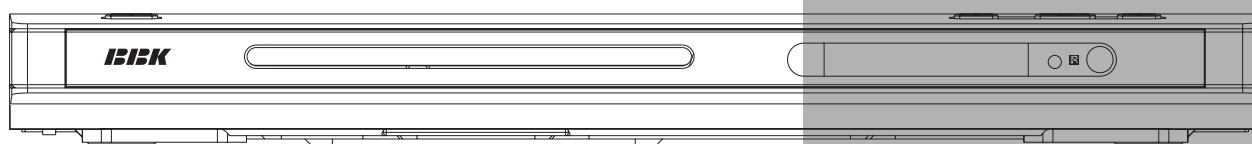


IBBK

DV815X(RU)

Service Manual



Model version:SI2.20 SI2.30

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Caution :

This Service Manual is only applicable to DV815X(RU) SI2.20,SI2.30.

The upgrading part is as follows:

- 1.Modify the material.
- 2.Software upgrading of player.
- 3.For other things that not be mentioned, please refer to BOM.

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-scale integrated 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 be 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 ($\geq 100\text{MHz}$)
- ◆ TV set
- ◆ SMD rework station
- ◆ Multimeter
- ◆ Soldering iron
- ◆ Pointed-nose pincers
- ◆ Cutting nippers
- ◆ Forceps
- ◆ Electric screw driver
- ◆ Terminal 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

#Digital audio playback: DVD-Audio(only for DV828X.) CD(CD-DA)and HDCD compatibility

#Fully compatible with compressed audio files such as MP3,WMA and OGG Vorbis formats

#Playback of DVD, VCD, CD+G Karaoke discs

#Digital graphic albums playback: Kodak picture CD, JPEG compatibility

Karaoke

#KARAOKE MIX system

#3000 tracks multiplex karaoke discs playback, most of the discs have background singer voice

#Competition mode with scoring system

#Track sort by filename, artist and genre

#Ability to create the list of Favourite tracks

#Creating and editing the list of the tracks during singing

#Random playback mode

#Applause effect

#Volume and echo level adjustment

Album with track list

Audio

#Coaxial and optical outputs for Dolby Digital/DTS/LPCM digital audio

#Analog multi-channel 5.1CH audio output(For all models except DV812X, DV823X.)

#Mixed audio output for amplifier and TV connection

#Digital multi-channel decoders, providing Dolby Digital/DTS(For all models except DV812X, DV823X.) audio stream playing

#Built-in Dolby Pro LogicII decoder makes available to convert stereo signal into multi-channel(For all models except DV812X, DV823X.)

#Two MIC inputs for karaoke function

Video

#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

#Capable of playing NTSC/PAL discs written in NTSC system

#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/DVD+RW

#USB interface to connect MP3 player, flash card or digital camera

#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 position after stop playback

#"Q-Play" function provides direct playback and allows to skip commercial impossible to rewind

#"Virtual Keyboard" function provides more convenient DVD playback control

#"Browser" function provides easy access to playback control

#Automatic Screensaver function

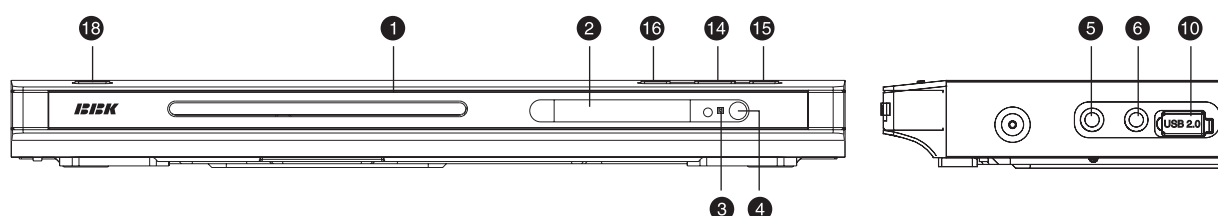
#Parental control function to protect children from watching inappropriate discs

#Super wide range of operating power supplies (~110-250v, 50/60 Hz), automatic short circuit protection

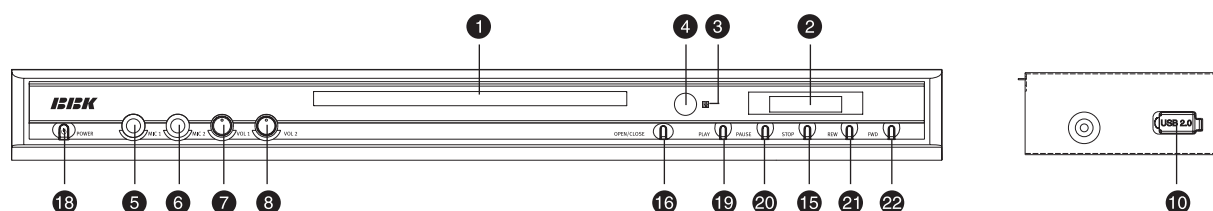
2.2 Controls and functions

2.2.1 Front and side panels control

For DV812X



For DV823X and DV826X

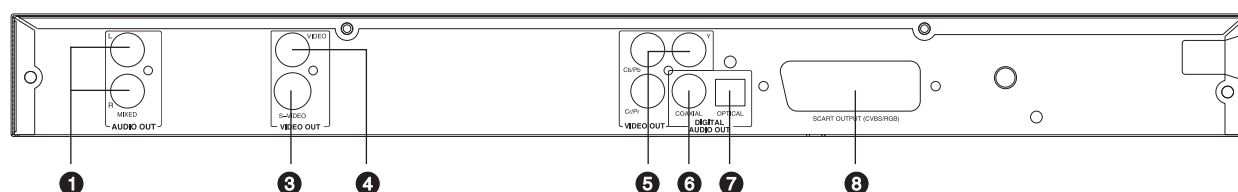


- | | |
|---------------------------------------|---|
| ① Disc tray | ⑪ Clear button
Press to cancel last input number/action |
| ② LED-display | ⑫ NEXT button
Press to playback from the following point |
| ③ The indicator of operating mode | ⑬ PREV button
Press to playback from the previous point |
| ④ Sensor of infrared beams | ⑭ PLAY/PAUSE button
Press to playback/pause |
| ⑤ Microphone input1 | ⑮ STOP button
Press to stop the playback |
| ⑥ Microphone input2 | |
| ⑦ Volume adjuster1 | |
| ⑧ Volume adjuster2 | |
| ⑨ Button for opening the safety panel | |
| ⑩ USB port | |

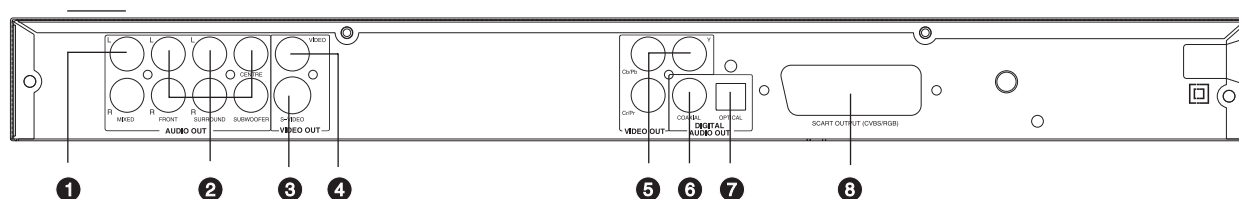
- 16 OPEN/CLOSE button
Press to stop the playback
- 17 Numeric buttons
Press to set the number of track/karaoke-song
- 18 POWER button(Press to switch ON/OFF the device)
- 19 PLAY button(Press to playback)
- 20 PAUSE button(Press to pause)
- 21 REW button(Press to fast reverse)
- 22 FWD button(Press to fast forward)

2.2.2 Rear Panel general view

For DV823X and DV812X

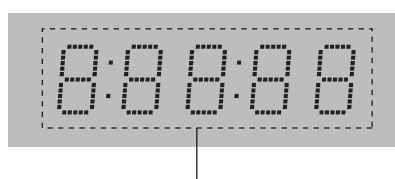


For DV826X and DV815X



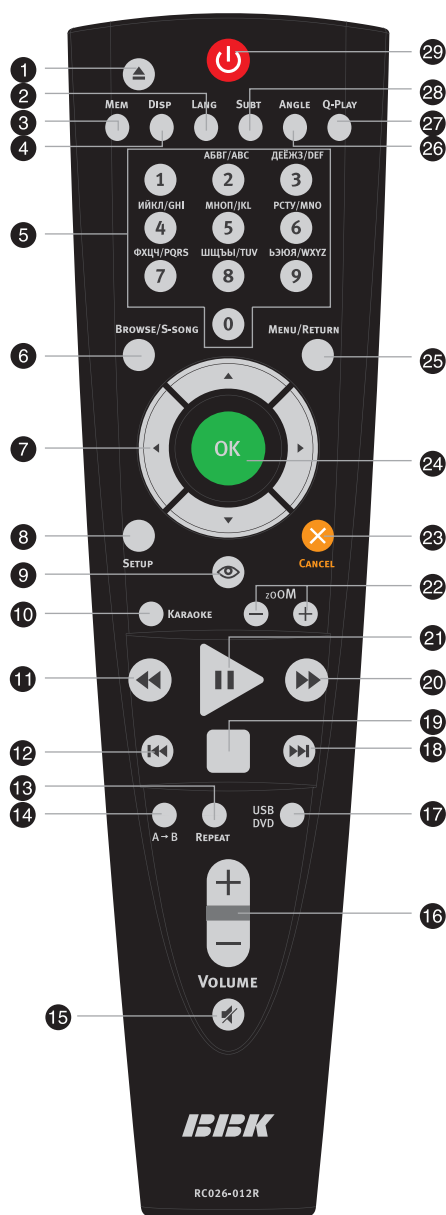
- 1 Stereophonic audio output
- 2 Socket of audio output 5.1CH
- 3 Socket of video output S-Video
- 4 Socket of composite video output
- 5 Socket of component video output Y Cb (Pb) Cr (Pr)
- 6 Socket of coaxial digital audio output
- 7 Socket of optical digital output
- 8 SCART socket

2.2.3 LED display general view



Playback time

2.2.4 Remote Control general view



- 25 **MENU/RETURN button**
DVD-disc menu/PBC function/return to the previous menu item.
- 26 **ANGLE button**
Press to change camera angle/change of a mode of reproduction of files Mp3 and JPEG formats.
- 27 **Q-PLAY button**
Press to turn the Q-Play mode on.
- 28 **SUBT button**
Press to change the subtitles language
- 29 **Button**
Press to switch the device on/into standby.

- 1 **Button**
Press to open / close the disc tray.
- 2 **LANG Button**
Press to change the 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 **BROWSER/S-SONG button**
Press to turn on/off the browser function or to turn on/off the list of songs.
- 7 **Cursor buttons(UP/DOWN/LEFT/RIGHT)**
- 8 **SETUP button**
Press to switch to setup mode.
- 9 **Button**
Press to turn on/off the Virtual Keyboard function.
- 10 **KARAOKE button**
Press to set karaoke function.
- 11 **Button**
Press to reverse scanning.
- 12 **Button**
Press to playback from the previous point.
- 13 **REPEAT button**
Press to repeat playback.
- 14 **A-B buttons**
Press to repeat the selected portion.
- 15 **Button**
Press to turn on/off the sound.
- 16 **VOLUME+/-button**
Press to adjust the volume.
- 17 **DVD/USB button**
Press to switch DVD/USB mode.
- 18 **Button**
Press to playback from the following point.
- 19 **Button**
Press to stop playback.
- 20 **Button**
Press to forward scanning.
- 21 **Button**
Press to play/pause the playback.
- 22 **ZOOM+/-button**
Press to zoom in/out the image.
- 23 **CANCEL button**
Press to go one level/cancel current operation.
- 24 **OK button**

2.3 Set list

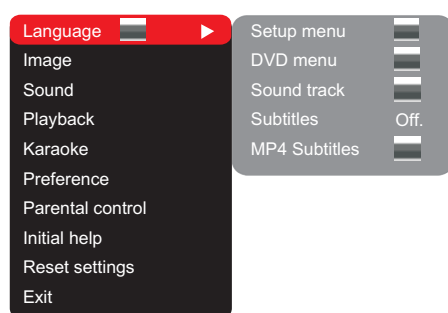
DVD player.....	1PCS
Audio cord	1PCS
Video cord	1PCS
Remote control	1PCS
Battery AAA	2PCS
Microphone	2PCS
Microphone cable	2PCS
Warranty card	1PCS
User's manual	1PCS
Album with track list	1PCS

2.4 FUNCTION SETTINGS

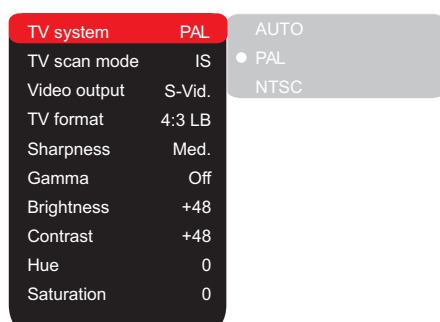
2.4.1 Function selection and change

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

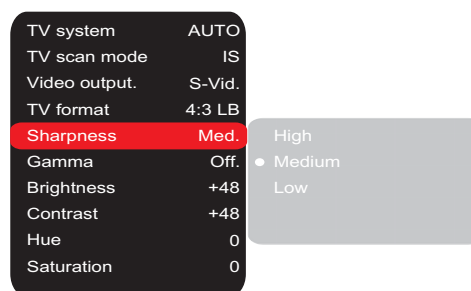
Select the desired menu item using the UP and DOWN buttons; press OK for confirmation.



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



- Using the Up and Down buttons, select the desired item and press OK.
For example, select the Sharpness item.
Settings will appear on the screen. Then select the desired sharpness level and press OK for confirmation.
- Press LEFT key of the UP and DOWN buttons for exit to previous menu level.
- Press SETUP to exit setup menu.



2.4.2 Language settings

1. menu: interface language setup

#Options: Russian, English, Ukrainian, Romanian.

#Default option: English.

2. DVD menu: selection of disc menu language

3. Soundtrack: selection of translation language
#Options: Russian, English, Estonian, Latvian, Kazakh, Romanian, Belarusian, Ukrainian, Chinese.

#Default: English.

#Selection of other languages: select the OTHERS item using the UP and DOWN buttons 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. DVD Subtitles: selection of DVD subtitles language

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

#Default option: Off.

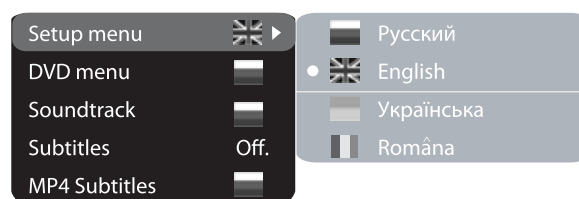
#Selection of other languages: select the OTHERS item using the UP and DOWN buttons and press OK. Enter the language code using numeric buttons and press OK.

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

5. MP4 subtitles: selection of MP4 subtitles language

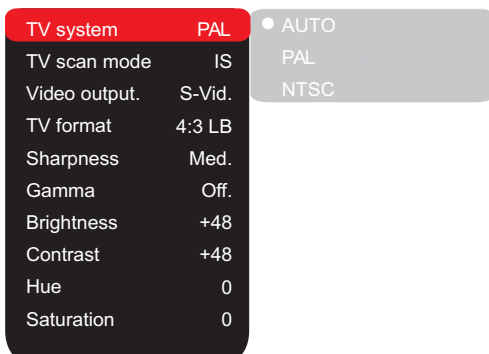
#Options: Russian, English, Ukrainian, Romanian.

#Default option: English.



2.4.3 Image settings menu

1. TV system: TV system selection
#Options: Auto, PAL, NTSC.
#Default option: PAL.
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. Video output: selection of video signal
#Options: S-Video, Comp, SCART.
#Default option: Comp.
4. TV Format: image ratio settings
#Options 4:3 Pan&scan, 4:3 letterbox and 16:9 TV.
#Default option: LB.
#Some discs are recorded with support of only one ratio. The selected ratio must comply with the TV screen.
5. Sharpness: image sharpness adjustment
#Options: High, Medium, Low.
#Default option: Low.

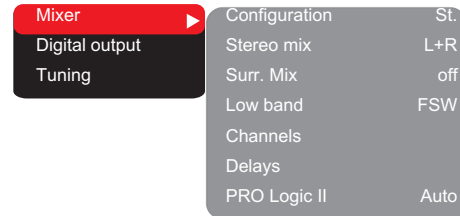


6. Gamma :adjustment of image color temperature
#Options: High, Medium, Low, Off.
#Default option: Off.
 7. Brightness: adjustment of image brightness
 8. Contrast: adjustment of image contrast.
 9. Hues: adjustment of image hues.
 10. Saturation: adjustment of image saturation
- Adjustment of image brightness, contrast, hues and saturation:
#Select the desired item of the image adjustment section using the Up and Down buttons. Press OK or RIGHT key to start adjusting the relevant option.
#Change the option value using the Up and Down buttons.

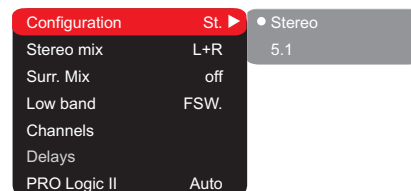
#Upon completion press the LEFT key of the UP and DOWN buttons to return to image setup menu.

2.4.4 Sound settings menu

1. Mixer

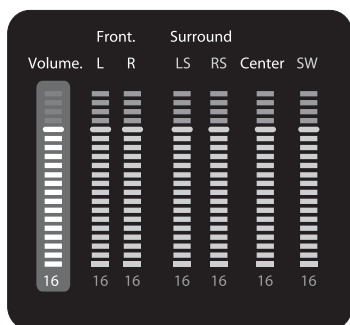


- A). Configuration: setting of the mode for conversion of the 5-channel signal to stereo signal
#Options : Stereo, 5.1.
#Default option: Stereo.
#5.1 mode must be supported by the disc.
Number of music accompaniment channels depends on the specific disc.
#Adjustment of the central speaker and surround 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 options: L+R.
- C. Surr. Mix: set-up of surround options while playing the Stereo disc.
#Options : Off, Virt. Surr.
#Default options: Off.
- 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.
#Adjust the sound volume of each channel using the UP and DOWN buttons.

#Press the OK to return to sound setting menu.

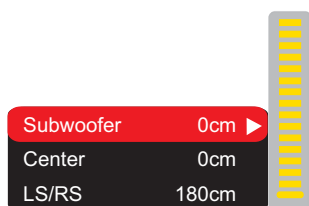


F. Delay of the channel: set-up of signal delay in speaker channels(central, rear and subwoofer).

#Using the UP and Down buttons, select the channel, for which you want to set up the delay, and press OK for confirmation.

#Using the Up and Down buttons set up the desired distance from the listener to each speaker(detailed description of this operation see on page 33).

#Presses LEFT key of the cursor to return to speaker configuration menu.



G. PRO Logic II: function of stereo sound conversion to 5-channel sound.

#Options: On, Off, Auto.

#Default option: Auto.

#In Auto position, the DVD player determines itself, when to use the PRO Logic II 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 options: RAW.

#When you select the RAW option, the not decoded signal is transferred to the DVD player's digital outputs, the decoded signal is transferred to analog outputs. Decoding is performed by the built-in decoder of the DVD player. This feature is meant to ensure that signal decoding at digital outputs is performed by an external device(e.g.an amplifier)

#If you select the PCM option, a PCM coded signal will be transferred to the DVD player's digital outputs.

B. LPCM: set-up of digital audio output options to comply with different amplifiers and receivers.

#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 Up and Down buttons, adjust the max volume level.

#Press the LEFT key of the Up and Down buttons to return to sound correction setup menu.

B. Equalizer: equalizer modes.

#Options: Rock, Pop, Live, Dance, Techno, Classic, Soft.

#Default option: Off.

C. Echo: echo effects.

#Options: Off, Concert, Living room, Hall, Bathroom, Cave, Arena, Church.

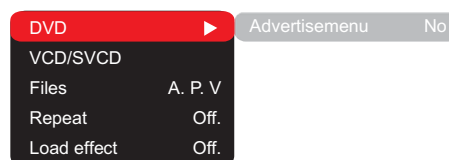
#Default option: Off.

D. Tone balance: adjustment of tone balance level.

#Adjust the tone balance level using the Up and Down buttons.

#Press the LEFT key of the Up and Down buttons to return to sound correction setup 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: PBC 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.

NOTE:

This function is possible failing disc only.

3.Files:selection of reproduced files on the disc

#Options: Audio, Picture, Video.

#Default option: A, P, V

4. Repeat : file repeat mode

#Options: Off, Single, All.

#Default option: Off.

5.Shuffle: shuffle files from the playlist

#Options: Off, On.

#Default option: Off.

6.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

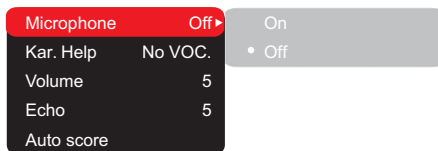
#Options: On, Off.

#Default option: Off.

2. Kar. help: karaoke- disc playback mode

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

#Default option: No vocal mode .

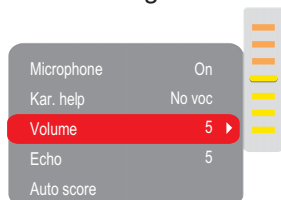


3. Volume:

Microphone: microphone sound volume level.

#Using the UP/DOWN buttons adjust the microphone volume level.

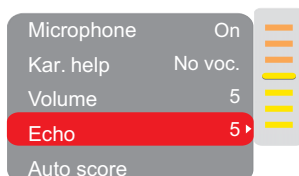
#Press LEFT key of the UP/DOWN buttons to return to karaoke settings menu.



4.Echo: echo level while playing the karaoke disc

#Adjust the echo level Using the UP/DOWN buttons.

#Press LEFT key of the UP/DOWN buttons to return to karaoke settings menu.



2.4.7 Preference settings

1.Gr. Equalizer: spectrum analyzer

#Options: On, Off.

#Default option: Off.

2.Screensaver:screen saver on/off

#Options: On, off.

#Default option: On.

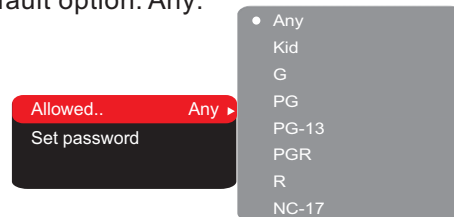


2.4.8 Parental Control

1.Category:setup of age restrictions to prevent children from seeing undesirable discs.

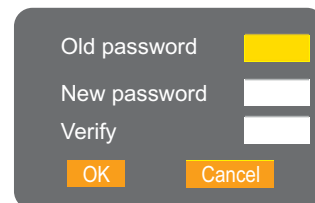
#Options: Any, Kid, G, PG, PG-13, PGR, R, NC-17.

#Default option: Any.



2.Set password: setup of a four-digit password to change the level of age restrictions.

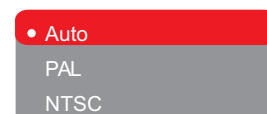
#Default option: 7890.



2.4.9 Initial setup menu

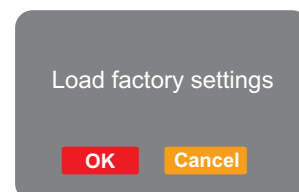
#Press the RIGHT key of the UP/DOWN buttons to enter the initial setup menu, then select the desired item using the buttons Up and Down and press OK key for confirmation.

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



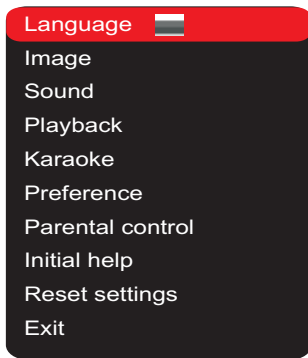
2.4.10 Reset to defaults

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



2.4.11 Exit setting menu

Select the exit item using the Up and Down buttons 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) and3(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.

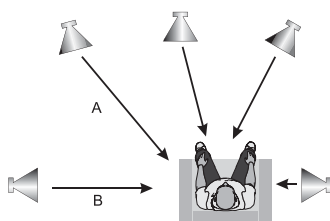


Fig.1.Take into account the A-B distance; use both figures for setting the desired time delay.

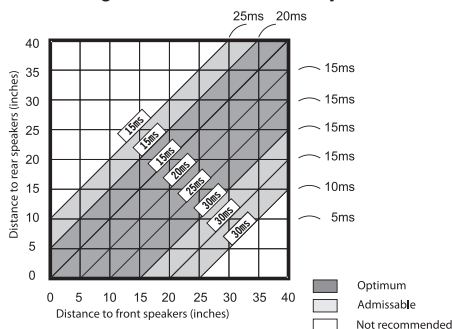


Fig.2.Determine delay value as to Dolby Pro Logic mode

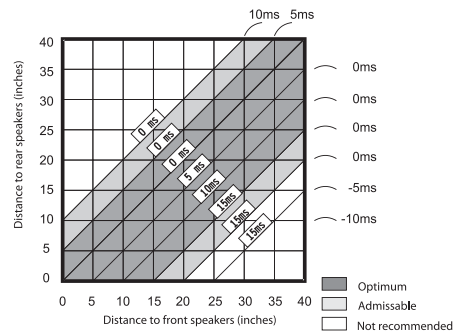


Fig.3.Determine delay value as to Dolby Digital mode.

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 speakers' 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 at 1 ms.

For instance, as shown in Fig.2, if the line C is by 1 foot shorter than the lines R and L, the delay value is to be set at 1 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 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".

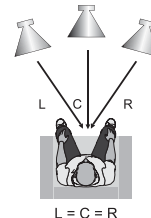


Fig.1.Delay of central channel=0

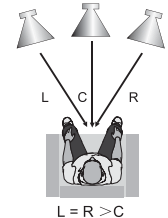


Fig.2.Small area Delay of central channel=L=(or) R-C

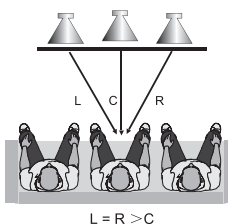
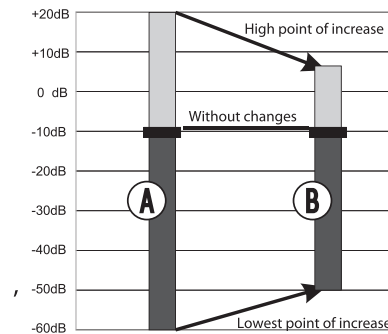


Fig.3.Small area Delay of central channel=0
L=R>C

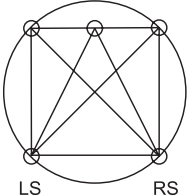
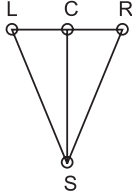
“Night” mode

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 20HZ-20kHz	Mono Channel with limited frequency range(100Hz-7kHz)
Low-frequency channel(subwoofer)	Available,20-120Hz	N/a
Sound field distribution	Multivariate 	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.
	Allows adjusting the decompression degree of sound information("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 existing 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 Specification

	DV812X	DV815X	DV823X	DV826X	DV828X
Disk Tipe	CD-R/CD-RW, DVD-R/DVD-RW, DVD+R/DVD+RW				
Format	DVD-Video, DVD-Audio*, KVD, MPEG-4, SVCD, VCD1.0, VSD1.1, VSD2.0, CD-DA, MP3, OGG				
Input (Microphone In)	2	2	2	2	2
Outputs (Audio)					
5.1 Channel Output	—	1	—	1	1
Line Stereo	1	1	1	1	1
Digital Optical output	1	1	1	1	1
Digital Coaxial output	1	1	1	1	1
Outputs (Video)					
Composite video output	1	1	1	1	1
S-Video	1	1	1	1	1
Composite video output	1	1	1	1	1
Y Cb/Pb Cr/Pr	1	1	1	1	1
RGB/SCART					
USB port	2.0	2.0	2.0	2.0	1.1
Video characteristics	Composite Video Output Amplitude: 1.0Vp-p (75 Ω) S-Video Output Amplitude: Y1.0Vp-p (75 Ω) C:0.286Vp-p (75 Ω) Component Video Output Amplitude Y Cb Cr: 1.0Vp-p (75 Ω), Cb/Cr: 0.7Vp-p (75 Ω)				
Audio characteristics	Frequency range: 20-20000 Hz (±1 dB) SNR: >90 dB Total harmonic distortions <0.01%				
Operatind Temperature	+5 - +35 °C				
Operatind Humiditi	15 - 75%				
Power Suppli	~ 220 V AC, 50/60 Hz				
Dimenaion (mm)	460x100x425	460x100x425	476x160x350	476x160x350	500x163x370
Weight (kg)	3.1	3.2	4.3	4.3	4.2

#We improve quality of our production permanently, that's why specification can change without notification.

#Some disks, was recording in different formats on different data mediums, can't playback or can playback incorrect over peculiarity of their record.

2.6 MISCELLANEOUS

2.6.1 Useful notes

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

#Disconnect the DVD player from the wall outlet after shutdown.

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

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

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

2.6.2 Trouble shooting

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  button.	1. Make proper connection 2. Clean the disc 3. Press the  button.
No image	1. Poor video cable connection. 2. Incorrect settings of your TV set. 3. The DVD player is in the progressive scan mode while your TV set does not support this mode.	1. Make proper connection. 2. Correct the setting of your TV set. 3. Place the DVD players 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 appropriate color system via 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 player's laser head.	1. Insert the disc. 2. Install the disc with the label side facing up. 3. Switch the DVD players on without disc for an 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 players 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 players. 3. Replace both batteries.
Some functions do not work	1. Disc is recorded incorrectly. 2. Incorrect key sequence. 3. Static voltage on the DVD player's housing.	1. Wait 5-10 seconds and the DVD players will automatically return to normal state. 2. Repeat the operation one more time. 3. Switch the DVD players off for 1-2 minutes and then
Unstable image	1. Incorrect TV set settings.	1. Correct the TV set settings.

3.2 BLOCK DIAGRAM FOR PLAYER

Block diagram for DV815X(RU) player is shown in figure 3.2.1.

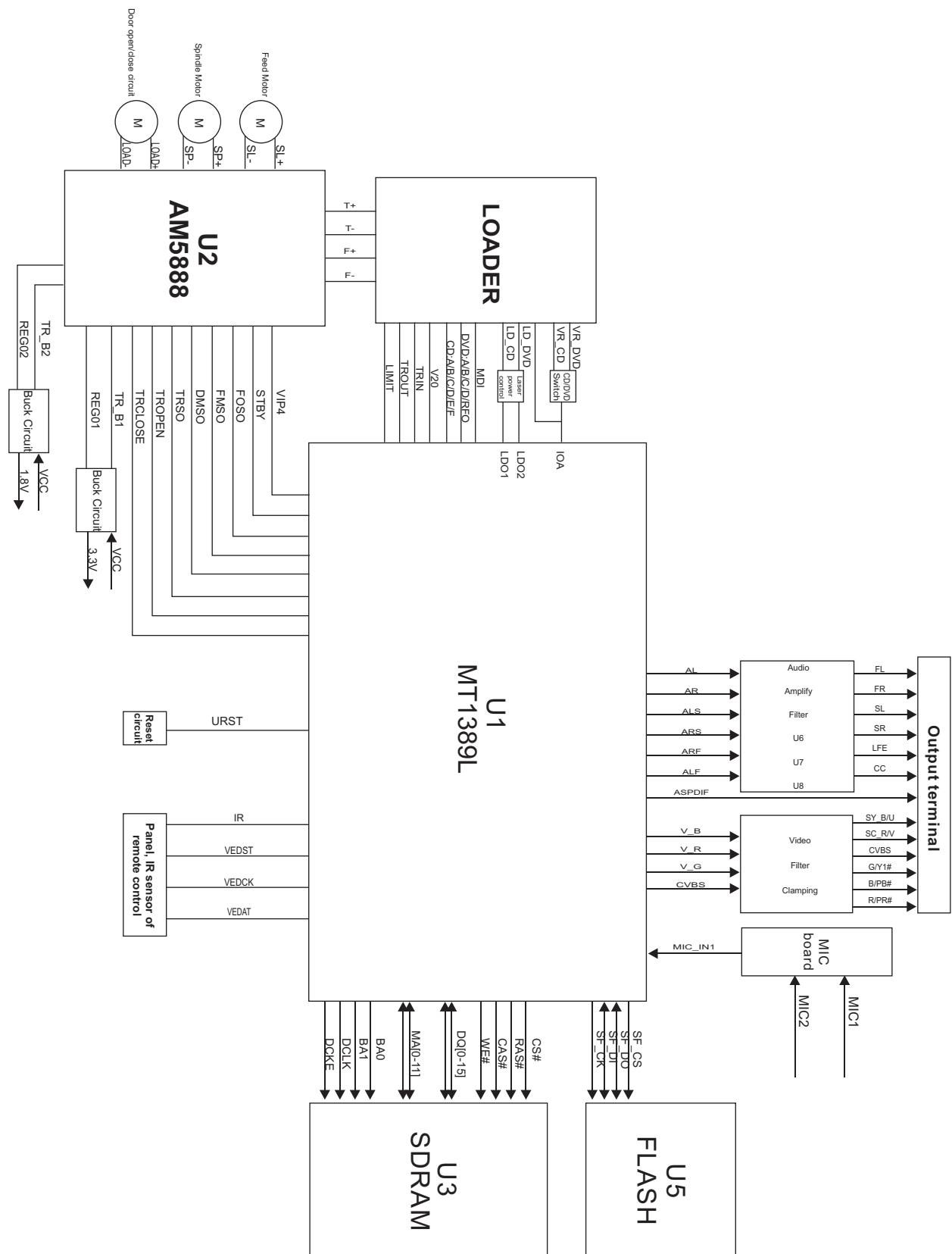


Figure 3.2.1 Block diagram of DV815X(RU)

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.

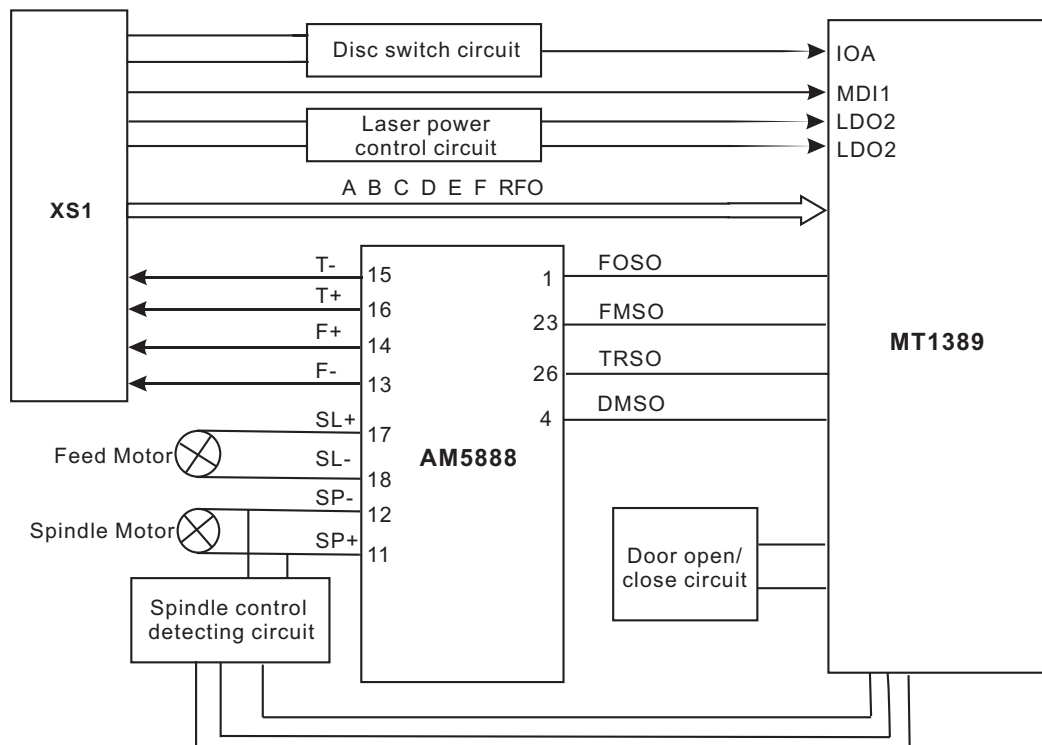


Figure 4.1.1 Block diagram of servo circuit

4.2 Decode Circuit

Decode circuit is mainly composed of MT1389, SDRAM and FLASH. Block diagram of circuit is shown in figure 4.2.1.

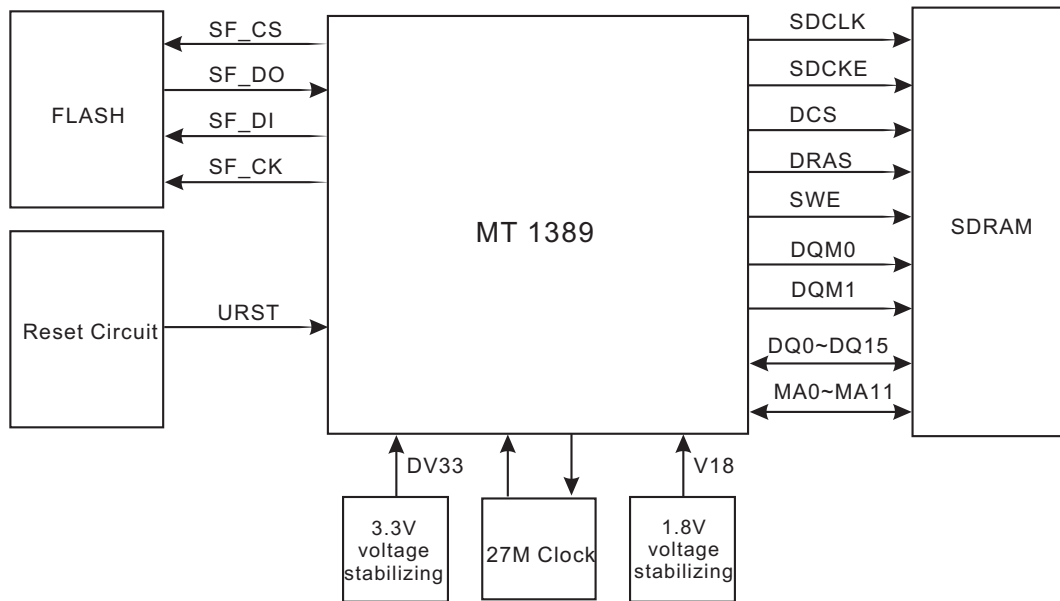


Figure 4.2.1 Block diagram of decode circuit

4.3 Video Circuit

MT1389 has video D/A converter circuit and video output has R/B/G, Y/Pb/Pr, Y/Cb/Cr, CVBS and Y/C output modes, in which R/B/G, Y/Pb/Pr, Y/Cb/Cr and Y/C can not output at the same time and need to be switched via software. CVBS is a separate output mode; four channel video signal is outputted to AV board by MT1389 after video filtering and clamping. Block diagram of video signal process is shown in figure 4.3.1.

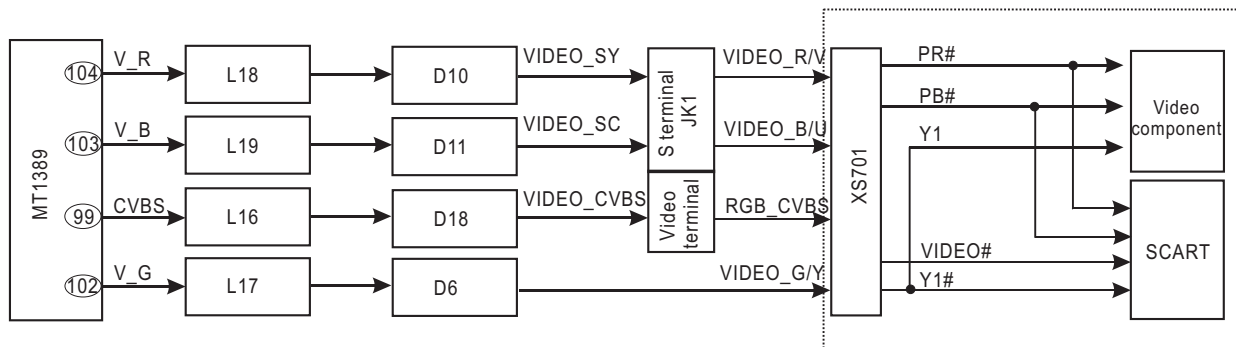


Figure 4.3.1 Block diagram of video signal process

4.4 Audio Circuit

Block diagram for audio circuit is shown in figure 4.4.1:

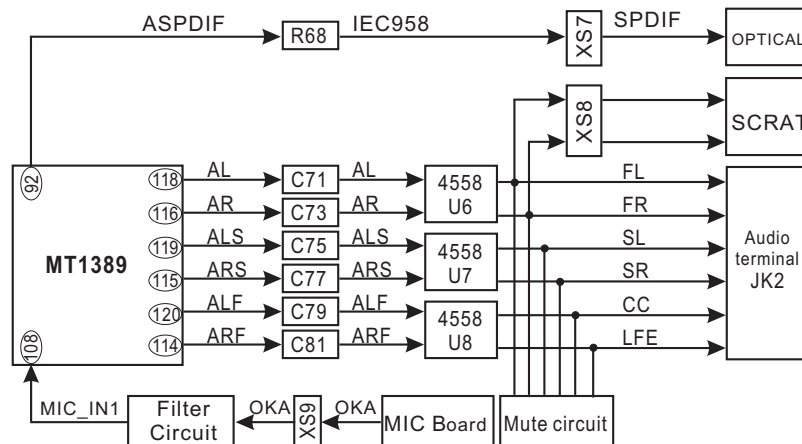


Figure 4.4.1 Block diagram of audio circuit

4.5 Power Circuit

1. Block diagram of power circuit is shown in figure 4.5.1.

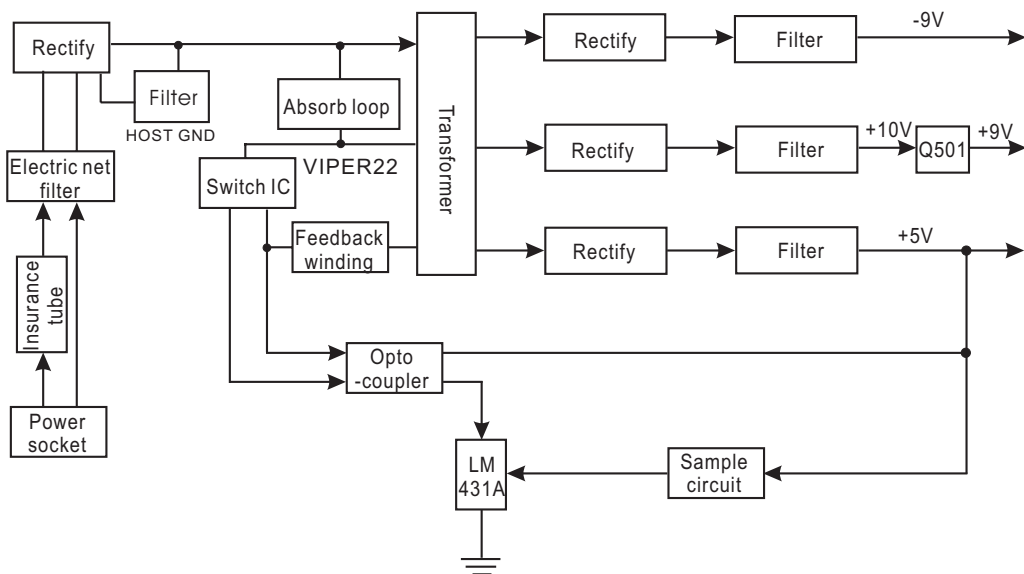
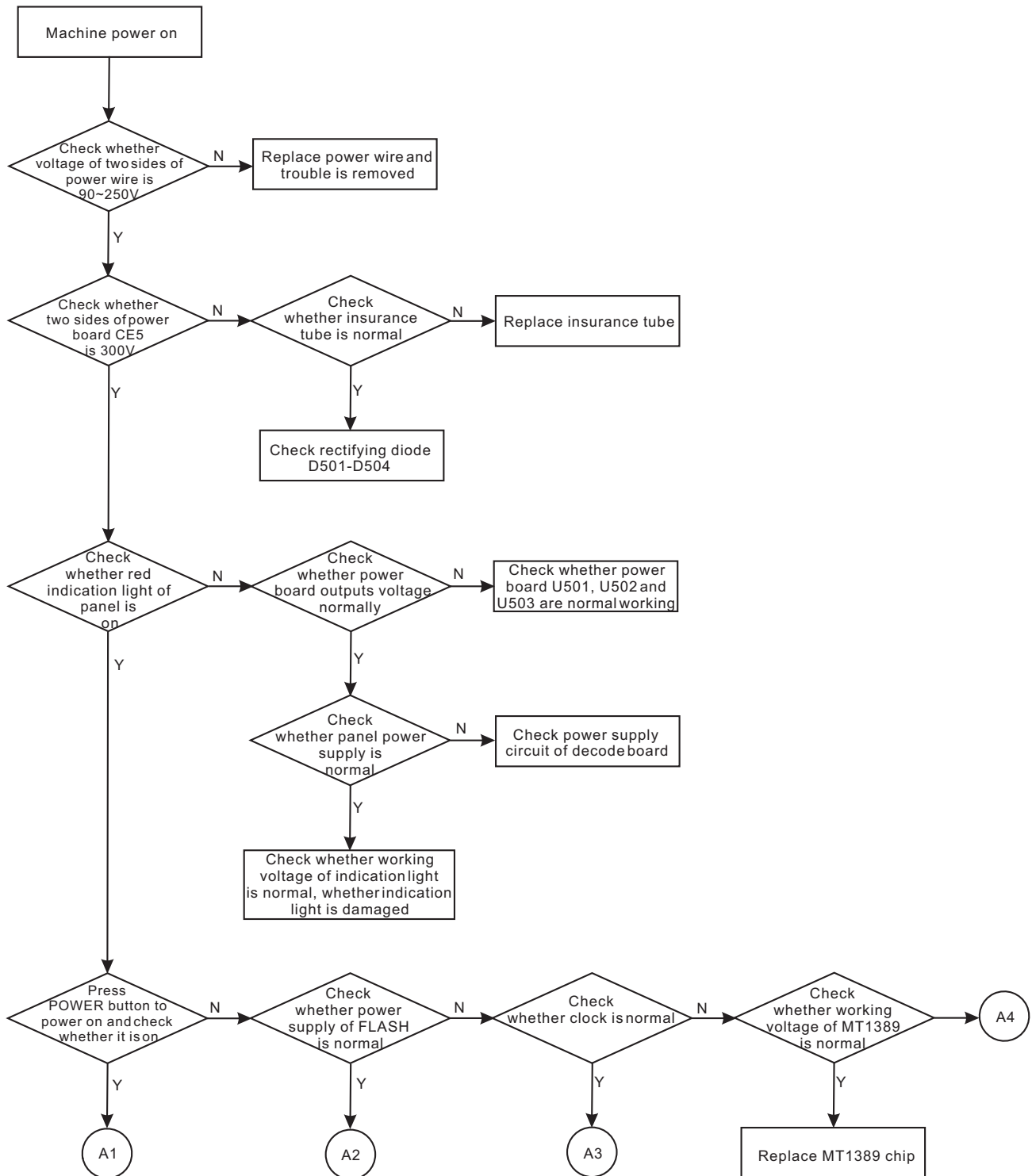
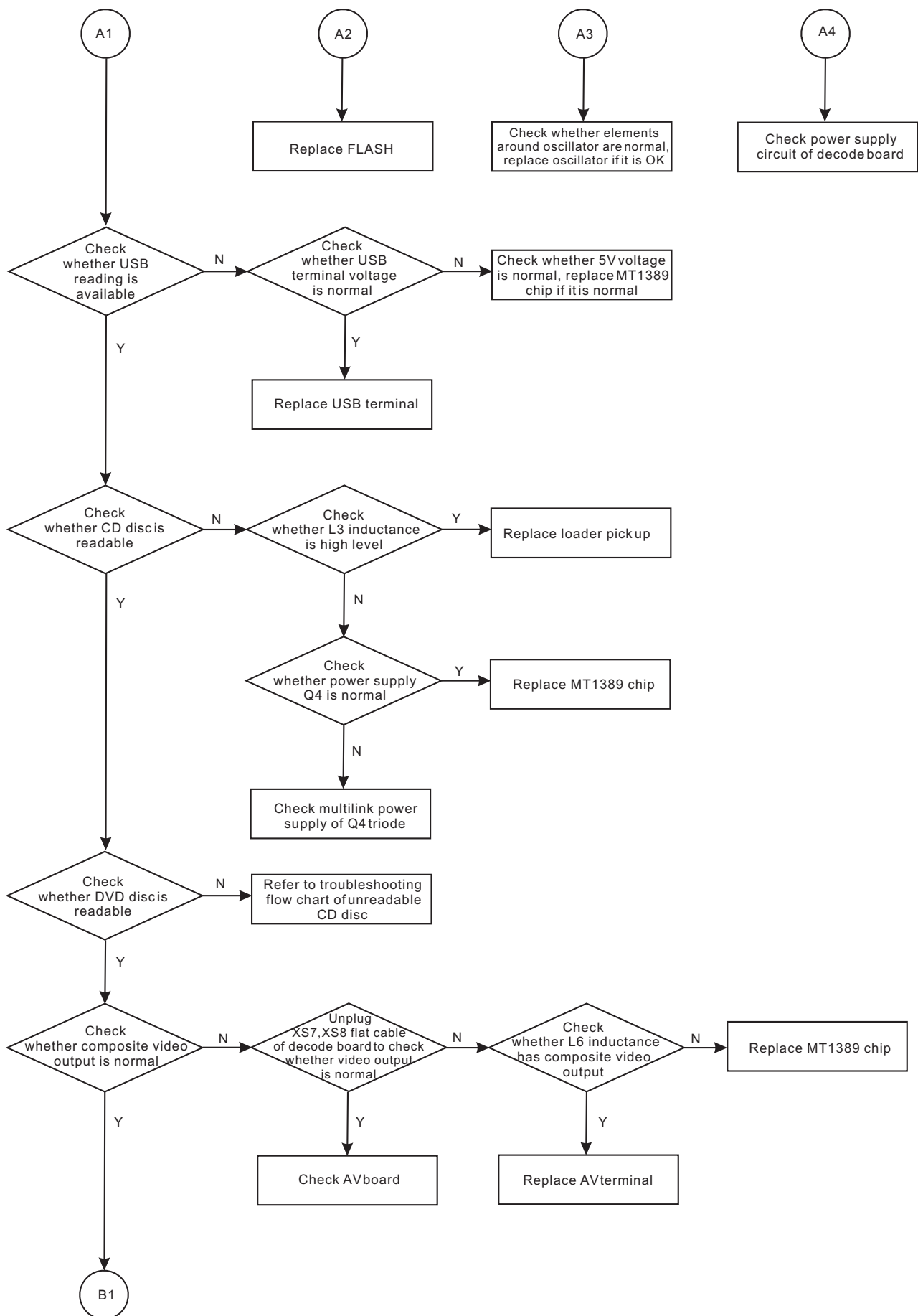
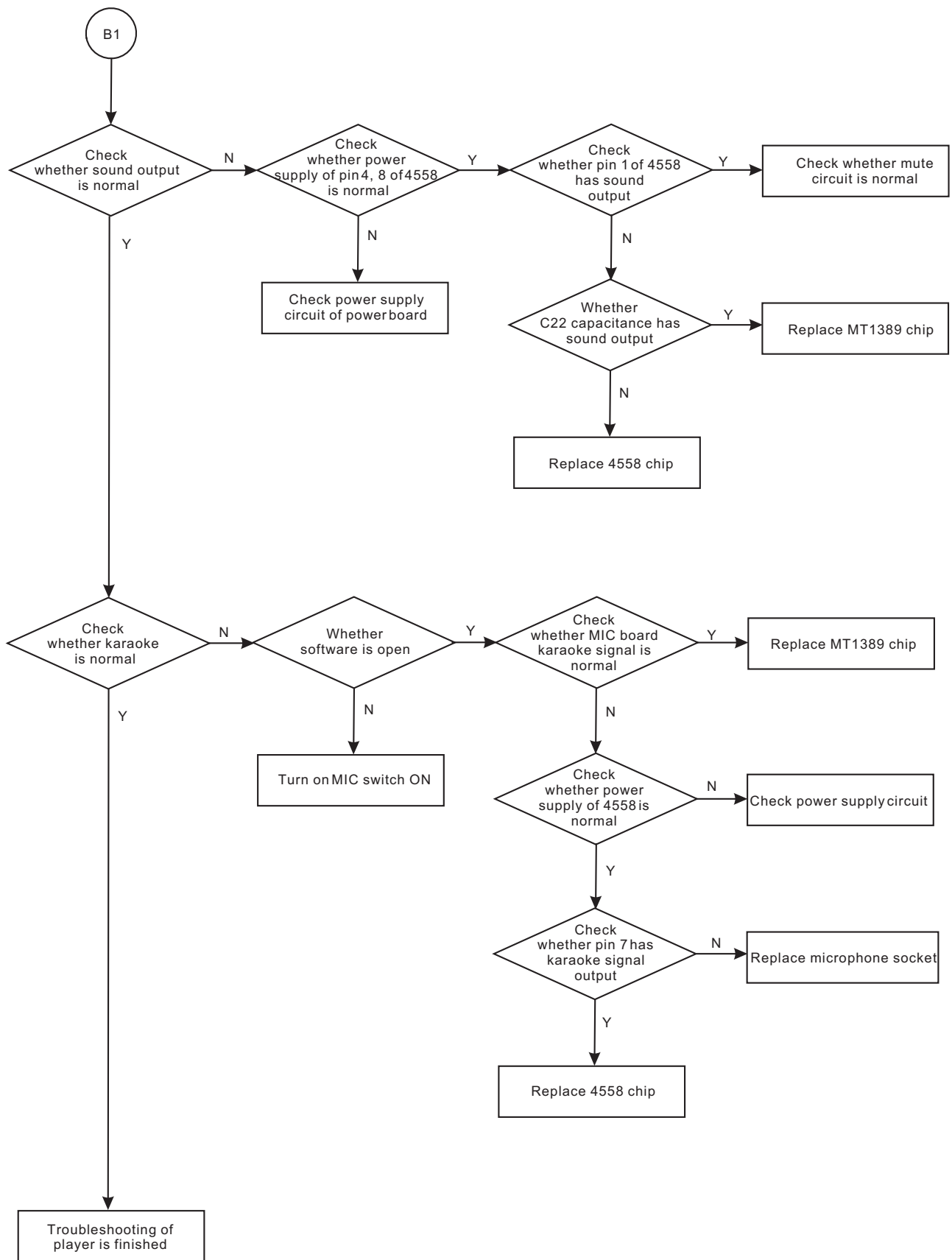


Figure 4.5.1 Block diagram of power circuit

Chapter Five Troubleshooting Flow Chart



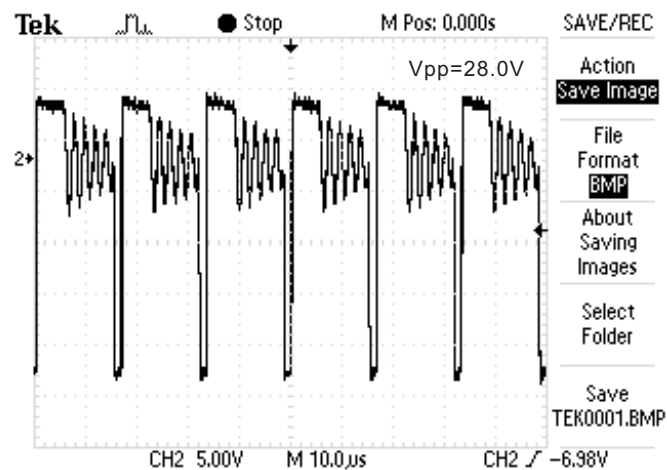




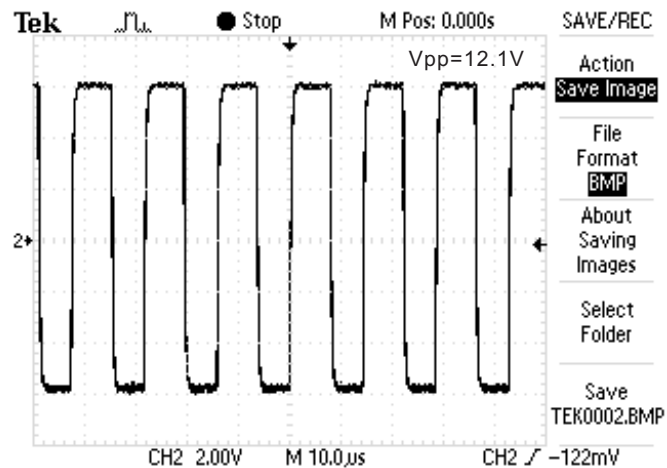
Chapter Six Waveform Diagram

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.

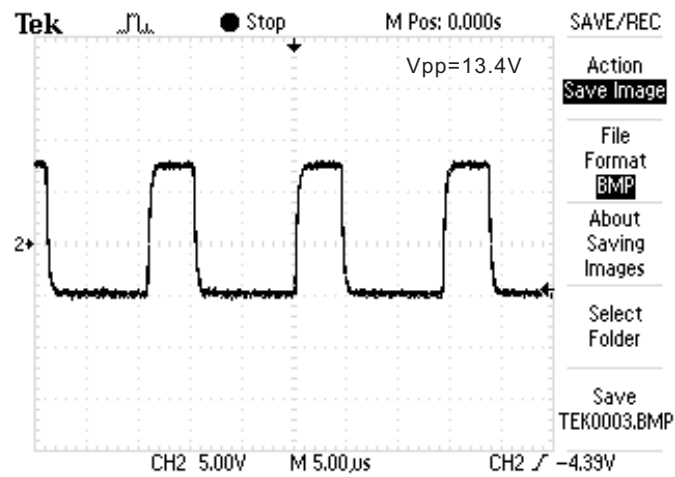
1. Waveform diagram for pulse DC of power board D510 anode.



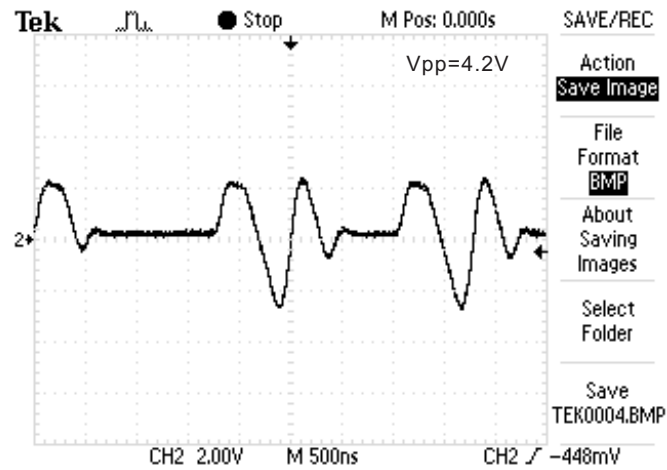
2. Waveform diagram for spindle signal DMO(when spindle has motion).



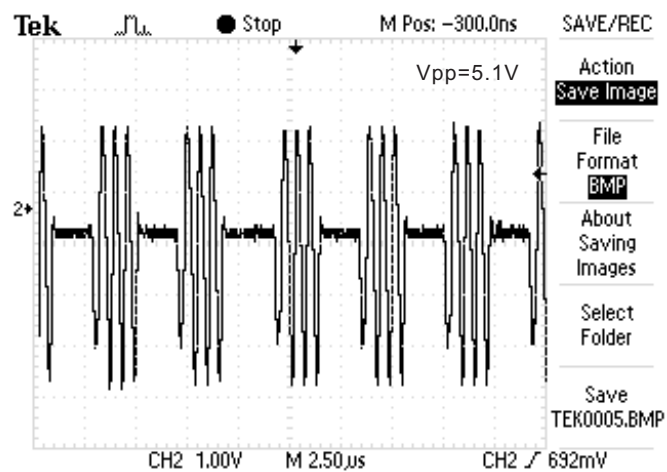
3. Waveform diagram for feed signal FMO(when pick up has feed motion).



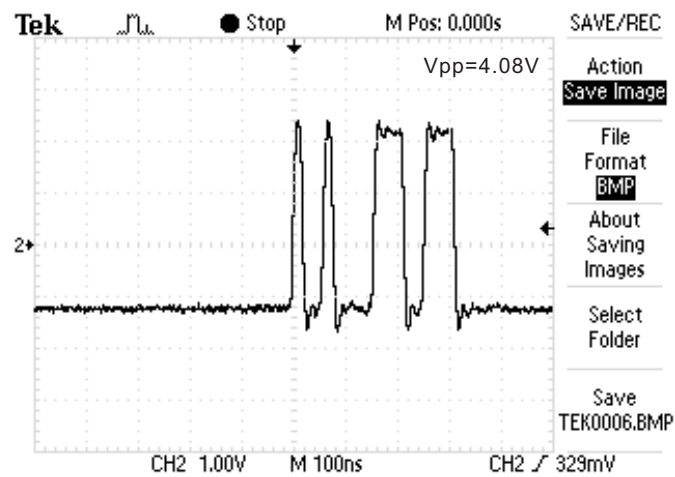
4. Waveform diagram for traction signal TRO(when pick up has traction motion).



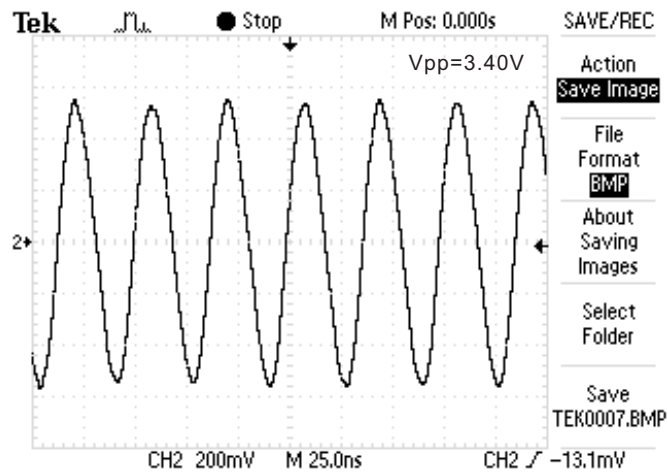
5. Waveform diagram for focus signal FOO(when pick up has focus motion).



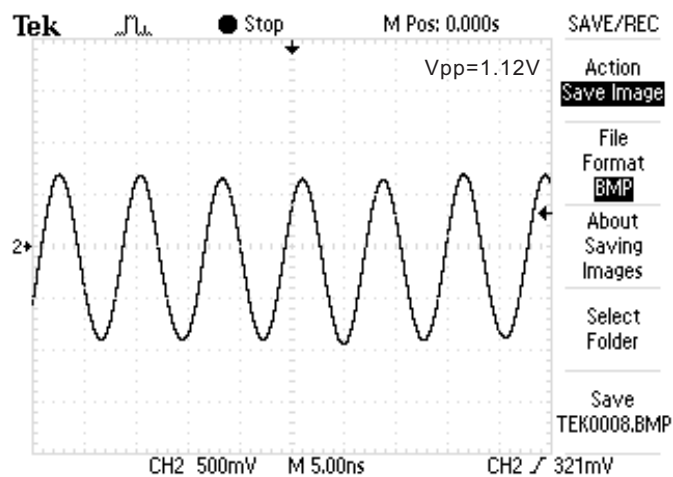
6. Waveform diagram for FLASH chip SF_DI(pin 5 of U5).



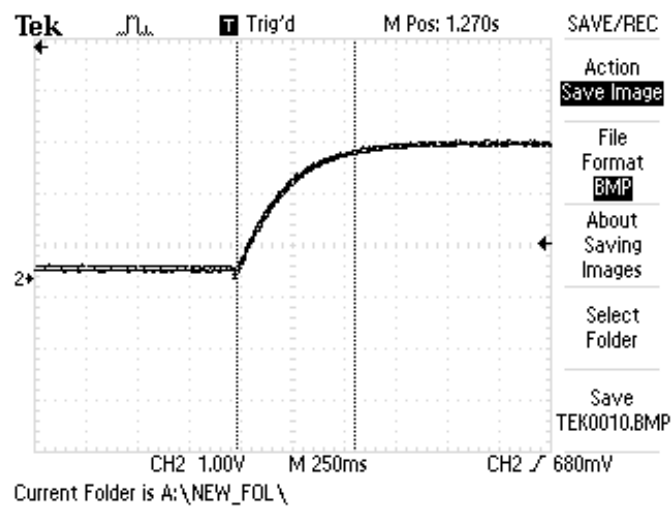
7. Waveform diagram for FLASH chip SF_CK(pin 6 of U5).



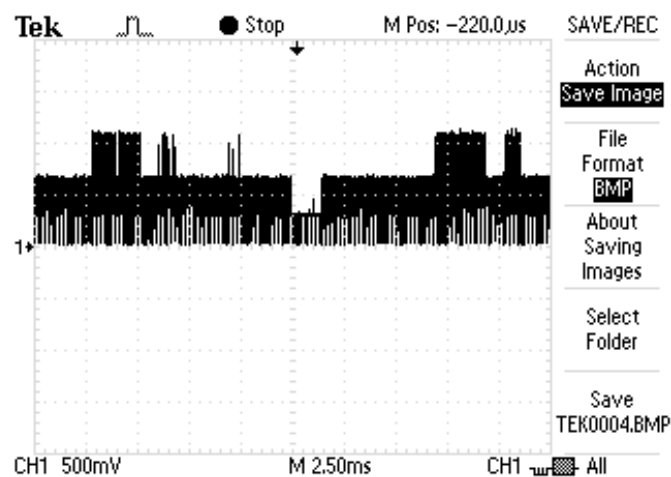
8. Waveform diagram for 27MHz clock (X1).



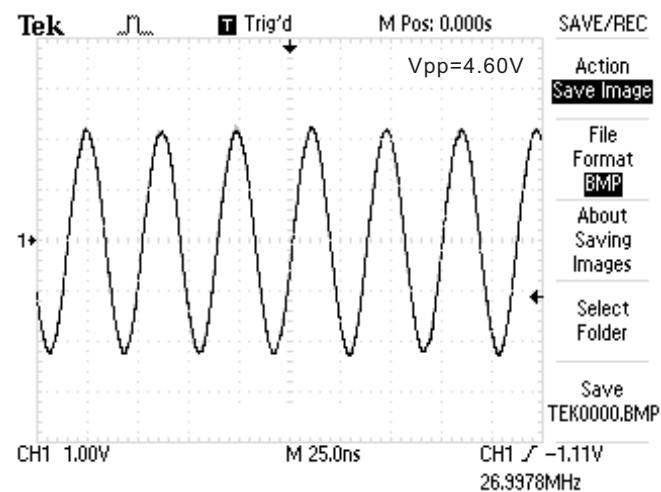
9. Reset signal URST waveform diagram.



10. Video signal waveform diagram.

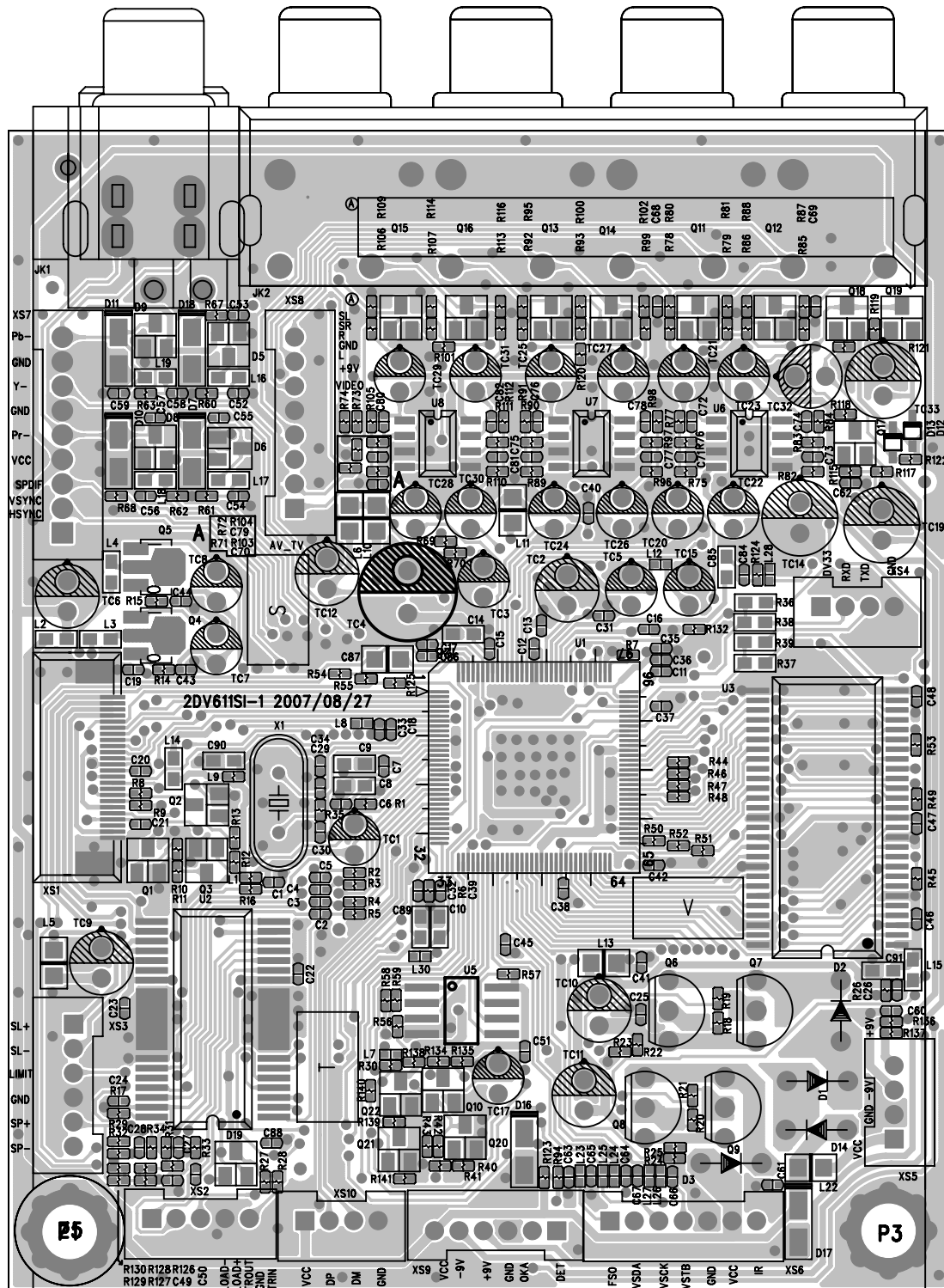


11. 1KHZ audio signal output waveform diagram(it is suggested to use test disc,if not,waveform tested will change at any time,which will affect your judgment).

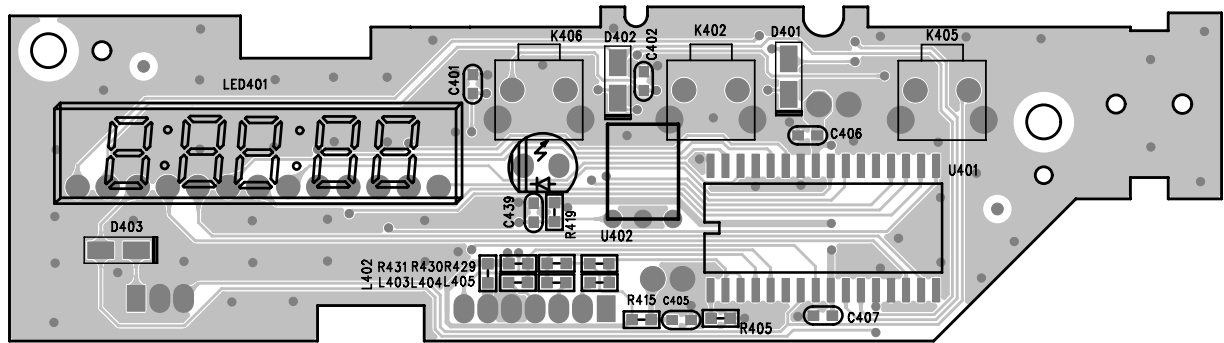


Chapter Seven PCB board

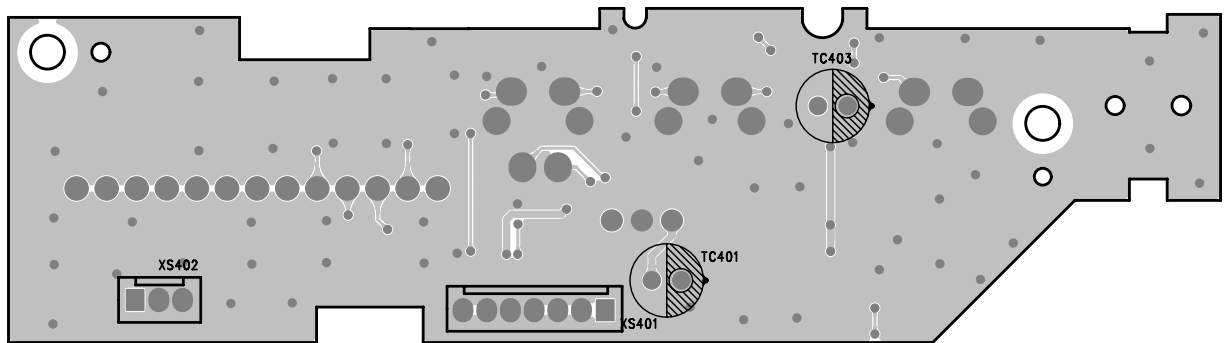
7.1 Surface layer of Decode Board (2DV611SI-1) 4941057



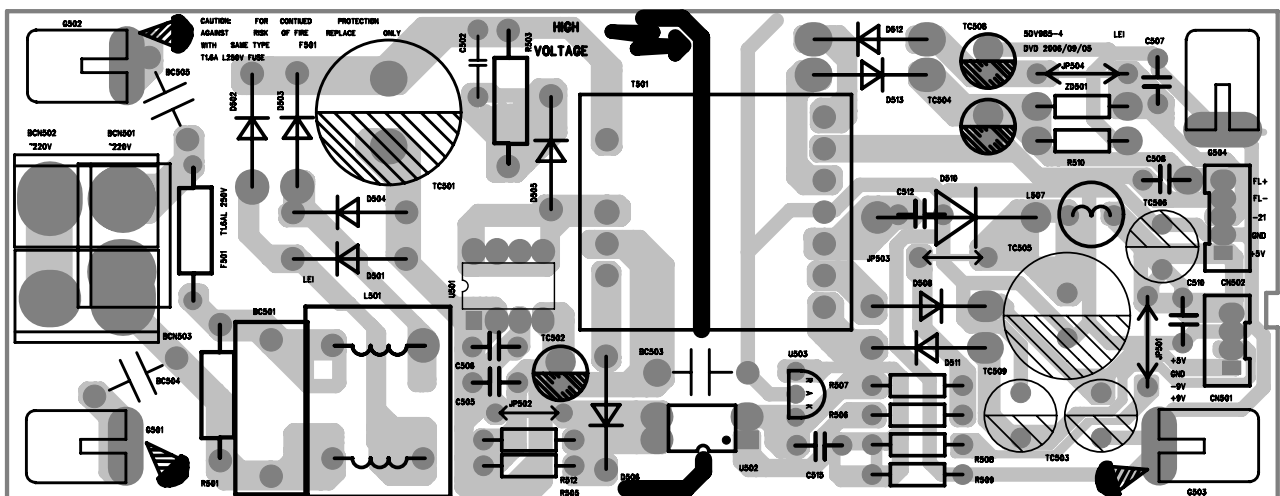
7.2 Surface layer of Main Panel (4DV815X-0) 4941055



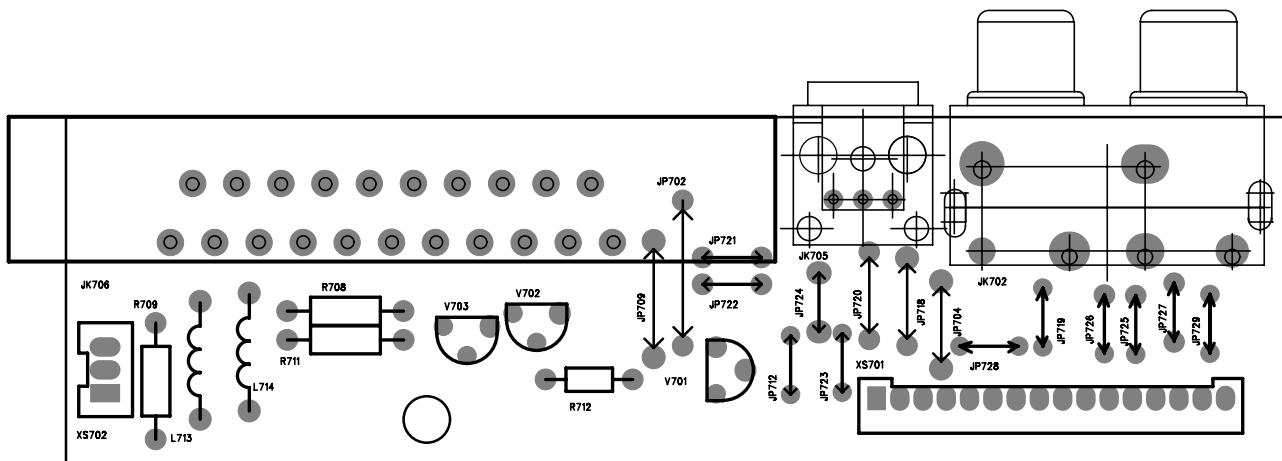
7.3 Bottom layer of Main Panel (4DV815X-0) 4941055



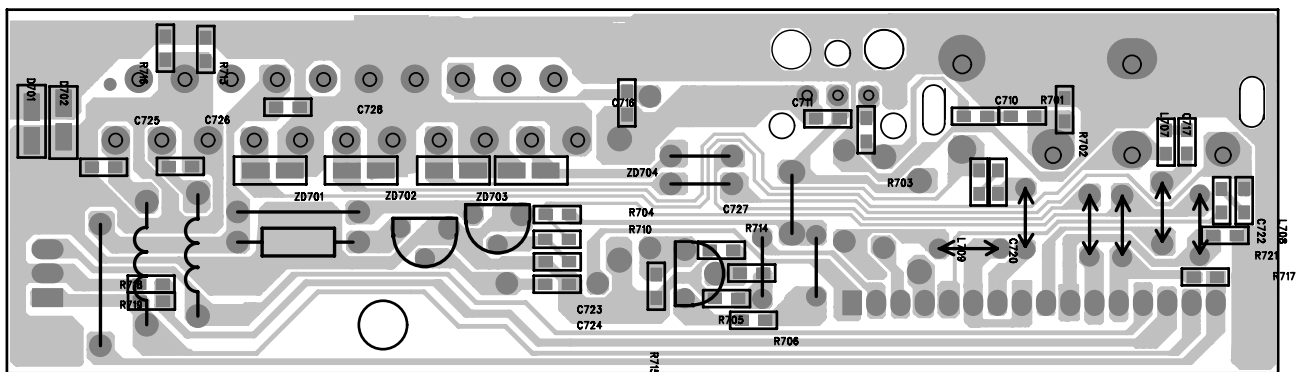
7.4 Power Board (@5DV985-4 UL) 4941062



7.5 Surface layer of AV Board (7231-1) 4941061

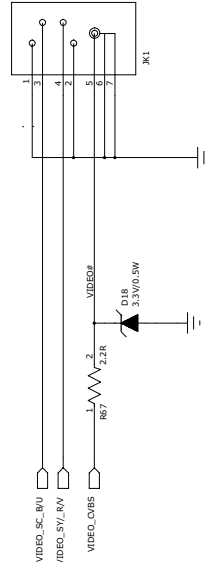
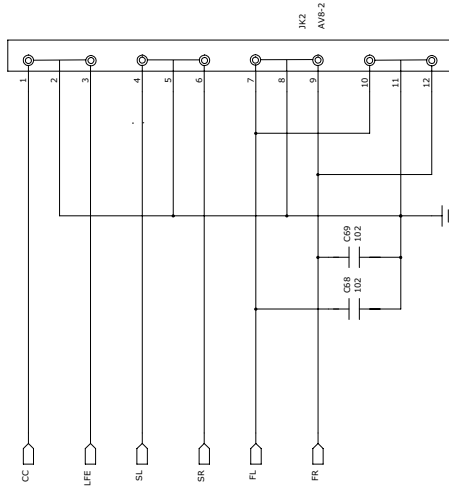
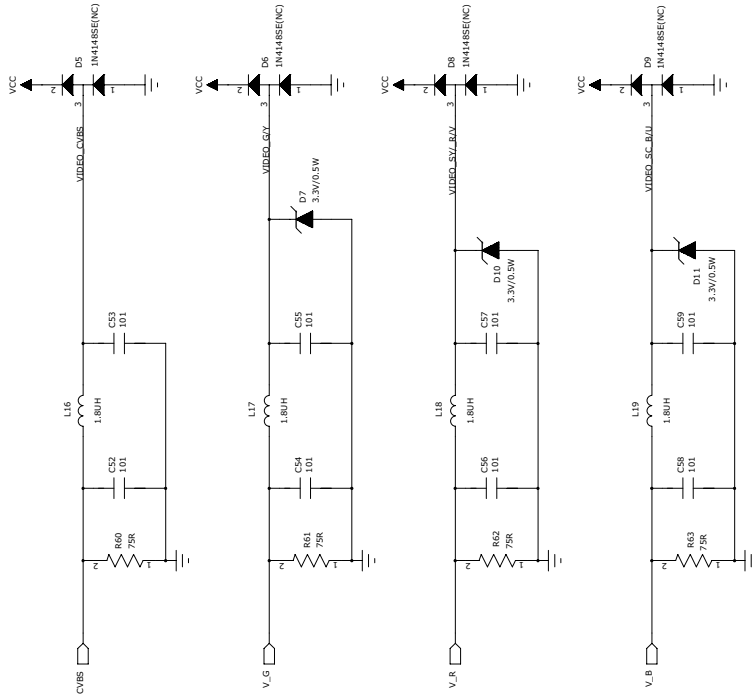
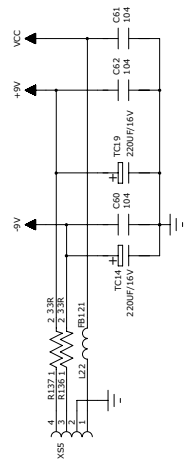
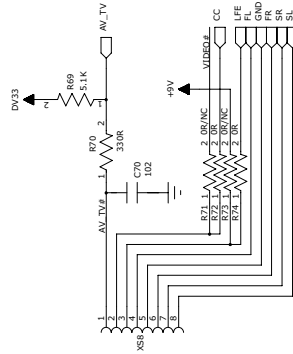
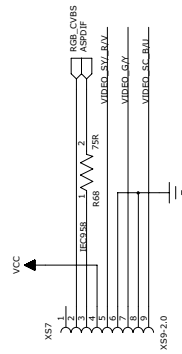
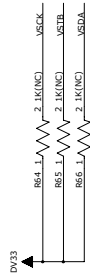
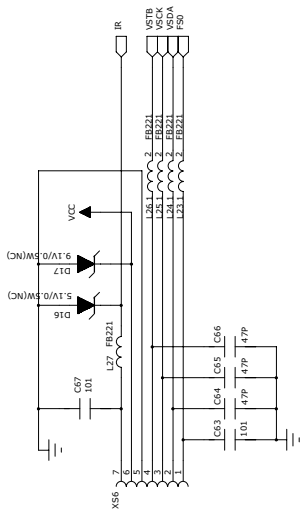


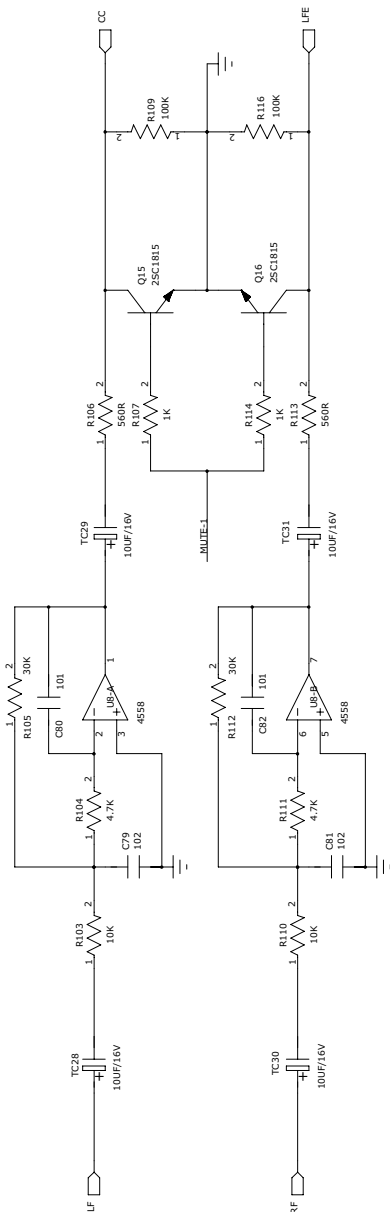
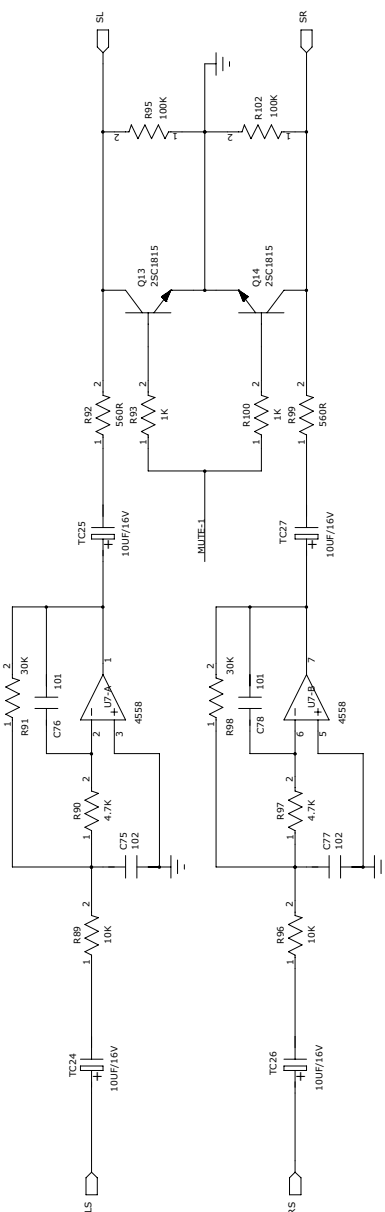
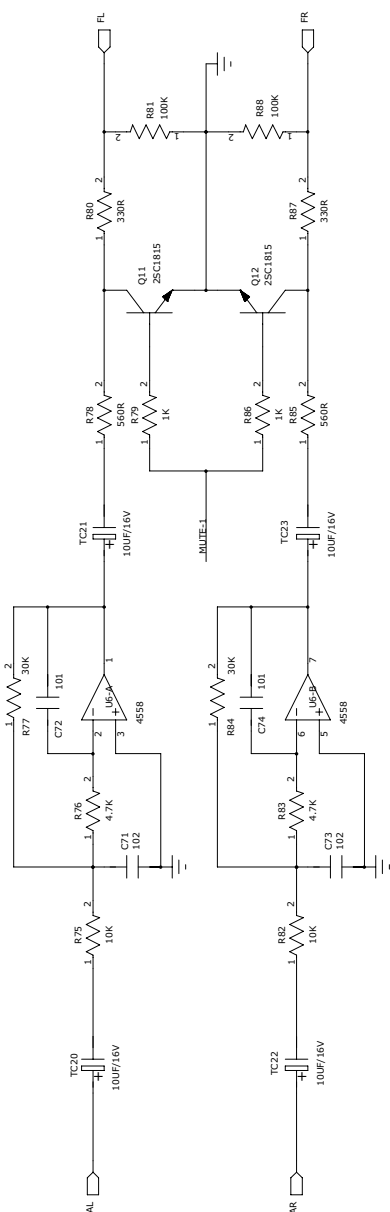
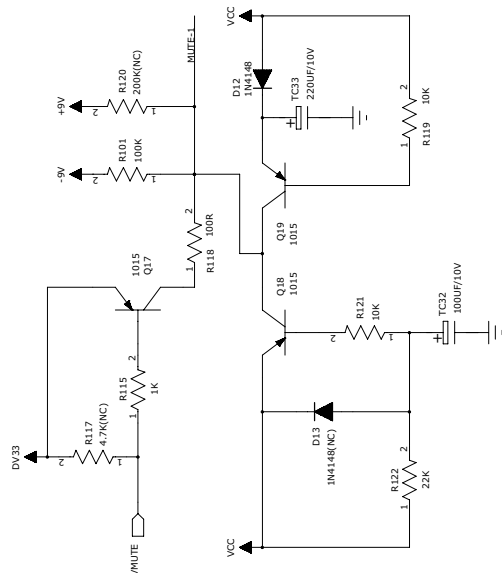
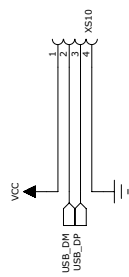
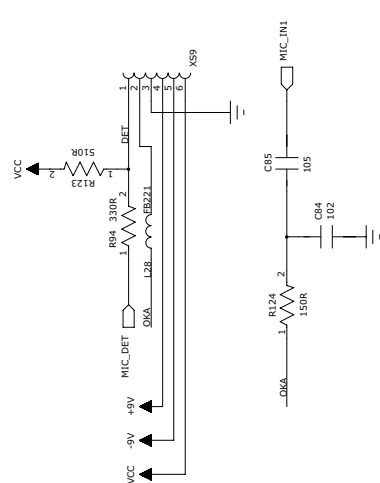
7.6 Bottom layer of AV Board (7231-1) 4941061



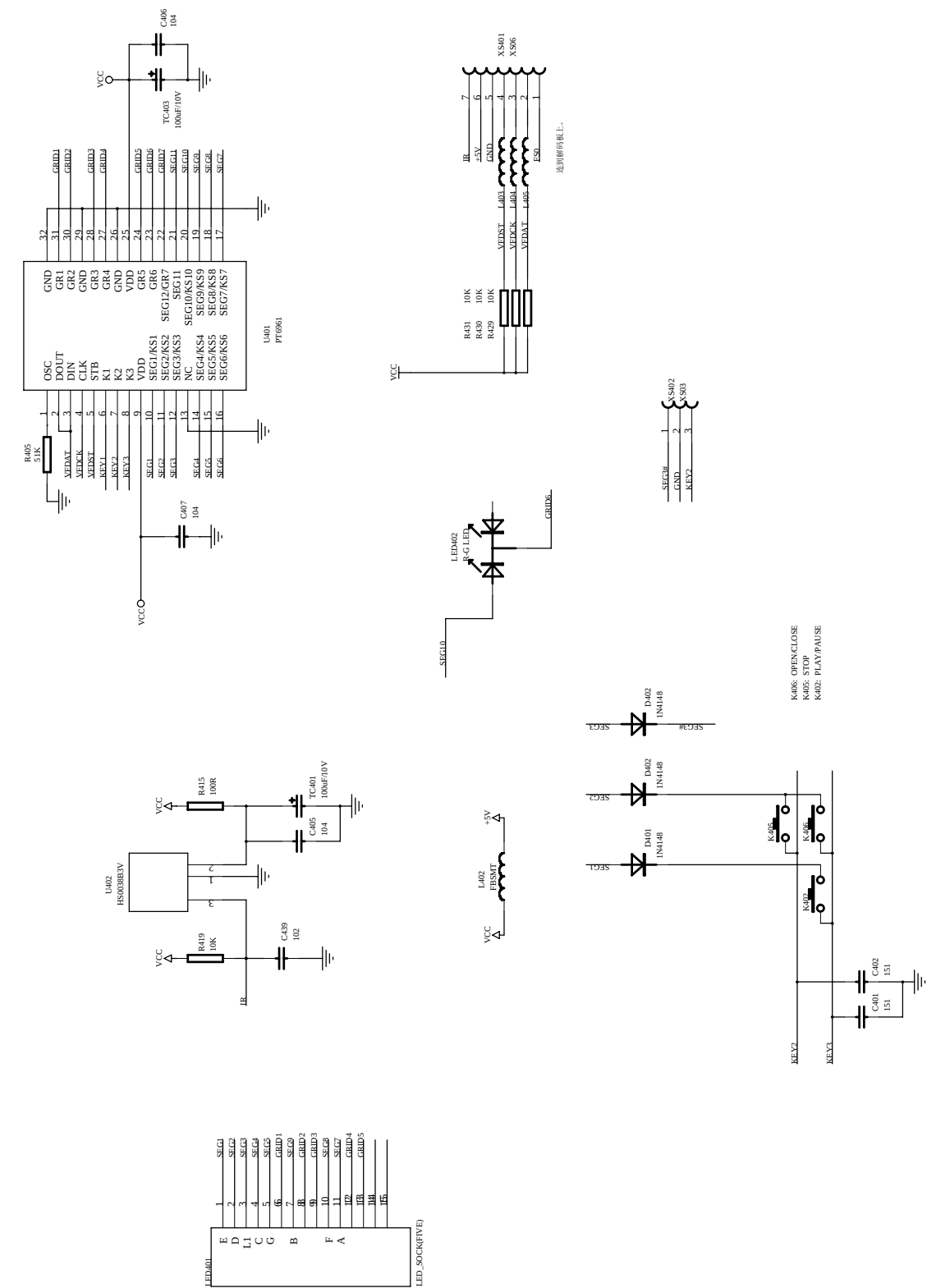
8.1 Decode Board (2DV611SI-1)



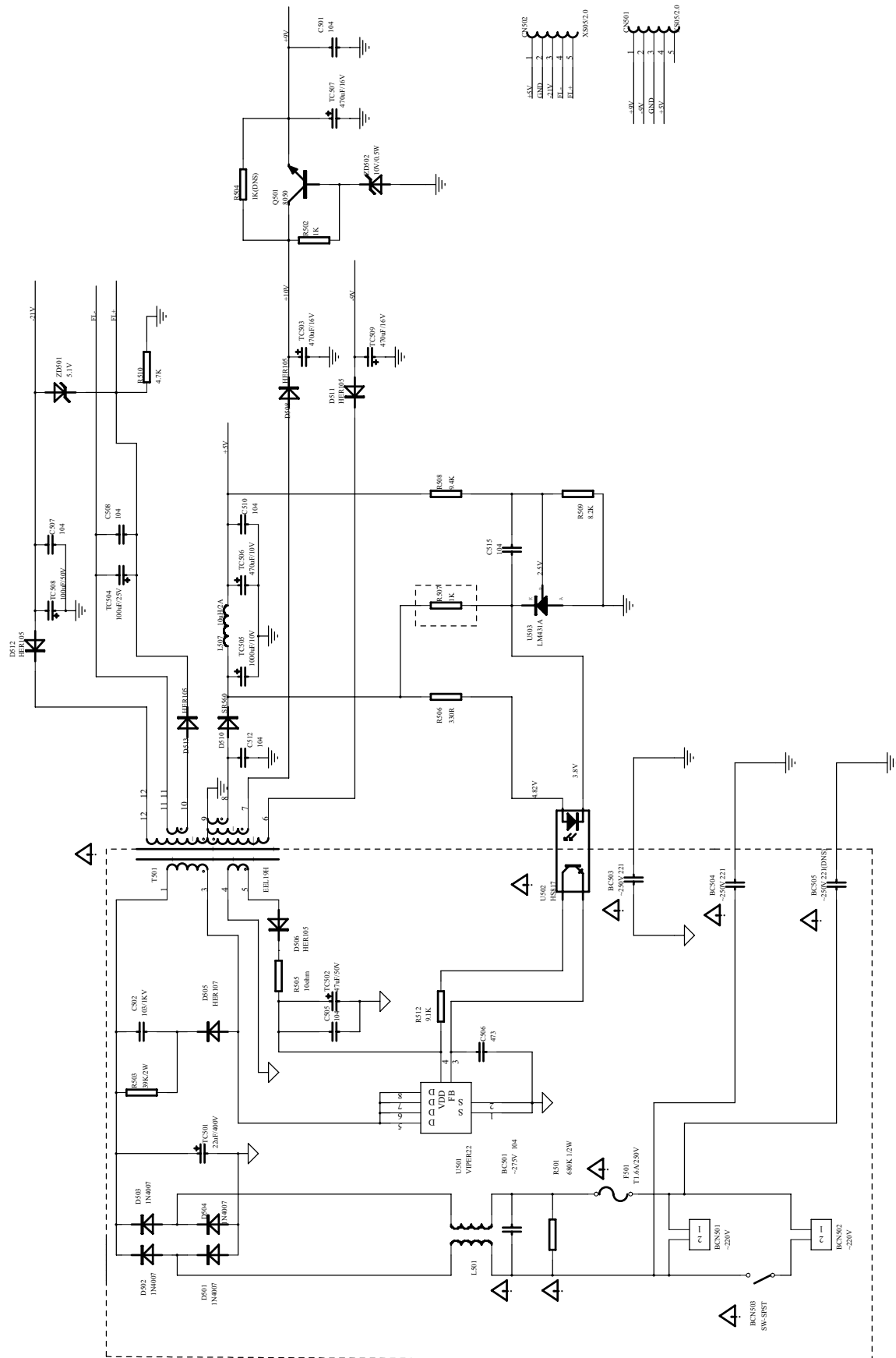




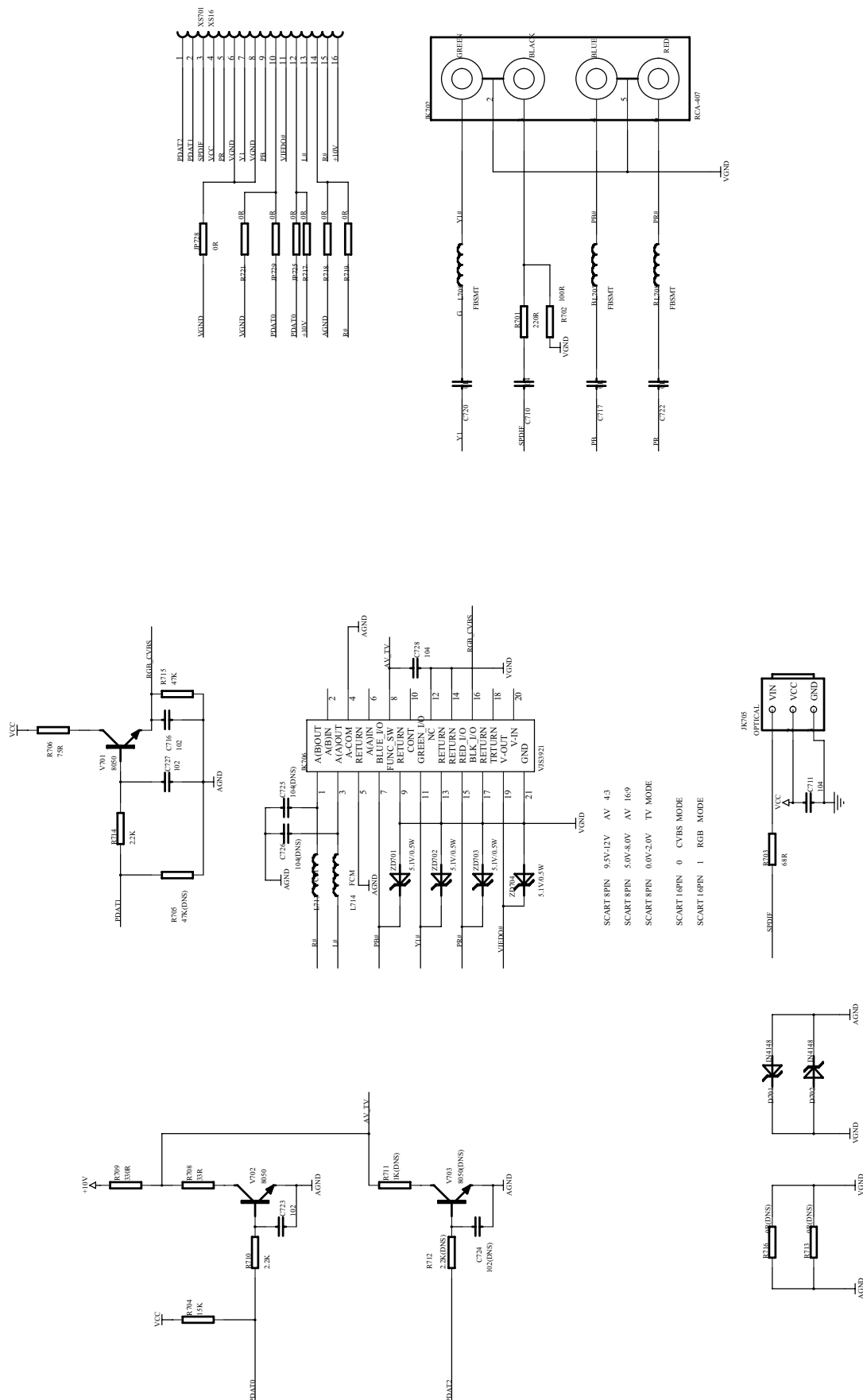
8.2 Main Panel (4DV815X-0)



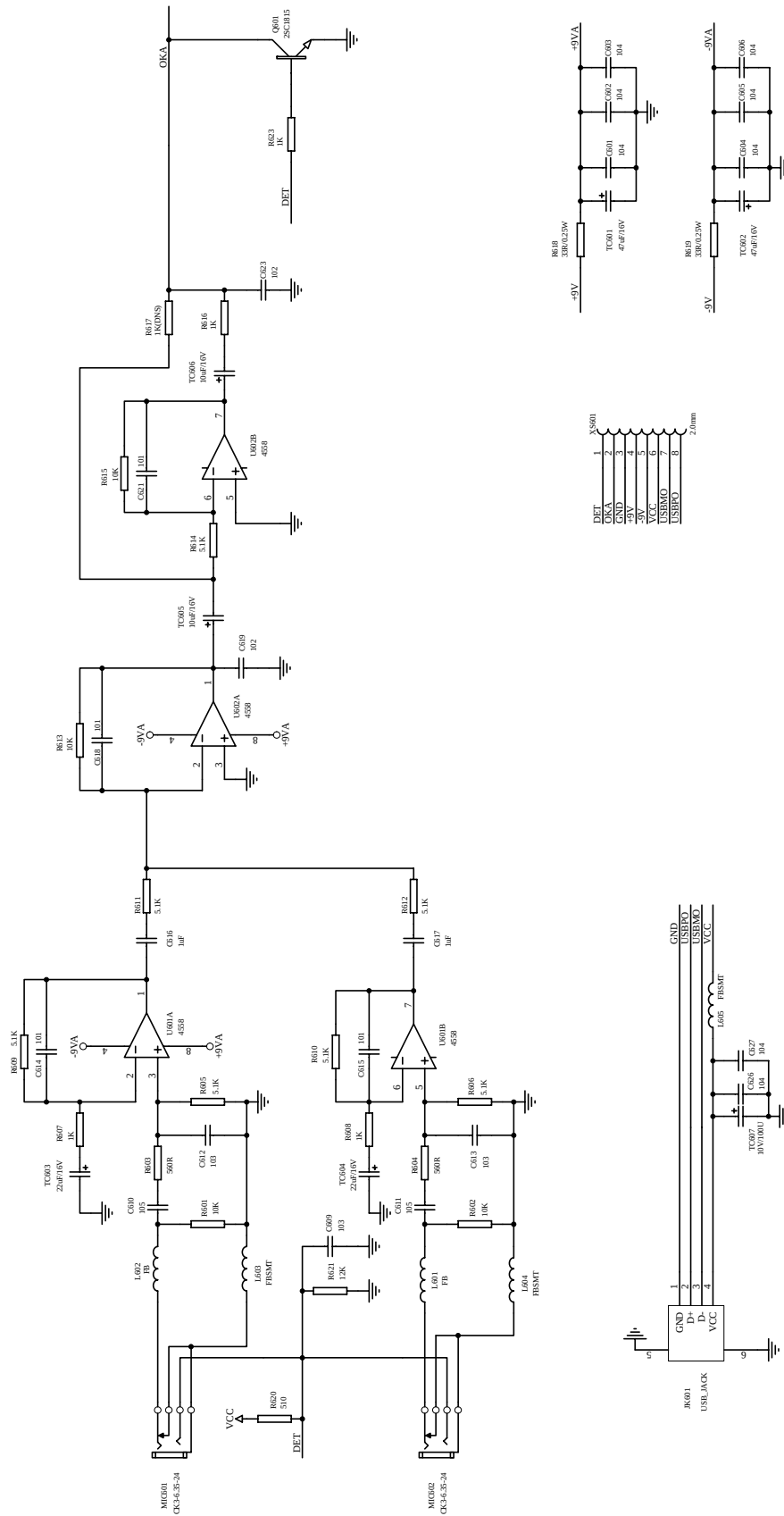
8.3 Power Board (5DV985-4)



8.4 AV Board (7231-1)



8.5 OK Board (6HD901K-2)



Chapter Nine BOM List

DV815X(RU)SILVER(1389L)

OK BOARD 4941058 6HD901K-5			
MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0000005	CARBON FILM RESISTOR	1/6W33Ω±5%	R618,R619
0090020	SMD RESISTOR	1/16W 5.1K±5% 0603	R606,R605,R609,R610,R611,R612,R614
0090018	SMD RESISTOR	1/16W 3.3K±5% 0603	R621
0090014	SMD RESISTOR	1/16W 1K±5% 0603	R607,R608,R616,R623
0310047	SMD CAPACITOR	50V 101±5% NPO 0603	C614,C615,C618,C621
0310066	SMD CAPACITOR	50V 102±10% 7R 0603	C619,C623
0310072	SMD CAPACITOR	50V 103±10% 7R 0603	C609,C612,C613
0090023	SMD RESISTOR	1/16W 10K±5% 0603	R601,R602,R613,R615
0090012	SMD RESISTOR	1/16W 560Ω±5% 0603	R603,R604
0090249	SMD RESISTOR	1/16W 510Ω±5% 0603	R620
0390095	SMD MAGNETIC BEADS	FC160822105	L601~L605
0310207	SMD CAPACITOR	50V 104 ±20% 7R 0603	C601~C606,C626,C627 ①
0310543	SMD CAPACITOR	50V 104 ±10% 7R 0603	C601~C606,C626,C627 ①
0310543	SMD CAPACITOR	50V 104 ±10% 7R 0603	C601~C606,C626,C627 ①
0310543	SMD CAPACITOR	50V 104 ±10% 7R 0603	C601~C606,C626,C627 ①
0310234	SMD CAPACITOR	16V 105 +80%-20% Y5V 0603	C610,C611,C616,C617
1980018	MICROPHONE SOCKET	C3-6.35-24	MIC601,MIC602
0780197	SMD TRIODE	C1815	Q601
0881742	IC	4558 SOP	U601,U602
1860047	USB SOCKET	CAB85-4Pin	JK601
5141757	VERSION LABEL	2.02 SQUARE WHITE	
02607799	CD	C11C 16V10U±20%4×7 C2.5 BELT	TC605,TC606
02607869	CD	C11C 16V22U±20%4×7 C2.5 BELT	TC603,TC604
02607879	CD	C11C 16V47U±20%5×7 C2.5 BELT	TC601,TC602
02602549	CD	C11C 10V100U±20%6×5 2.5 BELT	TC607
1634744	PCB	6 901K-5 FR4 D1.2 PX	

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
2150358	FLAT CABLE	8-6/4P130×2 2.0 T3 2PB WITH NEEDLE 8CORD	XS601

DV815X(RU)SILVER(1389L)

OUTPUT BOARD 4941061 7231-1			
MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
2100010	CONNENTION CORDS	Φ0.6 SHAPED 5mm	JP723~JP724,JP726,JP727,JP712,JP719,JP728,JP729,JP721,JP722
2100003	CONNENTION CORDS	Φ0.6 SHAPED 7.5mm	JP718,JP720,JP704
2100004	CONNENTION CORDS	Φ0.6 SHAPED 10mm	JP709
2100006	CONNENTION CORDS	Φ0.6 SHAPED 12.5mm	JP702
0000278	CARBON FILM RESISTOR	1/4W330Ω±5% SHAPED 10	R709
0000273	CARBON FILM RESISTOR	1/4W33Ω±5% SHAPED 10	R708
0700007	SMD DIODE	14148	D701,D702 ②
0700001	SMD DIODE	LS4148	D701,D702 ②
0700001	SMD DIODE	LS4148	D701,D702 ②
0700001	SMD DIODE	LS4148	D701,D702 ②
0090024	SMD RESISTOR	1/16W 15K±5% 0603	R704
0780050	TRIODE	S8050D	V701,V702
0700004	SMD VOLTAGE REGULATOR DIODE	5.1V±5% 1/2W	ZD701,ZD702,ZD703,ZD704
0090017	SMD RESISTOR	1/16W 2.2K±5% 0603	R710,R714
0090029	SMD RESISTOR	1/16W 47K±5% 0603	R715
0090006	SMD RESISTOR	1/16W 75Ω±5% 0603	R706
0090238	SMD RESISTOR	1/16W 68Ω±5% 0603	R703
0390057	MAGNETIC BEADS INDUCTOR	RH354708	L713,L714
0090008	SMD RESISTOR	1/16W 220Ω±5% 0603	R701
0390095	SMD MAGNETIC BEADS	FC160822105	L707,L708,L709
0090181	SMD RESISTOR	1/16W 100Ω±5% 0603	R702
0310207	SMD CAPACITOR	50V 104 ±20% 7R 0603	C710,C728 ③
0310543	SMD CAPACITOR	50V 104 ±10% 7R 0603	C710,C728 ③
0310543	SMD CAPACITOR	50V 104 ±10% 7R 0603	C710,C728 ③
0310543	SMD CAPACITOR	50V 104 ±10% 7R 0603	C710,C728 ③

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0090001	SMD RESISTOR	1/16W 0Ω±5% 0603	C717,C720,C722,R717,R713,R716,R718
0310234	SMD CAPACITOR	16V 105 +80%-20% Y5V 0603	C711
1910078	TERMINAL SOCKET	4-8.4-6G-3	JK702
1860029	SCART SOCKET	SCAR01	JK706
1090045	ELECTRO-OPTIC TRANSFORMER	179ATW	JK705
0310598	SMD CAPACITOR	50V 102±20% 7R 0603	C716,C723,C727
1564337	PCB	7231-1-1	
2122624	FLAT CABLE	15-6/9P80/80 2.0 T3 WITH NEEDLE,TOGETHER DIRECTION	XS701
5143210	VERSION LABEL	E.00 SQUARENESS,WHITE	

DV815X(RU)SILVER(1389L)

POWER BOARD 4941062 @5DV985-4 UL			
MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
2100003	CONNENTION CORDS	Φ0.6 SHAPED 7.5mm	JP502,JP503
2100004	CONNENTION CORDS	Φ0.6 SHAPED 10mm	JP501
1940045	SOCKET	2P 8.0mm 2#	BCN501
0260341	CD	ZT 400V22μ±20%φ16×20 7.5	TC501
0410011	CHOKE COIL	VERTICAL 10UH 2A 5mm	L507
0880863	IC	H17431VP TO-92	U503 ④
08824629	IC	AZ431AZ-A TO-92 BELT	U503 ④
1940022	SOCKET	4P 2.0mm	CN501
0010159	METAL OXIDE FILM RESISTOR	239K±5%SHAPED FLAT 15×7	R503
0680046	SCHOTTKY DIODE	SR560 DO-27 SHAPED R 17.5×8	D510
0881933	IC	VIPER22A DIP8	U501
3870115	GROUND CHIP OF POWER BOARD	903	G501,G504
0260559	CD	CD11T 50V47μ±20%6×12 2.5	TC502
1080032	PHOTOELECTRIC COUPLER	@HS817 VDE	U502
0200359	CERAMIC CAPACITOR	@250V 221±10% 10mm VDE	BC503,BC504
0210207	TERYLENE CAPACITOR	@275V 104±20% 15mm VDE	BC501
00002159	CARBON FILM RESISTOR	1/49.1K±5% BELT	R512

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
05700139	DIODE	HER105 BELT	D506
05700149	DIODE	HER107 BELT	D505,D508,D511
00001859	CARBON FILM RESISTOR	1/4330Ω±5% BELT	R506
00001959	CARBON FILM RESISTOR	1/41K±5% BELT	R507
02001389	PORCELAIN CAPACITOR	50V 104±20% 5mm BELT	C505,C510,C515
02607269	CD	CD288H 10V1000U±20%8×16 C5 BELT	TC506
02001369	PORCELAIN CAPACITOR	50V 473±20% 5mm BELT	C506
00001639	CARBON FILM RESISTOR	1/410Ω±5% BELT	R505
05700059	DIODE	1N4007 BELT	D501~D504
02002249	PORCELAIN CAPACITOR	1000V 103 +80%-20% 7.5MM BELT	C502
2300049	FUSE	@1.6AL 250V 3.6×10 VDE	F501
02003809	PORCELAIN CAPACITOR	100V 152±10%5MM BELT	C512
1000062	POWER GRID FILTER	@JLB1153 33MH +∞-0% SJ	L501
0460623	SWITCH POWER TRANSFORMER	@BC19-0348 SJ	T501
00700169	HIGH PRESSURE RESISTOR	@1/2680K±5% VDE BELT	R501
02607989	CD	C11T 16V470U±20%8×12 C5 BELT	TC509,TC503
1564554	PCB	@5 985-4 UL	
0260821	CD	CD288H 16V1500U±20%10×20 5	TC505
5143305	VERSION LABEL	I.01SQUARENESS CHALKINESS	
00100979	METAL FILM RESISTOR	1/4W9.4KΩ±1%BELT	R508
00103799	METAL FILM RESISTOR	1/4W8.2KΩ±1%BELT	R509

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DECODE BOARD 4941057 2DV611SI-4			
MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0960020	CRYSTAL OSCILLATOR	27.00MHz 49-S	X1
0260014	CD	CD11 10V470U±20%8×12 3.5	TC4
0390044	SMD INDUCTOR	10UH±10% 2012	L11
1940044	SOCKET	9P 2.0mm	XS7
1940023	SOCKET	7P 2.0mm	XS6

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0310392	SMD CAPACITOR	50V 102±10% 7R 0402	C68,C69,C71,C73,C75,C77,C79,C81,C84
1940022	SOCKET	4P 2.0mm	XS5,XS10
1940005	SOCKET	6P 2.0mm	XS3,XS8,XS9
1940024	SOCKET	5P 2.0mm	XS2
0390095	SMD MAGNETIC BEADS	FC160822105	L2,L15
0780040	SMD TRIODE	3904(100-300) SO23	Q3
0090457	SMD RESISTOR	1/162.2Ω±5% 0402	R67
0390096	SMD INDUCTOR	1.8UH±10% 1608	L16~L19
0780115	SMD TRIODE	2SB1132	Q4,Q5
0310493	SMD CAPACITOR	50V 121±5% NPO 0402	C19
0090339	SMD RESISTOR	1/16W 100Ω±5% 0402	R18~R21,R118,R8,R9
0090330	SMD RESISTOR	1/16W 33Ω±5% 0402	R50,R136,R137
0090331	SMD RESISTOR	1/1639Ω±5% 0402	R138
0090336	SMD RESISTOR	1/1675Ω±5% 0402	R60~R63,R68
0090324	SMD RESISTOR	1/16W 0Ω±5% 0402	R44,R46~R48,R51~R53,R55,R130,R71,R73,R70,R132
0090367	SMD RESISTOR	1/16W1.8K±5% 0402	R40
0090355	SMD RESISTOR	1/16W 510Ω±5% 0402	R26,R123
0090356	SMD RESISTOR	1/16560Ω±5% 0402	R7,R78,R85,R92,R99,R106,R113
0090362	SMD RESISTOR	1/16W 1K±5% 0402	R79,R86,R93,R100,R107,R114,R115
0090350	SMD RESISTOR	1/16330Ω±5% 0402	R80,R87,R94
0090394	SMD RESISTOR	1/16W 27K±5% 0402	R4,R5
0090395	SMD RESISTOR	1/16W 30K±5% 0402	R77,R84,R91,R98,R105,R112
0090385	SMD RESISTOR	1/16W 10K±5% 0402	R2,R11,R12,R16,R17,R23,R27,R28,R30,R41,R45,R49,R56~R58,R75,R82,R89,R96,R103,R110,R121,R126,R127,R119,R139,R42
0090387	SMD RESISTOR	1/1612K±5% 0402	R24
0090389	SMD RESISTOR	1/1615K±5% 0402	R1,R3
0090391	SMD RESISTOR	1/16W 20K±5% 0402	R25
0090392	SMD RESISTOR	1/16W 22K±5% 0402	R122,R43
0090377	SMD RESISTOR	1/16W 4.7K±5% 0402	R76,R83,R90,R97,R104,R111,R22

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0090378	SMD RESISTOR	1/16W 5.1K±5% 0402	R6
0090399	SMD RESISTOR	1/16W43K±5% 0402	R135
0090408	SMD RESISTOR	1/16W 100K±5% 0402	R10,R13,R35,R81,R88,R95,R101,R102,R109,R116
0090445	SMD RESISTOR	1/16W 1Ω±5% 0402	R128
0310446	SMD CAPACITOR	50V 152±10% 7R 0402	C12
0090447	SMD RESISTOR	1/16W 22Ω±5% 0402	R134
0090001	SMD RESISTOR	1/16W 0Ω±5% 0603	R36,R37,R38,R39
0310234	SMD CAPACITOR	16V 105 +80%-20% Y5V 0603	C10,C14,C85,C89~C91,C87
0780198	SMD TRIODE	2S1015	Q17,Q18,Q19
1910079	TERMINAL SOCKET	8-8.4-6G-3	JK2
0780197	SMD TRIODE	C1815	Q10~Q16,Q20,Q21
0780193	SMD TRIODE	2S3018	Q1,Q2,Q22
0881742	IC	4558 SOP	U6~U8
0700057	SMD DUAL DIODE	MMBD4148CC SO23	D19
1940094	CABLE SOCKET	24P 0.5mm SMD SUBMIT MEET WITH CLASP	XS1
0310566	SMD CAPACITOR	10V 225 +80%-20% Y5V 0603	C8,C9
1910129	TERMINAL SOCKET	S001-012 BLACK IRON PIECE,SCREESHIELDED	JK1
0310726	SMD CAPACITOR	16V 104±10% 5R 0402	C1,C4,C6,C7,C11,C13,C15~C18,C20~C26,C32~C51,C60~C62,C88
0700148	SMD VOLTAGE REGULATOR DIODE	3.3V±5% 1/2W	D7,D10,D11,D18
0700154	SMD TRIODE	14148WS SO323	D12
0390394	SMD MAGNETIC BEADS	PZ2012U221	L14
0390355	SMD INDUCTOR	4.7UH±10% 1608	L3,L4
0310454	SMD CAPACITOR	16V 153±10% 7R 0402	C5
0390385	SMD INDUCTOR	22uH±10% 2012	L6,L10
0310420	SMD CAPACITOR	50V 33P±5% NPO 0402	C29,C30
0310424	SMD CAPACITOR	50V 47P±5% NPO 0402	C64~C66
0310432	SMD CAPACITOR	50V 101±5% NPO 0402	C52~C59,C67,C72,C74,C76,C78,C80,C82
0310435	SMD CAPACITOR	50V 221±5% NPO 0402	C86
07803199	TRIODE	SS8550 TO-92 BELT	Q6~Q9

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
05700039	DIODE	1N4001 BELT	D1~D3,D14
08828028	IC	A5888S L/ HSOP\$	U2
0390444	SMD MAGNETIC BEADS	PZ2012U121	L5,L13,L22
0090342	SMD RESISTOR	1/16W150Ω±5% 0402	R124
0310794	SMD CAPACITOR	16V 331±5% NPO 0402	C2,C3
02607799	CD	C11C 16V10U±20%4×7 C2.5 BELT	TC20~TC31,TC1,TC3,TC5
02607819	CD	C11C 10V100U±20%5×11 C2.5 BELT	TC2,TC10,TC11,TC12,TC6,TC32
02607809	CD	C11C 10V47U±20%4×7 C2.5 BELT	TC7,TC8,TC15
02607869	CD	C11C 16V22U±20%4×7 C2.5 BELT	TC17
02607879	CD	C11C 16V47U±20%5×7 C2.5 BELT	TC9
0390453	SMD MAGNETIC BEADS	GZ1005D221T 0402	L1,L7,L8,L12,L9,L24~L28,L30
0090797	PRECISION SMD RESISTOR	1/16330Ω±1% 0402	R141
02600139	CD	10V220U±20%6×12 2.5 BELT	TC33
0090820	PRECISION SMD RESISTOR	1/161.2K±1% 0402	R140
02600289	CD	C11 16V220U±20%6×12 2.5 BELT	TC14,TC19
5143055	VERSION LABEL	6.07 SQUARENESS,WHITE	
0310853	SMD CAPACITOR	16V 682 ±10% 7R 0402	C31
0883532	IC	HY57V641620FTP-7 SOP	U3
0883596	IC	MT1389FE/L(L) LQFP	U1
0090869	SMD RESISTOR	1/16W6.8Ω±5% 0402	R14,R15
0912057	PROGRAM FLASH	ROM826XRU-0A(16M)	
1634727	PCB	2 611SI-4 FR4 D1.2 PX	
1030048	SMD PRESS SENSITIVITY RESISTOR	SDV1005E5R5C500NPT 0402	R142~R145

DV815X(RU)SILVER(1389L)

PROGRAM FLASH 0912057			
MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0883713	IC	AT26DF161-SU SOIC	U5

DV815X(RU)SILVER(1389L)

SUBSIDIARY BOARD	4941056	9DV815SI-2
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MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
1940026	SOCKET	3P 2.0mm	XS901
1340064	LIGHT TOUCH RESTORE SWITCH	KFC-06-2WB L3.8	K901
1565196	PCB	9 815X-2 HB D1.6 SX	

DV815X(RU)SILVER(1389L)

MAIN PANEL 4941055 4DV815SI-3			
MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0700007	SMD DIODE	14148	D401,D402,D403 ⑤
0700001	SMD DIODE	LS4148	D401,D402,D403 ⑤
0700001	SMD DIODE	LS4148	D401,D402,D403 ⑤
0700001	SMD DIODE	LS4148	D401,D402,D403 ⑤
0090192	SMD RESISTOR	1/16W 51K±5% 0603	R405
0090023	SMD RESISTOR	1/16W 10K±5% 0603	R419,R429,R430,R431
0390095	SMD MAGNETIC BEADS	FC160822105	L402~L405
0090181	SMD RESISTOR	1/16W 100Ω±5% 0603	R415
0310207	SMD CAPACITOR	50V 104 ±20% 7R 0603	C405,C406,C407 ⑥
0310543	SMD CAPACITOR	50V 104 ±10% 7R 0603	C405,C406,C407 ⑥
0310543	SMD CAPACITOR	50V 104 ±10% 7R 0603	C405,C406,C407 ⑥
0310543	SMD CAPACITOR	50V 104 ±10% 7R 0603	C405,C406,C407 ⑥
2360016	IR SENSOR	HS0038B3V	U402
0620002	LIGHT-EMITTING DIODE	Φ3 RED	LED402
0881426	IC	6961 SOP	U401
1340064	LIGHT TOUCH RESTORE SWITCH	KFC-06-2WB L3.8	K402,K405,K406
2122698	FLAT CABLE	7-6P170 2.0 T2 WITH NEEDLE, TOGETHER DIRECTION, 6CORD	XS401
0310597	SMD CAPACITOR	50V 151±20% 7R 0603	C401,C402
0310598	SMD CAPACITOR	50V 102±20% 7R 0603	C439
5142451	VERSION LABEL	2.09 SQUARE WHITE	
2121378	FLAT CABLE	3P270 2.0 2PIN, WITH NEEDLE, TOGETHER DIRECTION	XS402
02602549	CD	C11C 10V100U±20%6×5 2.5 BELT	TC401,TC403
5236344	SOFT SPONGE SPACER	8×6×8.5 DOUBLE-FACED,HARD	2PCS FOR IR SENSOR OF REMOTE CONTROL AND PCB

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
5237156	SOFT SPONGE SPACER	35×8×13 DOUBLE-FACED,HARD	1PC FOR DISPLAY SCREEN AND PCB
1200921	LED DISPLAY SCREEN	HM5MB40195B20	LED401
1634757	PCB	4 815X-3 FR4 D1.6 PX	
3075501	LED BRACKET	H=17MM Φ=4MM	1PC FOR LED/PCB

DV815X(RU)SILVER(1389L)

REMOTE CONTROL 5471869 8DV516SI-3			
MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0970003	CERAMIC RESONATOR	455E	X801
0880220	IC	P2222 SOP	U801
0700007	SMD DIODE	14148	D801~D803
0310048	SMD CAPACITOR	50V 151±5% NPO 0603	C802,C803
0090272	SMD RESISTOR	1/16W 1Ω±5% 0603	R801
0630009	EMISSION PIPE	TSAL4400	LED801
0780130	SMD TRIODE	STC3265	Q801
5070070	PLASTIC BAG	85×250	
4000038	SELF-TAPPING SCREW	PB 2.3×6 COLOR ZINC	FOR CONNECTING UPPER AND LOWER COVER
3850126	ANODE/CATHODE SPRING	RC026	
3051273	GLASS OF REMOTE CONTROLLER	026 MING PURPLE	
3850124	ANODE SPRING	RC026	
3850125	CATHODE SPRING	RC026	
3041399	BOTTOM CASING OF REMOTE CONTROL	026 BLACK 2#	
3051319	BATTERY CASE DOOR OF REMOTE CONTROL	026 BLACK 2#	
4631052	CONDUCT GLUE OF REMOTE CONTROL	RC026-01R 4#	
1564324	PCB	8516SI-3	
3032003	SURFACE CASING O REMOTE CONTROL	RC026-012R BLACK 2#	