCTOR-SMD;4.7UH,20%,2828	1	SA	
L19	3301-001148	BEAD-SMD;60ohm,1608,TP,-,-	1	SA	
L2	3301-001364	BEAD-SMD;1000ohm,1608,150mA,TP,1085	1	SA	
L20	3301-001148	BEAD-SMD;60ohm,1608,TP,-,-	1	SA	
L21	2703-000275	INDUCTOR-SMD;33UH,10%,2012	1	SA	
L3	3301-001364	BEAD-SMD;1000ohm,1608,150mA,TP,1085	1	SA	
L33	3301-001148	BEAD-SMD;60ohm,1608,TP,-,-	1	SA	
L4	3301-001148	BEAD-SMD;60ohm,1608,TP,-,-	1	SA	
L5	3301-001148	BEAD-SMD;60ohm,1608,TP,-,-	1	SA	
L6	3301-001148	BEAD-SMD;60ohm,1608,TP,-,-	1	SA	
L7	3301-001148	BEAD-SMD;60ohm,1608,TP,-,-	1	SA	
L8	3301-001148	BEAD-SMD;60ohm,1608,TP,-,-	1	SA	
L9	2703-001231	INDUCTOR-SMD;10uH,10%,1608	1	SA	
LED1	0601-002094	LED;SMD(TOP VIEW),WHT,1.6X0.8X0.4M	1	SA	
LED2	0601-002037	LED;SMD,BLUE,1.6x0.8x0.4mm,465/470	1	SA	
LED4	0601-002037	LED;SMD,BLUE,1.6x0.8x0.4mm,465/470	1	SA	
LED5	0601-002037	LED;SMD,BLUE,1.6x0.8x0.4mm,465/470	1	SA	
LED6	0601-002037	LED;SMD,BLUE,1.6x0.8x0.4mm,465/470	1	SA	
LED7	0601-002037	LED;SMD,BLUE,1.6x0.8x0.4mm,465/470	1	SA	
LED8	0601-002094	LED;SMD(TOP VIEW),WHT,1.6X0.8X0.4M	1	SA	
PCB	AH41-01013A	PCB;YP-K3 PCB,-,-,-,-,-,-,-,-	0.25	SNA	
Q1	0504-001193	TR-DIGITAL;KRC408V,NPN,100MW,22K/47	1	SA	
Q2	0504-001193	TR-DIGITAL;KRC408V,NPN,100MW,22K/47	1	SA	
Q3	0504-001193	TR-DIGITAL;KRC408V,NPN,100MW,22K/47	1	SA	
Q5	0504-001193	TR-DIGITAL;KRC408V,NPN,100MW,22K/47	1	SA	
R1	2007-000160	R-CHIP;68Kohm,5%,1/16W,TP,1005	1	SA	
R100	2007-000162	R-CHIP;100Kohm,5%,1/16W,TP,1005	1	SA	
R101	2007-000157	R-CHIP;47Kohm,5%,1/16W,TP,1005	1	SA	
R102	2007-000143	R-CHIP;4.7Kohm,5%,1/16W,TP,1005	1	SA	
R103	2007-000566	R-CHIP;220Kohm,5%,1/16W,TP,1005	1	SA	
R104	2007-000143	R-CHIP;4.7Kohm,5%,1/16W,TP,1005	1	SA	
R114	2007-000171	R-CHIP;0ohm,5%,1/16W,TP,1005	1	SA	
R115	2007-000171	R-CHIP;0ohm,5%,1/16W,TP,1005	1	SA	
R117	2007-000566	R-CHIP;220Kohm,5%,1/16W,TP,1005	1	SA	
R119	2007-000162	R-CHIP;100Kohm,5%,1/16W,TP,1005	1	SA	
R12	2007-000102	R-CHIP;100Kohm,5%,1/10W,TP,1608	1	SA	
R120	2007-000566	R-CHIP;220Kohm,5%,1/16W,TP,1005	1	SA	
R121	2007-000171	R-CHIP;0ohm,5%,1/16W,TP,1005	1	SA	
R124	2007-000171	R-CHIP;0ohm,5%,1/16W,TP,1005	1	SA	
R125	2007-000171	R-CHIP;0ohm,5%,1/16W,TP,1005	1	SA	
R126	2007-000141	R-CHIP;2.2Kohm,5%,1/16W,TP,1005	1	SA	
R127	2007-000141	R-CHIP;2.2Kohm,5%,1/16W,TP,1005	1	SA	
R128	2007-000140	R-CHIP;1Kohm,5%,1/16W,TP,1005	1	SA	
R129	2007-000140	R-CHIP;1Kohm,5%,1/16W,TP,1005	1	SA	
R13	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	SA	
R130	2011-001346	R-NETWORK;68ohm,5%,1/16W,L,CHIP,8P,	1	SA	
R14	2007-000171	R-CHIP;0ohm,5%,1/16W,TP,1005	1	SA	
R140	2007-000171	R-CHIP;0ohm,5%,1/16W,TP,1005	1	SA	
R141	2007-000171	R-CHIP;0ohm,5%,1/16W,TP,1005	1	SA	
R142	2007-000171	R-CHIP;0ohm,5%,1/16W,TP,1005	1	SA	
R15	2007-000636	R-CHIP;270Kohm,5%,1/16W,TP,1005	1	SA	
R18	2007-000157	R-CHIP;47Kohm,5%,1/16W,TP,1005	1	SA	
R19	2007-007001	R-CHIP;3.9Kohm,5%,1/16W,TP,1005	1	SA	
R2	2007-000148	R-CHIP;10Kohm,5%,1/16W,TP,1005	1	SA	
R20	2007-000148	R-CHIP;10Kohm,5%,1/16W,TP,1005	1	SA	
R21	2007-000143	R-CHIP;4.7Kohm,5%,1/16W,TP,1005	1	SA	
R22	2007-000143	R-CHIP;4.7Kohm,5%,1/16W,TP,1005	1	SA	
R23	2007-000157	R-CHIP;47Kohm,5%,1/16W,TP,1005	1	SA	
R24	2007-001325	R-CHIP;3.3Kohm,5%,1/16W,TP,1005	1	SA	
R25	2007-000148	R-CHIP;10Kohm,5%,1/16W,TP,1005	1	SA	
R26	2007-000162	R-CHIP;100Kohm,5%,1/16W,TP,1005	1	SA	
R27	2007-000171	R-CHIP;0ohm,5%,1/16W,TP,1005	1	SA	
R28	2007-000171	R-CHIP;0ohm,5%,1/16W,TP,1005	1	SA	
R29	2007-000148	R-CHIP;10Kohm,5%,1/16W,TP,1005	1	SA	
R3	2007-000143	R-CHIP;4.7Kohm,5%,1/16W,TP,1005	1	SA	
R32	2007-000148	R-CHIP;10Kohm,5%,1/16W,TP,1005	1	SA	
R33	2007-007107	R-CHIP;100Kohm,1%,1/16W,TP,1005	1	SA	
R34	2007-000503	R-CHIP;2.2ohm,5%,1/10W,TP,1608	1	SA	
R35	2007-000503	R-CHIP;2.2ohm,5%,1/10W,TP,1608	1	SA	
R36	2007-000157	R-CHIP;47Kohm,5%,1/16W,TP,1005	1	SA	
R39	2007-000161	R-CHIP;82Kohm,5%,1/16W,TP,1005	1	SA	
R4	2007-000171	R-CHIP;0ohm,5%,1/16W,TP,1005	1	SA	
R40	2007-000140	R-CHIP;1Kohm,5%,1/16W,TP,1005	1	SA	
R42	2007-000566	R-CHIP;220Kohm,5%,1/16W,TP,1005	1	SA	
R43	2007-000151	R-CHIP;15Kohm,5%,1/16W,TP,1005	1	SA	
R44	2007-000151	R-CHIP;15Kohm,5%,1/16W,TP,1005	1	SA	
R45	2007-002797	R-CHIP;560ohm,5%,1/16W,TP,1005	1	SA	
R46	2007-000139	R-CHIP;220ohm,5%,1/16W,TP,1005	1	SA	
R48	2007-000139	R-CHIP;220ohm,5%,1/16W,TP,1005	1	SA	
R49	2007-000139	R-CHIP;220ohm,5%,1/16W,TP,1005	1	SA	
R5	2007-000140	R-CHIP;1Kohm,5%,1/16W,TP,1005	1	SA	
R50	2007-000139	R-CHIP;220ohm,5%,1/16W,TP,1005	1	SA	
R51	2007-000139	R-CHIP;220ohm,5%,1/16W,TP,1005	1	SA	
R52	2007-002797	R-CHIP;560ohm,5%,1/16W,TP,1005	1	SA	
R53	2007-000143	R-CHIP;4.7Kohm,5%,1/16W,TP,1005	1	SA	
R54	2007-001025	R-CHIP;560Kohm,5%,1/16W,TP,1005	1	SA	
R55	2007-007942	R-CHIP;1Mohm,1%,1/16W,TP,1005	1	SA	
R57	2007-000162	R-CHIP;100Kohm,5%,1/16W,TP,1005	1	SA	
R58	2007-000162	R-CHIP;100Kohm,5%,1/16W,TP,1005	1	SA	
R59	2007-000148	R-CHIP;10Kohm,5%,1/16W,TP,1005	1	SA	
R6	2007-000162	R-CHIP;100Kohm,5%,1/16W,TP,1005	1	SA	
R60	2007-000162	R-CHIP;100Kohm,5%,1/16W,TP,1005	1	SA	
R61	2007-000157	R-CHIP;47Kohm,5%,1/16W,TP,1005	1	SA	
R62	2007-000143	R-CHIP;4.7Kohm,5%,1/16W,TP,1005	1	SA	
R63	2007-000143	R-CHIP;4.7Kohm,5%,1/16W,TP,1005	1	SA	
R64	2007-000157	R-CHIP;47Kohm,5%,1/16W,TP,1005	1	SA	
R65	2007-000155	R-CHIP;27Kohm,5%,1/16W,TP,1005	1	SA	
R67	2007-000157	R-CHIP;47Kohm,5%,1/16W,TP,1005	1	SA	
R68	2007-000162	R-CHIP;100Kohm,5%,1/16W,TP,1005	1	SA	
R69	2007-000153	R-CHIP;22Kohm,5%,1/16W,TP,1005	1	SA	
R7	2007-000157	R-CHIP;47Kohm,5%,1/16W,TP,1005	1	SA	

Loc. No.	Part No.	Description;Specification	Q'ty	SNA	Remark
R70	2007-000157	R-CHIP;47Kohm,5%,1/16W,TP,1005	1	SA	
R72	2011-001397	R-NETWORK;47Kohm,5%,1/16W,L,CHIP,8P	1	SA	
R75	2007-000146	R-CHIP;6.8Kohm,5%,1/16W,TP,1005	1	SNA	
R76	2007-000157	R-CHIP;47Kohm,5%,1/16W,TP,1005	1	SA	
R8	2007-000162	R-CHIP;100Kohm,5%,1/16W,TP,1005	1	SA	
R80	2007-007199	R-CHIP;2.7ohm,5%,1/16W,TP,1005	1	SA	
R81	2007-007199	R-CHIP;2.7ohm,5%,1/16W,TP,1005	1	SA	
R82	2007-000636	R-CHIP;270Kohm,5%,1/16W,TP,1005	1	SA	
R83	2007-000162	R-CHIP;100Kohm,5%,1/16W,TP,1005	1	SA	
R84	2007-000160	R-CHIP;68Kohm,5%,1/16W,TP,1005	1	SA	
R85	2007-007014	R-CHIP;51Kohm,5%,1/16W,TP,1005	1	SA	
R86	2007-000636	R-CHIP;270Kohm,5%,1/16W,TP,1005	1	SA	
R87	2007-007942	R-CHIP;1Mohm,1%,1/16W,TP,1005	1	SA	
R88	2007-008517	R-CHIP;240Kohm,1%,1/16W,TP,1005	1	SA	
R89	2007-000775	R-CHIP;33Kohm,5%,1/16W,TP,1005	1	SA	
R9	2007-000502	R-CHIP;2.2ohm,5%,1/8W,TP,2012	1	SA	
R90	2007-000162	R-CHIP;100Kohm,5%,1/16W,TP,1005	1	SA	
R91	2007-000162	R-CHIP;100Kohm,5%,1/16W,TP,1005	1	SA	
R92	2007-007107	R-CHIP;100Kohm,1%,1/16W,TP,1005	1	SA	
R93	2007-007107	R-CHIP;100Kohm,1%,1/16W,TP,1005	1	SA	
R95	2007-000157	R-CHIP;47Kohm,5%,1/16W,TP,1005	1	SA	
R96	2007-001325	R-CHIP;3.3Kohm,5%,1/16W,TP,1005	1	SA	
R97	2007-000982	R-CHIP;5.6Kohm,5%,1/16W,TP,1005	1	SA	
R99	2007-000141	R-CHIP;2.2Kohm,5%,1/16W,TP,1005	1	SA	
S/W1	3404-001180	SWITCH-TACT;12V DC,50mA,260gf,5.2x5	1	SA	
S/W2	3408-001066	SWITCH-SLIDE;4V,0.3A,SP3T,-,-	1	SA	
SHEET EMI MEMORY	AH63-01293A	GASKET-MEMORY PART;YP-K3,EMI TAPE+A	1	SNA	
SHEET EP JACK1	AH63-01430A	SHEET-EARJACK;YP-K3,PC,T0.4,W4.5,L8	1	SNA	
TU1	AH40-00083D	TUNER;GNT-1300A,FM TUNER MODULE,FM,	1	SA	
U1	0902-001923	IC-MICROPROCESSOR;TCC771,120MHz,16B	1	SA	
U10	1203-003615	IC-DC/DC CONVERTER;MP1541DJ,TSOT-23	1	SA	
U1-U2	0201-001445	ADHESIVE-STR;WE-1007,YEL,4000CPS,-	0.06	SNA	
U2	1105-001668	IC-MOBILE SDRAM;K4M281633,4x2Mx16Bi	1	SA	
U3	1107-001710	IC-FLASH MEMORY;K9LBG08U0M,32Gbit,4	1	SA	
U6	1203-003663	IC-BATTERY;ISL6294IRZ-T,DFN,8P,2x3m	1	SA	
U7	1203-004064	IC-DC/DC CONVERTER;AAT2512,TDFN,12P	1	SA	
VAR1	1405-001093	VARISTOR;14V,20A,1x0.5x0.6mm,TP	1	SA	
VAR10	1405-001093	VARISTOR;14V,20A,1x0.5x0.6mm,TP	1	SA	
VAR11	1405-001171	VARISTOR;6Vdc,-,1x0.5x0.5mm,TP	1	SA	
VAR12	1405-001171	VARISTOR;6Vdc,-,1x0.5x0.5mm,TP	1	SA	
VAR13	1405-001093	VARISTOR;14V,20A,1x0.5x0.6mm,TP	1	SA	
VAR14	1405-001093	VARISTOR;14V,20A,1x0.5x0.6mm,TP	1	SA	
VAR2	1405-001093	VARISTOR;14V,20A,1x0.5x0.6mm,TP	1	SA	
VAR3	1405-001093	VARISTOR;14V,20A,1x0.5x0.6mm,TP	1	SA	
VAR4	1405-001093	VARISTOR;14V,20A,1x0.5x0.6mm,TP	1	SA	
VAR5	1405-001093	VARISTOR;14V,20A,1x0.5x0.6mm,TP	1	SA	
VAR6	1405-001093	VARISTOR;14V,20A,1x0.5x0.6mm,TP	1	SA	
VAR7	1405-001093	VARISTOR;14V,20A,1x0.5x0.6mm,TP	1	SA	
VAR8	1405-001093	VARISTOR;14V,20A,1x0.5x0.6mm,TP	1	SA	
VAR9	1405-001093	VARISTOR;14V,20A,1x0.5x0.6mm,TP	1	SA	
X-TAL1	2801-004318	CRYSTAL-SMD;12MHz,20ppm,-,12PF,80oh	1	SA	
X-TAL2	2801-003856	CRYSTAL-SMD;0.032768MHz,20ppm,28-AC	1	SA	
X-TAL3	2801-003856	CRYSTAL-SMD;0.032768MHz,20ppm,28-AC	1	SA	
	AH99-10000X	ASSY AUTO INSERT-PCB;-,YP-K3A(4GB)	1	SNA	
	AH97-02175W	ASSY ACCESSORY;XET,YP-K3JAG,-,-	1	SNA	
	AH30-00086D	PHONE-EAR(EP-370);WHITE,EP-370,16oh	1	SA	
	AH39-00899A	CBF CABLE;USB CABLE,49338-0001,YP-T	1	SA	

Loc. No.	Part No.	Description;Specification	Q'ty	SNA	Remark
	AH68-00511E	LABEL-PACKING;YP-T7,KOR/CHN,-,-,-,-	1	SNA	
	AH68-00650H	MARK RECYCLE-CARD;YP-T10,XEU/XET/XE	1	SA	
	AH68-00650L	MARK RECYCLE;YP-P2,ELS,ENG,-,MOJO40	1	SA	
	AH68-01722C	MANUAL-QG;YP-K3,ELS,ENG/ITA/SPN/F/D	1	SA	
	AH69-01840G	PACKING CASE;YP-K3,OTHER,-,T1,W133,	1	SNA	
	AH80-00139B	INSTALL-MASTER CD;YP-K3,Same as SEC	1	SA	
	AH97-01777A	ASSY PACKING-SET;YP-K3,PACKING SET+	1	SNA	
	AH63-01285A	SHEET-REMOVER;YP-K3,pet0.1,-,-,-,-	1	SNA	
	AH69-01838A	CUSHION-SET;YP-K3,PPR-OTH,-,-,-,-,-	1	SNA	
	AH69-01839A	PACKING-SET;YP-K3,-,-,-,-,-,-,-,-,-	1	SNA	
	AH68-00508U	LABEL SERIAL;COMMON,ELS,-,-,90,-,-,	0.1	SNA	
	AH68-00511E	LABEL-PACKING;YP-T7,KOR/CHN,-,-,-,-	1	SNA	
	AH68-00701H	LABEL SERIAL;YP-T7,ALL,-,-,W20,L5.6	1	SNA	
	AH68-01453A	LABEL-LISTENING;YEPP EU ELS1,-,PASC	1	SNA	
	AH68-50119B	LABEL-EAN(B);-,-,ART,T0.05,W27,L47,	1.05	SNA	
	AH69-01816A	CARTON-MASTER;YP-Z5F,-,-,-,-,-,-,-,	0.1	SNA	

Model	Area	Code	UMS			
			1GB	2GB	4GB	8GM
YP-K3	AAW	Existing	AH92-02660A	AH92-02660B	AH92-02660C	
		A/S Code	AH82-00165A	AH82-00165B	AH82-00165C	AH82-00165D
	ADL	Existing		AH92-02734B		
		A/S Code	UMS NO FM			
	CHN	Existing	AH92-02660A	AH92-02660B	AH92-02660C	
		A/S Code	AH82-00165A	AH82-00165B	AH82-00165C	AH82-00165D
	HAC	Existing	AH92-02660A	AH92-02660B	AH92-02660C	
		A/S Code	AH82-00165A	AH82-00165B	AH82-00165C	AH82-00165D
	KNT	Existing		AH92-02734B		
		A/S Code	UMS NO FM			
	MEA	Existing	AH92-02660A	AH92-02660B	AH92-02660C	
		A/S Code	AH82-00165A	AH82-00165B	AH82-00165C	AH82-00165D
	NWT	Existing	AH92-02660A	AH92-02660B	AH92-02660C	AH92-02660D
		A/S Code	AH82-00165A	AH82-00165B	AH82-00165C	AH82-00165D
	RCL	Existing		AH92-02660B	AH92-02660C	
		A/S Code	AH82-00165A	AH82-00165B	AH82-00165C	AH82-00165D
	SMT	Existing		AH92-02660B	AH92-02660C	
		A/S Code	AH82-00165A	AH82-00165B	AH82-00165C	AH82-00165D
	SUN	Existing	AH92-02660A	AH92-02660B	AH92-02660C	
		A/S Code	AH82-00165A	AH82-00165B	AH82-00165C	AH82-00165D
	TSE	Existing	AH92-02660A	AH92-02660B	AH92-02660C	
		A/S Code	AH82-00165A	AH82-00165B	AH82-00165C	AH82-00165D
	XAA	Existing				
		A/S Code				
	XAC	Existing				
		A/S Code				
	XAH	Existing		AH92-02660B	AH92-02660C	
		A/S Code	AH82-00165A	AH82-00165B	AH82-00165C	AH82-00165D
	XAP	Existing		AH92-02660B	AH92-02660C	
		A/S Code	AH82-00165A	AH82-00165B	AH82-00165C	AH82-00165D
	XAX	Existing		AH92-02660B	AH92-02660C	AH92-02660D
		A/S Code	AH82-00165A	AH82-00165B	AH82-00165C	AH82-00165D
	XAZ	Existing		AH92-02660B	AH92-02660C	
		A/S Code	AH82-00165A	AH82-00165B	AH82-00165C	AH82-00165D
	XBG	Existing	AH92-02660A	AH92-02660B	AH92-02660C	
		A/S Code	AH82-00165A	AH82-00165B	AH82-00165C	AH82-00165D
	XEE	Existing				
		A/S Code				

<YP-K3 AS Code Table 1>

Model	Area	Code	UMS			
			1GB	2GB	4GB	8GM
YP-K3	XEF	Existing				
		A/S Code				
	XEH	Existing				
		A/S Code				
	XEO	Existing				
		A/S Code				
	XER	Existing	AH92-02660A	AH92-02660B	AH92-02660C	AH92-02660D
		A/S Code	AH82-00165A	AH82-00165B	AH82-00165C	AH82-00165D
	XET	Existing				
		A/S Code				
	XEU	Existing				
		A/S Code				
	XME	Existing	AH92-02660A	AH92-02660B	AH92-02750C	
		A/S Code	AH82-00165A	AH82-00165B	AH82-00165C	AH82-00165D
	XSA	Existing				
		A/S Code				
	XSE	Existing	AH92-02660A	AH92-02660B	AH92-02660C	AH92-02660D
		A/S Code	AH82-00165A	AH82-00165B	AH82-00165C	AH82-00165D
	XSH	Existing	AH92-02660A	AH92-02660B	AH92-02660C	
		A/S Code	AH82-00165A	AH82-00165B	AH82-00165C	AH82-00165D
	XSJ	Existing			AH92-02660C	
		A/S Code	AH82-00165A	AH82-00165B	AH82-00165C	AH82-00165D
	XSP	Existing	AH92-02660A		AH92-02660C	AH92-02660D
		A/S Code	AH82-00165A	AH82-00165B	AH82-00165C	AH82-00165D
	XSV	Existing	AH92-02660A	AH92-02660B	AH92-02660C	
		A/S Code	AH82-00165A	AH82-00165B	AH82-00165C	AH82-00165D
	XTC	Existing		AH92-02660B	AH92-02660C	
		A/S Code	AH82-00165A	AH82-00165B	AH82-00165C	AH82-00165D
	XTL	Existing	AH92-02660A	AH92-02660B		
		A/S Code	AH82-00165A	AH82-00165B	AH82-00165C	AH82-00165D
	XTW	Existing	AH92-02660A	AH92-02660B	AH92-02660C	
		A/S Code	AH82-00165A	AH82-00165B	AH82-00165C	AH82-00165D
	KOR	Existing	AH92-02660A	AH92-02660B	AH92-02660C	AH92-02660D
		A/S Code	AH82-00165A	AH82-00165B	AH82-00165C	AH82-00165D

<YP-K3 AS Code Table 2>

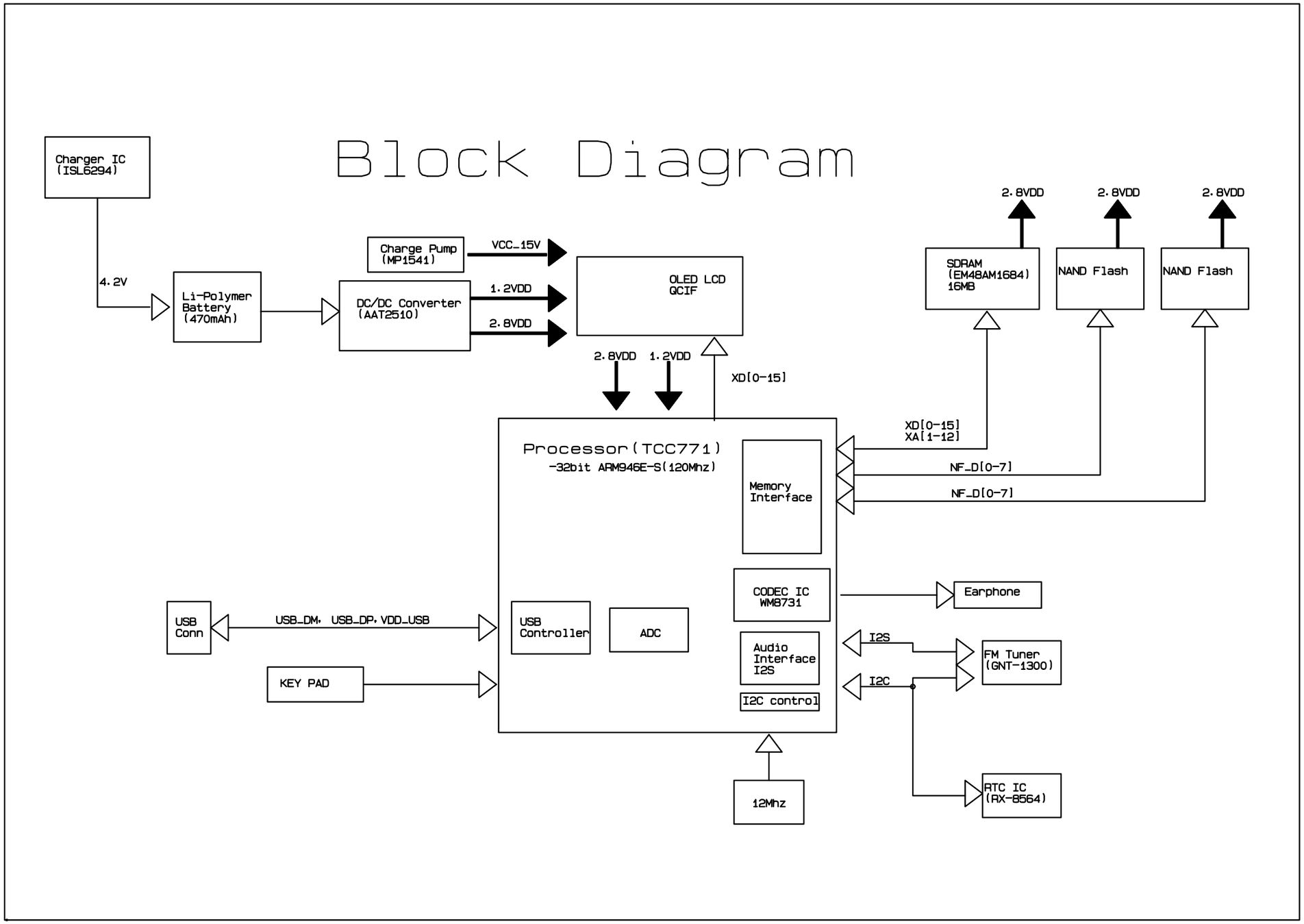
Model	Area	Code	MTP			
			1GB	2GB	4GB	8GM
YP-K3	AAW	Existing				
		A/S Code				
	ADL	Existing				
		A/S Code				
	CHN	Existing				
		A/S Code				
	HAC	Existing				
		A/S Code				
	KNT	Existing				
		A/S Code				
	MEA	Existing				
		A/S Code				
	NWT	Existing				
		A/S Code				
	RCL	Existing				
		A/S Code				
	SMT	Existing				
		A/S Code				
	SUN	Existing				
		A/S Code				
	TSE	Existing				
		A/S Code				
	XAA	Existing		AH92-02660B	AH92-02660C	
		A/S Code	AH82-00165E	AH82-00165F	AH82-00165G	AH82-00165H
	XAC	Existing		AH92-02660B	AH92-02660C	
		A/S Code	AH82-00165E	AH82-00165F	AH82-00165G	AH82-00165H
	XAH	Existing				
		A/S Code				
	XAP	Existing				
		A/S Code				
	XAX	Existing				
		A/S Code				
	XAZ	Existing				
		A/S Code				
	XBG	Existing				
		A/S Code				
	XEE	Existing	AH92-02660A	AH92-02660B	AH92-02660C	AH92-02660D
		A/S Code	AH82-00165E	AH82-00165F	AH82-00165G	AH82-00165H

<YP-K3 AS Code Table 3>

Model	Area	Code	MTP			
			1GB	2GB	4GB	8GM
YP-K3	XEF	Existing	AH92-02660A	AH92-02660B	AH92-02660C	
		A/S Code	AH82-00165E	AH82-00165F	AH82-00165G	AH82-00165H
	XEH	Existing	AH92-02660A	AH92-02660B	AH92-02660C	
		A/S Code	AH82-00165E	AH82-00165F	AH82-00165G	AH82-00165H
	XEO	Existing	AH92-02660A	AH92-02660B	AH92-02660C	
		A/S Code	AH82-00165E	AH82-00165F	AH82-00165G	AH82-00165H
	XER	Existing				
		A/S Code				
	XET	Existing	AH92-02660A	AH92-02660B	AH92-02660C	AH92-02660D
		A/S Code	AH82-00165E	AH82-00165F	AH82-00165G	AH82-00165H
	XEU	Existing	AH92-02660A	AH92-02660B	AH92-02660C	AH92-02660D
		A/S Code	AH82-00165E	AH82-00165F	AH82-00165G	AH82-00165H
	XME	Existing				
		A/S Code				
	XSA	Existing	AH92-02660A	AH92-02660B	AH92-02660C	AH92-02660D
		A/S Code	AH82-00165E	AH82-00165F	AH82-00165G	AH82-00165H
	XSE	Existing				
		A/S Code				
	XSH	Existing				
		A/S Code				
	XSJ	Existing				
		A/S Code				
	XSP	Existing				
		A/S Code				
	XSV	Existing				
		A/S Code				
	XTC	Existing				
		A/S Code				
	XTL	Existing				
		A/S Code				
	XTW	Existing				
		A/S Code				
	KOR	Existing				
		A/S Code				

<YP-K3 AS Code Table 4>

9. Block Diagram



10. Wiring Diagram

YP-K3 Wiring Diagram

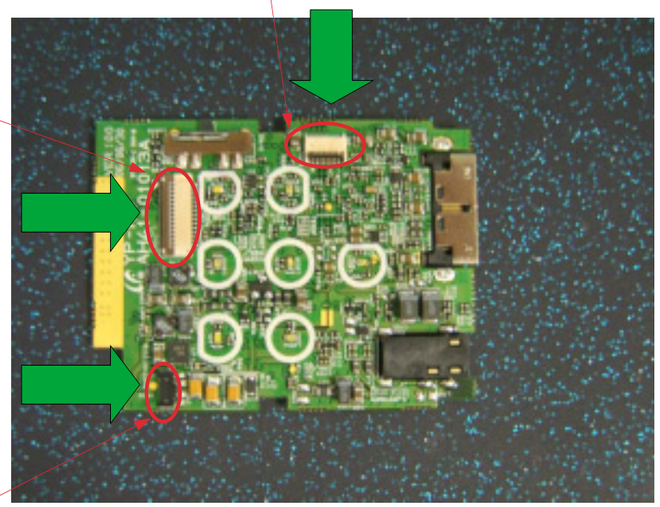
Uni-Directional

Insertion Direction

8P Connector (CON1)
: Although the Touch PAD Connector does not have an anti-reverse-direction insertion mechanism, reverse-direction insertion is mechanically difficult.

TOP

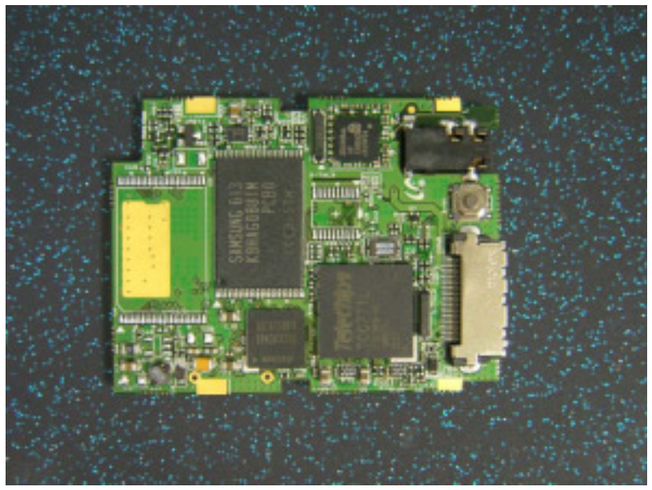
31P Connector (CON4)
: Although the LCD Connector does not have an anti-reverse-direction insertion mechanism, reverse-direction insertion is mechanically difficult.



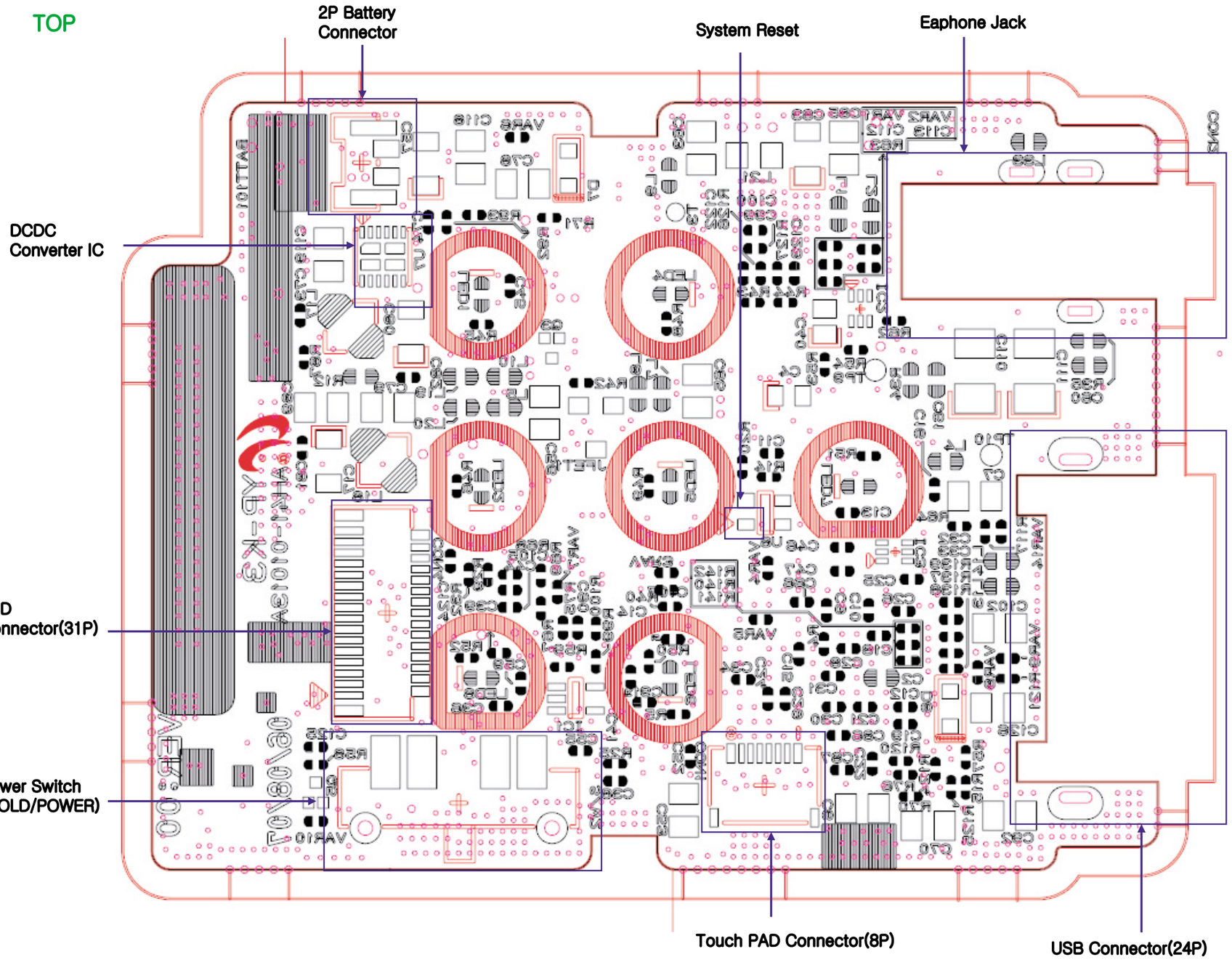
2P Connector (BATT101)
: The left-hand battery connector is -. Observe the correct polarity.
(A mechanical anti-reverse-direction insertion mechanism is fitted.)

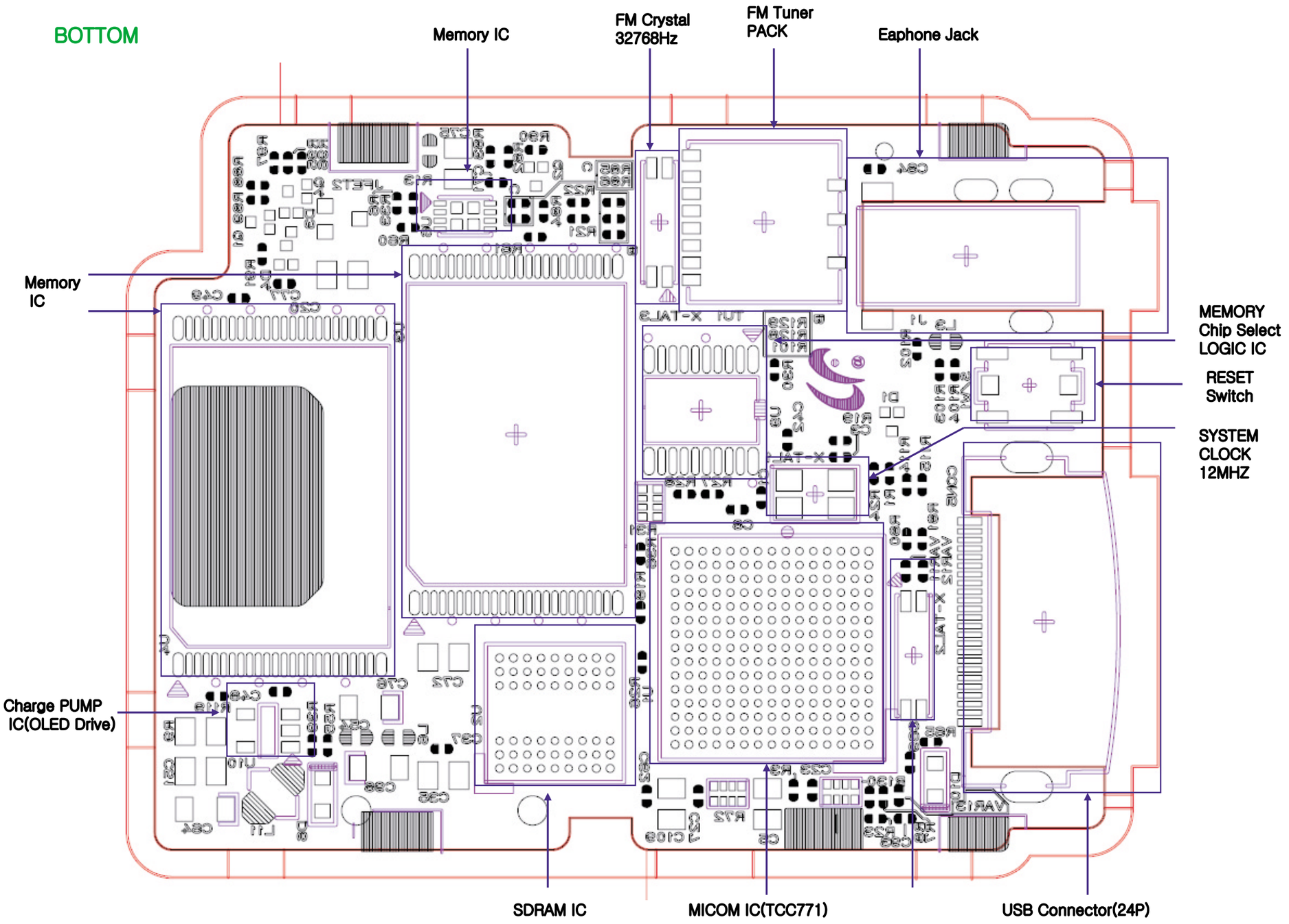
BOTTOM

There is no wiring architecture at the bottom.

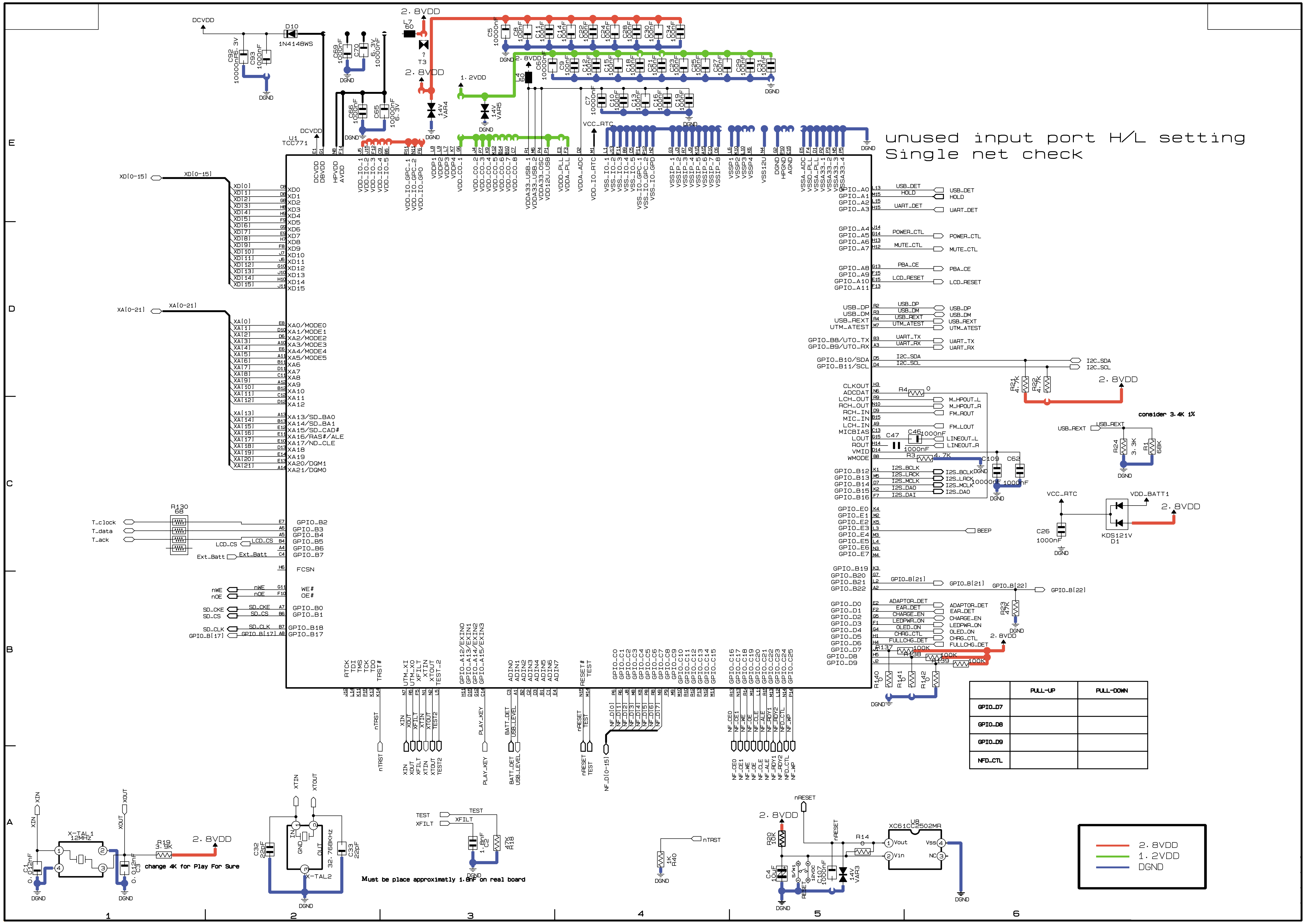


1-1. TOP View

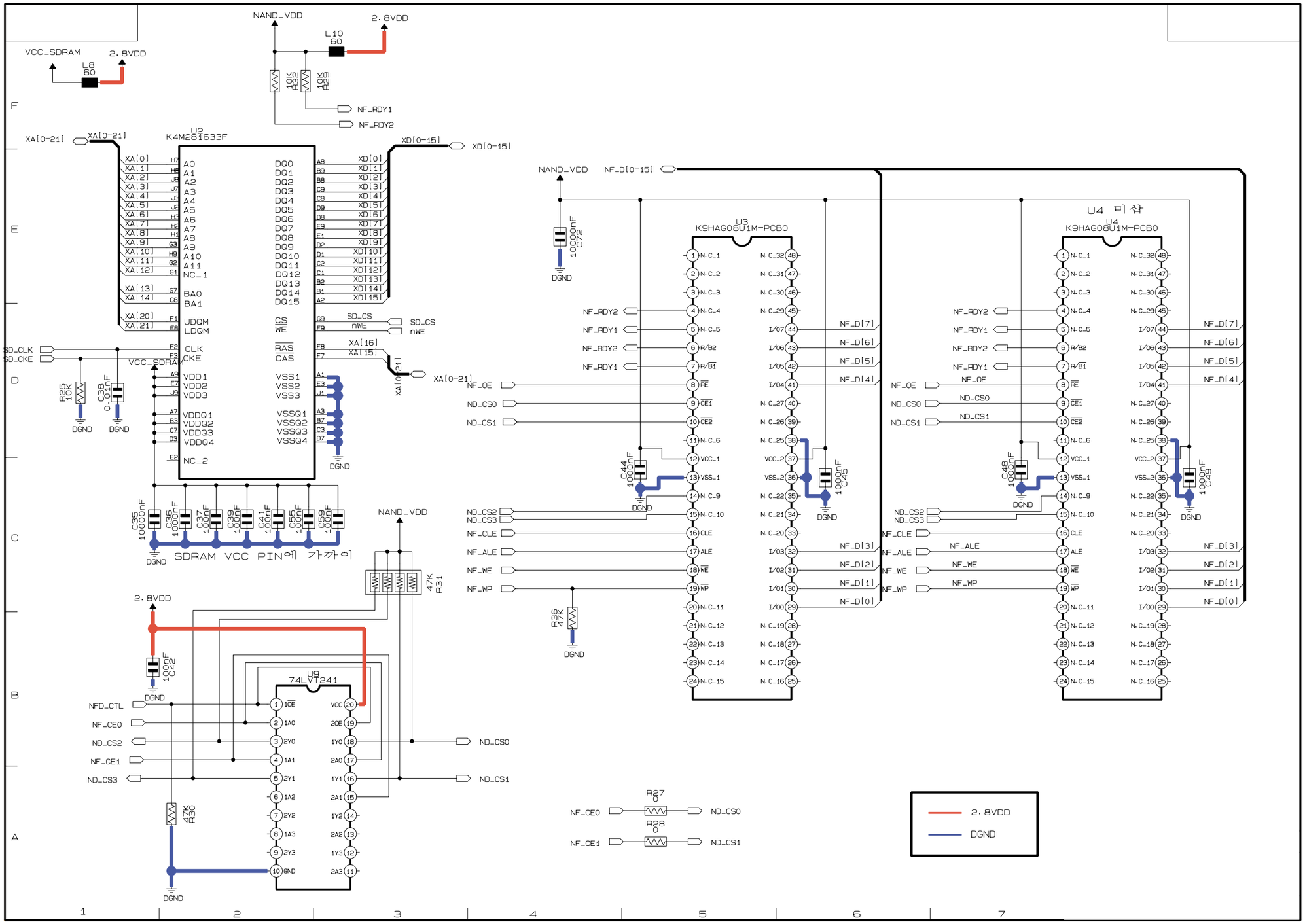

TOP
2P Battery Connector
System Reset
Eaphone Jack
DCDC Converter IC
LCD Connector(31P)
Power Switch (HOLD/POWER)
Touch PAD Connector(8P)
USB Connector(24P)

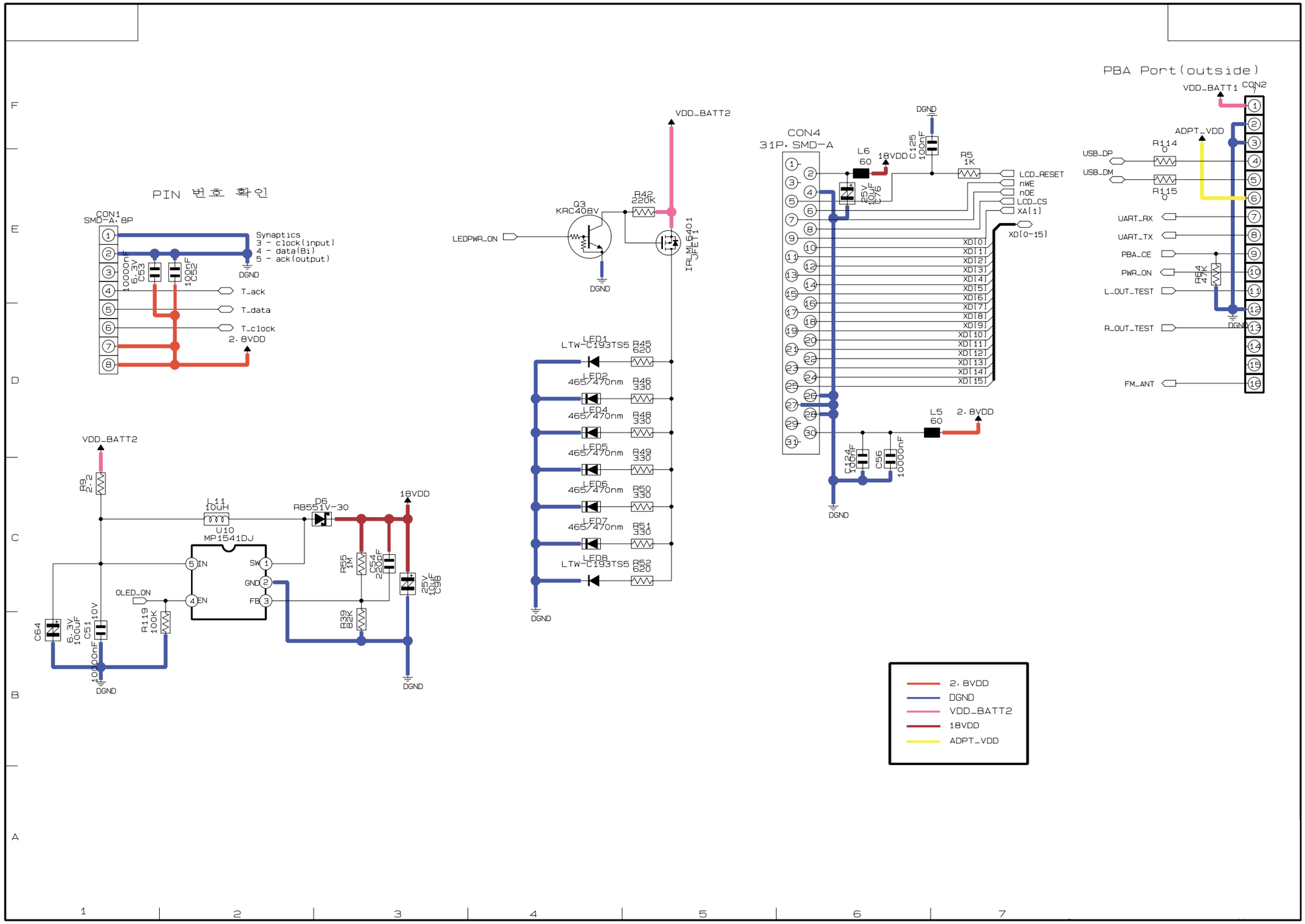

BOTTOM
Memory IC
FM Crystal 32768Hz
FM Tuner PACK
Eaphone Jack
Memory IC
MEMORY Chip Select LOGIC IC
RESET Switch
SYSTEM CLOCK 12MHZ
Charge PUMP IC(OLED Drive)
SDRAM IC
MICOM IC(TCC771)
USB Connector(24P)

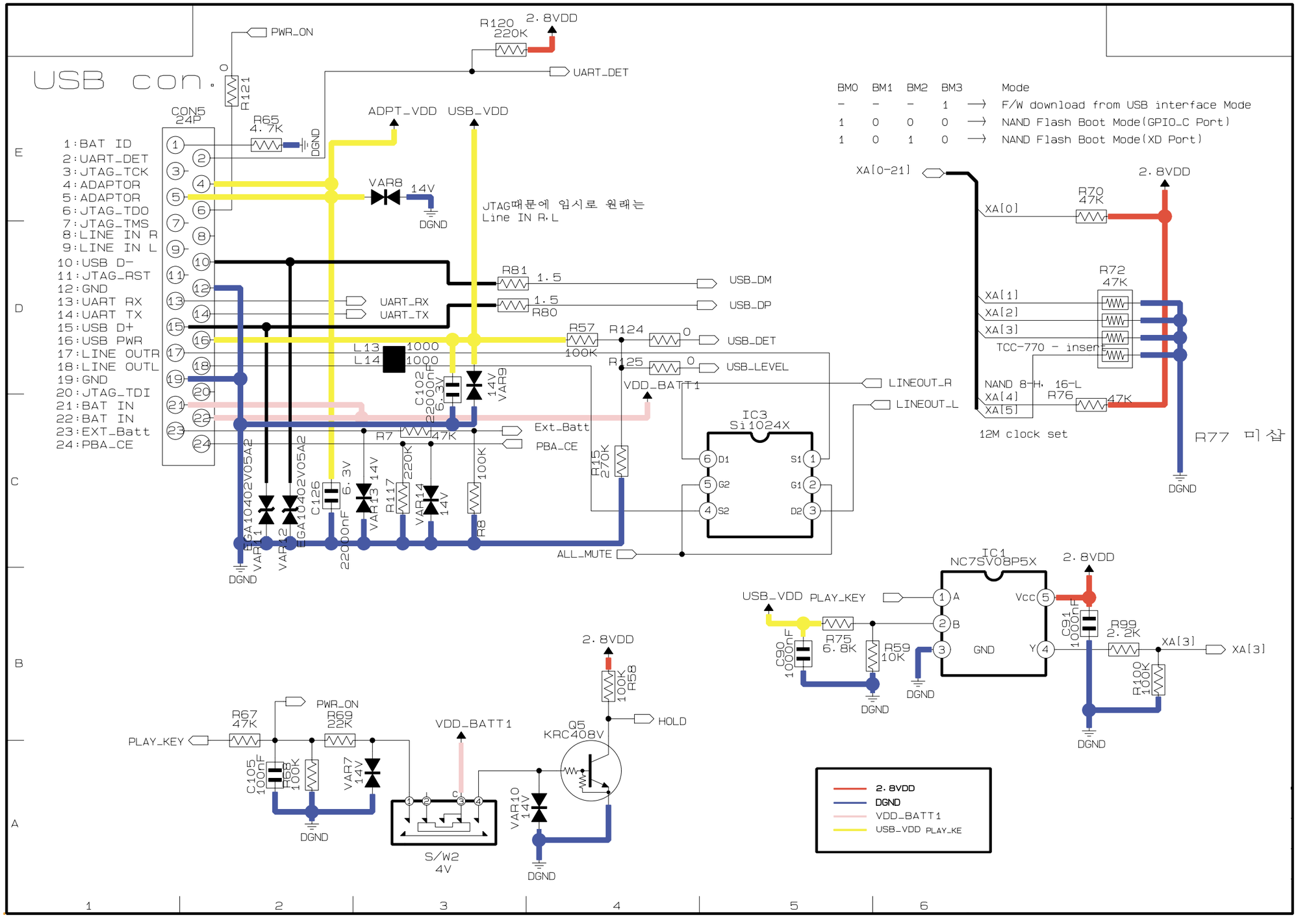
1-1. MICOM

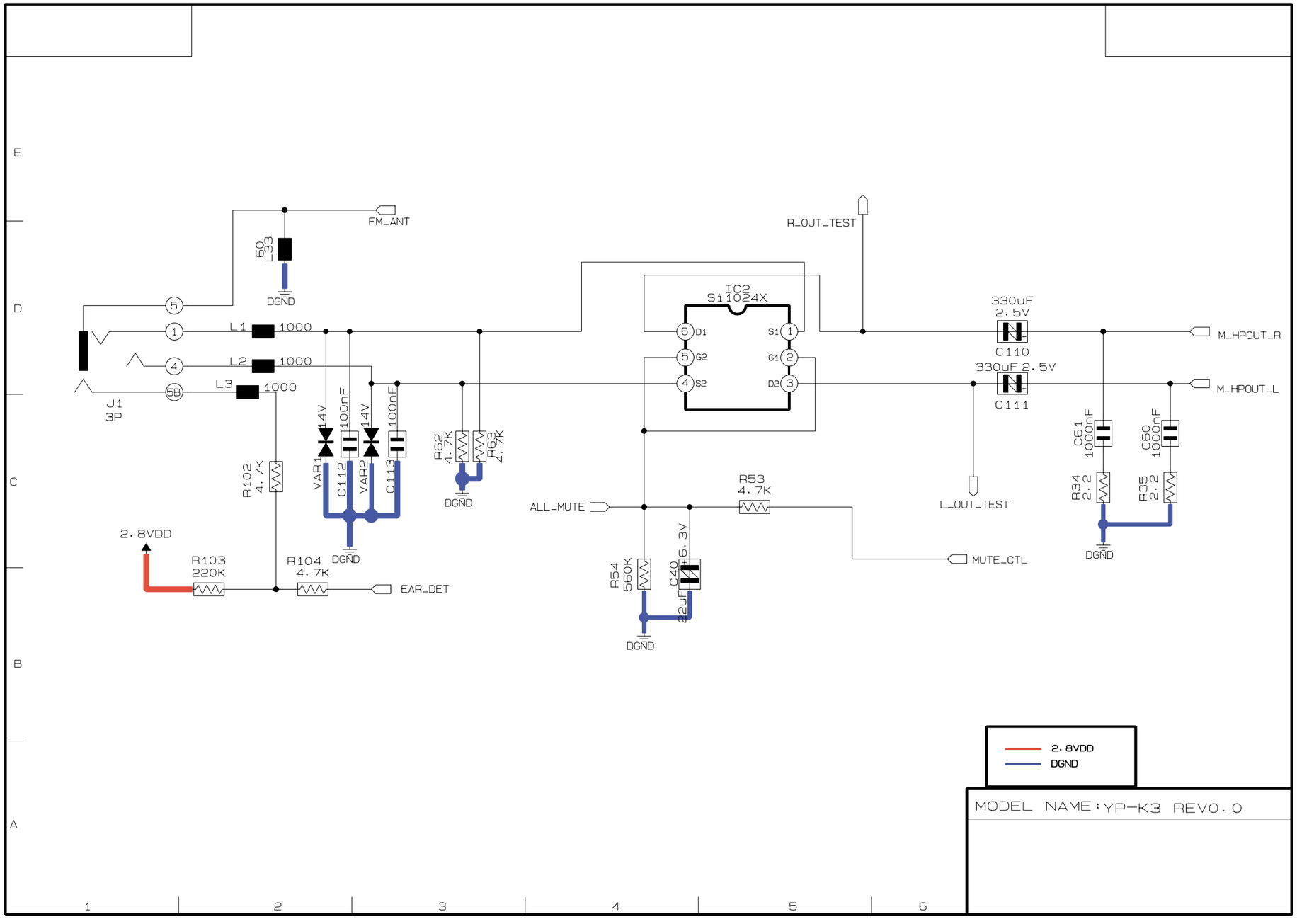


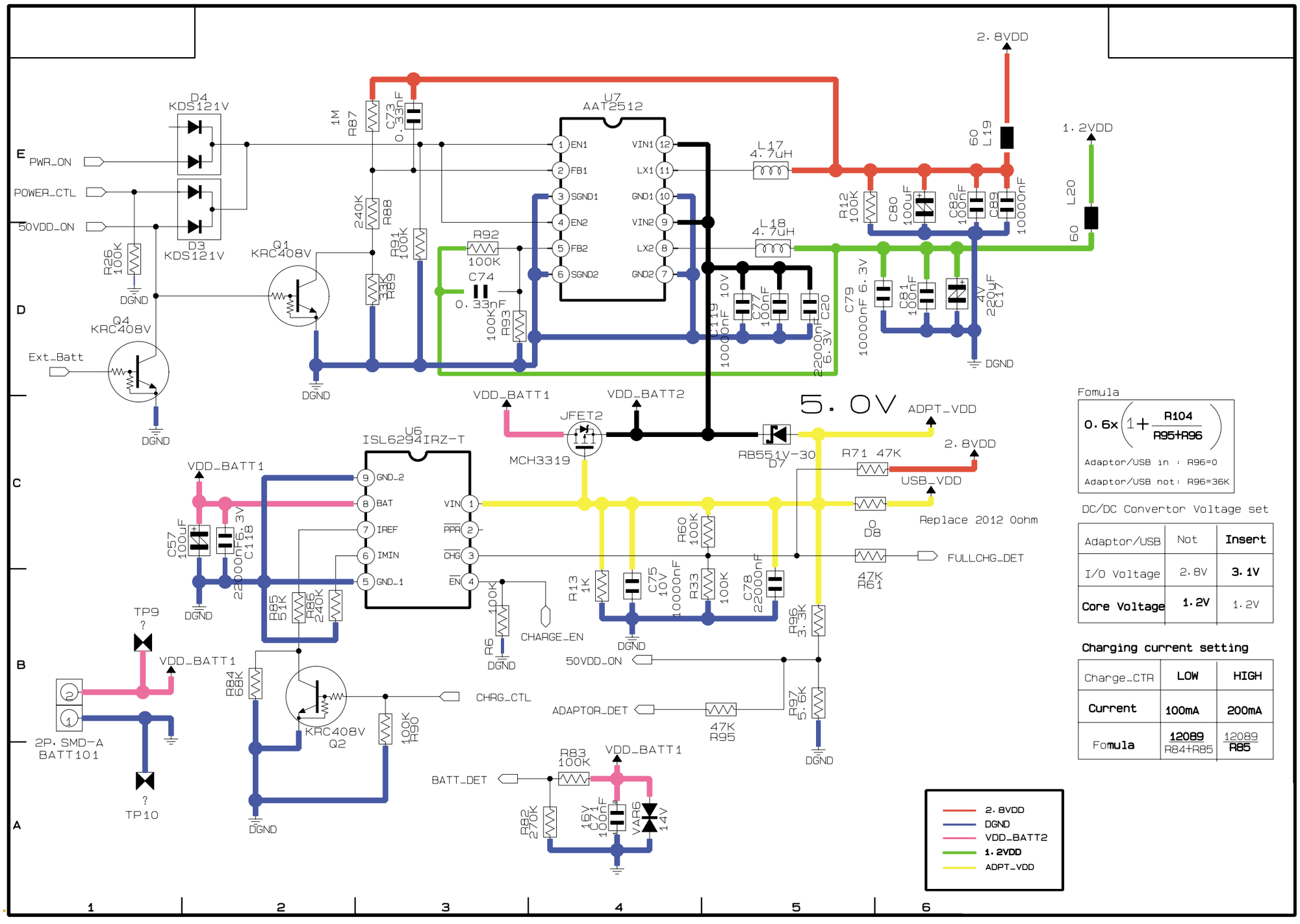
unused input port H/L setting
Single net check
U1
TCC771
consider 3.4K 1%
change 4K for Play For Sure
Must be place approximatly 1.8nF on real board
PULL-UP
PULL-DOWN
GPIO_D7
GPIO_D8
GPIO_D9
NFD_CTL
2.8VDD
1.2VDD
DGND

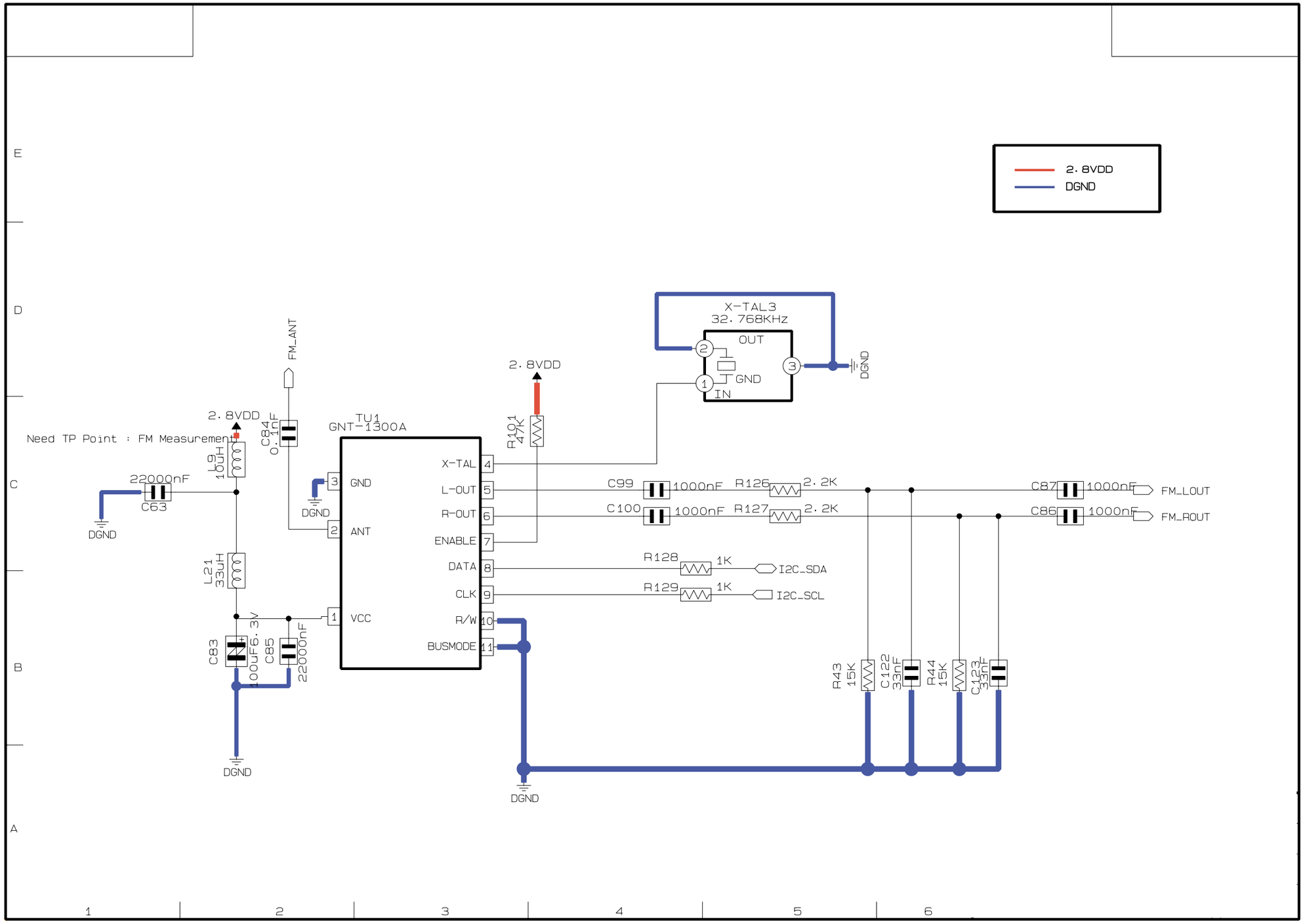

NAND_VDD
2.8VDD
L10 60
VCC_SDRAM
2.8VDD
L8 60
10K R29
10K R28
NF_RDY1
NF_RDY2
U2
K4M281633F
XA[0-21]
XD[0-15]
SD_CLK
SD_CKE
SD_CS
nWE
XA[16]
XA[15]
R25 10K
C38 0.01nF
DGND
VCC_SDRAM
SDRAM VCC PIN의 가까이
C35 1000nF
C36 100nF
C37 100nF
C39 100nF
C41 100nF
C55 100nF
C59 100nF
NF_D[0-15]
U3
K9HAG08U1M-PCB0
U4 미삽
U4
K9HAG08U1M-PCB0
C72 1000nF
C44 1000nF
C45 1000nF
C48 1000nF
C49 1000nF
NF_OE
ND_CS0
ND_CS1
NF_CLE
NF_ALE
NF_WE
NF_WP
NF_D[7]
NF_D[6]
NF_D[5]
NF_D[4]
NF_D[3]
NF_D[2]
NF_D[1]
NF_D[0]
R36 47K
47K R31
2.8VDD
C42 100nF
U9
74LVT241
NFD_CTL
NF_CE0
ND_CS2
NF_CE1
ND_CS3
ND_CS0
ND_CS1
R36 47K
R27 0
R28 0
NF_CE0
NF_CE1
ND_CS0
ND_CS1
2.8VDD
DGND


PIN 번호 확인
CON1
SMD-A-8P
Synaptics
3 - clock(input)
4 - data(Bi)
5 - ack(output)
T_ack
T_data
T_clock
2.8VDD
DGND
VDD_BATT2
Q3
KRC408V
R42
220K
LEDPWR_ON
IRLML6401
LED1
LTW-C193TS5
R45
620
LED2
465/470nm
R46
330
LED4
465/470nm
R48
330
LED5
465/470nm
R49
330
LED6
465/470nm
R50
330
LED7
465/470nm
R51
330
LED8
LTW-C193TS5
R52
620
CON4
31P, SMD-A
L6
60
18VDD
C125
100nF
R5
1K
LCD_RESET
nWE
nOE
LCD_CS
XA[1]
XD[0-15]
L5
60
2.8VDD
C124
100nF
C56
10000nF
PBA Port(outside)
CON2
ADPT_VDD
R114
0
R115
0
USB_DP
USB_DM
UART_RX
UART_TX
PBA_CE
PWR_ON
R64
47K
L_OUT_TEST
R_OUT_TEST
FM_ANT
L11
10uH
D6
RB551V-30
U10
MP1541DJ
IN
SW
GND
FB
EN
OLED_ON
R9
2.2
R119
100K
R55
1M
R39
82K
C54
220pF
C64
10000nF
C51
6.3V
100uF
10V
25V
10uF
C95
2.8VDD
DGND
18VDD
ADPT_VDD


USB con.
CON5
24P
1:BAT ID
2:UART_DET
3:JTAG_TCK
4:ADAPTOR
5:ADAPTOR
6:JTAG_TDO
7:JTAG_TMS
8:LINE IN R
9:LINE IN L
10:USB D-
11:JTAG_RST
12:GND
13:UART RX
14:UART TX
15:USB D+
16:USB PWR
17:LINE OUTR
18:LINE OUTL
19:GND
20:JTAG_TDI
21:BAT IN
22:BAT IN
23:EXT_Batt
24:PBA_CE
PWR_ON
R121 0
R120 220K
2.8VDD
UART_DET
R65 4.7K
DGND
ADPT_VDD
USB_VDD
VAR8 14V
JTAG때문에 임시로 원래는
Line IN R,L
R81 1.5
R80 1.5
USB_DM
USB_DP
UART_RX
UART_TX
R57 100K
R124 0
USB_DET
L13 1000
L14 1000
C102 2200nF 6.3V
14V VAR9
R125 0
USB_LEVEL
VDD_BATT1
LINEOUT_R
LINEOUT_L
R7 47K
Ext_Batt
PBA_CE
IC3
Si1024X
D1
G2
S2
S1
G1
D2
R15 270K
EGA1040 2V05A2 VAR1
EGA1040 2V05A2 VAR2
C126 6.3V 2200nF
VAR13 14V
R117 220K
VAR14 14V
R8 100K
ALL_MUTE
BM0 BM1 BM2 BM3 Mode
- - - 1 → F/W download from USB interface Mode
1 0 0 0 → NAND Flash Boot Mode(GPIO_C Port)
1 0 1 0 → NAND Flash Boot Mode(XD Port)
XA[0-21]
XA[0]
R70 47K
2.8VDD
R72 47K
XA[1]
XA[2]
XA[3]
TCC-770 - insert
NAND 8-H, 16-L
XA[4]
XA[5]
R76 47K
12M clock set
R77 미삽
DGND
IC1
NC7SV08P5X
USB_VDD
PLAY_KEY
A
B
GND
Vcc
Y
C90 1000nF
R75 6.8K
R59 10K
C91 1000nF
R99 2.2K
XA[3]
R100 100K
R67 47K
PWR_ON
R69 22K
C105 100nF
R68 100K
VAR7 14V
VDD_BATT1
Q5
KRC408V
HOLD
R58 100K
VAR10 14V
S/W2
4V
2.8VDD
DGND
VDD_BATT1
USB_VDD PLAY_KE


FM_ANT
L33
60
DGND
R_OUT_TEST
IC2
Si1024X
330uF
2.5V
C110
M_HPOUT_R
330uF 2.5V
C111
M_HPOUT_L
J1
3P
L1 1000
L2 1000
L3 1000
14V
100nF
VAR1
VAR2
C112
C113
R102
4.7K
R62
4.7K
R63
4.7K
DGND
ALL_MUTE
R53
4.7K
L_OUT_TEST
C61
1000nF
C60
1000nF
R34
2.2
R35
2.2
R54
560K
C40
2.2uF
16.3V
MUTE_CTL
2.8VDD
R103
220K
R104
4.7K
EAR_DET
2.8VDD
DGND
MODEL NAME : YP-K3 REVO.0

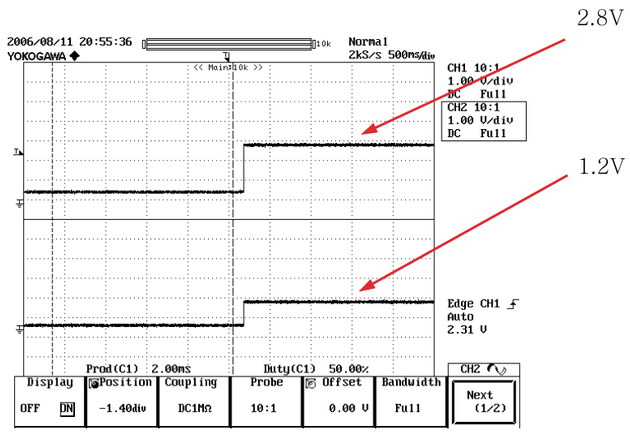

D4
KDS121V
D3
KDS121V
PWR_ON
POWER_CTL
50VDD_ON
R26
100K
DGND
Q1
KRC408V
Q4
KRC408V
Ext_Batt
1M
R87
C73
0.33nF
240K
R88
R91
100K
R89
33K
R92
100K
C74
0.33nF
100K
R93
U7
AAT2512
EN1
FB1
SGND1
EN2
FB2
SGND2
VIN1
LX1
GND1
VIN2
LX2
GND2
L17
4.7uH
L18
4.7uH
2.8VDD
60
L19
1.2VDD
L20
60
R12
100K
C80
100uF
C82
100nF
C89
10000nF
C79
10000nF 6.3V
C81
100nF
4V
220uF
C17
C119
10000nF 10V
C77
100nF
2200nF
6.3V
C20
DGND
VDD_BATT1
VDD_BATT2
JFET2
MCH3319
RB551V-30
D7
5.0V
ADPT_VDD
2.8VDD
R71 47K
USB_VDD
0
D8
Replace 2012 0ohm
FULLCHG_DET
47K
R61
U6
ISL6294IRZ-T
GND_2
BAT
IREF
IMIN
GND_1
VIN
PPR
CHG
EN
C57
100uF
2200nF
6.3V
C118
R85
51K
R86
240K
R60
100K
R13
1K
C75
10V
10000nF
R33
100K
C78
2200nF
R96
3.3K
R6
100K
CHARGE_EN
50VDD_ON
TP9
?
TP10
?
2P, SMD-A
BATT101
R84
68K
KRC408V
Q2
CHRG_CTL
100K
R90
ADAPTOR_DET
47K
R95
R97
5.6K
R83
100K
BATT_DET
R82
270K
16V
C71
100nF
VAR6
14V
Fomula
0.6x(1+R104/R95+R96)
Adaptor/USB in : R96=0
Adaptor/USB not: R96=36K
DC/DC Convertor Voltage set
Adaptor/USB | Not | Insert
I/O Voltage | 2.8V | 3.1V
Core Voltage | 1.2V | 1.2V
Charging current setting
Charge_CTR | LOW | HIGH
Current | 100mA | 200mA
Fomula | 12089/R84+R85 | 12089/R85
2.8VDD
DGND
VDD_BATT2
1.2VDD
ADPT_VDD
A
B
C
D
E
1
2
3
4
5
6


2.8VDD
DGND
X-TAL3
32.768KHz
OUT
GND
IN
DGND
2.8VDD
R101
47K
FM_ANT
2.8VDD
Need TP Point : FM Measurement
C84
0.1nF
L9
10uH
22000nF
C63
DGND
TU1
GNT-1300A
GND
DGND
ANT
L21
33uH
VCC
C83
100uF6.3V
C85
22000nF
DGND
X-TAL
L-OUT
R-OUT
ENABLE
DATA
CLK
R/W
BUSMODE
DGND
C99
1000nF
R126
2.2K
C100
1000nF
R127
2.2K
R128
1K
I2C_SDA
R129
1K
I2C_SCL
C87
1000nF
FM_LOUT
C86
1000nF
FM_ROUT
R43
15K
C122
33nF
R44
15K
C123
33nF

1. DC-DC Converter Output

Measuring Point : L19, L20

Measured Value : 2.8V(±0.1V), 1.2V(±0.1V)

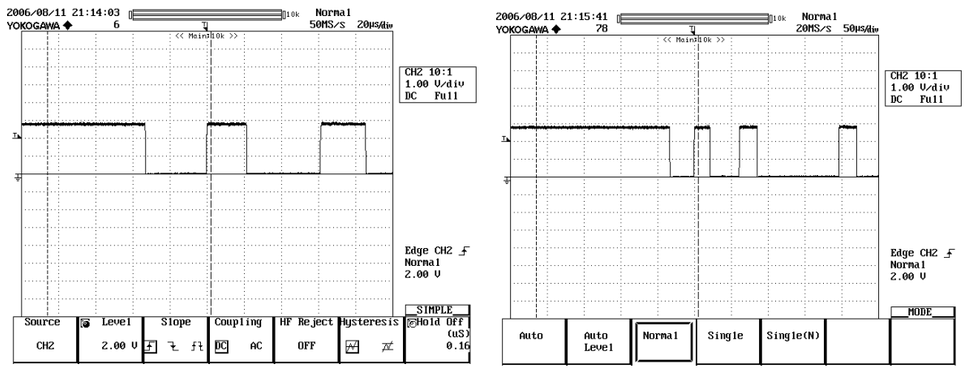


☞ Check if the 2.8V and 1.2V waveforms are the same as the figure above when a certain period of time has passed after turning the power on.

2. Touch PAD Switch Check

Measuring Point : 4-Array of R130

Measured Value : Check the CLK, DATA and ACK signals depending on the key operation.

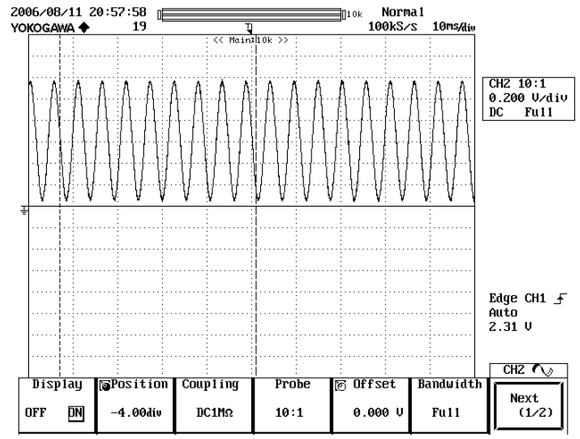


☞ Check if the square wave signals illustrated in the figure above are measured for the CLK, DATA or ACK operations.

3. System Clock Signal

Measuring Point : Pin 3 of X-TAL 1

Measured Value : 12MHz Square Wave Signal

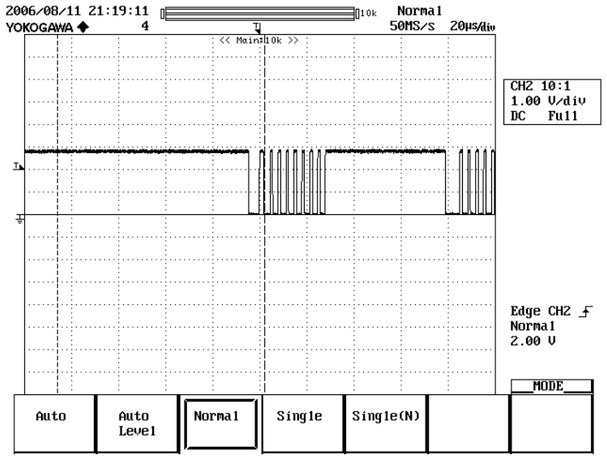


☞ Check if the 12MHz Sinewave illustrated in the figure above is measured.

4. Codec Control Signal

Measuring Point : R21, R22

Measured Value : I2C Clock Signal and Data Signal

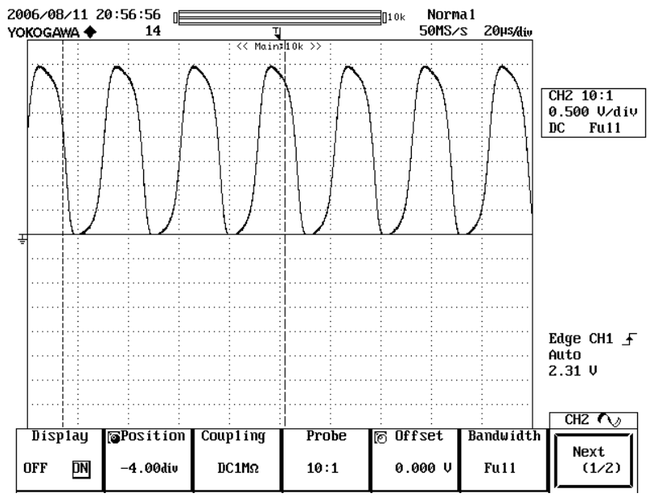


☞ Check if the square wave signals illustrated in the figure above are measured to check if the data and clock communications are normal.

5. FM Clock Signal

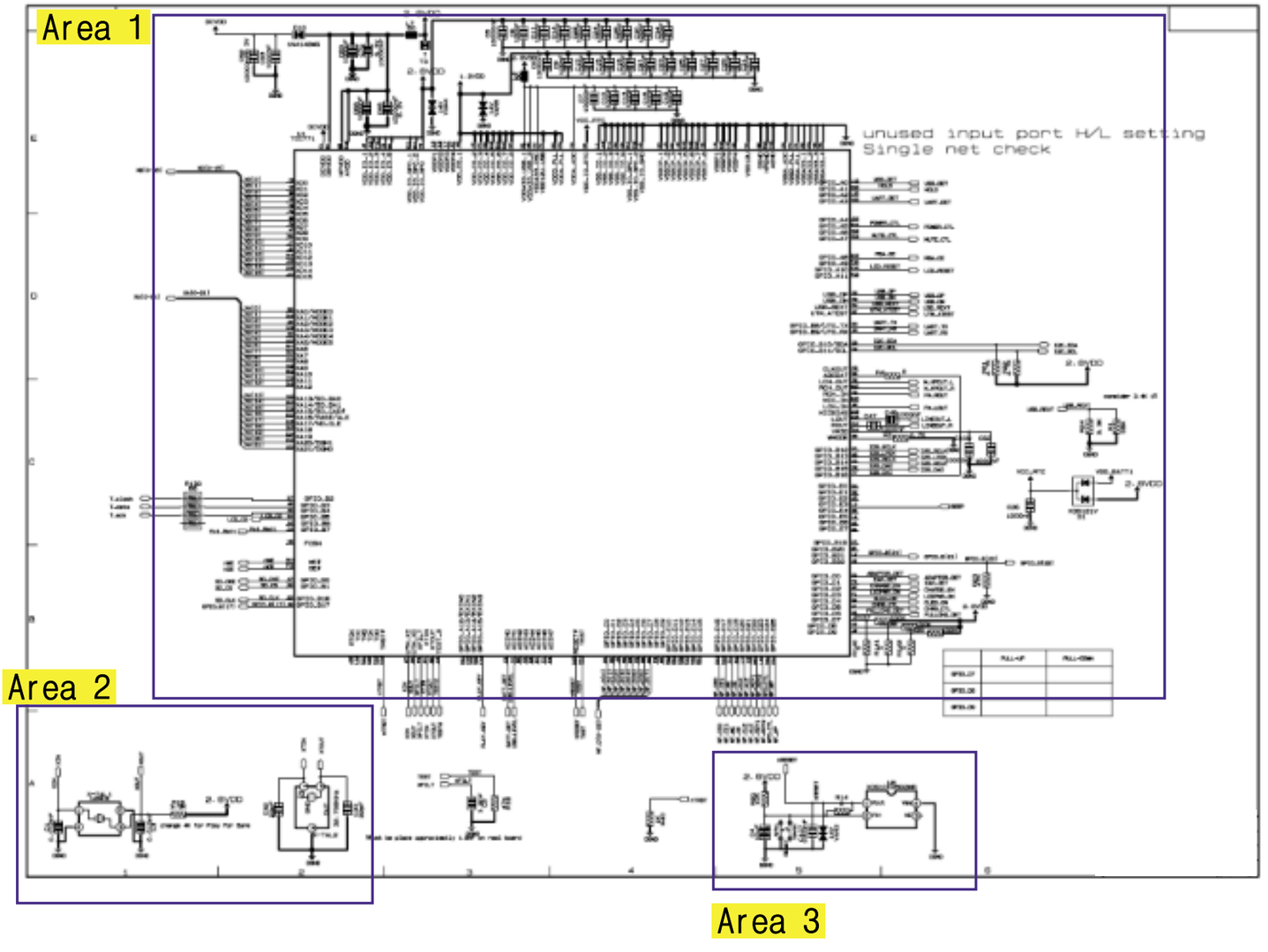
Measuring Point : Pin 1 off X-TAL 3

Measured Value : 32.768kHz Sinewave



☞ Check if the 32768Hz Sinewave illustrated in the figure above is measured.

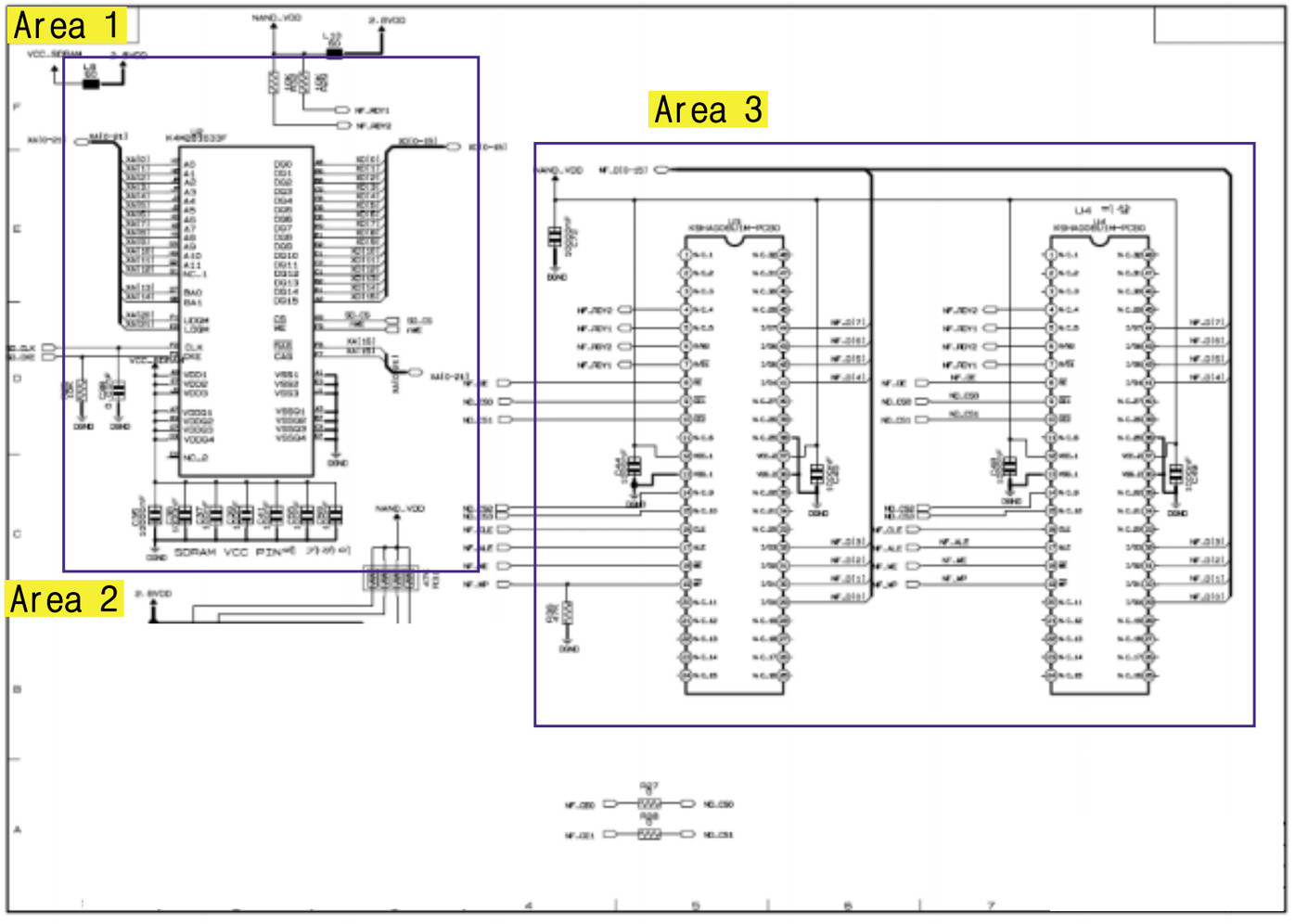
1.MICOM IC Block



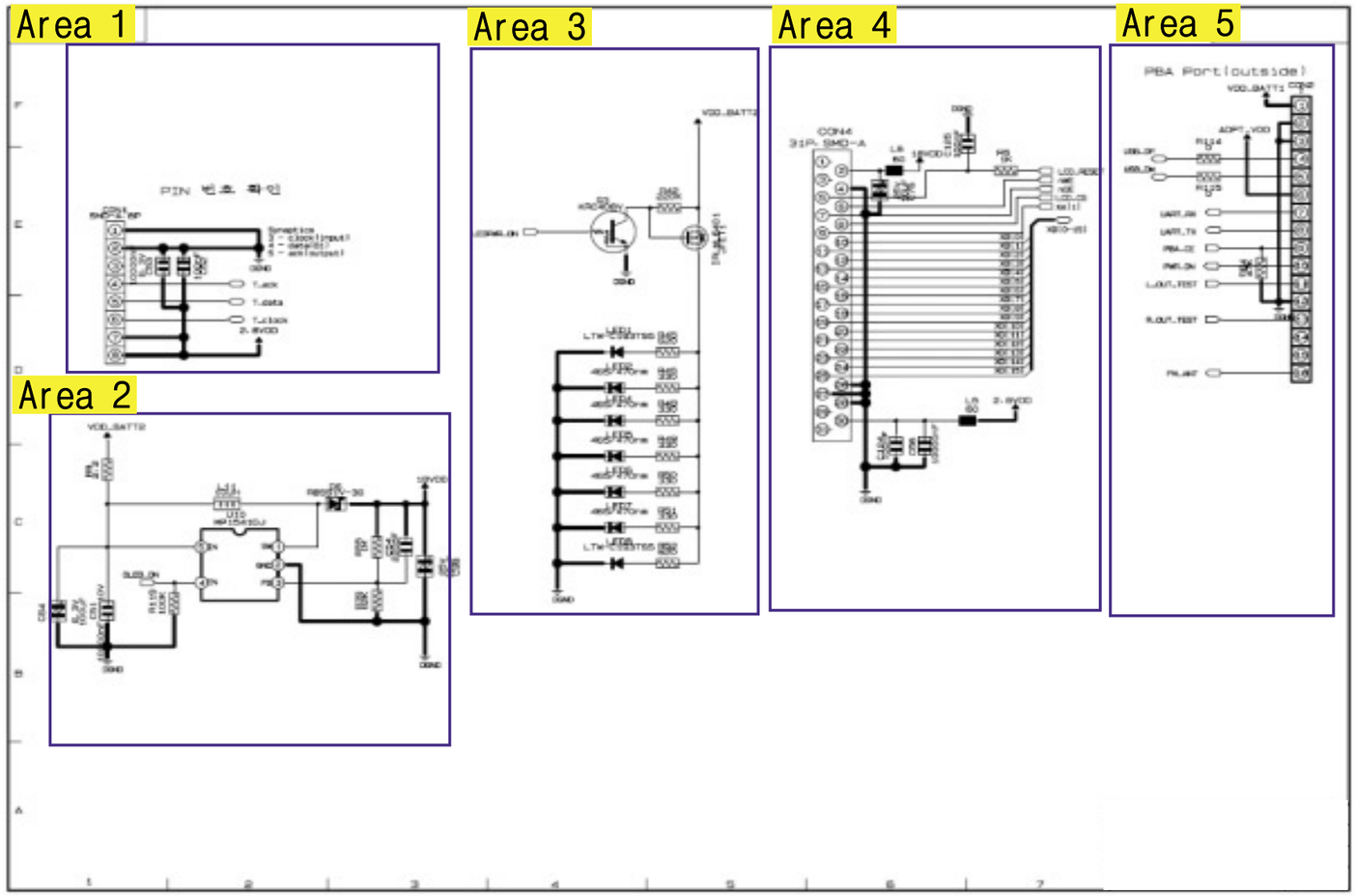
Major Functions

1. MICOM IC(TCC771)
   - Built-in NOR, 120MHz
   - Built-in WM8731 Codec
   - Entire Signal Control
   - System Management
2. Crystal Part
   - System CLK (12MHz)
   - RTC CLK (32768Hz)
3. Reset Part
   - System Reset
     Timing & Control

2. Memory SDRAM Block

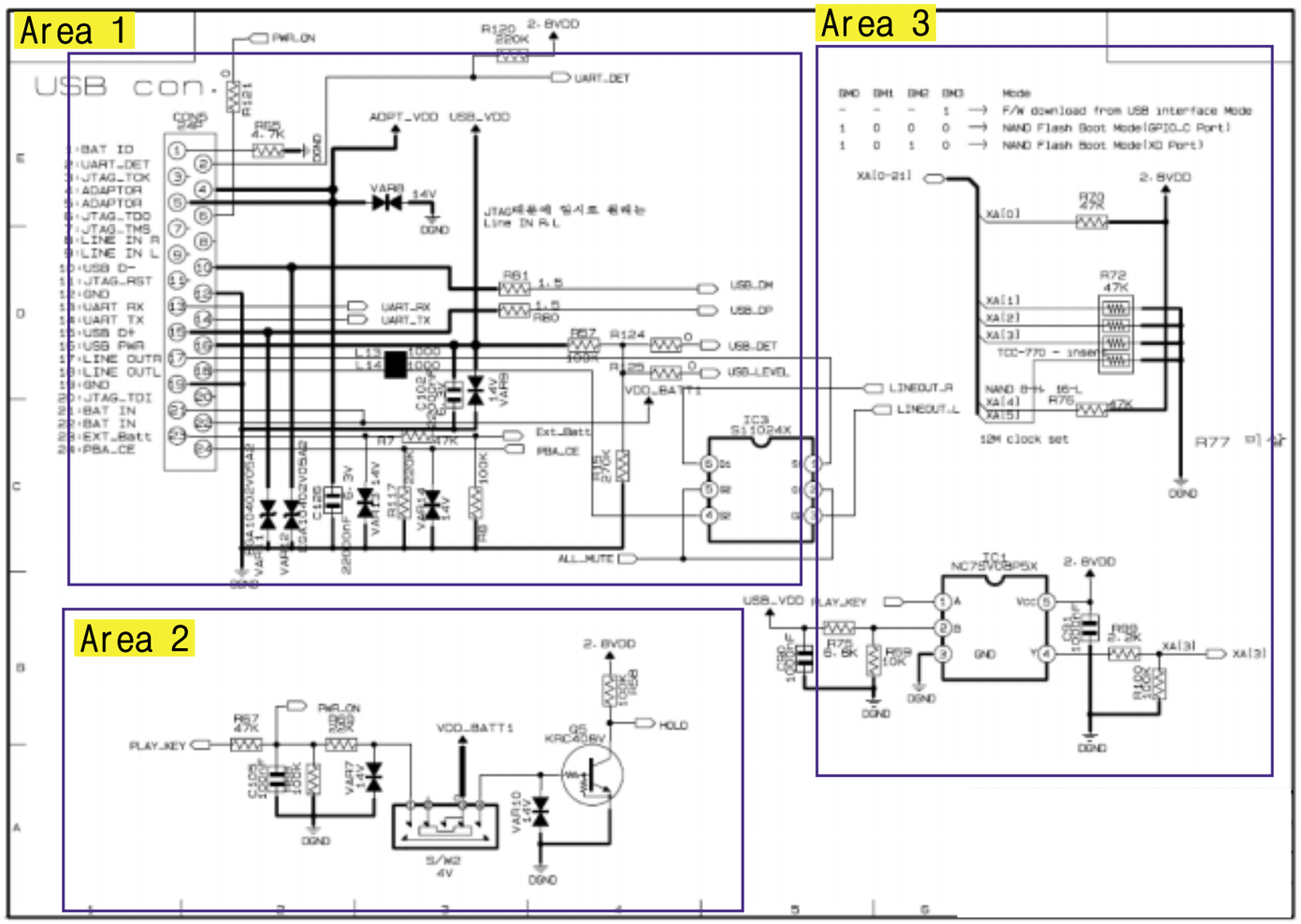


Major Functions
1. SDRAM Part - 16MB - Plays the role of a buffer. - FW Actual Operation Area. 2. Memory Select Part - Supports up to 2 Memories. - Chip Selection Control 3. Memory Part - Data In/Out - Actual Save Area

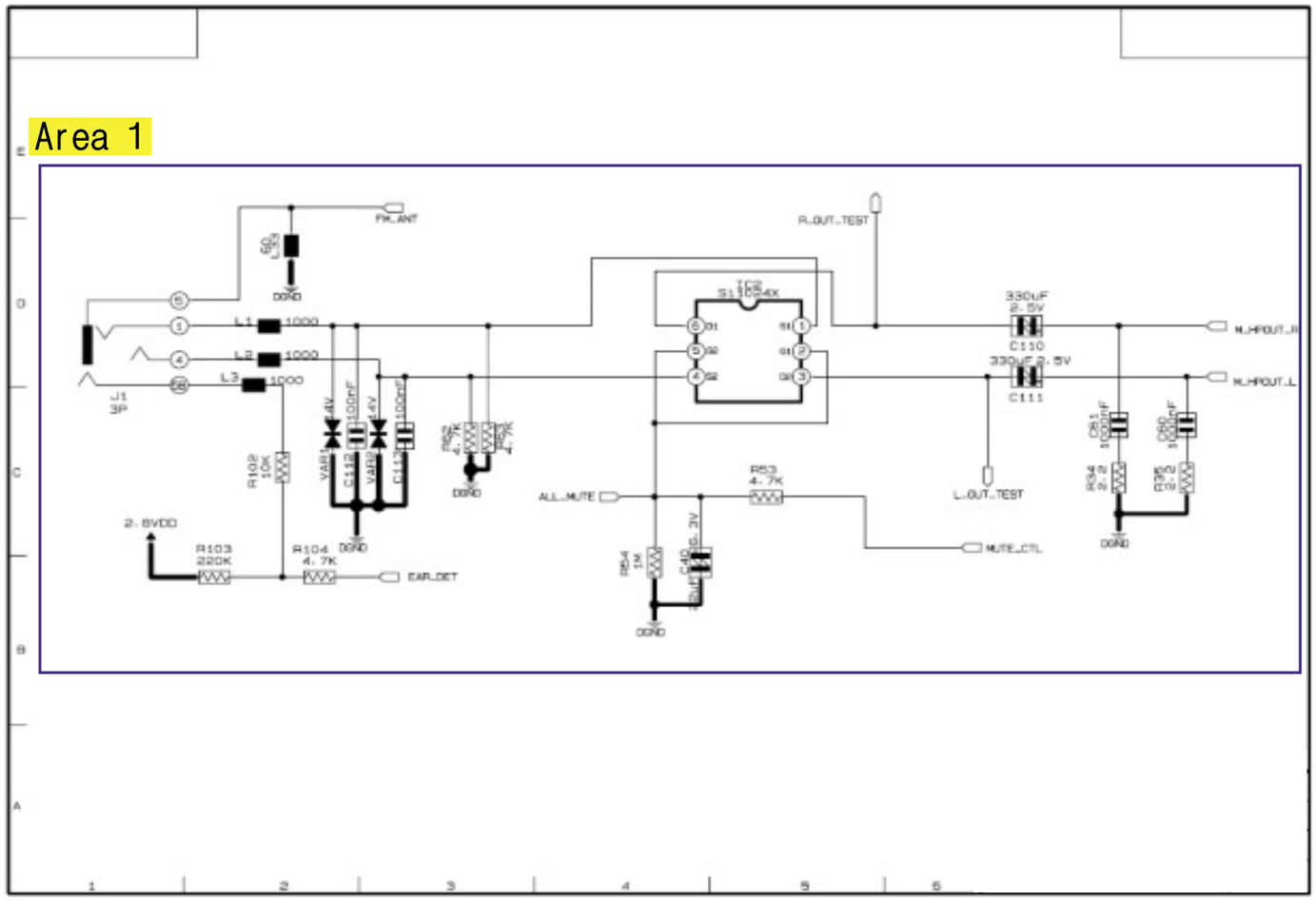


Major Functions
1. Touch PAD Part - Controls Front Panel Keys. 2. OLED Power Part - OLED Power 15V Driver 3. LED Part - Lights Front Panel Keys. 4. OLED Connector Part - OLED Assy Connector 5. PBA Checking Part - PBA Auto Check

4. USB/MODE Block



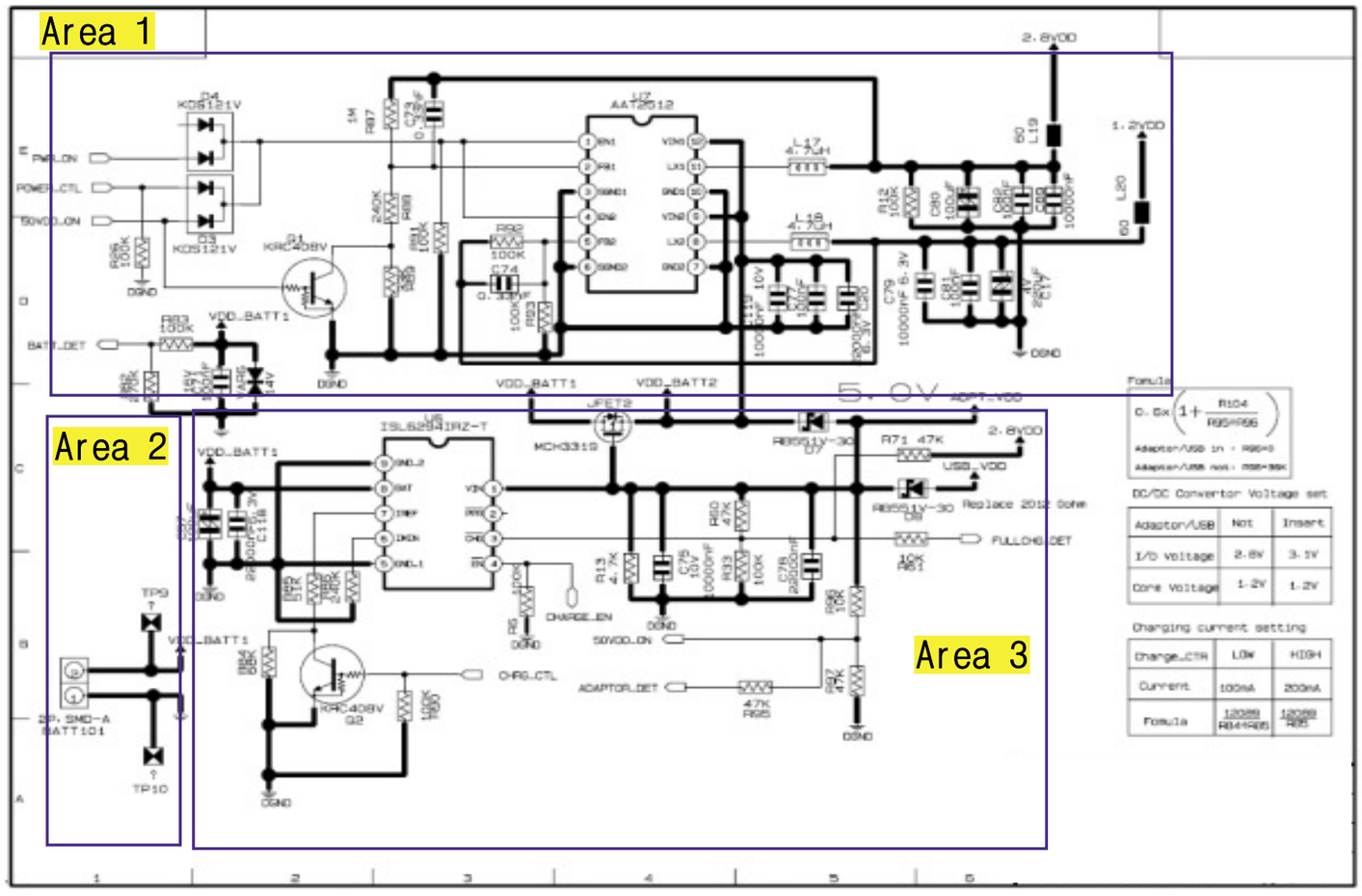
Major Functions
1. USB Connector Part - Interfaces Between Player and PC. 2. Power Key Part - SET Power On/Hold 3. MODE Select Part - Mode Selection 1) Normal Booting 2) Forced Firmware Update Mode



Major Functions

1. Audio Part
   - Audio Output
   - Mute Control
   - Earphone Jack

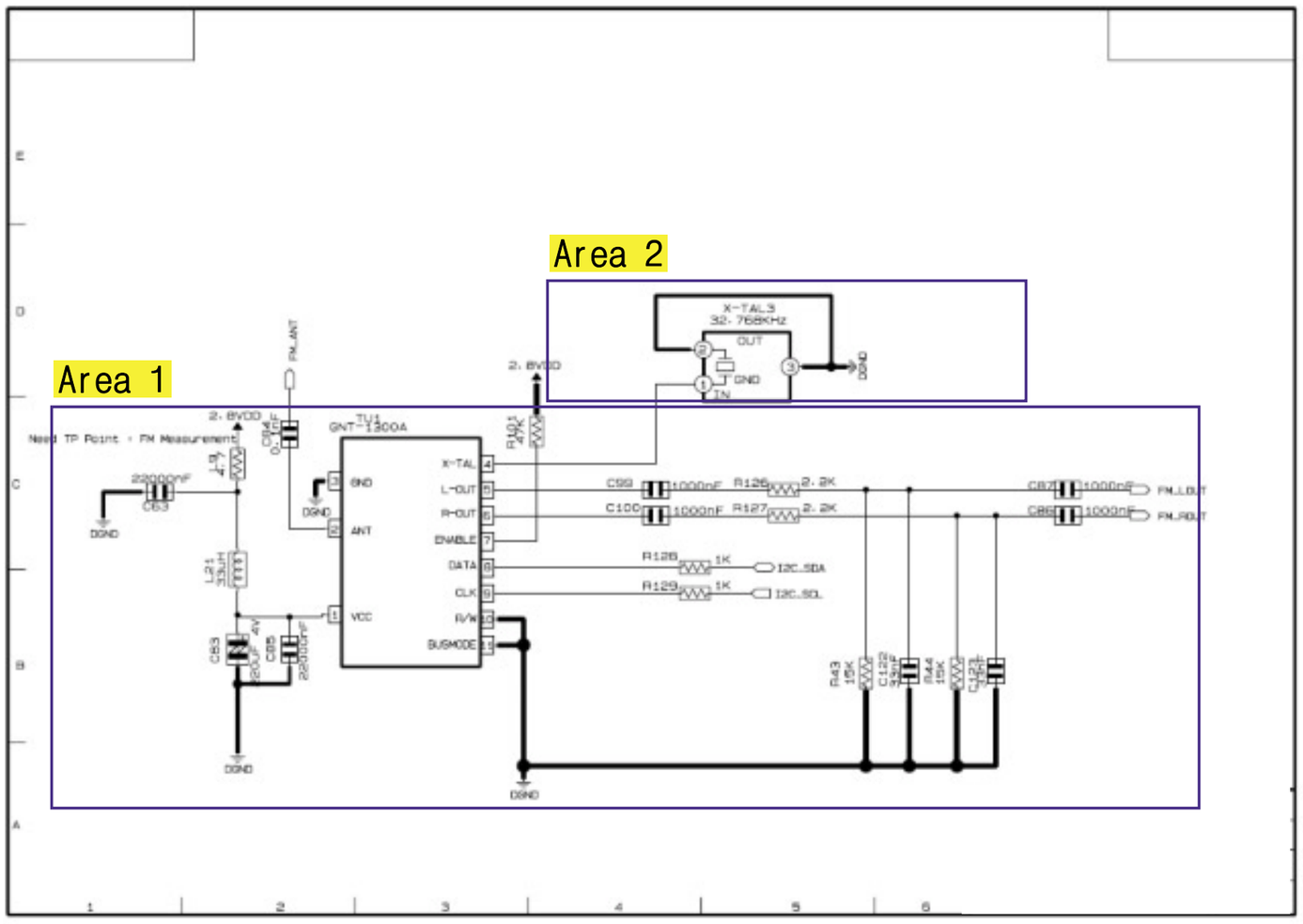
6. System Power Block



Major Functions

1. DC DC Converter Part
   - Supplies System Power (2.8V, 1.2V).
2. Battery Part
   - Li-poly 3.7V (470mAh)
3. Charging Part
   - Charges Battery (4.2V).
   - 230mAh

7. FM Tuner Block



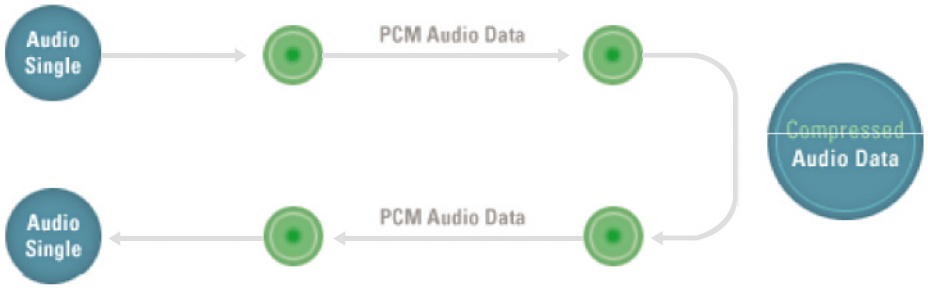
Major Functions
1. FM Tuner Part - Receives FM. 2. FM Crystal Part - Provides 32768Hz CLK.

14. Basic Information of MP3

1-1. Operating Principle of yepp

Terms and Overview

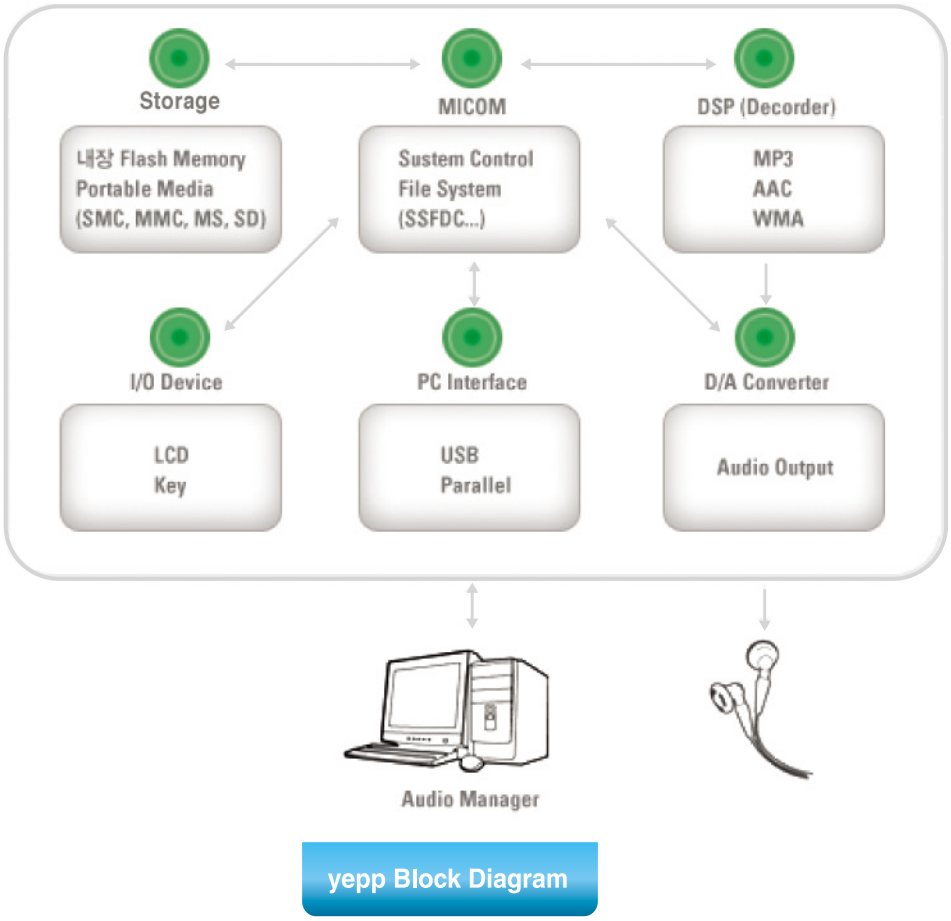
AV Conversion: process of converting Analog Data to Digital Data
SAMPLING RATE : means precision rate of A/D conversion and is indicated in Hz, bit number and channel number(for CD: 44.1 KHz, 16bit, 2channels)
ENCODING : process of compressing and converting digital data obtained through A/D conversion to audio format
Compression rate: indicated in bps(bit per second)
(For MP3: sound quality of CD level with compression rate of 128kbps)
ENCODING FORMAT : MP3 : MPEG Layer3
AAC : MPEG-2 AAC
WMA : Windows Media Audio (Microsoft)
ATRAC(3) : Adaptive TRansform Acoustic Coding (SONY)
EPAC : Enhanced Perceptual Audio Coder (Luscent Technology)
OGG : Ogg Vorbis
DECODING : Process of recovering the digital data encoded to the data before encoding
D/A : Process of converting Digital Data to Analog Data



CD Data Size (44.1KHz, 16Bit, 2Channel sampling으로 1분 용량의 경우)
44100/sec *2bytes(16bit)* 2(channel)* 60sec = 10,584,000 bytes

Process of converting digital data to analog data

Yepp Block Diagram



yepp Block Diagram

Yepp Vocabulary

Yepp (Young Energetic Personal Passinate)

MP3 player that enables you to enjoy audio data like music file in existing CD in high quality by compressing it to 1/12 level without loss of quality using MPEG1 Layer3(audio compression technology of animation and sound compression technique). You can also use it for learning foreign language and Internet broadcasting.

MPEG

MPEG is an abbreviation of Moving Picture Expert Group and means specification defining the compression and de-compression type of animation by MPEG established in 1988.

MP3

MP3 means MPEG1 Layer3 and compression rate can be up to 96:1(phone) to 12:1(CD) depending on sound quality with compression coding technique of audio of MPEG technology.

(file extension: "mp3") That is, up to 150 pieces of songs can be recorded in one copy of CD with MP3 compression.

FLASH Memory

Flash memory is the memory chip where entered information will not be deleted even if the power is turned off while data is entered, and data can be freely entered or deleted.

Smart Media Card

Compact and light semiconductor media card in dimension of 45.1 x 37.1 x 0.76mm and weight of 2.0g. It is used as a storage of portable device and high quality media storage device of digital camera and music MP3 player.
Flash memory is embedded to store the data even if the power is turned off and it is a super-high speed product that can record up to 250 characters per second.(mass production of 8MB, 16MB, 32MB currently at Samsung Electronics)

OTP (Once Time Programmable)

OTP is one type of micro controller(MCU) and is the customer-oriented semi-conductor on which the customers can directly record the program. OTP type MCU is rapidly growing as its life cycle of set product and multi-kind/small quantity production system is introduced.

Since existing type of micro controller uses Mask ROM which cannot be played or recorded again, it requires over 5 months to develop set products, and it is not suitable for products with rapid change of product model.

Firmware

It is a program that controls and manages hardware. Firmware is distinguished from hardware in that it is a program but is distinguished from general applications in that it is closely related to hardware. In general, firmware is saved in ROM.

IP (Information Provider)

Company that provides information that users want through communication system with certain fee.

SecuMAX

As multimedia digital contents distributions become active in networks such as Internet and PC communication, copyright issue has appeared as an important topic. It is a system that can protect the right of copyright holders and enables the user to conveniently use contents. To receive service, member registration is required at digital contents service site adopting SecuMAX.

When completing member registration, customer ID, password and resident registration number will be registered at SecuMAX server and utilized as a basic data for performing user certification role. After registration, download the dedicated player and decryption key to use service.

Music drive developed by Samsung Electronics is embedded with SecuMAX decryption module.

Decryption key will be registered during installation of music drive. Music file downloaded from digital contents music service site with SecuMAX can be played back.

Yepp Explorer

This software controls yepp player in PC. You can move or delete music list or voice saved in yepp card or embedded memory. This software is required to use yepp.

Music Drive

Software audio player for PC embedded with MPEG II AAC Decoder first in Korea. It supports not only playback of MPEG audio format as well as SecuMAX, encryption protection system.

CD Ripper

MP3 compression software that converts CD music in PC to MP3 file.

OGG (Ogg Vorbis)

OGG(Ogg Vorbis) is featured to have "higher compression rate than MP3', 'higher quality than MP3', 'no limit in use, distribution and development due to open source type. The biggest feature of Ogg Vorbis is that it has no limit in use of format itself.

The biggest feature that distinguishes Ogg Vorbis from existing music file is that it supports

VBR(Variable Bit Rate) by default.

Of course, MP3 also supports VBR format, but has effect of reducing capacity due to VBR based on existing MP3. Ogg Vorbis file supports VBR by default and helps you enjoy high quality music without loss due to big width of bit rate.

MP3 is one of file extension like .hwp, .wav, .txt used in computer.

Exactly, it is the abbreviation of MPEG Audio Layer-3.

Origin of MP3

MPEG is Motion Pictures Expert Group and is a standard made by experts in this area under international standard organization like ISO(International Standard Organization) and IEC(International Electric Committee). It is technical standard of compressing and transmitting video and audio signals and recovering them again.

The first specification that MPEG made is MPEG-1 in 1988. It is the technology used to produce video CD. MP3 means the audio compression part among specification of MPEG-1(1995). MPEG-2 is used together with MPEG-1. AAC(Advanced Audio Coding or MP4) receives attention with its excellent digital audio and is derived from MPEG-2. MPEG-4(lastests standard on movie compression for conference communication) is being established.

MP3 is most widely used and called "MPEG Audio Layer-3", which is version up from Layer-1 and Layer-2. In general, it is called MP3 since Layer-1 has compression rate of 1:4, Layer-2 of 1:61:8, Layer-3 of 1:101:12.

Using MP3 technology, up to 100 songs(7 hours) can be contained in one copy of empty CD of 650MB.

Transition of Portable Player

Transition of Portable Player

MP3

MP3 is most widely used and called "MPEG Audio Layer-3", which is version up from Layer-1 and Layer-2. In general, it is called MP3 since Layer-1 has compression rate of 1:4, Layer-2 of 1:61:8, Layer-3 of 1:101:12.

AAC

MP3 is most widely used and called "MPEG Audio Layer-3", which is version up from Layer-1 and Layer-2. In general, it is called MP3 since Layer-1 has compression rate of 1:4, Layer-2 of 1:61:8, Layer-3 of 1:101:12.

WMA (Windows Media Audio)

Multimedia compression type of Microsoft. Only music data is compressed from “WMT”. Streaming and file format also support this data. In a same quality as MP3, it is about 1/2 size and contains Windows Media Rights Manager with copyright protection technology. It can be played back with [Media Player] provided in Windows98.

ATRAC3

Sound compression type of MD and latest specification of [ATRAC (Adaptive TRansform Acoustic Coding)] developed by SONY. Has about 2 compression rate than existing ATRAC.

Real Audio G2

Format type developed by Real Network. High quality can be obtained at low transmission speed of 16Kbps-32Kbps using [RealAUDIO G2 Music Codec] as compression type. Since streaming play in Internet radio is the main purpose, file does not contain copyright protection technology. “Real Player G2” supports MP3 playback and “Real Juke Box” supports encoding from CD to MP3.

Tips

How MP3 can produce same quality as CD?

Ears of human can listen to signal in the range of 20Hz~20KHz. It is called "audible frequency". To convey the audible sound in digital type CD, sampling frequency of 44.1KHz, about 2 times of audible frequency, should be used. It is the task of dividing sound signal to 44,100 pieces per second and making the signal to digital format of 0 and 1. How delicately the sample can be expressed will be determined by number of bit per sample. Audio CD is 16 bit. It means that 1 sample can be expressed in 65,536(16 square of 2) stage.

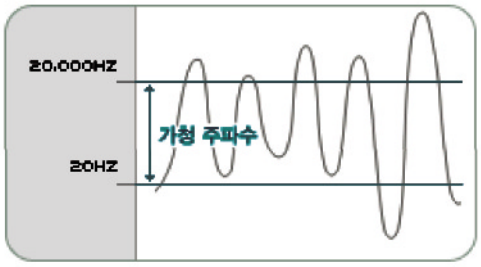


Fig. 1 Sound Wave before Loss Compression

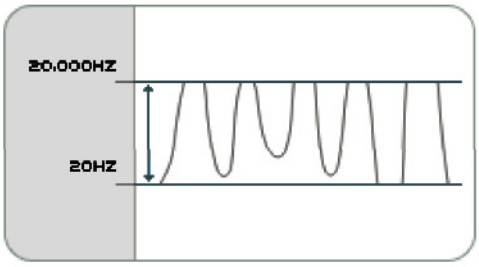
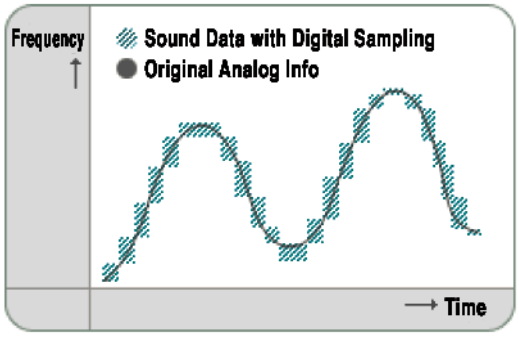


Fig. 2 Sound Wave after Loss Compression

When converting CD music to WAV file, the capacity is about 40MB(for 4 minutes). By converting it to MP3, it reduces to 4MB since "loss compression", the feature of MP3, is used. Loss compression type removes the sound beyond the range of audible frequency(20Hz~20KHz). It uses the features that small sound cannot be heard after very strong sound. <Figure 1> is the sound wave before loss compression. It can be regarded as the sound wave of music CD or cassette tape containing sound people cannot listen. When it is made into MP3, it is as shown in <Fig.2>.

Volume Control



Capacity can be reduced much by adjusting the degree of loss. However, it causes deterioration of sound quality. Music CD contains sound made with 16 bit 44.1KHz of stereo sampling. Stereo is the type of dividing the sound into left and right. CD should change analog

sound to digital.

Digital information is cut between sections and location information is saved in each section. "Sampling rate" is the standard of how many sub-section it will divide 1section. Divided frequency part is called 8 bit and 16 bit. 8 bit sampling means that frequency is divided into 2 stage, that is, sound pitch of 256 stage. 16 bit sampling divides into 65,536 sound pitch. In addition, 44.1KHz means sampling of 44,100 times per second. To reduce the amount of information made at digital, sampling bit number and frequency should be set low, but it will cause deterioration of sound quality. There is no difference in sound quality between MP3 and CD since encoding(converting CD track to MP3) is done with 44.1KHz at 16 bit. Better CD sound quality cannot be obtained by lowering the sampling rate, but the capacity can be reduced.

OGG(Ogg Vorbis)

OGG(Ogg Vorbis) is featured to have "higher compression rate than MP3', 'higher quality than MP3', 'no limit in use, distribution and development due to open source type. The biggest feature of Ogg Vorbis is that it has no limit in use of format itself.

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Of course, MP3 also supports VBR format, but has effect of reducing capacity due to VBR based on existing MP3. Ogg Vorbis file supports VBR by default and helps you enjoy high quality music without loss due to big width of bit rate.

MP3 is regarded as MP3.

Let's examine what are the types of storages currently used.

Optical Disc : CD, MD Player / Flash Memory : MP3 Player, Digital audio player

Type of Digital audio player storage.

Audio Format Table

	 SD	 MMC	 Smart Media	 Memory Stick
Source	Matsushita, Toshiba, SanDisk	SanDisk Hitachi	Samsung Toshiba	Sony
Size(mm)	32 x 24 x 2.1	32 x 24 x 1.4	45 x 37 x 0.76	21.5 x 50 x 2.8
Weight(gram)	2.5	1.5	2	4
Pin Count	9 (7of MIMC + 2 I/O)	7	22	10
ESD (Contact/air)	±10K/±15K V	-	±4K/±8K V	-
SDMICompliance	Phase 1 & 2	Phase 1	Phase 1	Phase 1 & 2
Security	Challenge & Response	Unique ID	Unique ID	Encryption Logic
Density	'00 : 32MB, 64MB '01 : 256MB	'00 : 32MB, 64MB	'99 : 32MB, 64MB '01 : 128MB	'00 : 32MB, 64MB '01 : 128MB
Licensing	Required	Open Standard	Open Standard	Required

* SSFDC (Solid State Floppy Disc Card) File System
* Standard file system for support of SMC's compatibility(DOS/FAT adopted)

Small Form - factor Cards Comparison

Item	 CD Player	 MD Player	 MP3 Player	 MP3-CDP
Audio Format	PCM	ATRAC	MP3, AAC, WMA...	MP3, WMA, Audio-CD
Audio Data compression	X	5:1	Various compression rate	Various compression rate
Storage	Optical Disc	Optical Disc	Flash Memory	Flash Memory
Basic function	Audio play	Audio play	Audio play	Audio play
Additional function	X	X	Voice recording, play phonebook FM Radio	Multi codec support Multi-functional LCD Remote controller, FM Radio
PC S/W	X	X	Audio Manager Ripper	Audio Manager Ripper

Various kinds of methods are combined to unify technical

specification to prevent digital music data from illegal reproduction.

Let's examine groups and vocabularies related to copyright.

SDMI (Secure Digital Music Initiative)

Internet music record company consortium to pursue development of digital music file format.
World-class music makers and related groups are formed to protect copyright of music and to prevent illegal reproduction.
-PD : Portable Device
-PM : Portable Media (SMC,MMC,MS,SD Card)
-UID : All PD, PM should have unique ID.
-Binding : All Digital Audio should be bounded to PD or PM.

DRM (Digital Rights Management)

Manage interests of persons related to copyright that occurs due to use of digital contents protected from illegal use of digital contents through various channels.

WaterMarking

Technology of inserting the specific data to claim copyright of multimedia contents so that eyes and ears of human cannot be distinguished.

SecuMAX

Digital Security Total Solution adopting Snake encoding algorithm.
Version1.0 contents in service in Korea (M4you.com, etc.)
SDMI compliant vrsion2.0 development completed

Reproduction Prevention System

Reopening of MP3 music service.
Lots of dispute have occurred in network due to copyright.
However, as online MP3 sales have resolved, the number of legal Internet site has increased.
However, reproduction prevention system is required for legal sales. All Internet sites serving Korean song in MP3 are introducing reproduction prevention system.

Meaning of SecuMAX System Application

Most legal Internet MP3 service sites adopt SecuMAX and YEPP of Samsung and several companies have hardware supporting SecuMAX among MP3 players currently distributed. Then, user needs to receive MP3 applied with SecuMAX to receive legal service. It is required to have program that can play back MP3 applied with SecuMAX technology in MP3 player. For example, since YEPP supports SecuMAX, it can play back, but it means that you cannot play back this at the players of other companies that do not support SecuMAX.

At present, organization has been formed for standardization of reproduction prevention system in foreign countries. Samsung Electronics has also participated in this standard using SecuMAX and completed development of SecuMAX 2.0 with world compatibility.

SecuMAX

SecuMAX is the reproduction prevention system that is made for protection of copyright in rapidly growing distribution of digital contents.

Reopening of MP3 Music Service

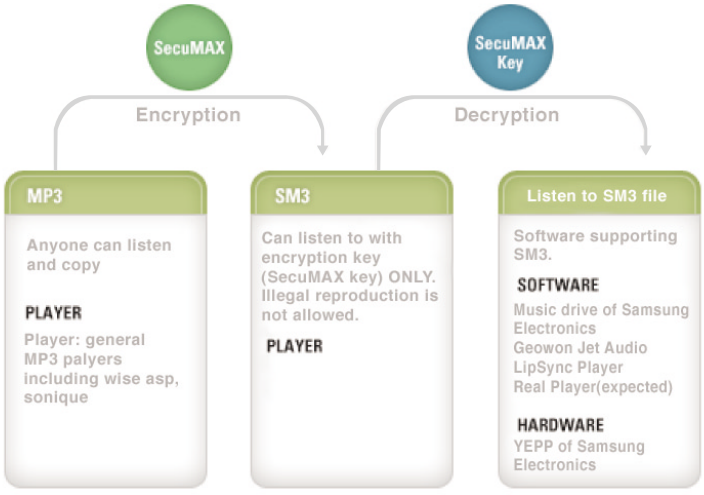
-Digital contents copyright protection and management service.

-Fundamentally prevent the illegal distribution

Only legal users can play back music

Dedicated software required(ex.Samsung Electronics, Music Dreve)

Prevention of usual illegal use such as file transfer, CD-R Copy and hardware reproduction.



-Report for copyright holder

  Basic data for collection of copyright fee and near copyright fee

  Track sales of all publications through Internet, PC communication or 3rd path.

  Provide sales information per IP, song and hour real time.

-Can serve any type of files

-Can applied to Internet and PC communication equally

-Can provide copyright protection service for hardware at the same time.