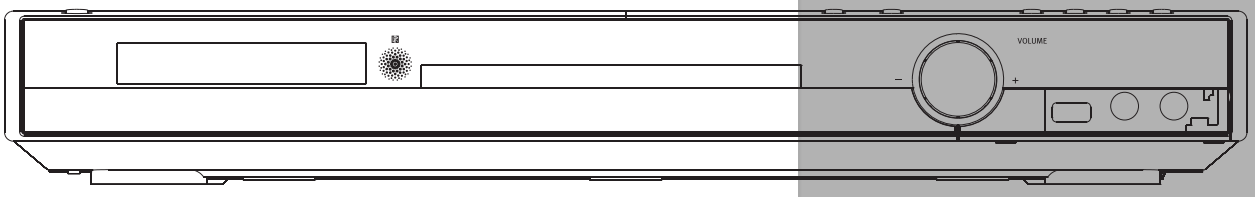
BBK

DK1513SI(RU)

Service Manual



Model Version: SI2.30

Catalog

Caution :

This Service Manual is only applicable to DK1513SI(RU) SI2.30.

Chapter One About Maintenance

1.1 Safety precautions

1.1.1 Power supply

When maintenance personnel are repairing DVD players, he should pay special attention to the power board with 220V AC and 330V DC which will cause hurt and damage to persons!

1.1.2 Precautions for antistatic

Movement and friction will both bring static electricity which causes serious damages to integrated IC. Though static charge is little, when a limited quantity of electric charge is added to large-scaleintegrated IC, as the capacitance is very small in the meantime, now the integrated IC is very much easy to be struck through by static electricity or the performance will decrease. Thus static electricity prevention is of extraordinary importance. The following are several measures to prevent static electricity:

1. Use a piece of electric conduction metal with the length of about 2 metres to insert into the earth, and Fetch the lead wire from the top of the surplus metal and connect to the required static electricity device. The length and depth of the metal embedded under the earth should be determined according to the wettability of the local soil. For humid places, it may be shorter, and longer and deeper for dry places. If possible, it can be distributed and layed in terms of "#" shape.

2. On operating table-board, the antistatic table cushion should be covered and grounded.

3. All devices and equipments should be placed on the antistatic table cushion and grounded.

4. Maintenance personnel should wear antistatic wrist ring which should be grounded.

5. Places around the operating position should also be covered with electric conduction cushion or Painted with antistatic paint.

1.1.3 Precautions for laser head

1. Do not stare at laser head directly, for laser emission will occur when laser head is working, which will Hurt your eyes!

2. Do not use wiping water or alcohol to clean laser head, and you may use cotton swab.

1.1.4 About placement position

1. Never place DVD player in positions with high temperature and humidity.
2. Avoid placing near high magnetic fields, such as loudspeaker or magnet.
3. Positions for placement should be stable and secure.

1.2 Maintenance method

1.2.1 Visualized method

Directly view whether abnormalities of collision, lack of element, joint welding, shedding welding, rosin joint, copper foil turning up, lead wire disconnection and elements burning up among pins of elements appear. Check power supply of the machine and then use hands to touch the casing of part of elements and check whether they are hot to judge the trouble spot. You should pay more attention when using this method to check in high voltage parts.

1.2.2 Electric resistance method

Set the multimeter in resistance position and test whether the numerical value of resistance of each point in the circuit has difference from the normal value to judge the trouble spot. But in the circuit the tested numerical value of resistance is not accurate, and the tested numerical value of integrated IC's pins can only be used for reference, so the elements should be broken down for test.

1.2.3 Voltage method

Voltage method is relatively convenient, quick and accurate. Set the multimeter in voltage position and test power supply voltage of the player and voltage of a certain point to judge the trouble spot according to the tested voltage variation.

1.2.4 Current method

Set the multimeter in current position and test current of the player of a certain point to judge the trouble spot. But when testing in current method, the multimeter should be series connected in the circuit, which makes this method too trivial and troublesome, so it is less frequently used in reality.

1.2.5 Cutting method

Cutting method should be combined with electric resistance method and voltage method to use. This method is mainly used in phenomena of short circuit and current leakage of the circuit. When cutting the input terminal voltage of a certain level, if voltage of the player rises again, it means that the trouble lies in this level.

1.2.6 Element substitution method

When some elements cannot be judged good or bad, substitution method may de adopted directly.

1.2.7 Comparison method

A same good PC board is usually used to test the correct voltage and waveform. Compared these data with those tested through fault PC board, the cause of troubles may be found.

Through the above maintenance method, theoretical knowledge and maintenance experience, all difficulties and troubles will be readily solved.

1.3 Required device for maintenance

- ◆ Digital oscillograph (≥100MHE)
- ◆ TV set
- ◆ SMD rework station
- ◆ Multimeter
- ◆ Soldering iron
- ◆ Pointed-month pincers
- ◆ Cutting nippers
- ◆ Forceps
- ◆ Electric screw driver
- ◆ Terminals connecting cord
- ◆ Headphone
- ◆ Microphone

Chapter Two

Functions and Operation Instructions

2.1 Features

Compatible Disc Types:

#Digital video playback : DVD-Video, Super VCD , VCD compatibility
#MPEG-4 standard support: compatibility with DivX3.11, DivX Pro, XviD compressed video files
#Digital audio playback: CD-DA and HDCD compatibility
#Fully compatible with compressed audio files such as Mp3, WMA and OGG
#Playback of DVD, VCD ,CD+G karaoke discs
#Digital graphic albums playback: Kodak Picture CD, JPEG compatibility

Audio:

#192 KHz/24 bit audio Digital/Analog converter
#Coaxial and optical outputs for Dolby Digital/DTS/LPCM digital audio
#Mixed audio output for amplifier or TV connection
#Stereo signal input for external signal connection
#Digital multi-channel decoders, providing Dolby Digital/ DTS audio stream playing
#Built-in Dolby Pro Logic ll decoder makes available to convert stereo signal into multi-channel
#Dual-channel MIC inputs for karaoke function

Video:

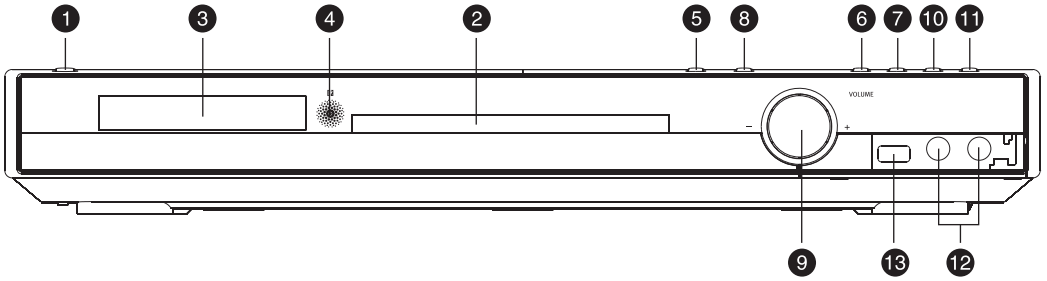
#108 MHz/12 bit Video Digital/Analog converter
#Progressive Scan Output(Y Pb Pr) producing flicker-free and stable images
#Composite , component(Y Cb Cr), S-Video and RGB/SCART outputs for various types of connections
NTSC/PAL transcoder
#Multiple dubbings, angles, subtitles support
#Sharpness, gamma, brightness, contrast, hue, Saturation adjustment

Others :

#Compatible disc types: CD-R/CD-RW, DVD-R/DVD-RW,DVD+R/DVDD+RW
#Built-in digital FM/AM tuner with 30 radio stations memory
#USB port, providing playback of files of supported formats from external flash-memory devices
#KARAOKE + system, expanding karaoke function
#Russia, CIS and Baltic States adaptation interface and filenames, ID3-tags and CD-Text support simplifies device operation
#"Memory" function enables to save the last point after stop playback
#"Q-Play" function provides direct playback and allows to skip commercial that is not possible to rewind
#"Virtual Keyboard" function provides more convenient DVD playback control
#"Browser" function provides easy access to playback control
#Automatic screensaver function
#Parental control function to protect children from watching inappropriate discs
#Super wide range of operating power supplies(~110-250V, 50/60 Hz), automatic short circuit protection

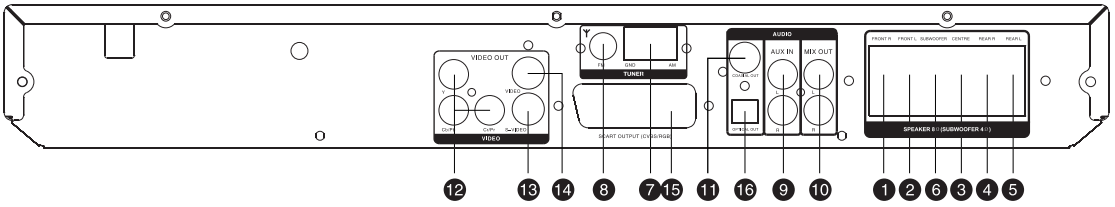
2.2 Controls and functions

2.2.1 Front panel controls



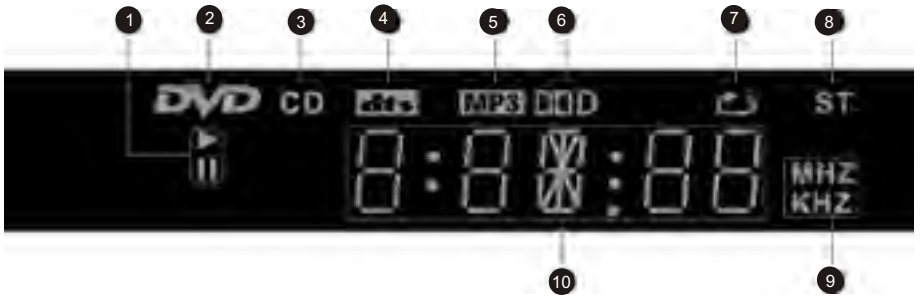
1. STANDBY/POWER button
   Press to switch the device on/into stanby
2. Disc tray
3. VFD display window
4. Infrared sensor
5. OPEN/CLOSE button
   Press to open/close the disc tray.
6. PLAY/PAUSE button
   Press to playback pause.
7. STOP button
   Press to stop the playback.
8. SOURCE button
   Press to switch between DVD receiver/Audio Input/Radio.
9. VOLUME adjuster
   Press to adjust volume.
10. REW button
    Press to fast reverse.
11. FWD-button
    Press to fast forward/radio station tuning.
12. Dual-channel MIC inputs
13. USB port

2.2.2 Rear panel connections



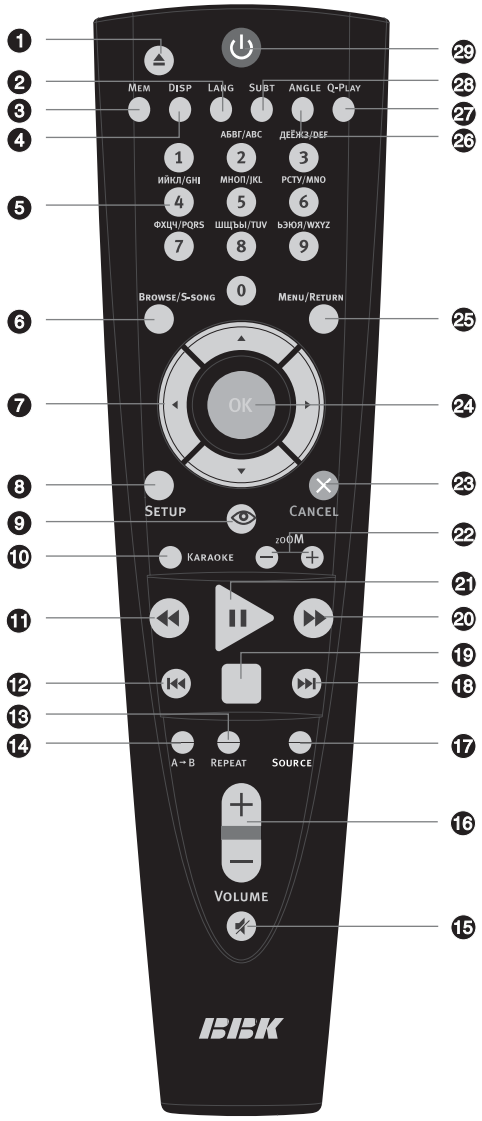
1. Right front speaker input(output from the built-in amplifier)
2. Left front speaker input(output from the built-in amplifier)
3. Center speaker input(output from the built-in amplifier)
4. Right Surround speaker input(output from the built-in amplifier)
5. Left Surround speaker input(output from the built-in amplifier)
6. Subwoofer input(output from the build-in amplifier)
7. AM Antenna input
8. FM Antenna input
9. Audio input
10. Stereo audio output
11. Coaxial digital audio output
12. Component video output Y Cb(Pb)
13. S-Video output
14. Composite video output
15. SCART
16. Optical digital audio output

2.2.3 VFD display general view



1. Playback/pause
2. DVD disc
3. CD disc
4. DTS
5. Mp3
6. Dolby Digital
7. Repeat
8. Stereo
9. Friquency
10. Universal letter-digital indicator

2.2.4 Remote control general view



1. EJECT button
   Press to open/close the disc tray.
2. LANG button
   Press to change language.
3. MEM button
   Press to memorize the point where playback was stopped/playback from the previously memorized point.
4. DISP button
   Press to display the disc information.
5. Numeric buttons
6. BROWSE button
   Press to turn on/off the browser function.
7. CURSOR buttons
8. SETUP button
   Press to switch to setup mode.
9. Button
   Press to turn on/off the virtual control panel.
10. KARAOKE button
    Press to set the karaoke functions
11. Button
    Press to start rewind/rewind scanning.
12. Button
    Press to skip backward.
13. REPEAT button
    Press to repeat playback.
14. A-B button
    Press to repeat the selected portion.

⑮ Button
Press to turn on/off the sound.

⑯ VOLUME+/- button
Press to adjust the volume.

⑰ SOURCE button
Press to change the DVD/ USB /RADIO / AUX mode.

⑱ Button
Press to skip forward.

⑲ Button
Press to stop the playback.

⑳ Button
Press to start forward/forward scanning.

㉑ Button
Press to normal playback/pause.

㉒ ZOOM+/- button
Press to zoom in/out.

㉓ CANCEL button
Press to go one level back/cancel current operation.

㉔ OK button
MENU button

㉕ DVD disc menu/PBC function.

㉖ ANGEL button
Press to change the camera angel/change the Mp3 and JPEG files playback mode.

㉗ Q-PLAY button
Press to turn the Q-Play mode on.

㉘ SUBT button
Press to change the subtitles language/change the playback mode of MP3 and JPEG files.

㉙ Button
Press to switch the device on/into standby.

2.3 Set list

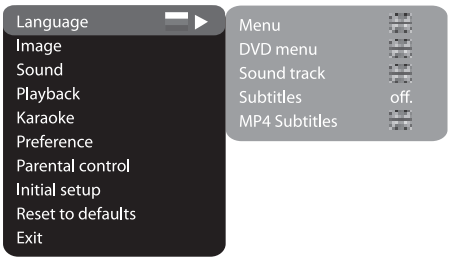
DVD receiver 1PCS
Speakers 5PCS
Subwoofer 1PCS
Audio/Video Cord 1PCS
2xRCA-Mini-Jack audio cord 1PCS
Speaker cord 6PCS
FM Antenna 1PCS
AM Antenna 1PCS
Remote control 1PCS
AAA size battery 2PCS
DM-998 microphone 1PCS
Microphone cable 1PCS
Karaoke disc 1PCS
Warranty card 1PCS
User manual 1PCS

2.4 FUNCTION SETTINGS

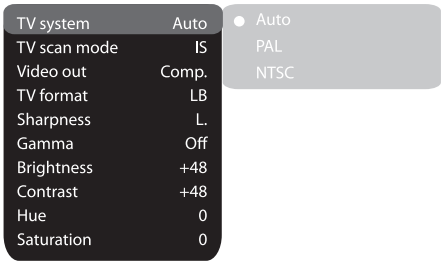
2.4.1 Function selection and change

Press the SETUP key to show the setup menu. You will see the following image on the screen, as shown on the figure:

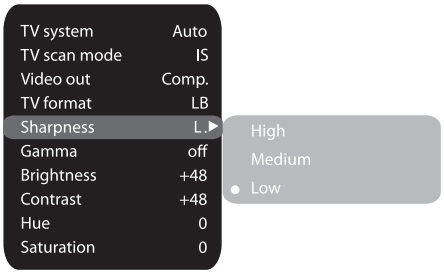
Select the desired menu item using the UP/DOWN buttons button; press the OK key for confirmation.



1.For example, if you wish to change the image settings, you have to select the Image item and press the OK or RIGHT key



2. Using the UP/DOWN buttons, select the desired item and press OK or RIGHT button. For example, select the Sharpness item. Settings will appear on the screen. Then select the desired sharpness level and press OK for confirmation.
3. Press LEFT for exit to previous menu level.
4. Press SETUP to exit setup menu.

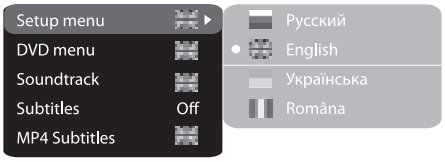


2.4.2 Language settings

1.Menu: interface language set-up

#Options: Russian, English, Ukrainian, Romanian.

#Default option: English.



2.DVD menu :selection of disc menu language

3.Sound: selection of translation language

#Disc menu/translation language options: Russian, English, Estonian, Latvian, Kazakh, Romanian, Belarusian, Ukrainian, Chinese.

#Default menu/translation language option: English.

#Selection of other languages: select the OTHERS item using the wheel and press OK. Enter the language code using the numeric buttons and press OK.

#If the language you selected is not recorded on the DVD disc, another available language will be used.

4.5.Subtitles DVD/MP4 : selection of subtitles language

#Options: Off, Russian, English, Estonian, Latvian, Kazakh, Romanian, Belarusian, Ukrainian and Chinese.

#Default option: Off.

#Selection of other languages: select the OTHERS item using the wheel and press OK. Enter the language code using numeric buttons and press OK.

If the language you selected is not recorded on the DVD/MP4 disc, another available language will be displayed.

2.4.3 Image settings menu

1.TV system: TV system selection

#Options: Auto, PAL, NTSC.

#Default option: Auto

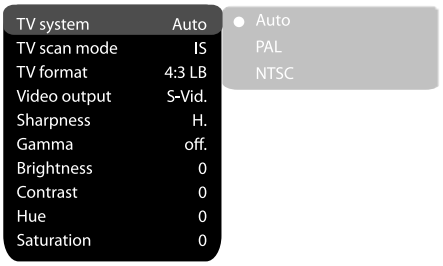
2.TV scan mode: scan mode selection

#Options: progressive, interlaced.

#Default option: interlaced.

#Progressive scan is transferred only via a component video output.

#Before switching to progressive scan, make sure that your TV set supports this operation mode.



3.TV Format: image ratio settings

#Options: 4:3 pan&scan, 4:3 letterbox and 16:9 TV.

#Default option: 4:3 pan&scan

#Some discs are recorded with support of only one ratio. The selected ratio must comply with the TV screen.

4.Video output: selection of video signal

#Options: S-Video, Comp, RGB.

#Default option: Comp.

5.Sharpness: image sharpness adjustment

#Options: High, Medium, Low.

#Default option: Low.

6.Gamma: adjustment of image color temperature

#Options: High, Medium, Low, Off.

#Default option: Off.

7.Brightness: adjustment of image brightness.

8.Contrast: adjustment of image contrast

9. Hues: adjustment of image hues.

10.Saturation: adjustment of image saturation

Adjustment of image brightness, contrast, hues and saturation:

#Select the desired item of the image adjustment section using the UP/DOWN buttons. Press OK or RIGHT key to start adjusting the relevant option.

#Change the option value using the wheel.

#Upon completion press the LEFT button of the UP/DOWN buttons to return to image setup menu.

2.4.4 Sound settings menu

1. Mixer

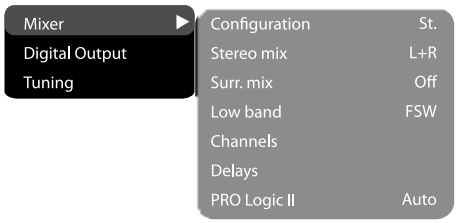
A)Configuration: setting of the mode for conversion of the 5-channel signal to stereo signal

#Options: Stereo

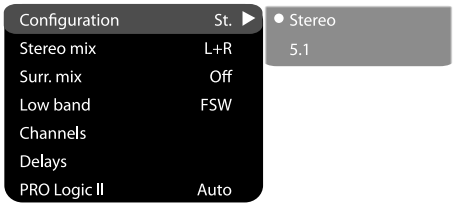
#Default option: Stereo.

#5.1 mode must be supported by the disc Number of muic accompaniment channels depends on the specific disc.

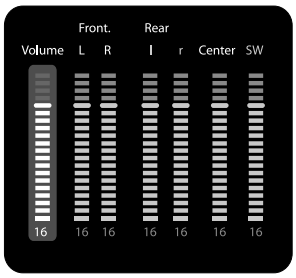
#Adjustment of the central speaker and surround speakers is available only if the Configuration option is set to 5.1 position.



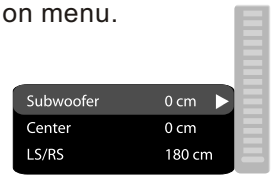
B).Stereo mix: playback set-up while playing the disc with two independent audio channels.
#Options: L+R, L, R.
#Default option: L+R.
C) Surr. Mix: set-up of surround options while playing the stereo disc.
#Options: Off, sum, L+R, Virt. Surr.
#Default options: sum, L+R.
D).Low band: distribution of low frequencies through channels.
#Options: Front F, Center C, Surround Sr, Subwoofer SW.
#Default options: Front F, Subwoofer SW.
If you want the low-frequency component of the sound signal enter only the subwoofer channel, select and confirm the parameter Subwoofer SW.



E)Channel settings: separate adjusting of volume by channels.
#Select the channel you want to adjust using the cursor buttons.
#Adjust the sound volume of each channel using the cursor buttons.
#Press the OK key to return to sound settings menu.



F)Delay of the channel: set-up signal delay in speaker channels(central, rear and subwoofer).
#Using the button of the cursor buttons, select the channel, for which you want to set up the delay, and press OK for confirmation.
#Using the cursor buttons set up the desired distance from the listener to each speaker(detailed description of this operation see on page36).
#Press the LEFT button to return to speaker configuration menu.



g). PRO Logic ll: function of stereo sound conversion to 5-channels sound.
#Options: On, Off, Auto.
#Default option: Auto.
In Auto position, the DVD receiver determines itself, when to use the PRO Logic ll decoder. Some discs do not support this function.
2.Digital audio output
A)SPDIF format: set-up of digital audio output options.
#Options: RAW, PCM.
#Default option: RAW.
#When you select the RAW option, the not decoded signal is transferred to the DVD receiver's digital outputs, the decoded signal is transferred to analog outputs. Decoding is performed by the built-in decoder of the DVD receiver.
This feature is meant to ensure that signal decoding at digital outputs is performed by an extermal device (e.g.an amplifier).
If you select the PCM option, a PCM coded signal will be transferred to the DVD receiver's digital outputs.
B)LPCM: set-up of digital audio output options to comply with different amplifiers and recelvers.
#Options: 48 kHz 16 bit,96 kHz 24 bit.
#Default option: 48 kHz 16 bit.
3.Sound correction
A) Max volume: max volume limiting
#Using the cursor buttons, adjust the max volume level.
#Press the LEFT key to return to sound correction set-up menu.
B) Equalizer: equalizer modes
#Options: Off, rock, pop, live sound, dance music, techno, classics, soft sound.
#Default option: Off.
C)Echo: echo effects
#Options: Off, concert, living room, hall, bathroom, cave, arena, cathedral.
#Default option: Off.

D)Tone balance: adjustment of tone balance level.

#Adjust the tone balance level using the cursor buttons.

#Press the LEFT button to return to sound correction set-up menu.

2.4.5 Playback settings

1.DVD

Advertisement skip: skip the unskippable block while playing a DVD disc

#Options: Yes, NO

#Default option: NO

2. VCD/SVCD

PBS menu: PBC menu on/off

#Options: On, Off.

#Default option: On.

If on option is set, while reproducing discs, a menu will appear, in which you can select the order of playing the disc content. If the off option is set, the reproducing of content is performed in the order, in which it is recorded on the disc.

3. Files: selection fo reproduced files on the disc.

#Options: Audio, Pictures, Video

#Default option: A. P. V

4.Repeat: file repeat mode

#Options: Off, Single, All.

#Default option: Off.

5.Load effect: type of transition from one JPEG file to another

#Options: Off, from top, from bottom

#Default option: Off.

2.4.6 Karaoke settings menu

1.Microphone: microphone on/off

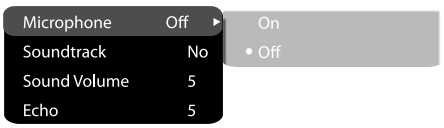
#Options: Off, On.

#Default option: Off.

2.soundtrack: karaoke-disc playback mode

#Options: Channels L, Channels R, No ast, No voc.

#Default option: Without solo.



3. Sound Volume:

Microphone: microphone sound volume level

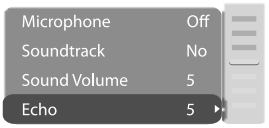
#Using the wheel adjust the microphone volume level.

#Press LEFT button to return to karaoke settings menu.

4. Echo: echo level while playing the karaoke-disc

#Adjust the echo level Using the cursor buttons.

#Press LEFT button to return to karaoke settings menu.



2.4.7 Preference settings

1. Equalizer: spectrum analyzer

#Options: On, Off.

#Default option: Off.

2.Screensaver: screen saver on/off

#Options: On, Off.

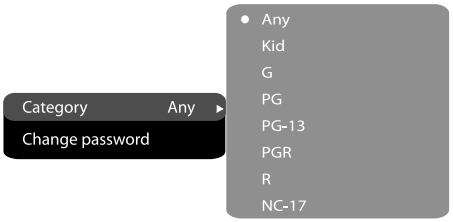
#Default option: Off.

2.4.8 Family filter settings

1.Category: set-up of age restrictions to prevent children from seeing undesirable discs.

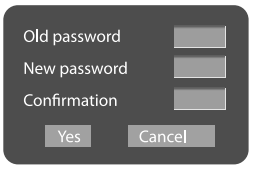
#Options: Any, Kid, G, PG, PG-13, PGR, R, NC-17.

#Default option: Any.



2.Change password: set-up of a four-digit password to change the level of age restrictions.

#Default option: 7890.



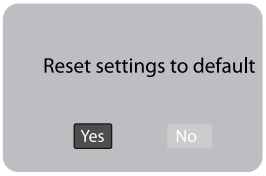
2.4.9 Initial setup menu

#Press the RIGHT key to enter the initial settings menu, then select the desired item using the cursor buttons and press OK key for confirmation.

#While being in this menu section, you cannot return to the previous level by pressing the LEFT key .

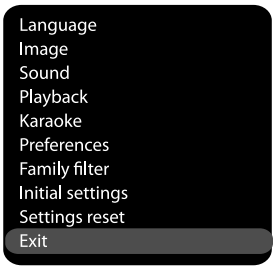
2.4.10 Reset to default

#Resetting all settings and restoring default options, except age restrictions level and password.



2.4.11 Exit settings menu

#Select the exit item using the Jog Dial and press the OK to exit the menu.



2.4.12 Channel delay set-up

Set-up of time delay in the surround channel

Usually, time delay in the Dolby Digital decoding system is preset to ensure best effect while installing the Home Theater. However, in case you wish to adjust your system more precisely, please consult instructions given in this manual. Set up of time delay for this device is possible in both Dolby Digital and Dolby Pro Logic modes.

To set the desired delay you have to know the distance from the place where you are, to the front speakers and Surround speakers as shown in Fig.1. Consult Fig.2(Dolby Pro Logic mode) and 3 (Dolby Digital mode) in order to determine the distance to Surround speakers(axis Y in the figure) and the distance to the front speakers(axis X in the figure). Crossing point of those two lines on the chart will give the recommended delay value.

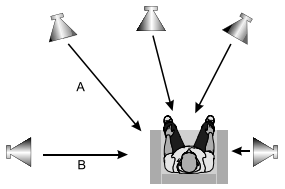


Fig.1. Take into account the A-B distance; use both figures for setting the desired time delay.

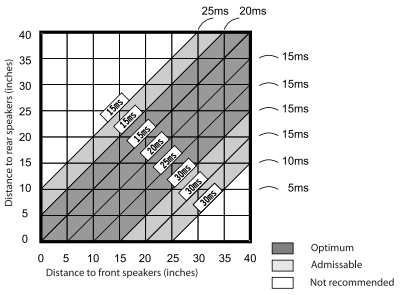


Fig.2. Determine delay value as to Dolby Pro Logic mode.

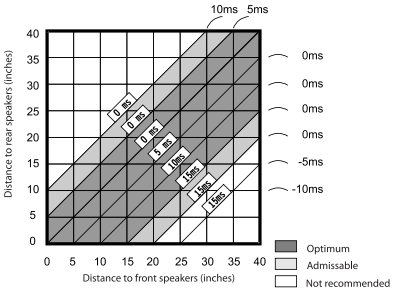


Fig.3. Determine delay value as to Dolby Digital mode.

Set-up of time delay in the central channel

Sometimes several people are listening to the music, and the space is limited. In this case, you can install three speakers(two front ones and a central one) as shown in Fig.1. With the distance to the listener being approximately the same. The central channel delay is to be set at"0".

Should the central speaker be in close proximity to left and right front speakers as shown in Fig.2, or the central speaker be nearer to listeners when compared with front speaker's location, or the central speaker be nearer to the listener by 1 foot, in all these cases you may set the delay value for the central channel at1 ms.

For instance, as shown in Fig.2, if the line C is by 1foot shorter than the lines R and L, the delay value is to be set at1 ms, If your sofa is broad enough, and there are several listeners sitting on it, it makes sense to locate the speakers in one line, as shown in Fig.3 with the delay value of the central channel to be set at"0".

Finally, if it will be necessary to install the central speaker behind the left and right front speakers, the delay value shall be set at "0".

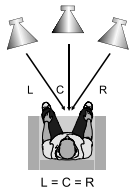


Fig.1. Delay of central channel=0
L=R=C

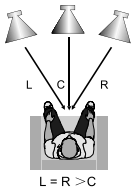


Fig.2. Small area
Delay of central channel =L=(or R)-C

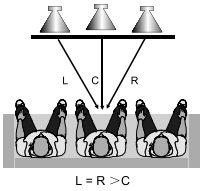
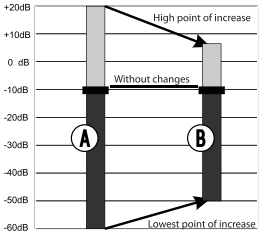


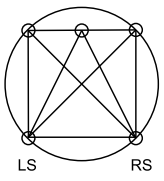
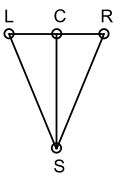
Fig.3. Small area
Delay of central channel=0
L= R>C

"Night" mode

The Dolby Digital system provides an extremely broad dynamic range of playback sound-from gentle to roaring. It creates the presence effect, especially while seeing motion pictures. However, at night a powerful sound with a broad dynamic range may give pleasure to you, but disturb and annoy your family and neighbors, if you just decrease the volume, you will immediately notice that you ceased to hear, e.g, dialogues as clear as you do at normal volume, and such sound effects as rustle, whisper etc. Have merely disappeared. To avoid this, you just have to decrease the volume of " loud" sounds by simultaneously increasing the volume of "soft" sounds with the volume of "average" sounds left unchanged, i.e. just decrease the dynamic range of sound accompaniment. Only Dolby Digital system provides for such a method of sound control. It uses the principle of compressing the acoustic signal's dynamic range while recording; therefore, while playing an inverse transformation (volume expansion) takes place, This is called "night" mode. The regulation limits are restricted, however, to avoid distortions of resultant signal.



Principle of compressing the acoustic signal's dynamic range.

	Dolby Digital	Dolby Pro Logic surround
Rear channel	Stereo 20 Hz-20 kHz	Mono channel with limited frequency range(100Hz-7 kHz)
Low-frequency channel(subwoofer)	Available,20-120 Hz	N/a
Sound field distribution	Muitivariate 	From left to right, from right to left, from front to rear, from rear to front 
Channels	6 independent channels, each reproducing its own signal at a time	4 segmented channels. Only one channel is decoded at a time.
Miscellaneous	Creates an optimum sound field with illusion of an equal distance from listener to each speaker.	The most cost-efficient way to ensure high-quality surround effect.

Miscellaneous	Allows adjusting the decompression degree of sound infromation("night" mode).	Surround sound may be received from any signal source.
	Possibility of programmable control of the decoder to transfer basses into low-frequency channel in systems equipped with broad-band speakers and a subwoofer.	Compatible with existiing and future two-channel(stereo) formats.
	Undoubted progress in sound recording technology, especially important for program directors, film directors, sound engineers and actors.	Big progress in comparison with conventional stereo, the world's most popular surround format.

2.5 MISCELLANEOUS

2.5.1 Useful notes

#To extend the service life of your DVD- receiver make pauses of not less than 30 seconds between switching off and repeatedly switching on the DVD receiver.

#Disconnect the DVD- receiver from the wall outlet after shutdown.

#Some DVD receiver's functions may not be applied to some discs.

#Use supply sources of rated voltage, otherwise the DVD receiver may not function or be damaged.

#In case of the DVD-receiver's occasional stops, please switch the power supply off and then on again.

Please check probable causes of malfunction before addressing the service center.

Sign of trouble	Cause of trouble	Actions to eliminate the trouble
No sound	1.Poor audio cable connection 2.Disc dirty or damaged. 3.Sound disabled by the MUTE button.	1.Make proper connection. 2.Clean the disc. 3. Press the MUTE button.
No image	1.Poor video cable connection. 2.Incorrect settings of your TV set. 3.The DVD receiver's is in the progressive scan mode while your TV set does not support this mode.	1.Make proper connection. 2.Correct the settings of your TV set. 3.Place the DVD receiver in the interlaced scan mode through the DVD-receiver's menu.
Black and white image	1.Incorrect TV color system selected. 2.Color level on the TV set adjusted incorrectly.	1.Set the approprlate color system vla the menu: SETUP＞Image＞TV scan. 2.Readjust the color system of your TV set.
Discs cannot be read	1.Disc not inserted. 2.Disc inserted incorrectly. 3. Condensate on the DVD receiver's laser head.	1. Insert the disc. 2.Install the disc with the label side facing up. 3. Switch the DVD receiver on without disc for and hour.
Microphone does not operate	1.Microphone is unplugged. 2. Low level of the microphone's sound volume.	1. Connect the microphone. 2. Adjust the level of the microphone's sound volume.

Remote control does not operate	1.Remote control is incorrectly directed at the DVD players's screen. 2.Distance to the DVD receiver is in excess of 8 meters. 3. Run out batteries.	1.Use the remote control according to the manual. 2. Decrease the distance to the DVD receiver. 3. Replace both batteries.
Some functions do not work	1. Disc is recorded incorrectly. 2.Incorrect key sequence. 3.Static voltage on the DVD receiver's housing.	1.Wait 5-10 seconds and the DVD receiver will automatically return to normal state. 2. Repeat the operation one more time. 3.Switch the DVD receiver off for 1-2 minutes and then switch it on again.

Chapter Three Block Diagram

3.1 OVERALL WIRING DIAGRAM FOR PLAYER

Overall wiring diagram of DK1513SI(RU)player is shown in figure3.1.1

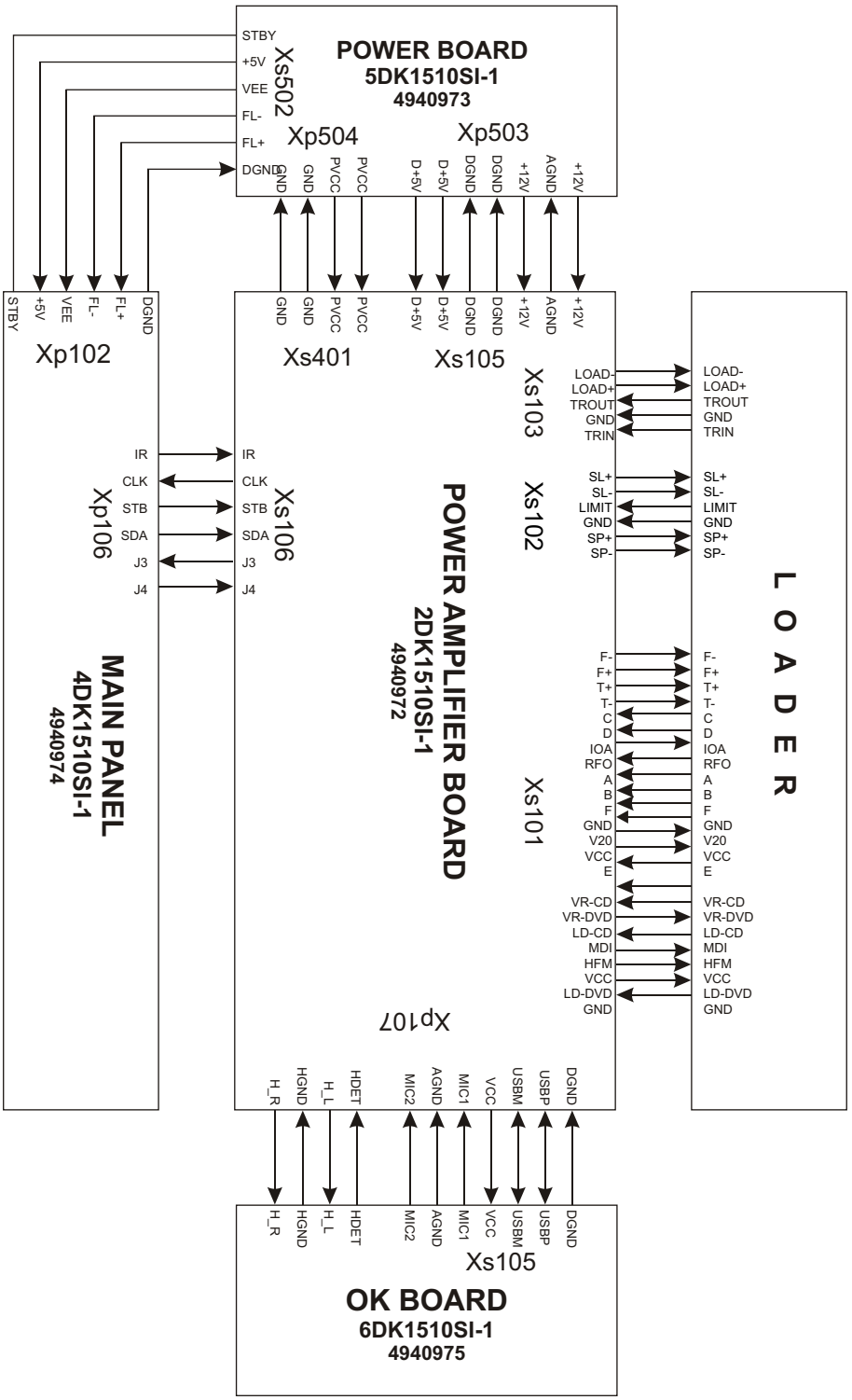


Figure3.1.1 Overall Wiring Diagram of DK1513SI (RU)

3.2 BLOCK DIAGRAM FOR PLAYER

Block diagram for DK1513SI(RU) player is shown in figure 3.2.1

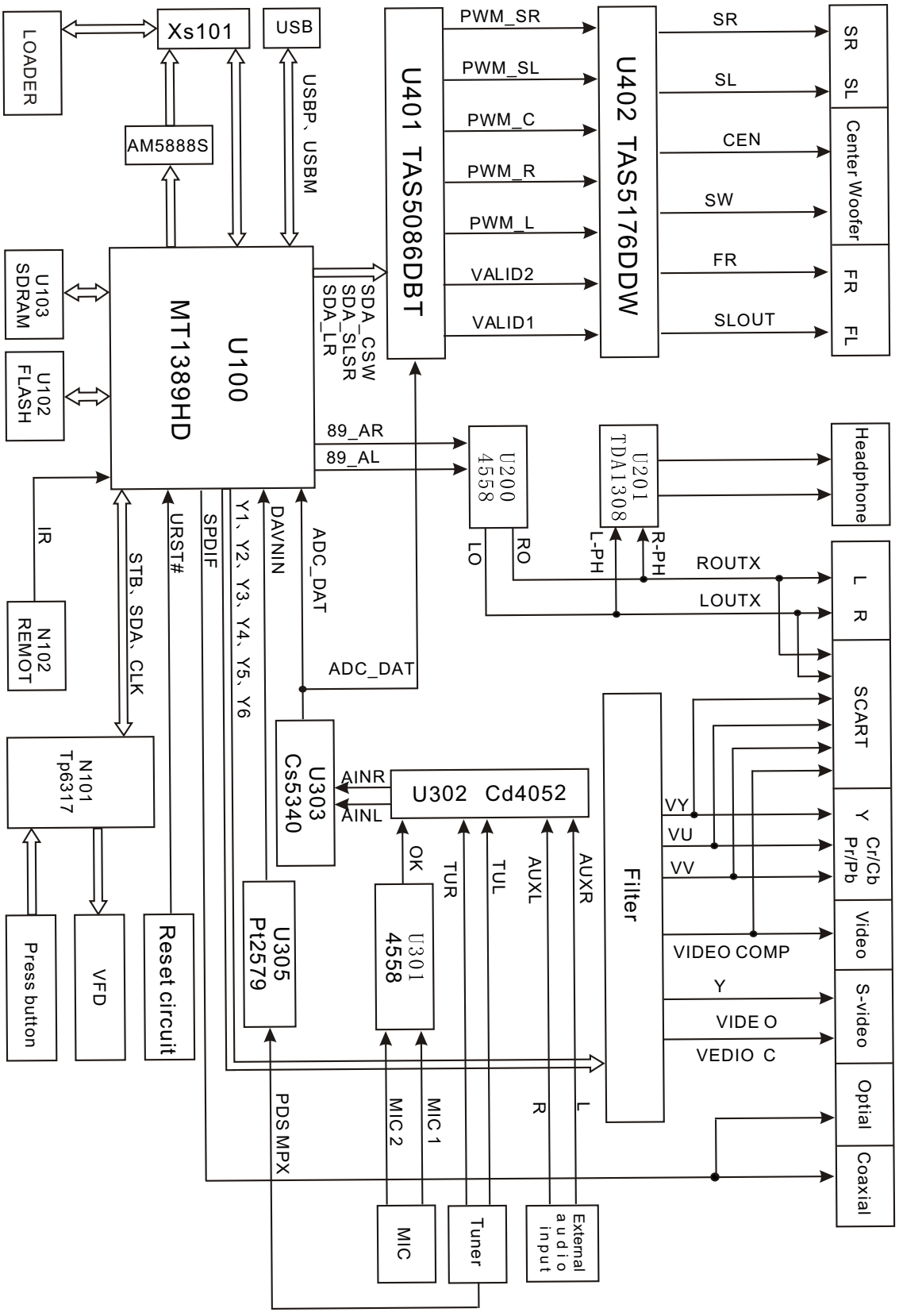


Figure 3.2.1 Block diagram of player

Chapter Four

Block Diagram of Unit Circuit

4.1 Servo circuit

Servo system of this machine adopts SONY loader and MTK decode scheme. And servo circuit is mainly composed of front signal processing, digital servo processing, digital signal processing chip MT1389 and driving chip AM5888. Mt1389 is also main part of decode circuit. Block diagram of servo circuit is shown in figure 4.1.1：

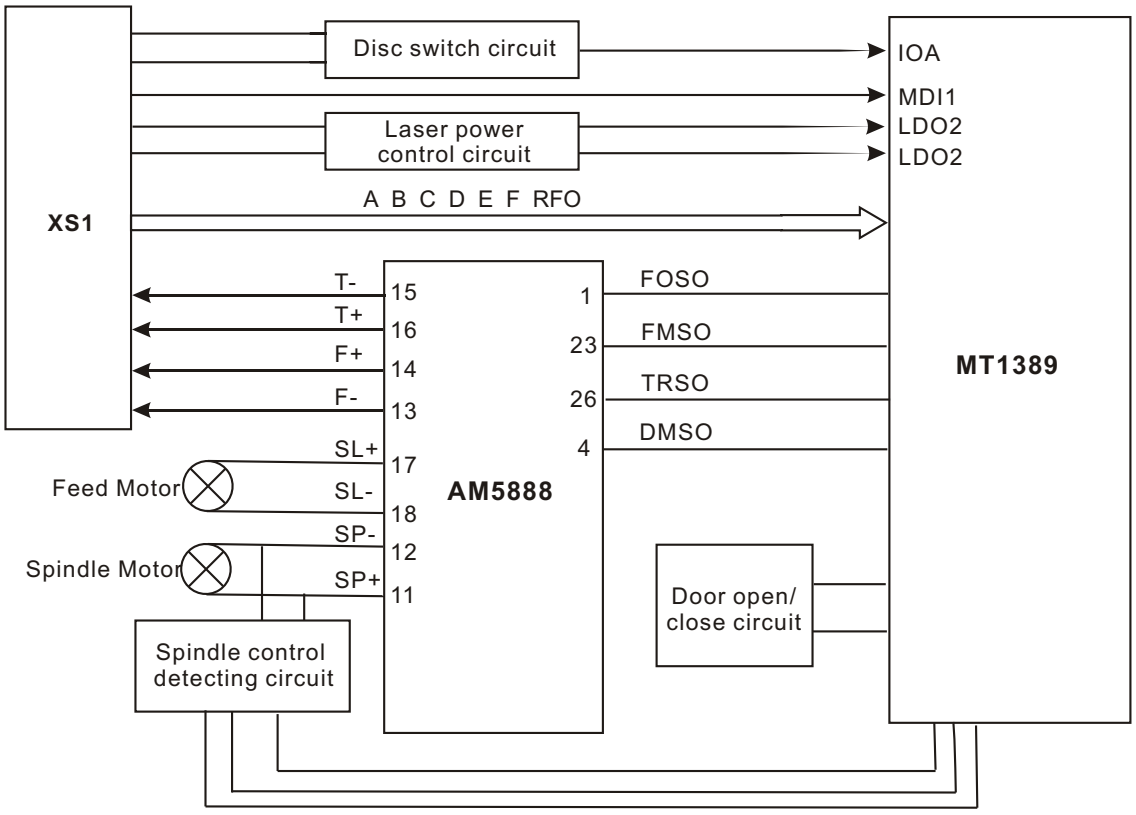


Figure 4.1.1 Block diagram of servo circuit

4.2 Decode Circuit

Decode circuit is mainly composed of MT1389,SDRAM and FLASH. Block diagram of circuit is shown in figure4.2.1.

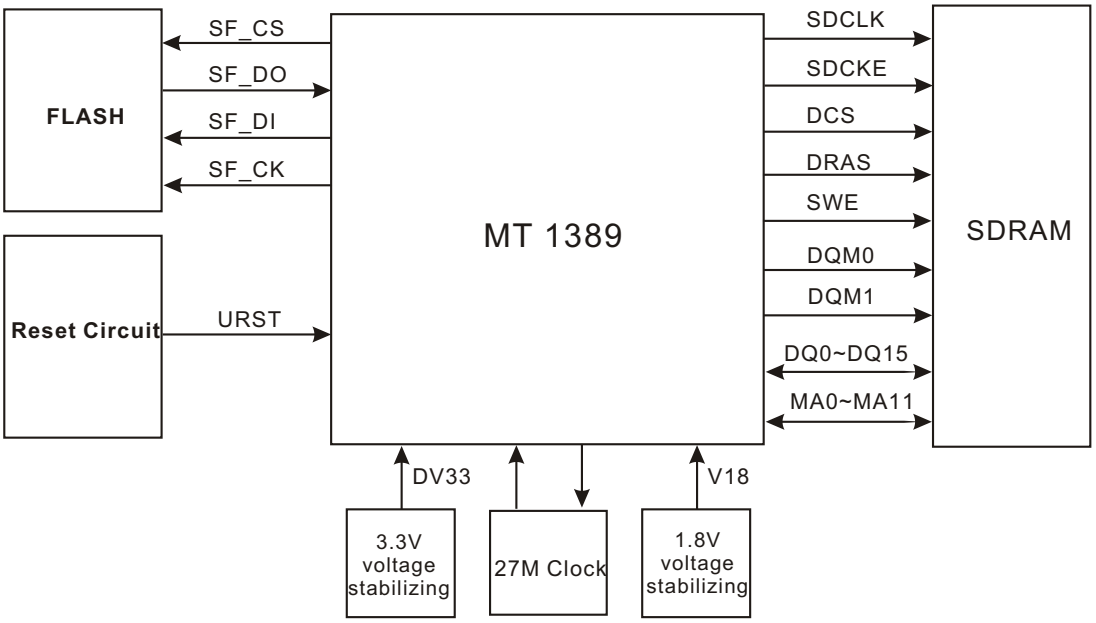


Figure 4.2.1 Block diagram of decode circuit

4.3 Video circuit

Video circuit block diagram is shown as the following figure 4.3.1:

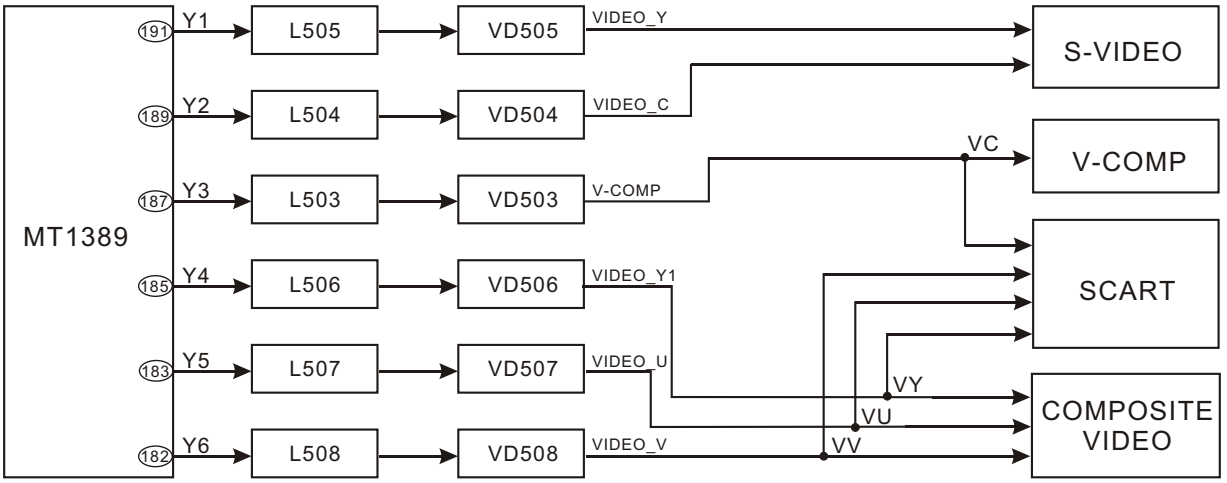


Figure 4.3.1 Video circuit block diagram

4.4 Audio power amplifying circuit block diagram

Audio power amplifying circuit block diagram is shown as the following figure 4.4.1:

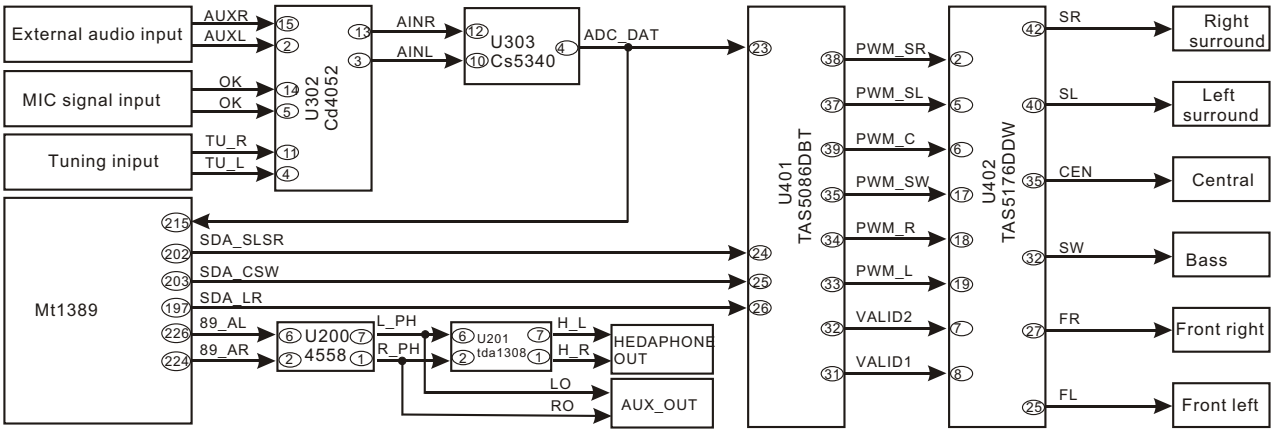


Figure 4.4.1 Audio power amplifying circuit block diaghram

4.5 Power supply circuit

Power supply circuit block diagram is shown as the following figure 4.5.1:

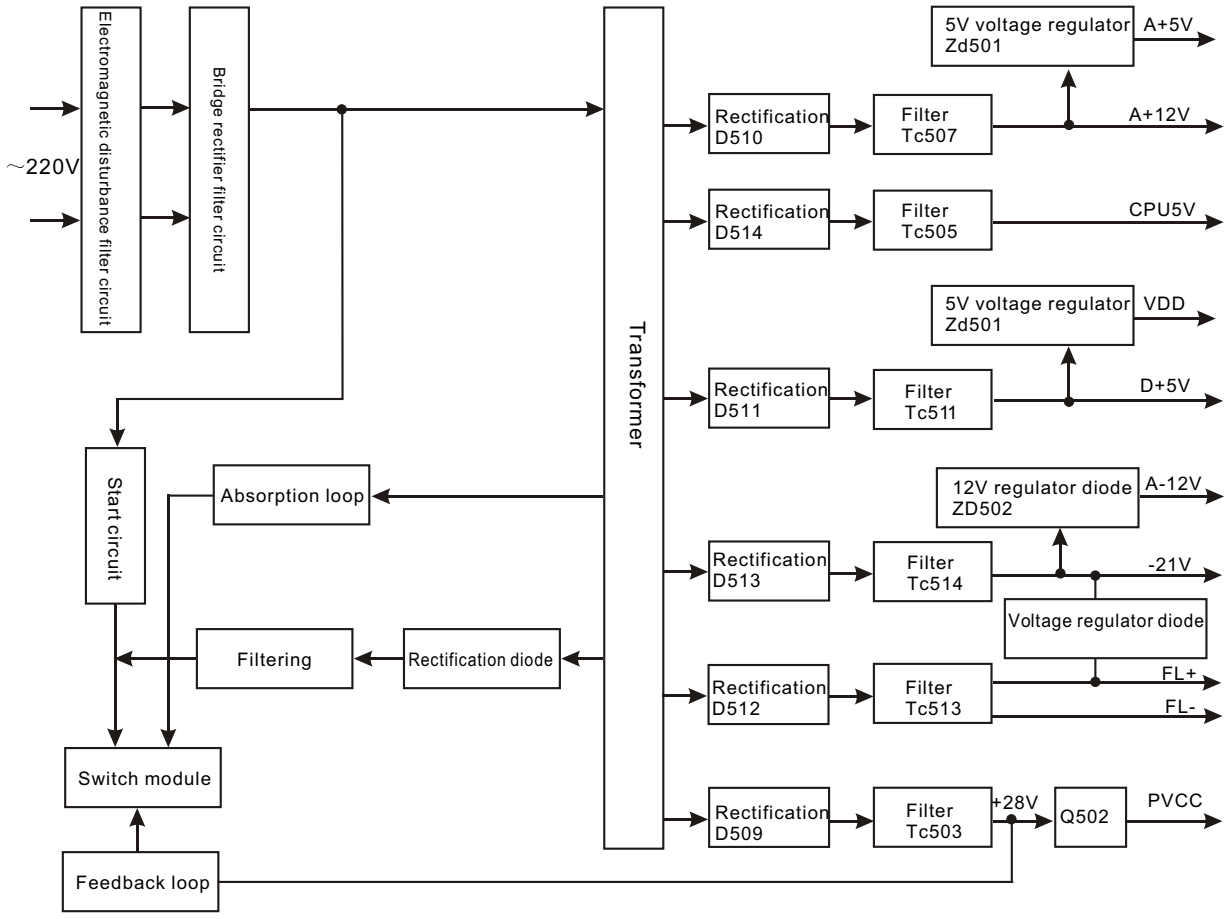
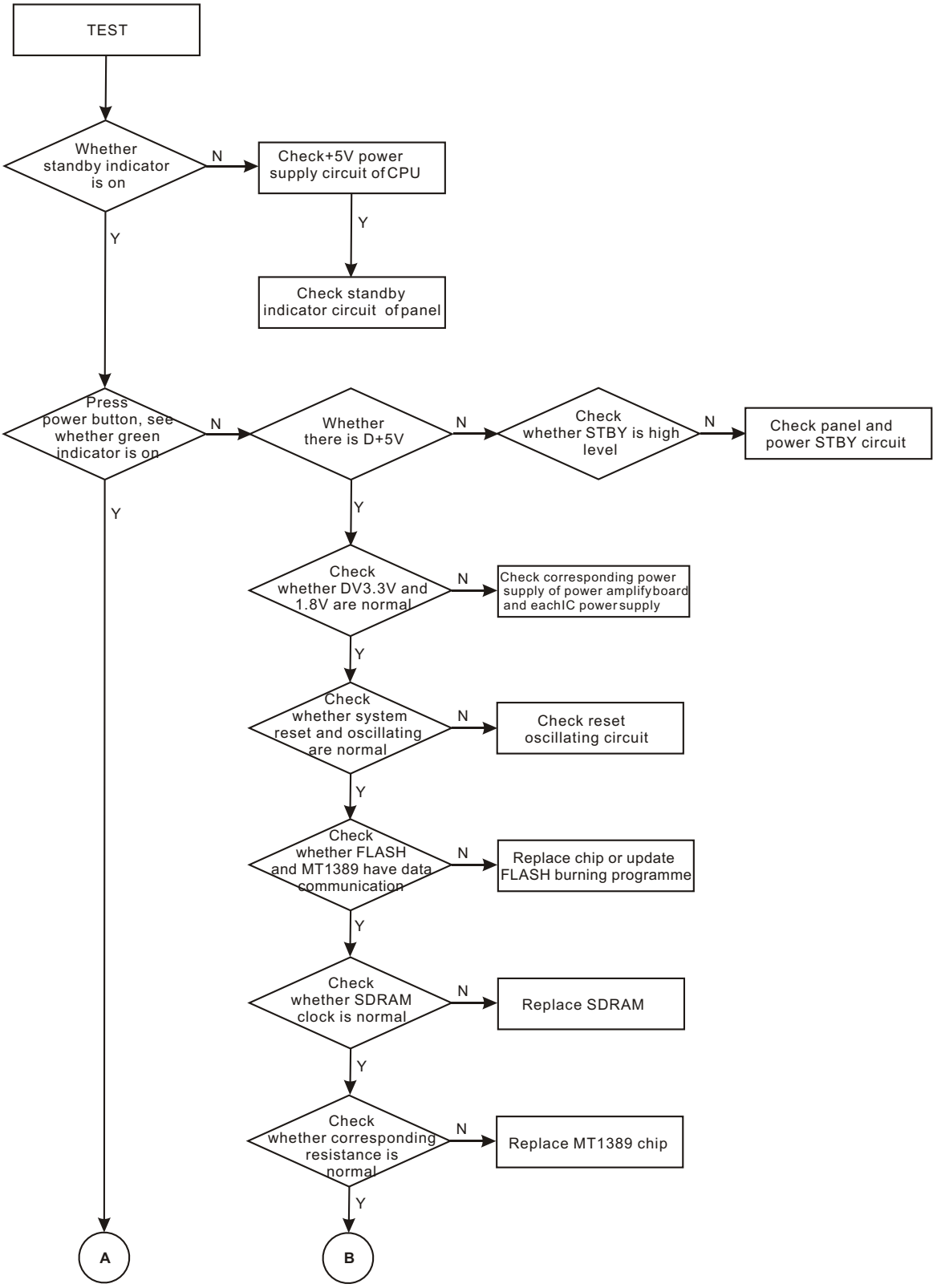
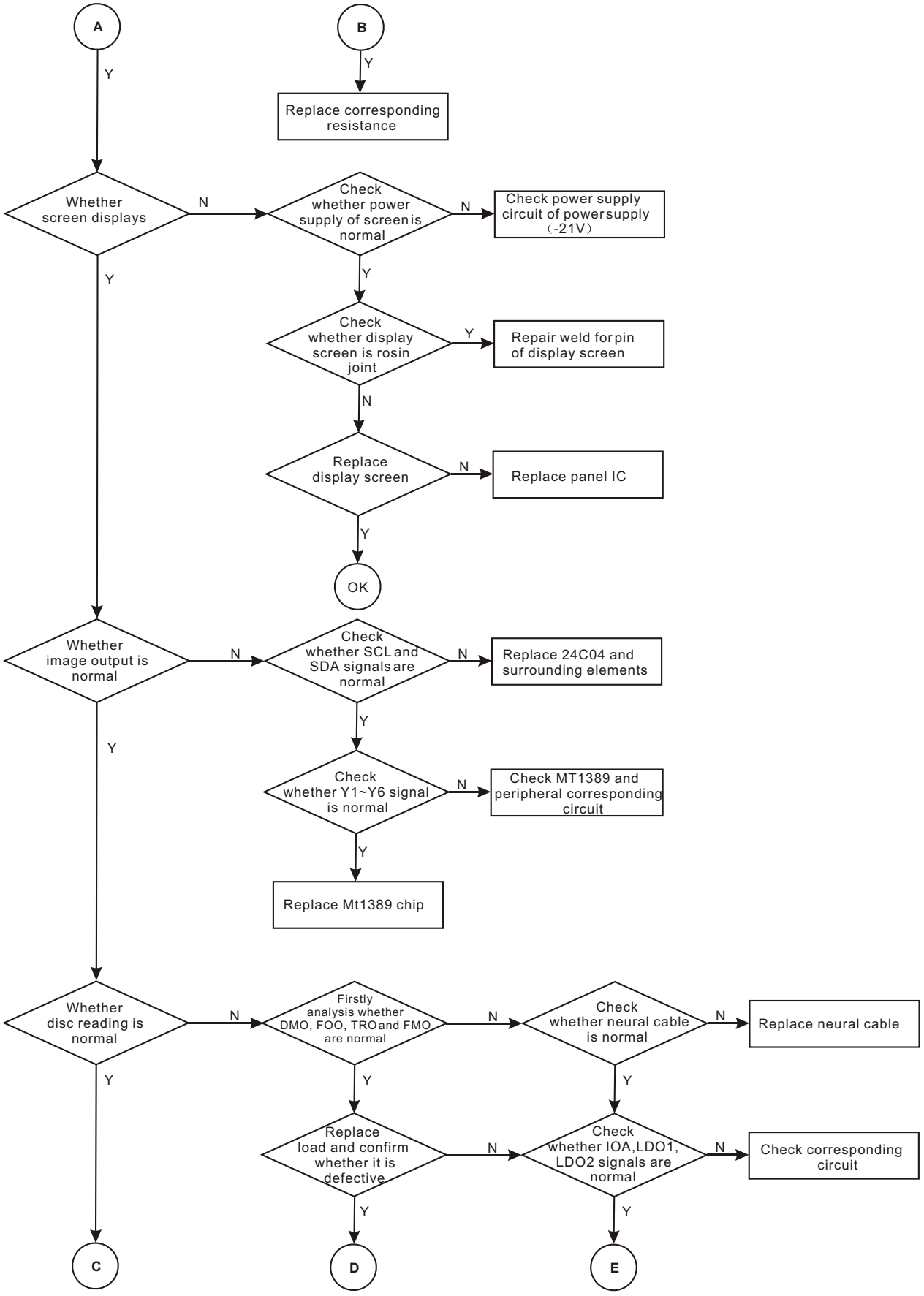
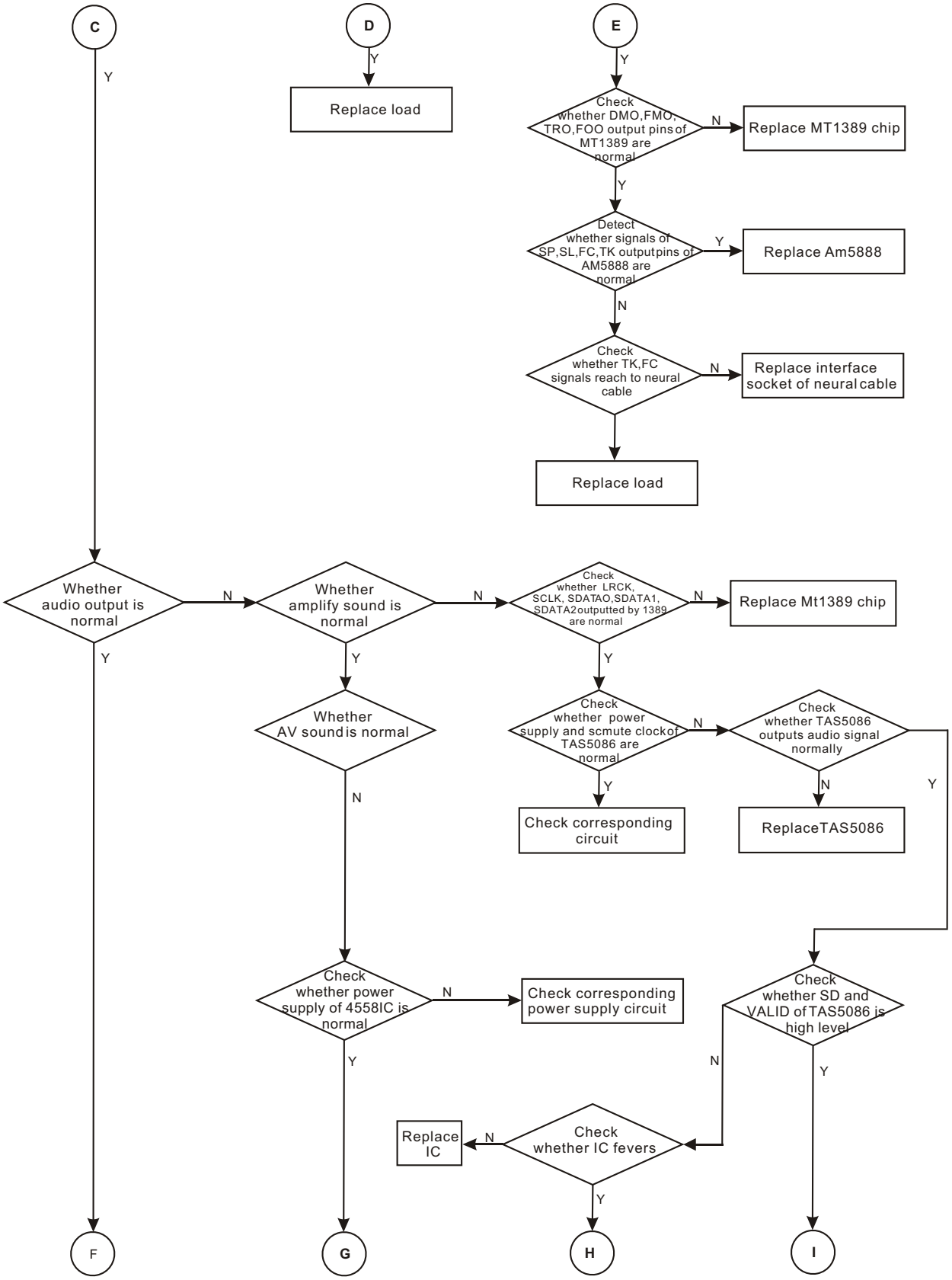


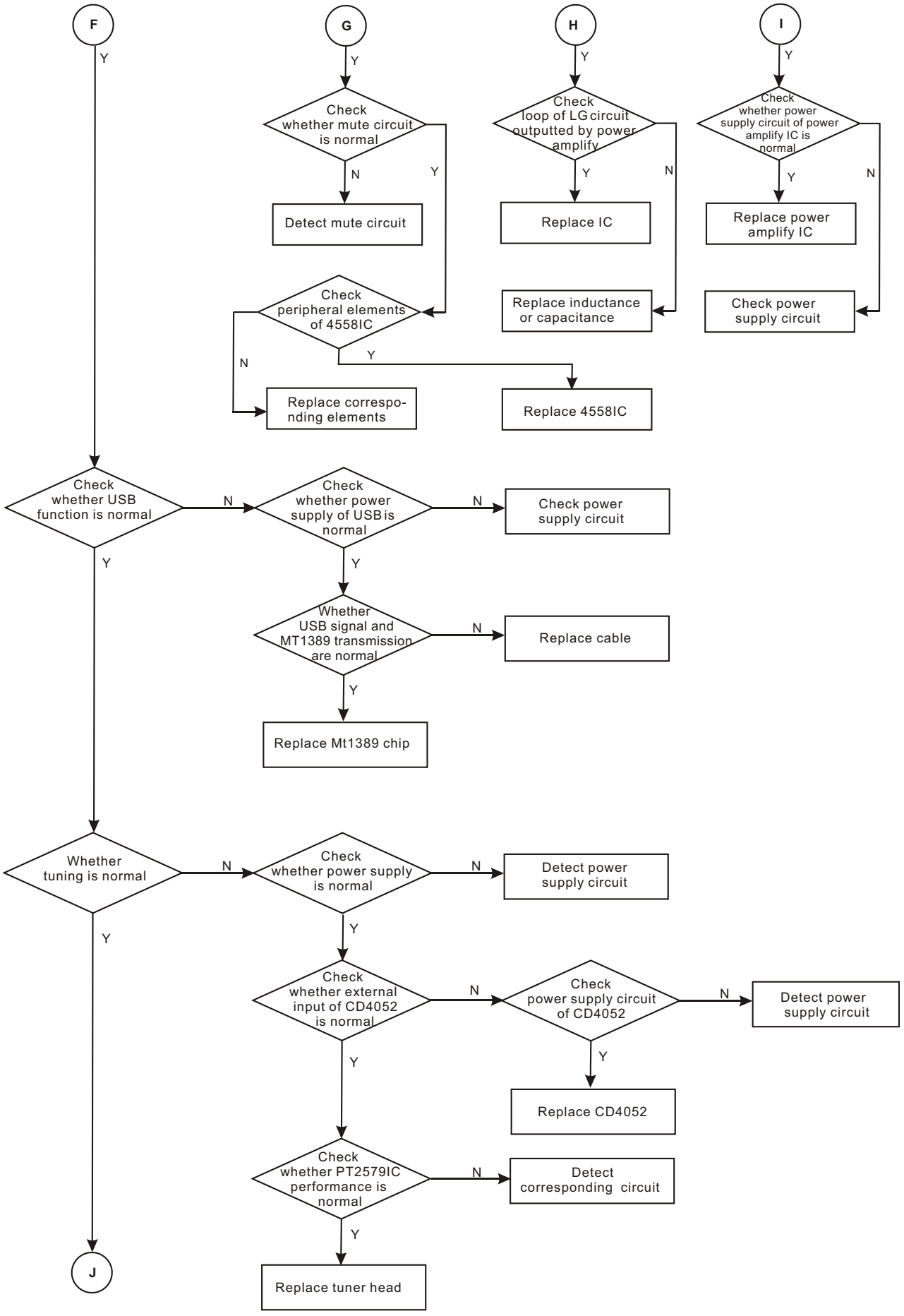
Figure 4.5.1 Power supply circuit block diagram

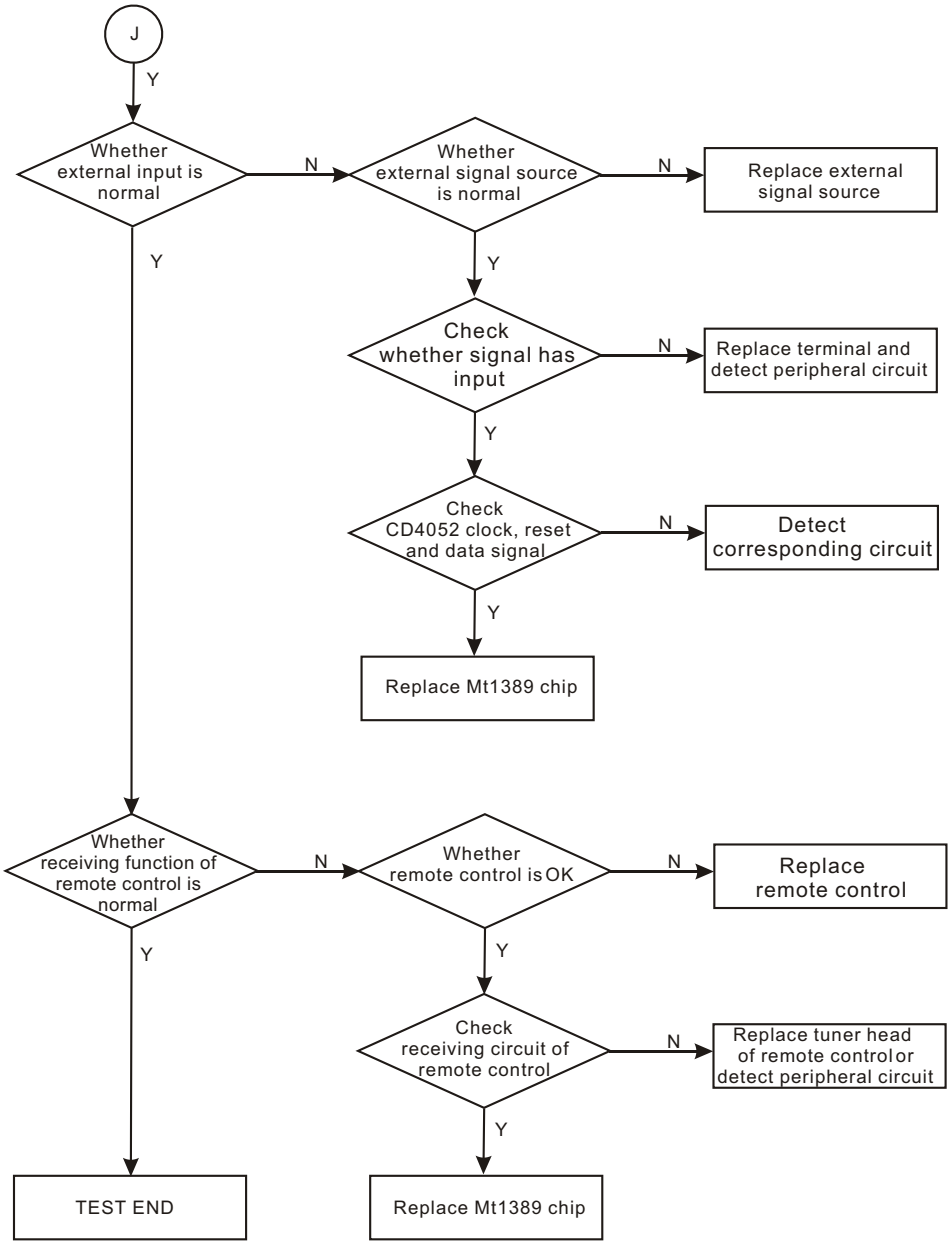
Chapter Five Troubleshooting Flow Chart




A
B
Y
Replace corresponding resistance
Whether screen displays
N
Check whether power supply of screen is normal
N
Check power supply circuit of power supply (-21V)
Y
Y
Check whether display screen is rosin joint
Y
Repair weld for pin of display screen
N
Replace display screen
N
Replace panel IC
Y
OK
Whether image output is normal
N
Check whether SCL and SDA signals are normal
N
Replace 24C04 and surrounding elements
Y
Y
Check whether Y1~Y6 signal is normal
N
Check MT1389 and peripheral corresponding circuit
Y
Replace Mt1389 chip
Whether disc reading is normal
N
Firstly analysis whether DMO, FOO, TRO and FMO are normal
N
Check whether neural cable is normal
N
Replace neural cable
Y
Y
Y
Replace load and confirm whether it is defective
N
Check whether IOA,LDO1, LDO2 signals are normal
N
Check corresponding circuit
Y
Y
C
D
E


C
D
E
Y
Replace load
Check whether DMO,FMO, TRO,FOO output pins of MT1389 are normal
N
Replace MT1389 chip
Detect whether signals of SP,SL,FC,TK output pins of AM5888 are normal
Replace Am5888
Check whether TK,FC signals reach to neural cable
Replace interface socket of neural cable
Replace load
Whether audio output is normal
Whether amplify sound is normal
Check whether LRCK, SCLK, SDATAO,SDATA1, SDATA2 outputted by 1389 are normal
Replace Mt1389 chip
Whether AV sound is normal
Check whether power supply and scmute clock of TAS5086 are normal
Check whether TAS5086 outputs audio signal normally
Check corresponding circuit
ReplaceTAS5086
Check whether power supply of 4558IC is normal
Check corresponding power supply circuit
Check whether SD and VALID of TAS5086 is high level
Replace IC
Check whether IC fevers
F
G
H
I

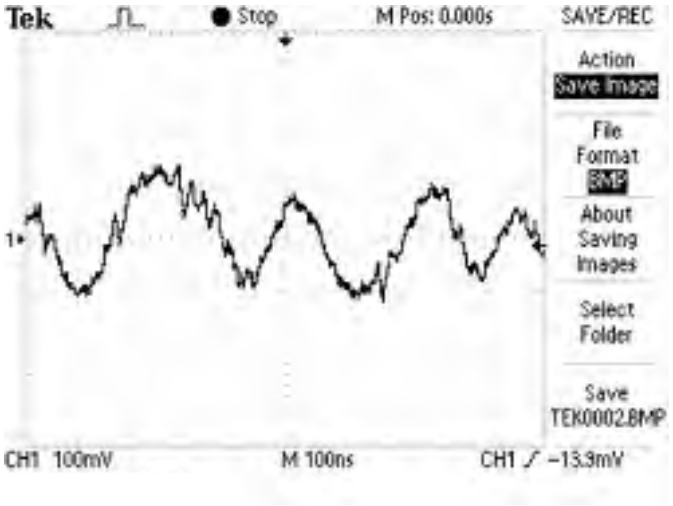

F
G
H
I
Y
Check whether mute circuit is normal
N
Y
Detect mute circuit
Check loop of LG circuit outputted by power amplify
Replace IC
Check whether power supply circuit of power amplify IC is normal
Replace power amplify IC
Check peripheral elements of 4558IC
Replace inductance or capacitance
Check power supply circuit
Replace correspo-nding elements
Replace 4558IC
Check whether USB function is normal
Check whether power supply of USB is normal
Check power supply circuit
Whether USB signal and MT1389 transmission are normal
Replace cable
Replace Mt1389 chip
Whether tuning is normal
Check whether power supply is normal
Detect power supply circuit
Check whether external input of CD4052 is normal
Check power supply circuit of CD4052
Detect power supply circuit
Replace CD4052
Check whether PT2579IC performance is normal
Detect corresponding circuit
Replace tuner head
J


J
Y
Whether external input is normal
N
Whether external signal source is normal
N
Replace external signal source
Y
Y
Check whether signal has input
N
Replace terminal and detect peripheral circuit
Y
Check CD4052 clock, reset and data signal
N
Detect corresponding circuit
Y
Replace Mt1389 chip
Whether receiving function of remote control is normal
N
Whether remote control is OK
N
Replace remote control
Y
Y
Check receiving circuit of remote control
N
Replace tuner head of remote control or detect peripheral circuit
Y
TEST END
Replace Mt1389 chip

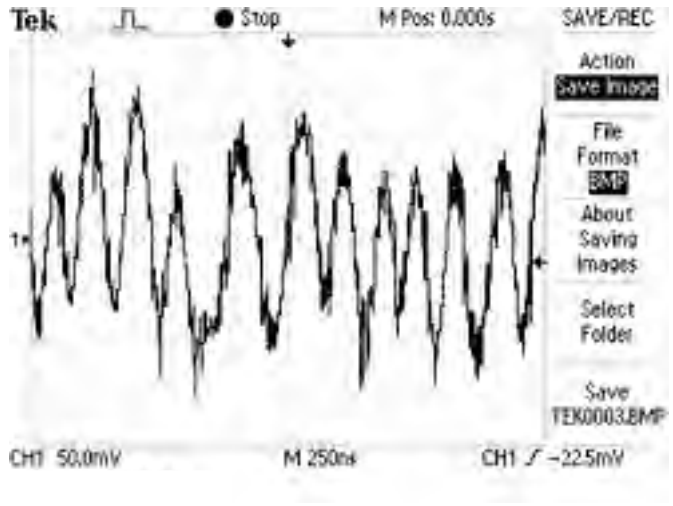
Chapter Six Waveform diagram

This section collects signal waveform diagram of audio, video and each unit circuit with the purpose to help servicing personnel to judge where trouble lies in accurately and quickly to improve servicing skills. For the difference of oscillograph's type, model and tuner, a certain difference may exist, so the servicing personnel are expected to pay more attention to check in daily operation.

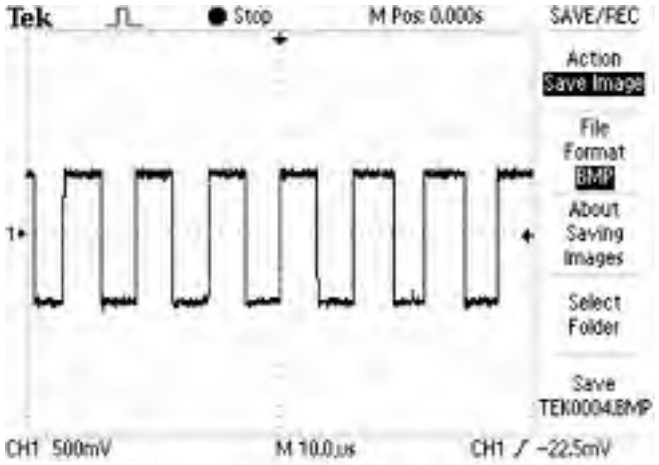
1. RFO signal waveform diagram of pin 17 of XS101



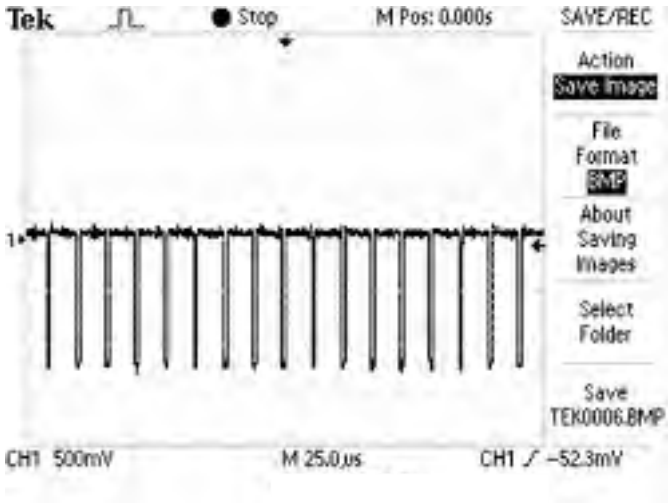
2. A signal waveform diagram of pin 16 of XS101(B、C、D、E、F）



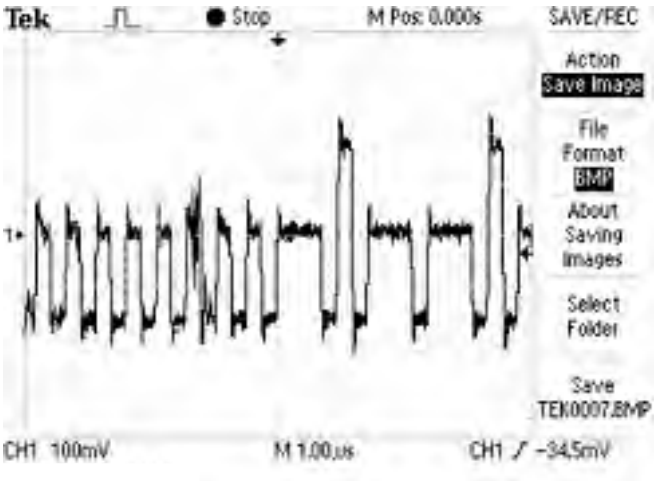
3. DMO signal (when there is main axis rotation) waveform diagram of pin 37 of U100 (MT1389)



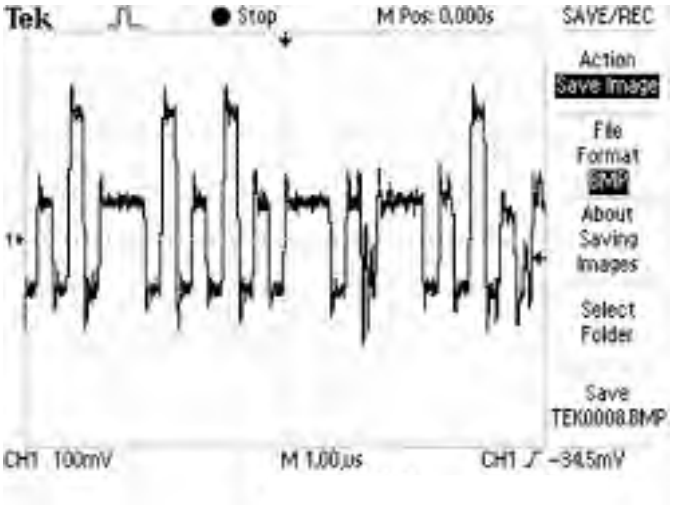
4. FMO signal (when there is feed) waveform diagram of pin 38 of U100 (MT1389)



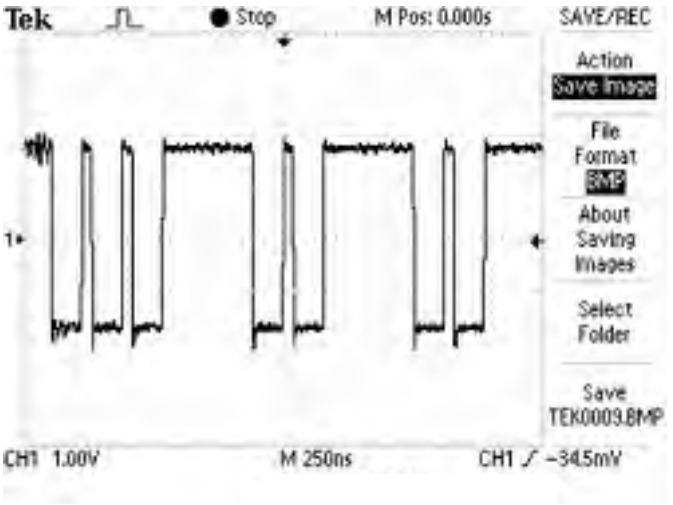
5. TRO signal (when there is trace) waveform diagram of pin 41 of U100 (MT1389)



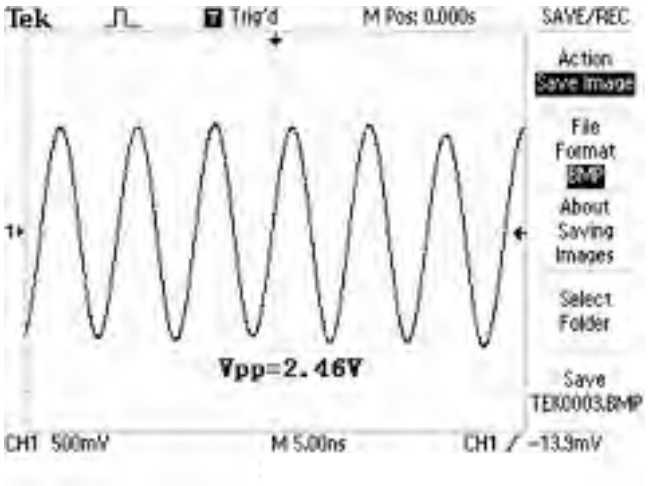
6. FOO signal (when there is focus) waveform diagram of pin 42 of U100 (MT1389)



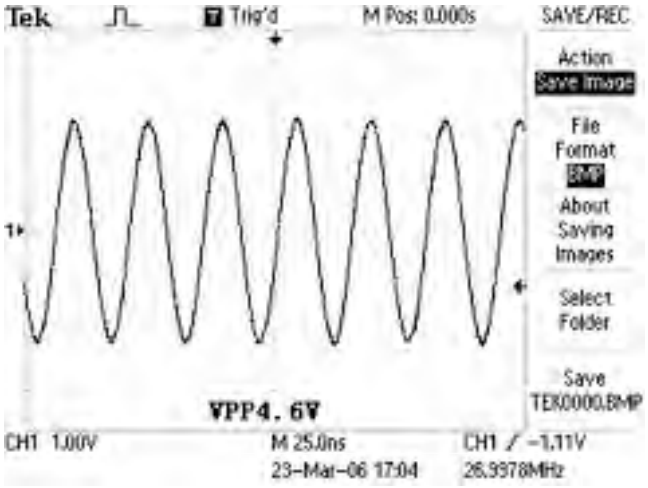
7. Waveform diagram of pin 29 (when no disc in) of U102 (FLASH)



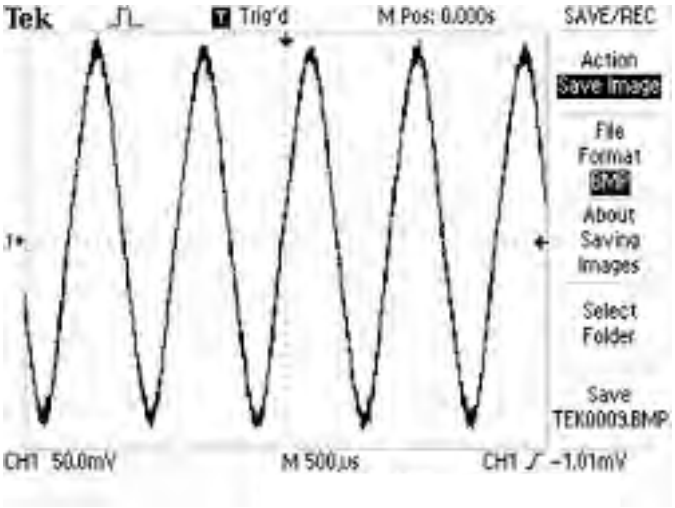
8. Waveform diagram of pin 38of U103 (SDRAM)



9. 27M clock signal waveform diagram

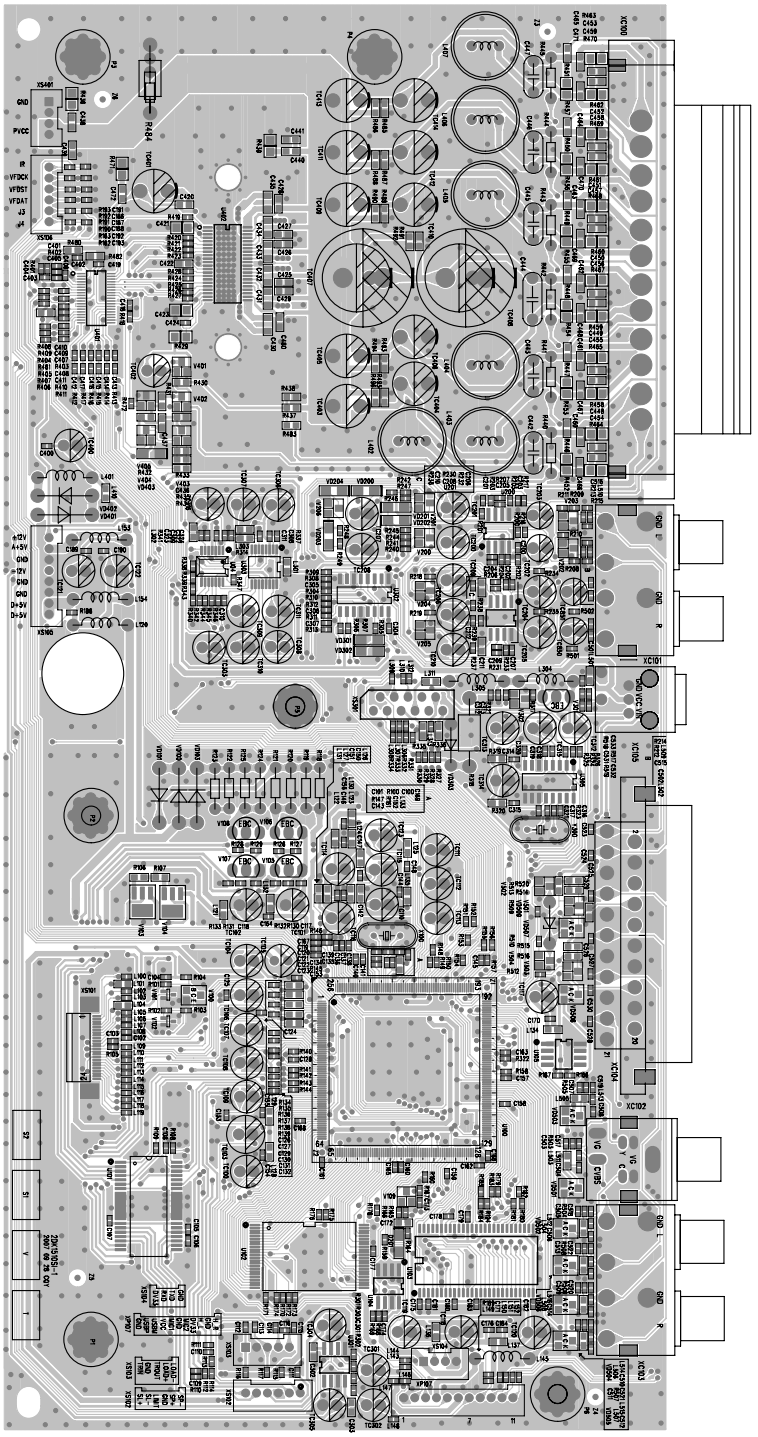


10. 1KHZ signal waveform diagram. It is suggested to use test disc, if not, the tested waveform will change at any time to affect judgment.

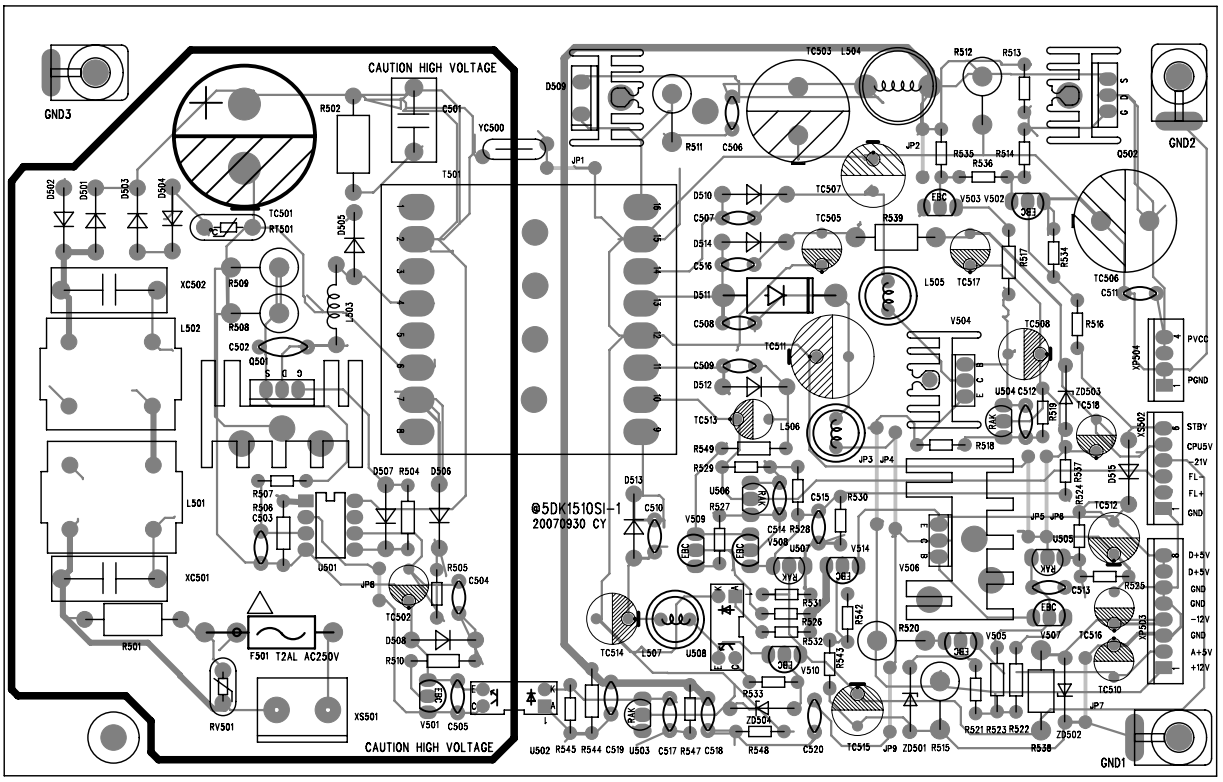


Chapter Seven PCB Board

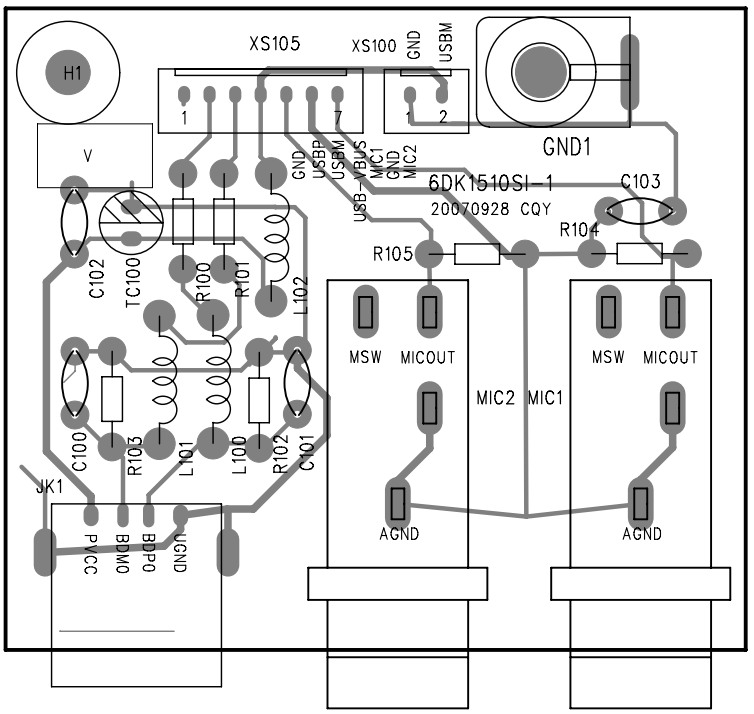
7.1 Surface layer of Decode Board(2DK1510SI-1)4940972



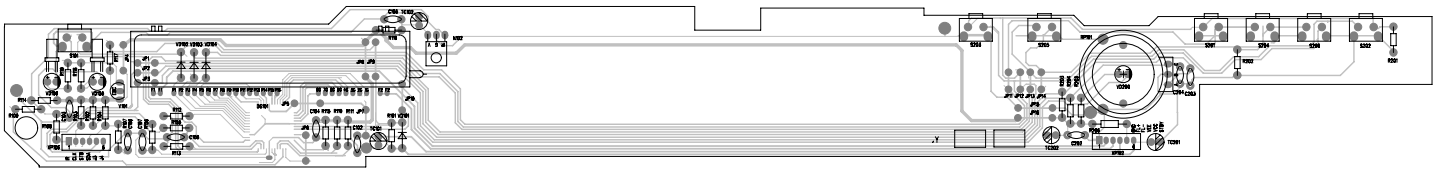
7.2 Power Board (@5DK1510SI-1)4940973



7.3 OK Board (6DK1510SI-1)4940975



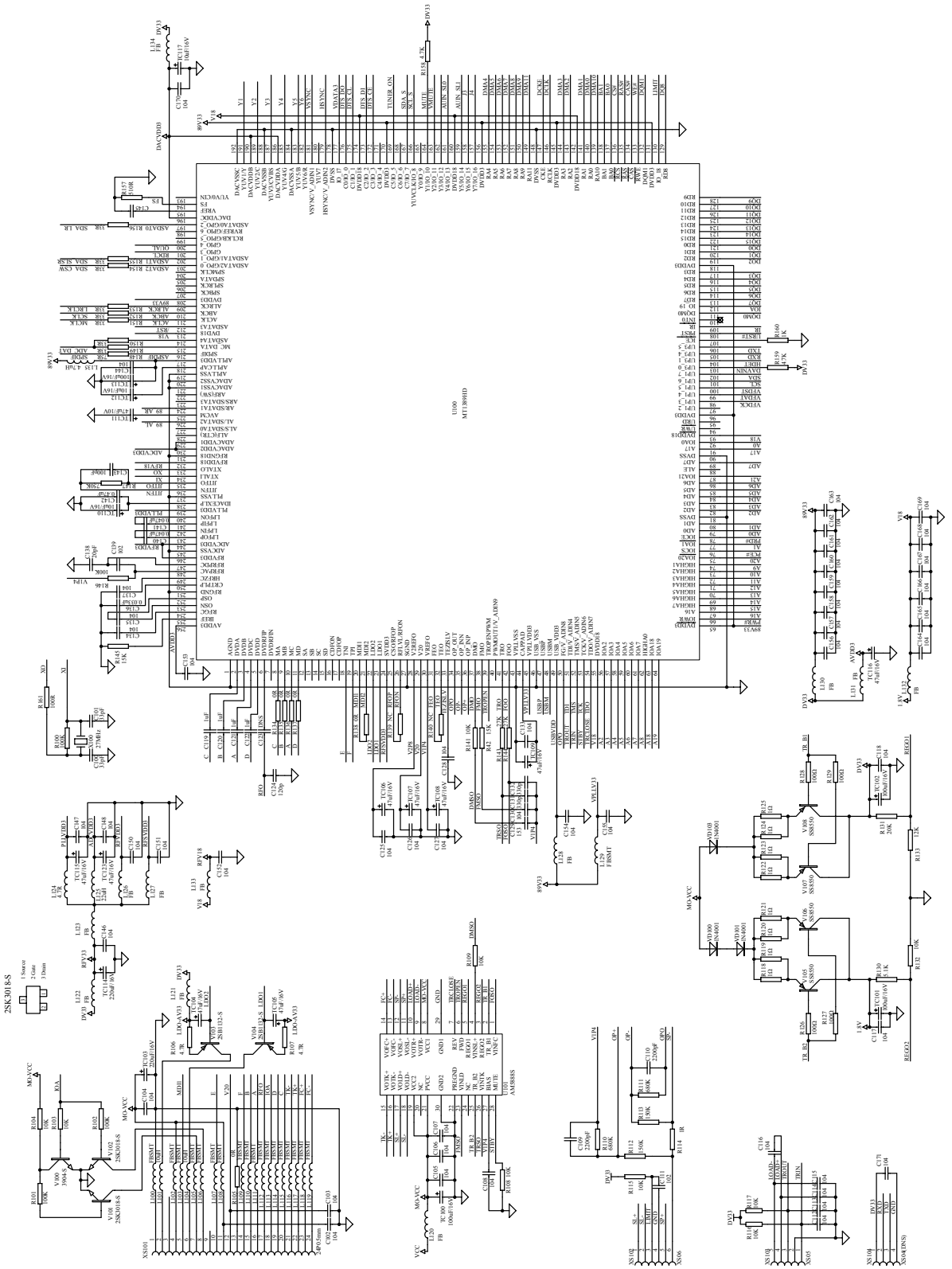
7.4 Surface layer of Main Panel (4DK1510SI-1)4940974

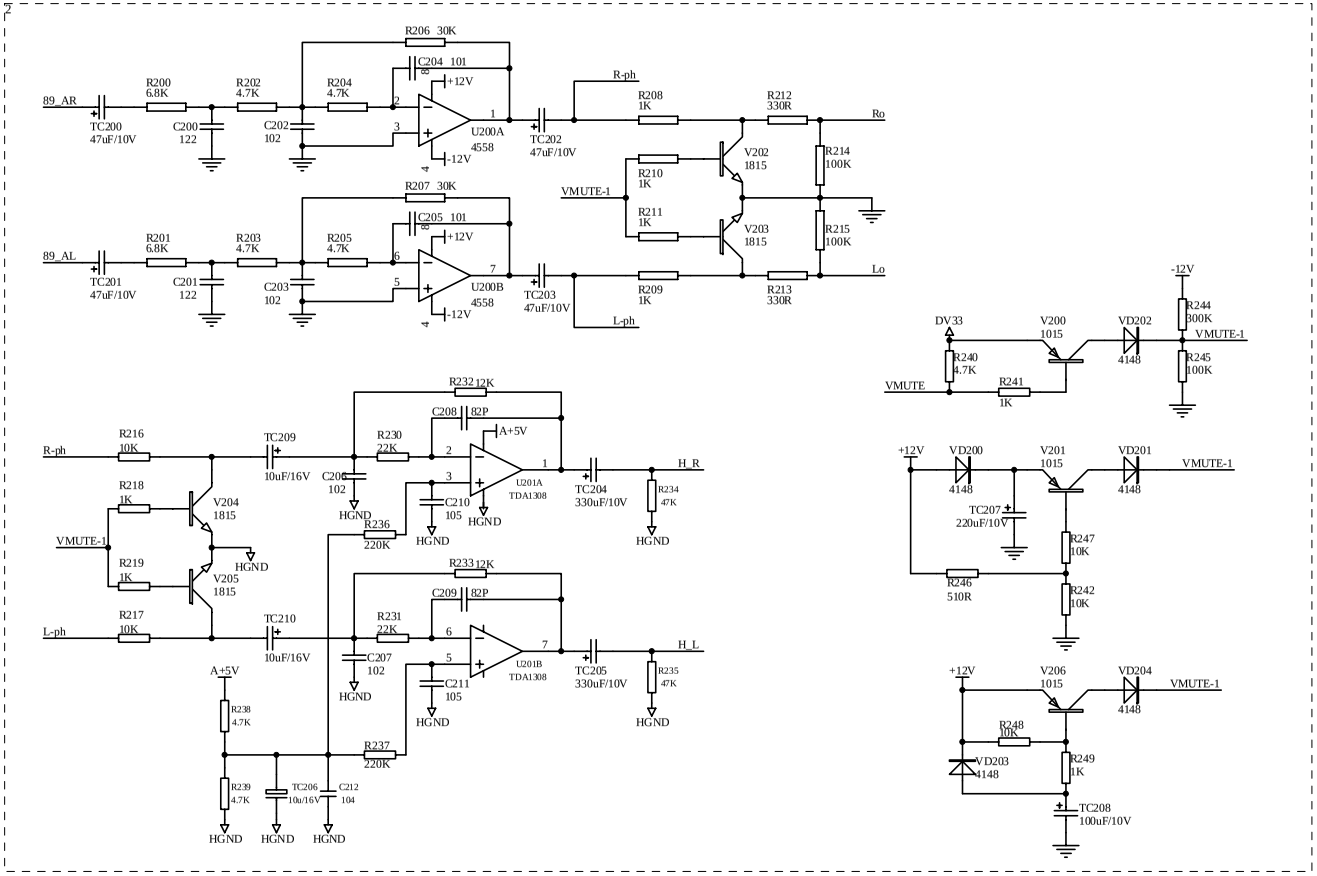


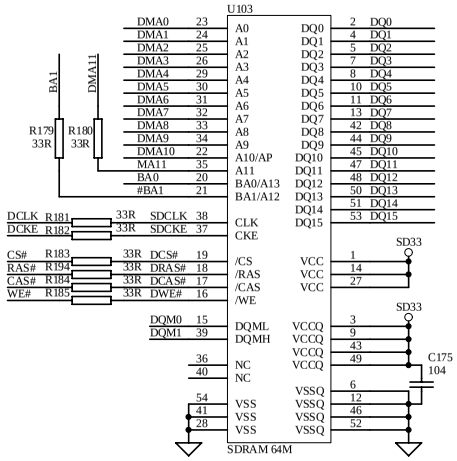
7.5 Bottom layer of Main Panel (4DK1510SI-1)4940974

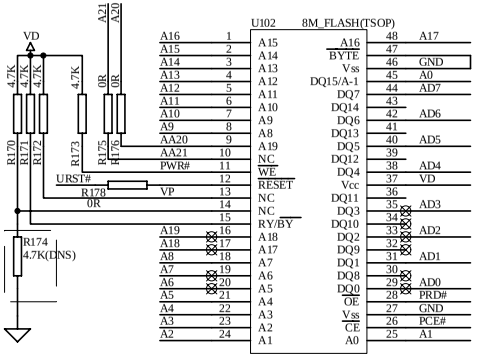
Chapter Eight Circuit Diagram

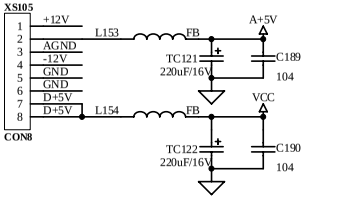
8.1 Decode Board(2DK1510SI-1)

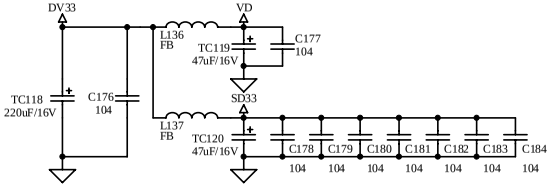


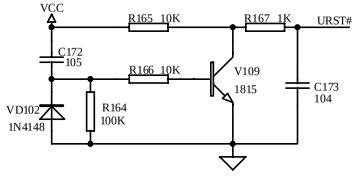

R206 30K
C204 101
R200 6.8K
R202 4.7K
R204 4.7K
89_AR
TC200 47uF/10V
C200 122
C202 102
+12V
-12V
U200A 4558
TC202 47uF/10V
R-ph
R208 1K
R212 330R
Ro
V202 1815
R214 100K
R210 1K
VMUTE-1
R211 1K
V203 1815
R215 100K
R207 30K
C205 101
R201 6.8K
R203 4.7K
R205 4.7K
89_AL
TC201 47uF/10V
C201 122
C203 102
U200B 4558
TC203 47uF/10V
L-ph
R209 1K
R213 330R
Lo
R232 12K
C208 82P
R216 10K
TC209 10uF/16V
R230 22K
A+5V
C206 102
HGND
U201A TDA1308
TC204 330uF/10V
H_R
R234 47K
R218 1K
V204 1815
R236 220K
C210 105
R219 1K
V205 1815
R233 12K
C209 82P
R217 10K
TC210 10uF/16V
R231 22K
C207 102
C211 105
U201B TDA1308
TC205 330uF/10V
H_L
R235 47K
R238 4.7K
R237 220K
R239 4.7K
TC206 10u/16V
C212 104
DV33
V200 1015
VD202 4148
-12V
R244 300K
VMUTE-1
R240 4.7K
VMUTE
R241 1K
R245 100K
+12V
VD200 4148
V201 1015
VD201 4148
TC207 220uF/10V
R247 10K
R246 510R
R242 10K
+12V
V206 1015
VD204 4148
R248 10K
VD203 4148
R249 1K
TC208 100uF/10V

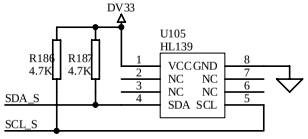

U103
DMA0 DMA1 DMA2 DMA3 DMA4 DMA5 DMA6 DMA7 DMA8 DMA9 DMA10 MA11 BA0 #BA1
BA1 DMA11
R179 33R
R180 33R
DCLK R181 33R
DCKE R182 33R
CS# R183 33R
RAS# R194 33R
CAS# R184 33R
WE# R185 33R
SDCLK SDCKE DCS# DRAS# DCAS# DWE#
DQM0 DQM1
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10/AP A11 BA0/A13 BA1/A12 CLK CKE /CS /RAS /CAS /WE DQML DQMH NC NC VSS VSS VSS
DQ0 DQ1 DQ2 DQ3 DQ4 DQ5 DQ6 DQ7 DQ8 DQ9 DQ10 DQ11 DQ12 DQ13 DQ14 DQ15 VCC VCC VCC VCCQ VCCQ VCCQ VCCQ VSSQ VSSQ VSSQ VSSQ
SD33
C175 104
SDRAM 64M

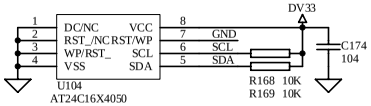

VD
4.7K 4.7K 4.7K
4.7K
0R 0R
A21 A20
R170 R171 R172
R173
R175 R176
URST#
R178 0R
VP
R174 4.7K(DNS)
U102 8M_FLASH(TSOP)
A16 A15 A14 A13 A12 A11 A10 A9 AA20 AA21 PWR# WE RESET NC NC RY/BY A18 A17 A7 A6 A5 A4 A3 A2
A19 A18 A8
BYTE Vss DQ15/A-1 DQ7 DQ14 DQ6 DQ13 DQ5 DQ12 DQ4 Vcc DQ11 DQ3 DQ10 DQ2 DQ9 DQ1 DQ8 DQ0 OE Vss CE A1 A0
GND A0 AD7 AD6 AD5 AD4 VD AD3 AD2 AD1 AD0 PRD# GND PCE# A1

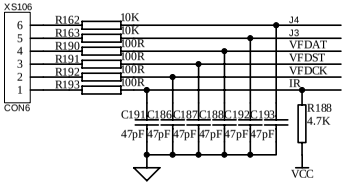

XS105
+12V AGND -12V GND GND D+5V D+5V
CON8
L153 FB
TC121 220uF/16V
A+5V
C189 104
L154 FB
VCC
TC122 220uF/16V
C190 104

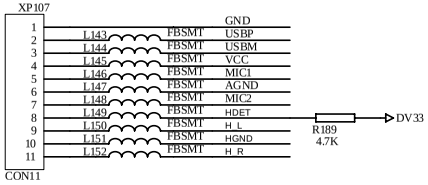

DV33
VD
L136 FB
TC119 47uF/16V
C177 104
TC118 220uF/16V
C176 104
SD33
L137 FB
TC120 47uF/16V
C178 C179 C180 C181 C182 C183 C184
104 104 104 104 104 104 104

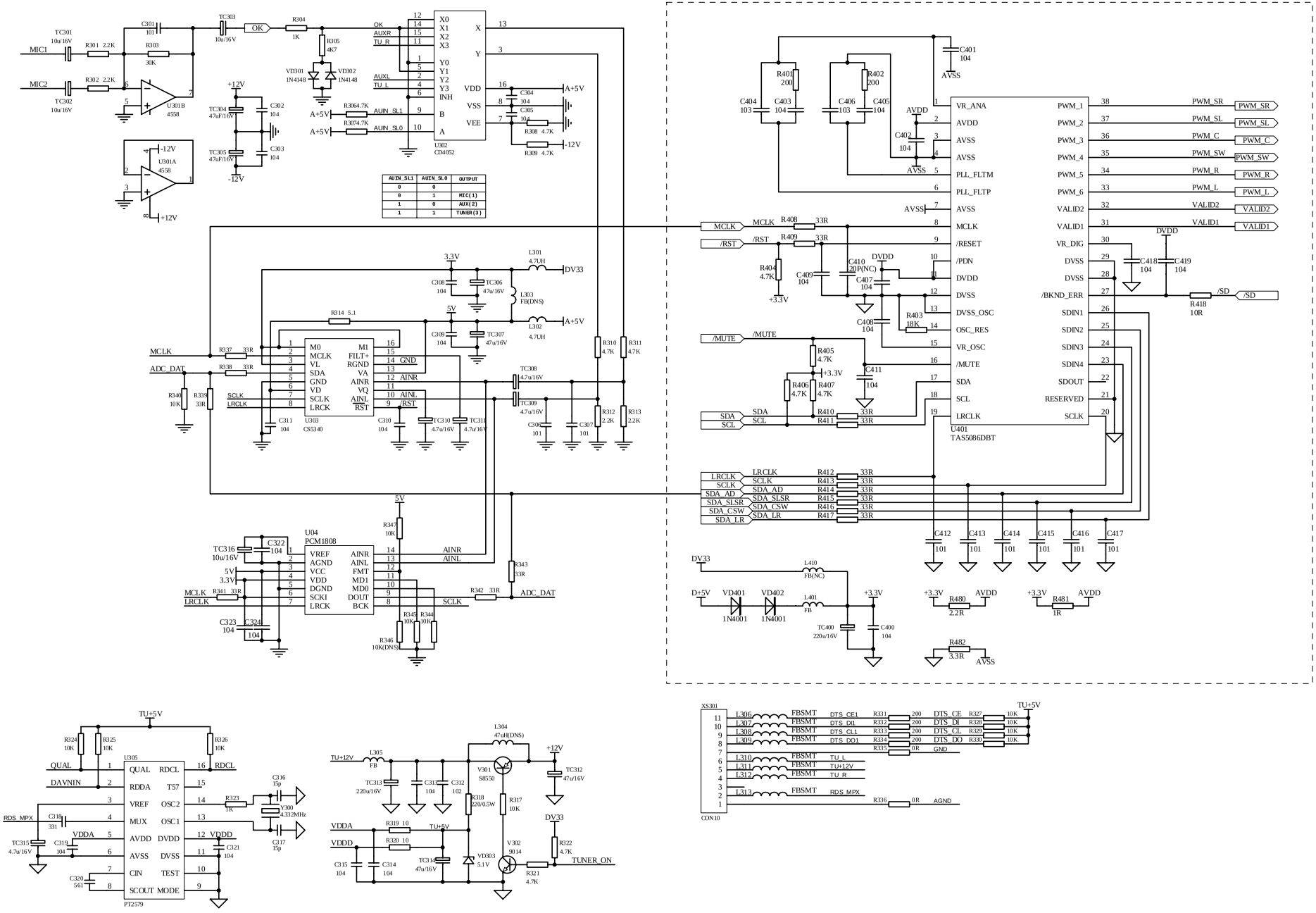

VCC
R165 10K
R167 1K
URST#
C172 105
R166 10K
V109 1815
C173 104
VD102 1N4148
R164 100K

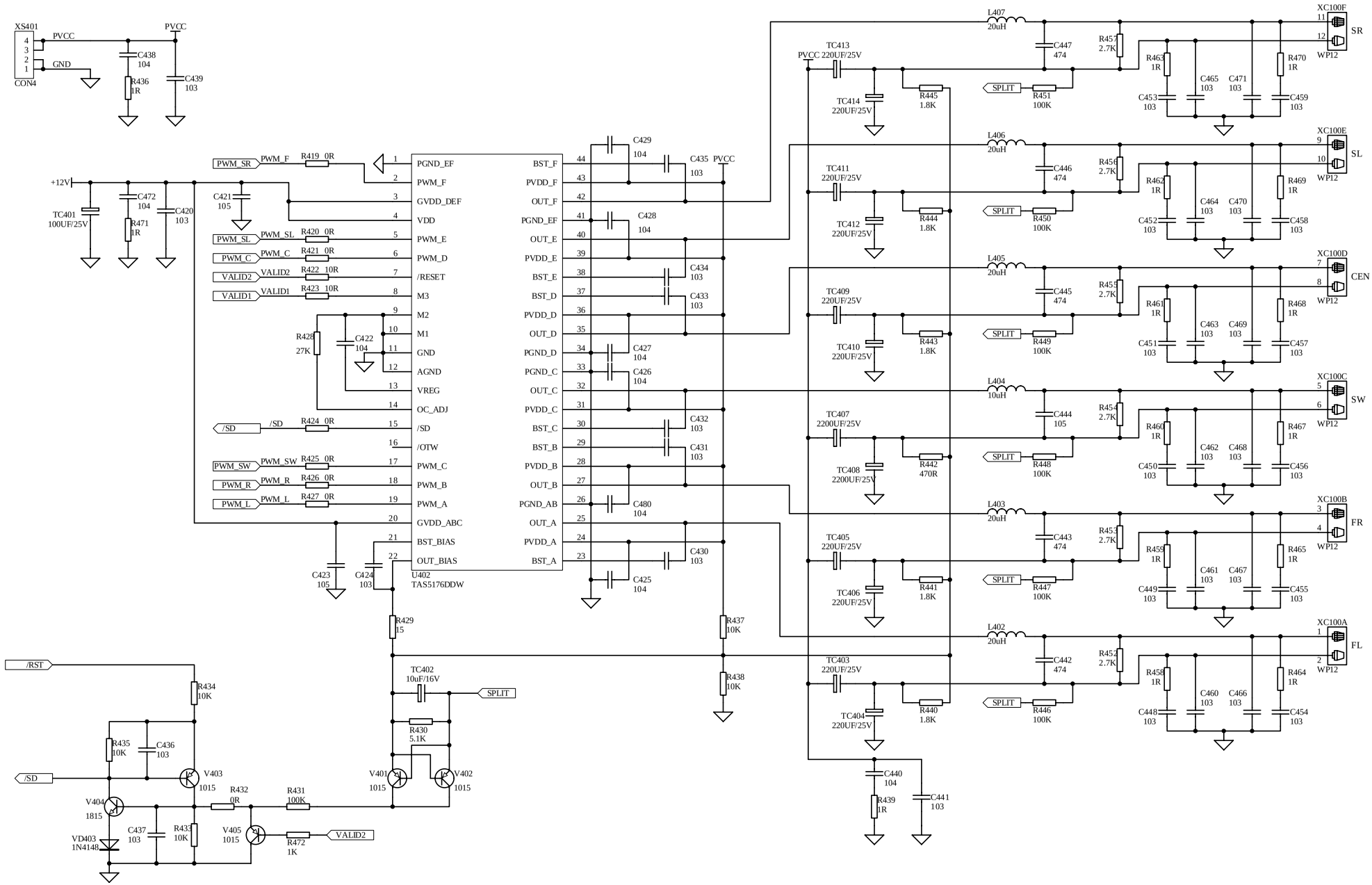

DV33
R186 4.7K
R187 4.7K
U105 HL139
VCC GND NC NC NC NC SDA SCL
SDA_S
SCL_S

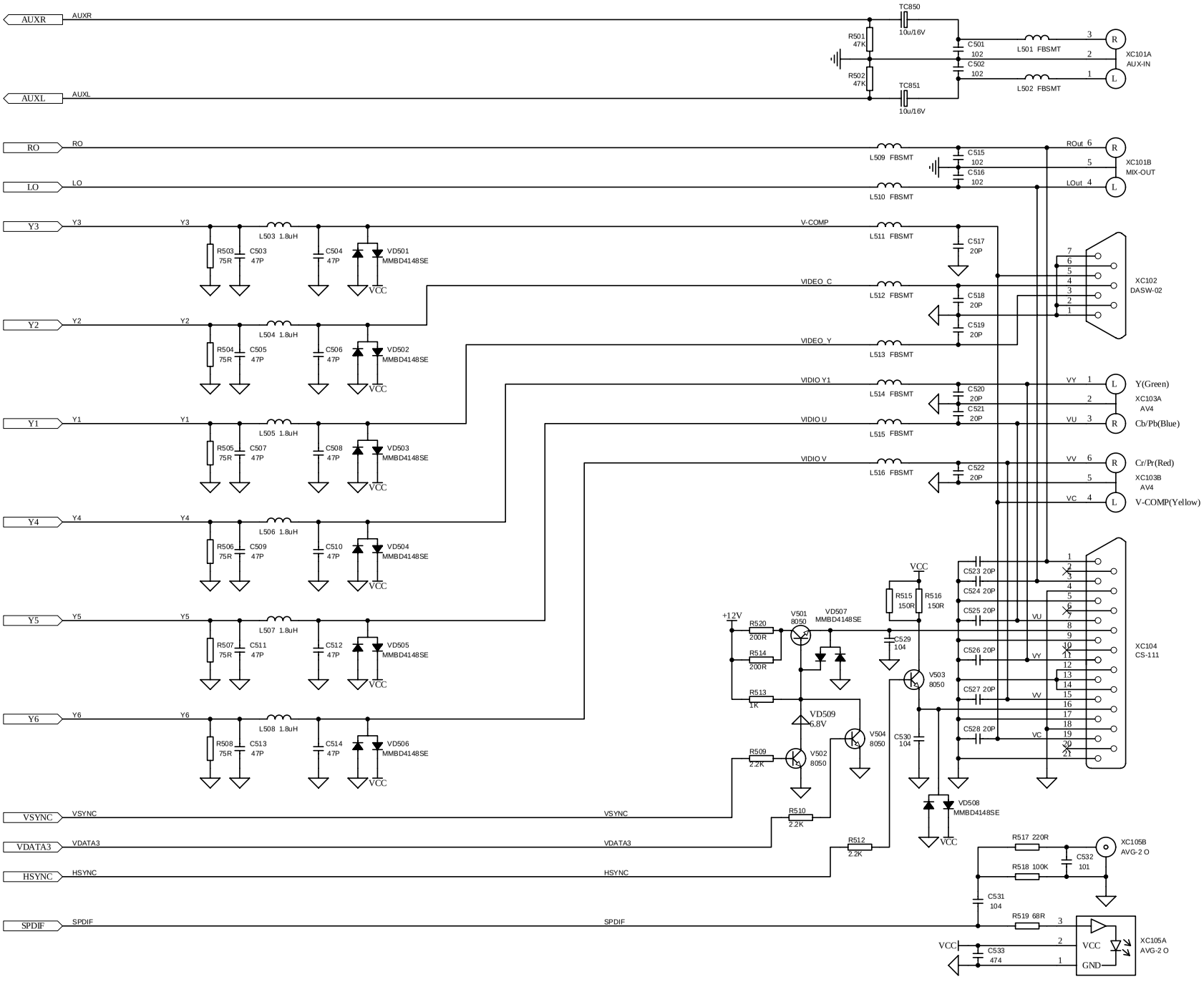

DC/NC RST_/NC WP/RST_ VSS
VCC RST/WP SCL SDA
GND SCL SDA
U104 AT24C16X4050
DV33
C174 104
R168 10K
R169 10K


XS106
R162 R163 R190 R191 R192 R193
10K 10K 100R 100R 100R 100R
J4 J3 VFDAT VFDST VFDCK IR
C191 C186 C187 C188 C192 C193
47pF 47pF 47pF 47pF 47pF 47pF
R188 4.7K
VCC
CON6

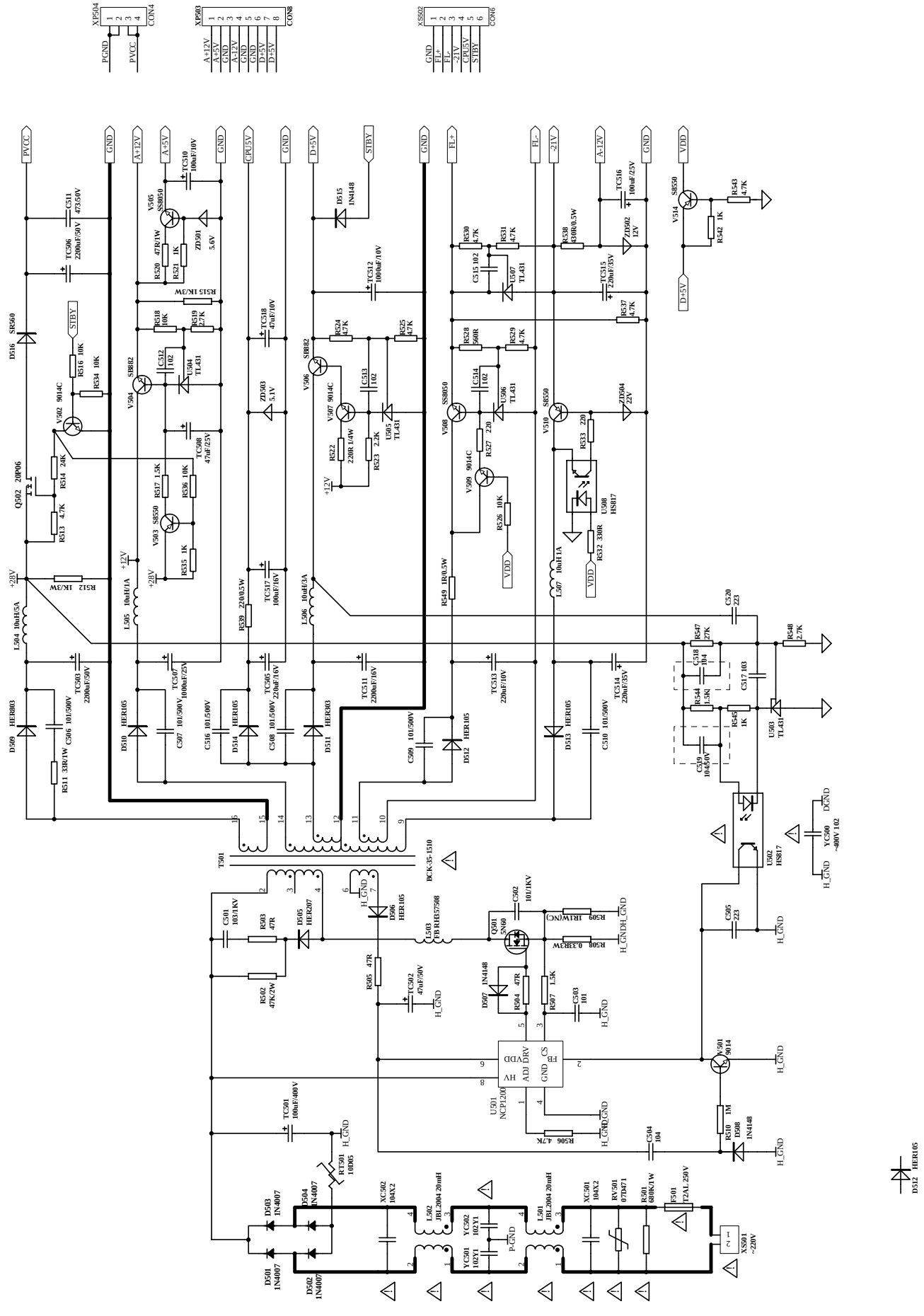

XP107
L143 L144 L145 L146 L147 L148 L149 L150 L151 L152
FBSMT
GND USBP USBM VCC MIC1 AGND MIC2 HDET H_L HGND H_R
R189 4.7K
DV33
CON11


MIC1
MIC2
TC301 10u/16V
TC302 10u/16V
C301 101
R301 2.2K
R302 2.2K
R303 30K
U301B 4558
TC303 10u/16V
OK
R304 1K
R305 4K7
VD301 1N4148
VD302 1N4148
+12V
-12V
TC304 47uF/16V
TC305 47uF/16V
C302 104
C303 104
U301A 4558
R3064.7K
R3074.7K
AUIN_SL1
AUIN_SL0
AUXR
TU_R
AUXL
TU_L
U302 CD4052
X0
X1
X2
X3
Y0
Y1
Y2
Y3
INH
VDD
VSS
VEE
X
Y
A
B
C304 104
C305 104
R308 4.7K
R309 4.7K
A+5V
AUIN_SL1 | AUIN_SL0 | OUTPUT
0 | 0 | MIC(1)
0 | 1 | AUX(2)
1 | 0 | AUX(3)
1 | 1 | TUNER(3)
3.3V
5V
DV33
L301 4.7UH
L303 FB(DNS)
L302 4.7UH
C308 104
TC306 47u/16V
C309 104
TC307 47u/16V
R314 5.1
MCLK
ADC_DAT
SCLK
LRCLK
R337 33R
R338 33R
R339 33R
R340 10K
U303 CS5340
M0
M1
MCLK
FILT+
VL
RGND
SDA
VA
GND
AINR
VD
VQ
SCLK
AINL
LRCK
RST
C311 104
C310 104
TC310 4.7u/16V
TC311 4.7u/16V
TC308 4.7u/16V
TC309 4.7u/16V
C306 101
C307 101
R310 4.7K
R311 4.7K
R312 2.2K
R313 2.2K
U04 PCM1808
VREF
AGND
VCC
VDD
DGND
SCKI
LRCK
AINR
AINL
FMT
MD1
MD0
DOUT
BCK
TC316 10u/16V
C322 104
C323 104
C324 104
R341 33R
R342 33R
R343 33R
R345 10K
R344 10K
R346 10K(DNS)
R347 10K
AINR
AINL
SCLK
ADC_DAT
U401 TAS5086DBT
VR_ANA
AVDD
AVSS
PLL_FLTM
PLL_FLTP
MCLK
/RESET
/PDN
DVDD
DVSS
DVSS_OSC
OSC_RES
VR_OSC
/MUTE
SDA
SCL
LRCLK
PWM_1
PWM_2
PWM_3
PWM_4
PWM_5
PWM_6
VALID2
VALID1
VR_DIG
DVSS
/BKND_ERR
SDIN1
SDIN2
SDIN3
SDIN4
SDOUT
RESERVED
SCLK
R401 200
R402 200
C401 104
C402 104
C403 104
C404 103
C405 104
C406 103
R403 18K
R404 4.7K
R405 4.7K
R406 4.7K
R407 4.7K
R408 33R
R409 33R
R410 33R
R411 33R
R412 33R
R413 33R
R414 33R
R415 33R
R416 33R
R417 33R
C407 104
C408 104
C409 104
C410 20P(NC)
C411 104
C412 101
C413 101
C414 101
C415 101
C416 101
C417 101
C418 104
C419 104
R418 10R
/SD
PWM_SR
PWM_SL
PWM_C
PWM_SW
PWM_R
PWM_L
VALID2
VALID1
DVDD
+3.3V
AVSS
L410 FB(NC)
L401 FB
D+5V
VD401 1N4001
VD402 1N4001
TC400 220u/16V
C400 104
R480 2.2R
R481 1R
R482 3.3R
TU+5V
U305 PT2579
QUAL
DAVNIN
RDS_MPX
VDDA
RDCL
RDDA
T57
VREF
OSC2
MUX
OSC1
AVDD
DVDD
AVSS
DVSS
CIN
TEST
SCOUT
MODE
R324 10K
R325 10K
R326 10K
R323 1K
C316 15p
C317 15p
V300 4.332MHz
C318 331
C319 104
C320 561
C321 104
TC315 4.7u/16V
L305 FB
L304 47uH(DNS)
TU+12V
+12V
TC313 220u/16V
C313 104
C312 102
C314 104
C315 104
TC314 47u/16V
TC312 47u/16V
V301 S8550
R318 220/0.5W
R317 10K
R319 10
R320 10
VD303 5.1V
V302 9014
R321 4.7K
R322 4.7K
TUNER_ON
XS301
CON10
L306 FBSMT DTS_CE1 R331 200 DTS_CE R327 10K
L307 FBSMT DTS_DI1 R332 200 DTS_DI R328 10K
L308 FBSMT DTS_CL1 R333 200 DTS_CL R329 10K
L309 FBSMT DTS_DO1 R334 200 DTS_DO R330 10K
R335 0R GND
L310 FBSMT TU_L
L311 FBSMT TU+12V
L312 FBSMT TU_R
L313 FBSMT RDS_MPX
R336 0R AGND

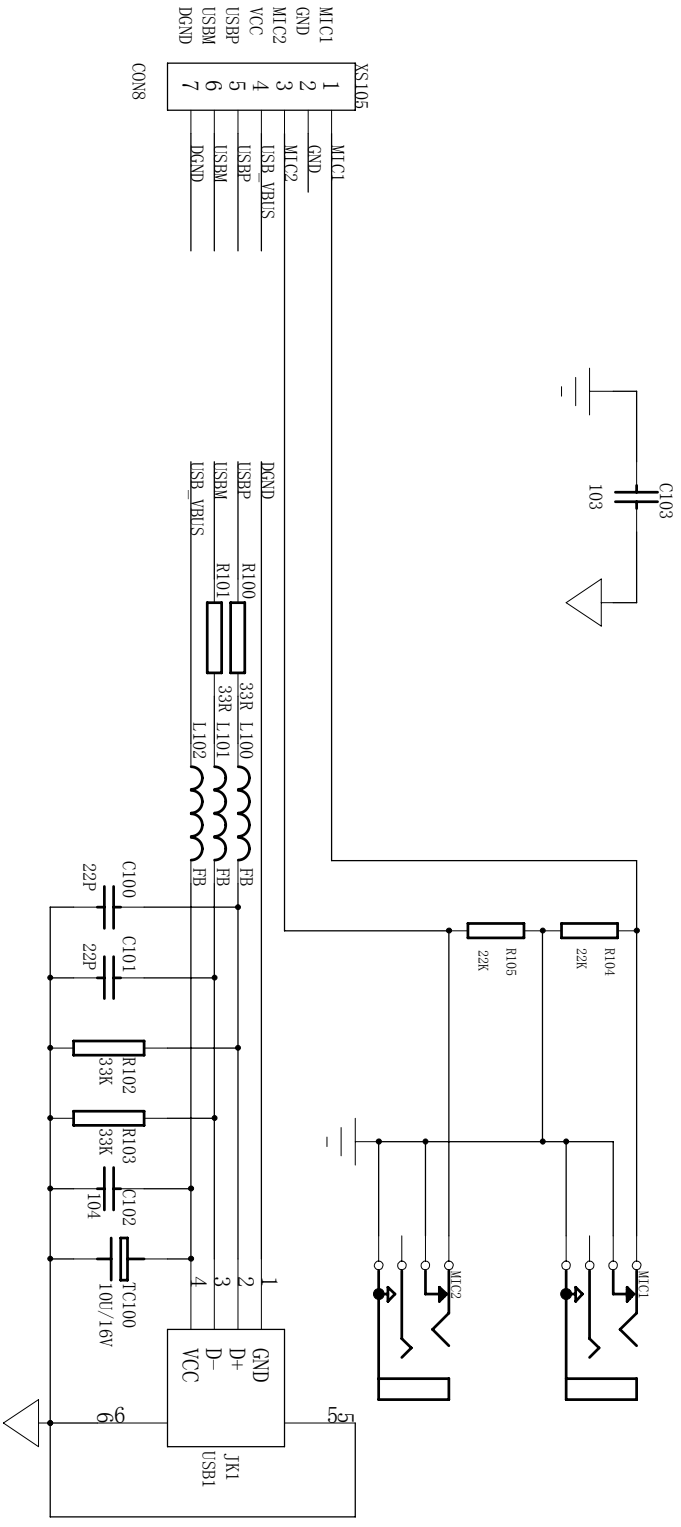

XS401
CON4
PVCC
GND
C438 104
R436 1R
C439 103
+12V
TC401 100UF/25V
C472 104
R471 1R
C420 103
C421 105
U402
TAS5176DDW
PGND_EF
PWM_F
GVDD_DEF
VDD
PWM_E
PWM_D
/RESET
M3
M2
M1
GND
AGND
VREG
OC_ADJ
/SD
/OTW
PWM_C
PWM_B
PWM_A
GVDD_ABC
BST_BIAS
OUT_BIAS
BST_F
PVDD_F
OUT_F
PGND_EF
OUT_E
PVDD_E
BST_E
BST_D
PVDD_D
OUT_D
PGND_D
PGND_C
OUT_C
PVDD_C
BST_C
BST_B
PVDD_B
OUT_B
PGND_AB
OUT_A
PVDD_A
BST_A
PWM_SR
PWM_SL
PWM_C
VALID2
VALID1
/SD
PWM_SW
PWM_R
PWM_L
R419 0R
R420 0R
R421 0R
R422 10R
R423 10R
R424 0R
R425 0R
R426 0R
R427 0R
R428 27K
C422 104
C423 105
C424 103
C425 104
C426 104
C427 104
C428 104
C429 104
C430 103
C431 103
C432 103
C433 103
C434 103
C435 103
C480 104
R429 15
R437 10K
R438 10K
/RST
R434 10K
R435 10K
C436 103
V403 1015
V404 1815
R432 0R
R431 100K
C437 103
R433 10K
VD403 1N4148
V405 1015
R472 1K
VALID2
TC402 10uF/16V
R430 5.1K
V401 1015
V402 1015
SPLIT
PVCC
L407 20uH
L406 20uH
L405 20uH
L404 10uH
L403 20uH
L402 20uH
TC413 220UF/25V
TC414 220UF/25V
TC411 220UF/25V
TC412 220UF/25V
TC409 220UF/25V
TC410 220UF/25V
TC407 2200UF/25V
TC408 2200UF/25V
TC405 220UF/25V
TC406 220UF/25V
TC403 220UF/25V
TC404 220UF/25V
R445 1.8K
R444 1.8K
R443 1.8K
R442 470R
R441 1.8K
R440 1.8K
C440 104
R439 1R
C441 103
C447 474
C446 474
C445 474
C444 105
C443 474
C442 474
R451 100K
R450 100K
R449 100K
R448 100K
R447 100K
R446 100K
R457 2.7K
R456 2.7K
R455 2.7K
R454 2.7K
R453 2.7K
R452 2.7K
R463 1R
R462 1R
R461 1R
R460 1R
R459 1R
R458 1R
R470 1R
R469 1R
R468 1R
R467 1R
R465 1R
R464 1R
C453 103
C452 103
C451 103
C450 103
C449 103
C448 103
C465 103
C464 103
C463 103
C462 103
C461 103
C460 103
C471 103
C470 103
C469 103
C468 103
C467 103
C466 103
C459 103
C458 103
C457 103
C456 103
C455 103
C454 103
XC100F
XC100E
XC100D
XC100C
XC100B
XC100A
WPI2
SR
SL
CEN
SW
FR
FL


AUXR
AUXL
RO
LO
Y3
Y2
Y1
Y4
Y5
Y6
VSYNC
VDATA3
HSYNC
SPDIF
TC850
10u/16V
TC851
10u/16V
R501 47K
R502 47K
C501 102
C502 102
L501 FBSMT
L502 FBSMT
XC101A AUX-IN
L509 FBSMT
L510 FBSMT
C515 102
C516 102
XC101B MIX-OUT
L503 1.8uH
L504 1.8uH
L505 1.8uH
L506 1.8uH
L507 1.8uH
L508 1.8uH
R503 75R
R504 75R
R505 75R
R506 75R
R507 75R
R508 75R
C503 47P
C504 47P
C505 47P
C506 47P
C507 47P
C508 47P
C509 47P
C510 47P
C511 47P
C512 47P
C513 47P
C514 47P
VD501 MMBD4148SE
VD502 MMBD4148SE
VD503 MMBD4148SE
VD504 MMBD4148SE
VD505 MMBD4148SE
VD506 MMBD4148SE
VCC
V-COMP
VIDEO_C
VIDEO_Y
VIDIO Y1
VIDIO U
VIDIO V
L511 FBSMT
L512 FBSMT
L513 FBSMT
L514 FBSMT
L515 FBSMT
L516 FBSMT
C517 20P
C518 20P
C519 20P
C520 20P
C521 20P
C522 20P
XC102 DASW-02
XC103A AV4
Y(Green)
Cb/Pb(Blue)
XC103B AV4
Cr/Pr(Red)
V-COMP(Yellow)
+12V
R520 200R
R514 200R
R513 1K
R509 2.2K
R510 2.2K
R512 2.2K
V501 8050
V502 8050
V503 8050
V504 8050
VD507 MMBD4148SE
VD509 6.8V
R515 150R
R516 150R
C529 104
C530 104
C523 20P
C524 20P
C525 20P
C526 20P
C527 20P
C528 20P
XC104 CS-111
VD508 MMBD4148SE
R517 220R
R518 100K
C532 101
C531 104
R519 68R
C533 474
XC105B AVG-2 O
XC105A AVG-2 O
GND

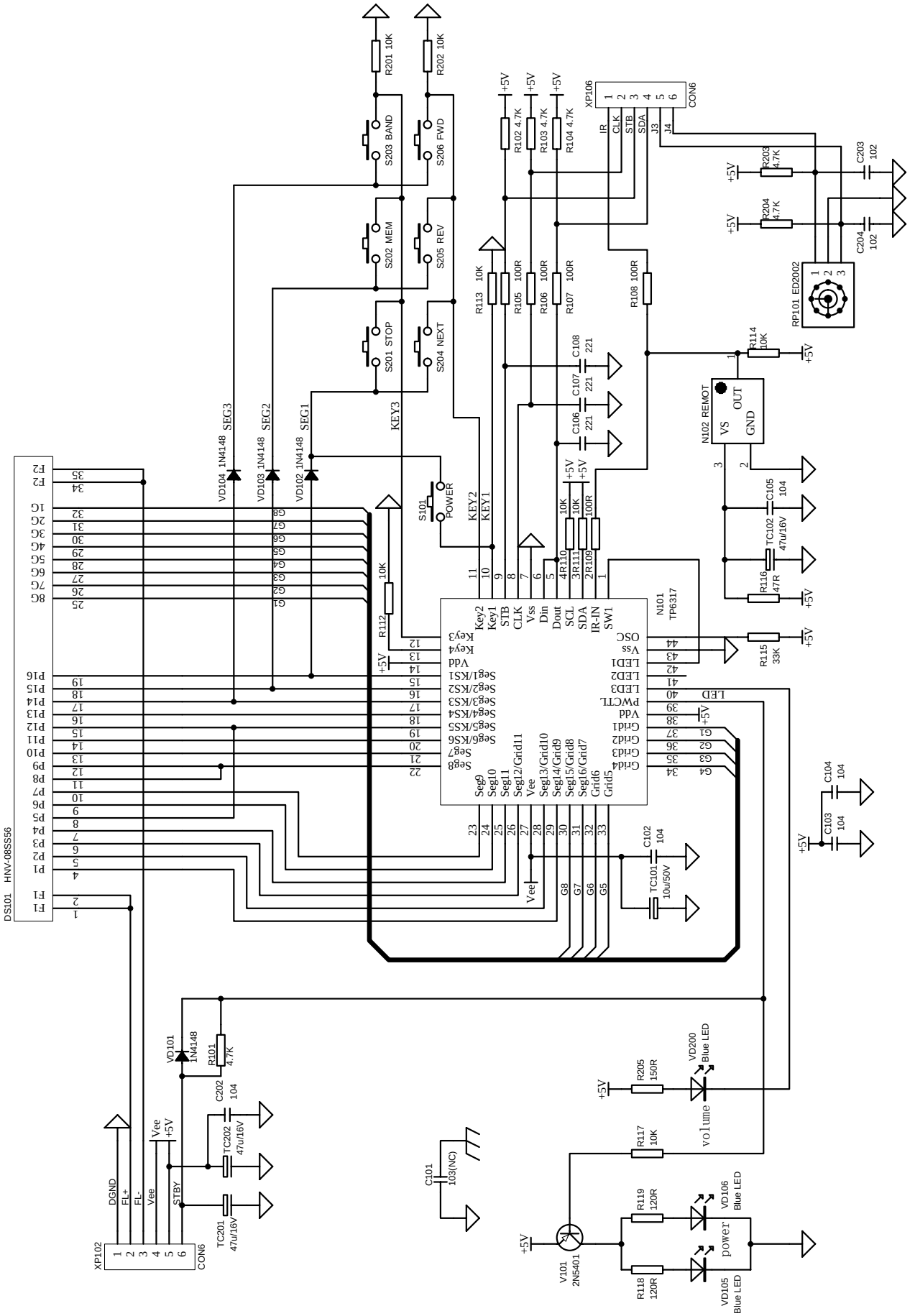
8.2 Power Board (@5DK1510SI-1)



8.3 OK Board(6DK1510SI-1)



8.4 Main Panel Board(4DK1510SI-1)



Chapter Nine BOM List

DVD HOME THEATER DK1513SI(RU)SILVER

POWER AMPLIFIER BOARD: 2DK1510SI-1 4940972 Ver2.05			
MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0090001	SMD RESISTOR	1/16W 0Ω±5% 0603	R336,R432,R483
0090272	SMD RESISTOR	1/16W 1Ω±5% 0603	R481
0090002	SMD RESISTOR	1/16W 2.2Ω ±5% 0603	R480
0090616	SMD RESISTOR	1/16W 3.3Ω±5% 0603	R482
0090106	SMD RESISTOR	1/16W 4.7Ω±5% 0603	L124,R106,R107
0090232	SMD RESISTOR	1/16W 150Ω±5% 0603	R515,R516
0090239	SMD RESISTOR	1/16W 200Ω±5% 0603	R514,R520
0090014	SMD RESISTOR	1/16W 1K±5% 0603	R513
0090023	SMD RESISTOR	1/16W 10K±5% 0603	R430,R433,R434,R435,R437,R438
0090034	SMD RESISTOR	1/16W 100K±5% 0603	R431,R446~R451
0090324	SMD RESISTOR	1/16W 0Ω±5% 0402	R105,R134~R140,R175,R176,R178,R419,R420,R421,R424~R427,L143,L144
0090445	SMD RESISTOR	1/16W 1Ω±5% 0402	R114
0090314	SMD RESISTOR	1/16W 5.1Ω±5% 0603	R314
0090326	SMD RESISTOR	1/16W 10Ω±5% 0402	R418,R422,R423
0090330	SMD RESISTOR	1/16W 33Ω±5% 0402	R149~R156,R179~R185,R194,R337,R338,R339,R408~R417
0090336	SMD RESISTOR	1/1675Ω±5% 0402	R148,R503~R508
0090335	SMD RESISTOR	1/1668Ω±5% 0402	R519
0090339	SMD RESISTOR	1/16W 100Ω±5% 0402	R126~R129,R161,R190~R193,L105,L106,R517,C532
0090345	SMD RESISTOR	1/16W 200Ω±5% 0402	R331~R334,R401,R402
0090350	SMD RESISTOR	1/16330Ω±5% 0402	R212,R213
0090355	SMD RESISTOR	1/16W 510Ω±5% 0402	R157,R246
0090362	SMD RESISTOR	1/16W 1K±5% 0402	R160,R167,R208~R211,R241,R304,R472
0090369	SMD RESISTOR	1/16W 2.2K±5% 0402	R301,R302,R509,R510,R512

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0090377	SMD RESISTOR	1/16W 4.7K±5% 0402	R158,R159,R170~R173,R189,R202~R205,R240,R305~R309,R312,R313,R321,R322,R404,R405
0090378	SMD RESISTOR	1/16W 5.1K±5% 0402	R130
0090381	SMD RESISTOR	1/1639Ω±5% 0402	R200,R201
0090385	SMD RESISTOR	1/16W 10K±5% 0402	R103,R104,R108,R109,R115,R116,R117,R132,R141,R162,R163,R165,R166,R168,R169,R242,R247,R310,R311,R317,R327~R330,R340,R249
0090387	SMD RESISTOR	1/1612K±5% 0402	R133
0090389	SMD RESISTOR	1/1615K±5% 0402	R142,R145
0090390	SMD RESISTOR	1/16W 18K±5% 0402	R403
0090391	SMD RESISTOR	1/16W 20K±5% 0402	R131,R428,R188
0090394	SMD RESISTOR	1/16W 27K±5% 0402	R143,R144
0090395	SMD RESISTOR	1/16W 30K±5% 0402	R206,R207,R248,R303
0090400	SMD RESISTOR	1/16W 47K±5% 0402	R501,R502
0090408	SMD RESISTOR	1/16W 100K±5% 0402	R100,R101,R102,R146,R164,R214,R215,R245,R518
0090412	SMD RESISTOR	1/16W 150K±5% 0402	R112,R113
0090420	SMD RESISTOR	1/16W 300K±5% 0402	R244
0090429	SMD RESISTOR	1/16W 680K±5% 0402	R110,R111
0090430	SMD RESISTOR	1/16W750K±5% 0402	R147
0090147	SMD RESISTOR	1/10W 1Ω±5% 0805	R436,R439,R458~R465,R467~R471
0090040	SMD RESISTOR	1/10W 15Ω±5% 0805	R429
0090053	SMD RESISTOR	1/10W 2.7K±5% 0805	R452~R457
0310415	SMD CAPACITOR	50V 20P±5% NPO 0402	C138,C517~C528
0310420	SMD CAPACITOR	50V 33P±5% NPO 0402	C100,C101
0310424	SMD CAPACITOR	50V 47P±5% NPO 0402	C186,C187,C188,C191,C192,C193,C503~C514
0310432	SMD CAPACITOR	50V 101±5% NPO 0402	C143,C204,C205,C301,C306,C307,C412~C417
0310721	SMD CAPACITOR	50V 331±5% NPO 0402	C131,C132
0310392	SMD CAPACITOR	50V 102±10% 7R 0402	C111,C139,C202,C203,C312,C501,C502,C515,C516

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0310843	SMD CAPACITOR	25V 122±10% 7R 0402	C200,C201
0310394	SMD CAPACITOR	50V 222±10% 7R 0402	C109,C110
0310728	SMD CAPACITOR	25V 103±20% 7R 0402	C404,C406,C424
0310454	SMD CAPACITOR	16V 153±10% 7R 0402	C129
0310570	SMD CAPACITOR	16V 333±10% 7R 0402	C136
0310482	SMD CAPACITOR	16V 473±10% 7R 0402	C140,C141
0310737	SMD CAPACITOR	16V 104±10% 7R 0402	C125,C102~C108,C112~C118,C126~C128,C130,C133~C135,C137,C144~C148,C150~C171,C173~C184,C189,C190,C304,C305,C308~C311,C313,C400~C403,C405,C407,C408,C409,C411,C418,C419,C530,C531
0310072	SMD CAPACITOR	50V 103±10% 7R 0603	C420,C439,C441,C448~C471
0310207	SMD CAPACITOR	50V 104 ±20% 7R 0603	C302,C303,C422,C425~C429,C438,C440,C472,C480,C529
0310362	SMD CAPACITOR	16V474 +80%-20% Y5V 0603	C142,C533
0310234	SMD CAPACITOR	16V 105 +80%-20% Y5V 0603	C119~C123,C172
0310033	SMD CAPACITOR	50V 103±10% 7R 0805	C430~C435
0310169	SMD CAPACITOR	50V 105 +80%-20% 0805	C421,C423
0390095	SMD MAGNETIC BEADS	FCM1608K-221T05	L121~L123,L126~L134,L136,L137,L311
0390453	SMD MAGNETIC BEADS	GZ1005D221T 0402	L100,L102,L103,L107~L119,L146~L152,L306~L309,L310,L312,L313,L501,L502,L509~L516
0390096	SMD INDUCTOR	1.8UH±10% 1608	L503~L508
0390355	SMD INDUCTOR	4.7UH±10% 1608	L135,L301,L302
0390170	SMD INDUCTOR	10UH±10% 1608	L101,L104,L125
0700007	SMD DIODE	14148	D201,VD200~VD204,VD301,VD302,VD403
0700056	SMD DOUBLE DIODE	MMBD4148SE SO23	VD501~VD508
0780085	SMD TRIODE	8050D	V501~V504
0780062	SMD TRIODE	9014C	V302
0780198	SMD TRIODE	2S1015	V200,V201,V206,V401,V402,V403,V405
0780197	SMD TRIODE	C1815	V109,V202,V203,V404

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0780040	SMD TRIODE	3904(100-300) SO23	V100
0780115	SMD TRIODE	2SB1132	V103,V104
0780193	SMD TRIODE	2S3018	V101,V102
0882644	IC	MT1389FE/HD(HD EDITION) QFP	U100
0882802	IC	5888S HSOP	U101
0881079	IC	24C04 SOP	U104
0881226	IC	RC4558D SOP	U200,U301
0882953	IC	4641632UC60 TSOP	U103
0883532	IC	HY57V641620FTP-7 SOP	U103
0881693	IC	TL 74HC4052D SOP	U302
0882353	IC	C5340 TSSOP	U303
0883753	IC	TAS5086DBT TSSOP	U401
0883752	IC	TAS5176 HTSSOP	U402
0883754	IC	TAS5186DDV HTSSOP	U402
1940094	CABLE SOCKET	24P 0.5mm SMD SUBMIT MEET WITH CLASP	XS101
1634543	PCB	2 1510SI-1 FR4 D1.2 PX	

DVD HOME THEATER DK1513SI(RU)SILVER

POWER AMPLIFIER BOARD: 2DK1510SI-1 4940972 Ver2.05			
MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
00000029	CARBON FILM RESISTOR	1/61Ω±5% BELT	R118~R125
00000169	CARBON FILM RESISTOR	1/6470Ω±5% BELT	R442
00004189	CARBON FILM RESISTOR	1/61.8K±5% BELT	R440,R441,R443,R444,R445
02101659	METAL POLYESTER FILM CAPACITOR	CL23X 63V 474±5% 5 BELT	C442,C443,C445,C446,C447
0210083	METAL POLYESTER FILM CAPACITOR	CL21X 63V 105±5% 7.5	C444
02601279	CD	CD11 16V4.7U±20%5×11 C2.5 BELT	TC308,TC309,TC310,TC311
02607799	CD	C11C 16V10U±20%4×7 C2.5 BELT	TC110,TC112,TC117,TC301,TC302,TC303,TC850,TC851

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
02607879	CD	C11C 16V47U±20%5×7 C2.5 BELT	TC104~TC109,TC111,TC115,TC116,TC119,TC120,TC123,TC200~TC203,TC304~TC307,TC312
02602549	CD	C11C 10V100U±20%6×5 2.5 BELT	TC100~TC102,TC113,TC208
02602229	CD	C11C 10V220U±20%6×7 2.5 BELT	TC103,TC114,TC118,TC121,TC207,TC313,TC400
02608259	CD	CD11T 25V10U±10%5×11 C2.5 BELT	TC402
02600049	CD	C11 25V220U±20% 8×12 C5 BELT	TC401
02608689	CD	CD288H 50V47U±20％6.3×11 C5 BELT	TC403~TC406,TC409~TC414
0260231	CD	CD11 25V2200U±20%13×25 5	TC407,TC408
07803199	TRIODE	SS8550 TO-92 BELT	V105~V108,V301
03900579	MAGNETIC BEADS INDUCTOR	RH354708 BELT	L120,L145,L153,L154,L305,L401
05700049	DIODE	1N4004 BELT	VD100,VD101,VD103,VD401,VD402
05800459	VOLTAGE REGULATOR DIODE	6.8V±5% 1/2W BELT	VD509
0410176	VERTICAL SCREEN SHIELD FILTERING INDUCTOR	10uH±10% 4A 5mm	L404
0410242	VERTICAL SCREEN SHIELD FILTERING INDUCTOR	22uH ±20% 7A 5mm	L402,L403,L405,L406,L407
0960020	CRYSTAL OSCILLATOR	27.00MHz 49-S	X100
1940022	SOCKET	4P 2.0mm	XS401
1940024	SOCKET	5P 2.0mm	XS103
1940005	SOCKET	6P 2.0mm	XS102,XS106
1940008	SOCKET	8P2.0mm	XS105
1940033	CABLE SOCKET	11P 1.25mm DUAL RANK STRAIGHT INSERT	XS301
1940023	SOCKET	7P 2.0mm	XP107（PLUG IN PIN 1 TO 1）
1990019	EXTERNAL SOURCES SOCKET	WP12-11	XC100
1910158	TERMINAL SOCKET	4-8.4-13	XC101
1910194	TERMINAL SOCKET	4-8.4-13/PB-08B	XC103
1090077	ELECTRO-OPTIC TRANSFORMER	1792	XC105
1090098	ELECTRO-OPTIC TRANSFORMER	HK179A	XC105

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
1910159	TERMINAL SOCKET	CS TERMINAL D02	XC102
1860064	SCART SOCKET	SC107	XC104
3580265	HEAT RADIATION BOARD	40×10×20 1513SI(RU)	POWER AMPLIFY IC U402
5233174	RUBBER SPACER	9×9×1 SINGLE-FACED WITH GLUE IN REAR SIDE,CENTER HOLE φ3	POSITION OF POWER AMPLIFY IC SCREW
4000452	SELF-TAPPING SCREW	PWT 3×6×7H WHITE NICKEL	ASSEMBLE HEAT RADIATION

DVD HOME THEATER DK1513SI(RU)SILVER

POWER BOARD @5DK1510SI-1 4940973 1.4/Ver2.04			
MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
2100003	CONNETION CORDS	Φ0.6 SHAPED 7.5mm	JP1,JP2
2100006	CONNETION CORDS	Φ0.6 SHAPED 12.5mm	JP5,JP6
2100007	CONNETION CORDS	Φ0.6 SHAPEN 15mm	JP3,JP4
2100004	CONNETION CORDS	Φ0.6 SHAPED 10mm	JP7,JP9
2100010	CONNETION CORDS	Φ0.6 SHAPED 5mm	JP8
00001699	CARBON FILM RESISTOR	1/447Ω±5% BELT	R504
00004209	CARBON FILM RESISTOR	1/647Ω±5% BELT	R505
00001819	CARBON FILM RESISTOR	1/4220Ω±5% BELT	R522
00000119	CARBON FILM RESISTOR	1/6220Ω±5% BELT	R527,R533
00000139	CARBON FILM RESISTOR	1/6330Ω±5% BELT	R532
00001989	CARBON FILM RESISTOR	1/41.5K±5% BELT	R544,R517
00002089	CARBON FILM RESISTOR	1/44.7K±5% BELT	R506
00000229	CARBON FILM RESISTOR	1/61K±5% BELT	R521,R535,R542,R545
00000259	CARBON FILM RESISTOR	1/61.5K±5% BELT	R507
00000349	CARBON FILM RESISTOR	1/64.7K±5% BELT	R513,R537,R543
00000409	CARBON FILM RESISTOR	1/610K±5% BELT	R516,R526,R534,R536
00000479	CARBON FILM RESISTOR	1/624K±5% BELT	R514
00002579	CARBON FILM RESISTOR	1/41MΩ±5% BELT	R510

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0010234	METAL FILM RESISTOR	1/6W 560Ω±1%	R528
0010254	METAL FILM RESISTOR	1/62.7K±1%	R519,R548
00100569	METAL FILM RESISTOR	1/42.2K±1% BELT	R523
00101299	METAL FILM RESISTOR	1/64.7K±1% BELT	R524,R525,R529,R530,R531
00100099	METAL FILM RESISTOR	1/610K±1% BELT	R518
00000489	CARBON FILM RESISTOR	1/627K±5% BELT	R547
00102289	METAL OXIDE FILM RESISTOR	1/41Ω±5% BELT	R549
0010233	METAL OXIDE FILM RESISTOR	1/247Ω±5% SHAPED 12.5	R539
0010370	RY	1/2430Ω±5% SHAPED 12.5	R538
0010279	METAL OXIDE FILM RESISTOR	1680K±5% SHAPED 15	R501
0010395	RY	3W0.33Ω±5% SHAPED VERTICAL7.5	R508
0010275	METAL OXIDE FILM RESISTOR	133Ω±5% SHAPED VERTICAL 7.5	R511
0010288	METAL OXIDE FILM RESISTOR	1W 100Ω±5% SHAPED VERTICAL 7.5	R520
0010147	METAL OXIDE FILM RESISTOR	247K±5% SHAPED FLAT 15×7	R502
0010281	METAL OXIDE FILM RESISTOR	31K±5% SHAPED VERTICAL 7.5	R512
02001059	PORCELAIN CAPACITOR	50V 100P ±10% 5mm BELT	C503
02001239	PORCELAIN CAPACITOR	50V 102±10% 5mm BELT	C512,C513,C514,C515
02001329	PORCELAIN CAPACITOR	50V 103±20% 5mm BELT	C517
02001389	PORCELAIN CAPACITOR	50V 104±20% 5mm BELT	C504
0200240	PORCELAIN CAPACITOR	500V 102±20% 5mm	C506,C507,C508,C509,C510,C516
0200228	PORCELAIN CAPACITOR	1000V 101 ±10% 7.5mm	C502
0210254	CBB	CBB13X 1000V 103 J 10	C501
02100229	TERYLENE CAPACITOR	100V 223±5% 5mm BELT	C505,C520
02101489	TERYLENE CAPACITOR	100V 473±10% SHAPED 5mm BELT	C511
0210204	ANTI-JAMMING CAPACITOR	@MKP61 2 275VAC 104M 15 UL	XC501,XC502
0200353	CERAMIC CAPACITOR	@Y1 400VAC 102±10% 10mm UL	YC500

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0260584	CD	LT 400V100U±20%22×30 10	TC501
02606859	CD	C11T 16V100u±20%6×12 C5 BELT	TC517,TC510
02607359	CD	C11T 16V47U±20%5×11 C5 BELT	TC518
02606849	CD	C11T 50V47u±20%6×12 C5 BELT	TC502,TC508
02607139	CD	C11T 16V220U±20%6×12 C5 BELT	TC505,TC513
02607149	CD	C11T 25V100U±20%6×12 C5 BELT	TC516
02606879	CD	C11T 10V1000u±20%8×16 C5 BELT	TC512
0260661	CD	CD288H 16V2200U±20%13×20 5	TC511
0010368	RY	3100Ω±5% SHAPED VERTICAL 7.5	R515
0260663	CD	CD11K 35V220U±20% 8×12 3.5	TC514,TC515
0260723	CD	CD288H 25V1000U±20% 10×20 5	TC507
0260677	CD	CD11K 50V2200U±20% 16×30 7.5	TC503,TC506
0390154	MAGNETIC BEADS INDUCTOR	R357508	L503
0390340	VERTICAL INDUCTOR	10uH±10% 5A 12.5×26.5 10mm	L504
0410011	CHOKE COIL	VERTICAL 10UH 2A 5mm	L507,L505, L506
1000045	FILTER OF POWER NET	@U20 30mH+∞-0% UL	L501,L502
0460683	SWITCH POWER TRANSFORMER	@BCK-40-0433 100W @VDE	T501
0460687	SWITCH POWER TRANSFORMER	@KB1249-9747 100W @SJ	T501
07800329	TRIODE	9014C BELT	V502,V507,V509,V501
07803199	TRIODE	SS8550 TO-92 BELT	V503,V514
07800259	TRIODE	25401 BELT	V510
0780138	TRIODE	8050D	V505,V508
0780164	TRIODE	2882-P	V504,V506
05700059	DIODE	1N4007 BELT	D501,D502,D503,D504
05700069	DIODE	1N4148 BELT	D507,D508,D515
0570013	DIODE	HER105	D506,D510,D512,D513,D514

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0570042	DIODE	HER207 SHAPED 12.5mm	D505
0570018	DIODE	HER303 SHAPED R 17.5×8mm	D511
0570083	DIODE	ER803 TO-220AC	D509
05800069	VOLTAGE REGULATOR DIODE	5.1V±5% 1/2W BELT	ZD503
05800339	VOLTAGE REGULATOR DIODE	5.6V±5% 1/2W BELT	ZD501
0580022	VOLTAGE REGULATOR DIODE	12V±5% 1W	ZD502
05800489	VOLTAGE REGULATOR DIODE	22V±5% 1/2W BELT	ZD504
0790092	FIELD EFFECT TRANSISTOR	FQP560C TO-220F	Q501
0790131	FIELD EFFECT TRANSISTOR	CEP20P06 P-CHANNEL TO-220	Q502
0881480	IC	NCP1200P60 DIP	U501
08824629	IC	AZ431AZ-A TO-92 BELT	U503,U504,U505,U506,U507
1030007	PRESS SENSITIVITY RESISTOR	7D 471±10% 5mm	RV501
1050002	HEAT SENSITIVITY RESISTOR	NTC SC104MS±20%	RT501
1080032	PHOTOELECTRIC COUPLER	@HS817 VDE	U502,U508
1940006	SOCKET	6P 2.5mm	XS502
2122800	FLAT CABLE	4P460 2.5/2.0 T2 WITH NEEDLE, TOGETHER DIRECTION 20#CORD	XP504
2122826	FLAT CABLE	8-6/2P390/80 2.5/2.0 T3 WITH NEEDLE, TOGETHER DIRECTION	XP503
1940074	SOCKET	2P 7.92mm	XS501
2300060	FUSE	@2AL 250V 3.6×10 WITH LEAD FEET VDE	F501
3580218	HEAT RADIATION BOARD	24×11×25 9918K	Q501,V506
3580195	HEAT RADIATION BOARD	11×15×25 SINGLE HOLE,NOT OXIDATION	D509,Q502,V504
3870115	GROUND CHIP OF POWER BOAR	903	GND1,GND2
4000453	SELF-TAPPING SCREW	BT 3×8H WHITE NICKEL	D509,Q502,V504,Q501,V506 AND HEAT RADIATION
1565133	PCB	@5 1510SI-1 VO D1.6 SX @UL	

DVD HOME THEATER DK1513SI(RU)SILVER

SURFACE CONTROL BOARD: 4DK1510SI-1	4940974	Ver2.03

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
2100010	CONNETION CORDS	Φ0.6 SHAPED 5mm	JP1,JP2,JP3,JP11~JP14
2100003	CONNETION CORDS	Φ0.6 SHAPED 7.5mm	JP4~JP7
2100004	CONNETION CORDS	Φ0.6 SHAPED 10mm	JP8,JP9,JP15,JP16
0570006	DIODE	1N4148	VD101~VD104
0780025	TRIODE	25401	V101
0000133	CARBON FILM RESISTOR	1/6W4.7K±5% SHAPED 7.5	R101~R104,R203,R204
0000137	CARBON FILM RESISTOR	1/6W10K±5% SHAPED 7.5	R110~R114,R117,R201,R202
0000142	CARBON FILM RESISTOR	1/6W33K±5% SHAPED 7.5	R115
0000556	CARBON FILM RESISTOR	1/6W47Ω±5% SHAPED 7.5	R116
0000122	CARBON FILM RESISTOR	1/6W100Ω±5% SHAPED 7.5	R105~R109
0000488	CARBON FILM RESISTOR	1/6W220Ω±5% SHAPED 7.5	R118,R119
0010335	METAL OXIDE FILM RESISTOR	1/4W 0.47Ω±5% SHAPED 10	R206
0260076	CD	CD11C 50V22U±20%6×7 2.5	TC101
0260780	CD	CD11C 10V47U±20%4×7 C2.5	TC102,TC201,TC202
0200138	PORCELAIN CAPACITOR	50V 104±20% 5mm	C102~C105,C202
0200108	PORCELAIN CAPACITOR	50V 221±5% 5mm	C106~C108
0200123	PORCELAIN CAPACITOR	50V 102±10% 5mm	C203,C204
0620025	LIGHT-EMITTING DIODE	3R 4SD RED	VD105,VD106
1340064	LIGHT TOUCH RESTORE SWITCH	KFC-06-2WB L3.8	S101,S201~S206
0160227	DIGITAL POTENTIOMETER	ED200120-A20-100-G77	RP101
2360021	IR SENSOR	138BV3	N102
0882414	IC	TP6317 LQFP44	N101
1200653	IAY SCREEN	HL-D593	DS101
5236518	SOFT ONGE ACER	14×10×6.5 DOUBLE-FACED,HARD(50 DEGREE)	2PCS FOR DISPLAY SCREEN/SURFACE CONTROL BOARD
5236982	SOFT SPONGE SPACER	7 ×6×10 DOUBLE-FACED,HARD	1PCS FOR IR SENSOR/SURFACE CONTROL BOARD

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
2122803	FLAT CABLE	6P180 2.0 T2 WITH NEEDLE, TOGETHER DIRECTION SEPARATE CORD	XP106
2122802	FLAT CABLE	6P90 2.5/2.0 T2 WITH NEEDLE, TOGETHER DIRECTION SEPARATE CORD	XP102
1565136	PCB	4 1510SI-1 HB D1.6 SX	

DVD HOME THEATER DK1513SI(RU)SILVER

REMOTE CONTROL 5471769			
MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0310048	SMD CAPACITOR	50V 151±5% NPO 0603	C802,C803
0630009	EMISSION PIPE	TSAL4400	LED801
0700007	SMD DIODE	14148	D801~D803
0700001	SMD DIODE	LS4148	D801~D803
0700002	SMD DIODE	LL4148	D801~D803
0780130	SMD TRIODE	STC3265	Q801
0970003	CERAMIC RESONATOR	455E	X801
0090272	SMD RESISTOR	1/16W 1Ω±5% 0603	R801
0880220	IC	P2222 SOP	U801
0882379	IC	S0102B SOP	U801
4000038	SELF-TAPPING SCREW	PB 2.3×6 COLOR ZINC	FOR CONNECTING UPPER AND LOWER COVER
1564324	PCB	8516SI-3	
3031876	SURFACE CASING O REMOTE CONTROL	RC026-06R BLACK	
3051319	BATTERY CASE DOOR OF REMOTE CONTROL	026 BLACK 2#	
3041399	BOTTOM CASING OF REMOTE CONTROL	026 BLACK 2#	
3051273	GLASS OF REMOTE CONTROLLER	026 MING PURPLE	
3850124	ANODE SPRING	RC026	
3850125	CATHODE SPRING	RC026	
3850126	ANODE/CATHODE SPRING	RC026	

4631052	CONDUCT GLUE OF REMOTE CONTROL	RC026-01R 4#	
MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
5070070	PLASTIC BAG	85×250	

DVD HOME THEATER DK1513SI(RU)SILVER

MICROPHONE HOLDER BOARD 6DK1510SI-1 4940975 Ver2.01			
MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0260824	CD	CD11 16V10U±20%5×11 C2.5	TC100
0000140	CARBON FILM RESISTOR	1/6W22K±5% SHAPED 7.5	R104,R105
2100003	CONNETION CORDS	Φ0.6 SHAPED 7.5mm	R100,R101
2100004	CONNETION CORDS	Φ0.6 SHAPED 10mm	L100,L101
0000142	CARBON FILM RESISTOR	1/6W33K±5% SHAPED 7.5	R102,R103
0200227	PORCELAIN CAPACITOR	50V 104±10% 5mm	C102
0200131	PORCELAIN CAPACITOR	50V 103±10% 5mm	C103
200033	PORCELAIN CAPACITOR	50V 22P±10% NPO 5mm	C100,C101
1940001	SOCKET	2P 2.5mm	XS100
03900579	MAGNETIC BEADS INDUCTOR	RH354708 BELT	L102
3870115	GROUND CHIP OF POWER BOAR	903	GND1
1860047	USB SOCKET	CAB85-4Pin	JK1
1980030	MICROPHONE SOCKET	C3-6.35-19	MIC1,MIC2
2150360	FLAT CABLE	7-6P280 2.0 T2 3PB WITH NEEDLE, TOGETHER DIRECTION, 6CORD	XS105
1565134	PCB	6 1510SI-1 HB D1.6 SX	