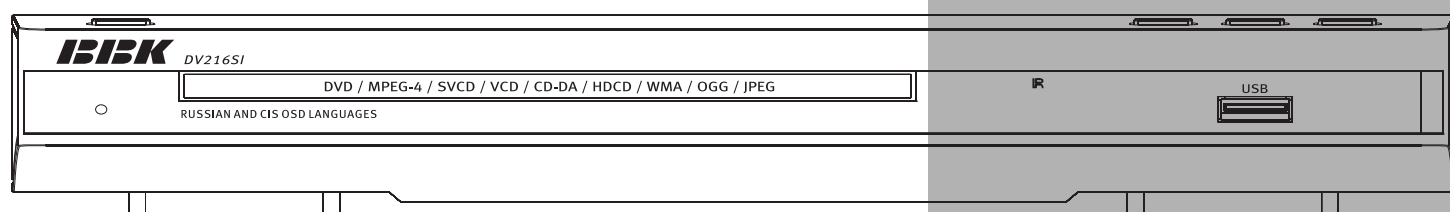


IBBK

DV216SI(RU)

service manual

VerSI09.11



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Caution :

This service manual is only applicable to DV216SI(RU) SI09.11

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: compatibility with DivX3.11, DivX4, DivX5, DivX Pro, XviD compressed video files

#Digital audio playback: CD(CD-DA)and HDCD compatibility

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

#Playback of DVD-Video, 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 and TV connection

#Digital multi-channel decoders, providing Dolby Digital/DTS audio stream playing

#Built-in Dolby Pro LogicII decoder makes available to convert stereo signal into multi-channel

#MIC input for karaoke function(only for models DV611SI,DV615SI,DV624SI ,DV626SI,DV628SI)

#Headphones output(only for models DV626SI,DV628SI)

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

#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 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

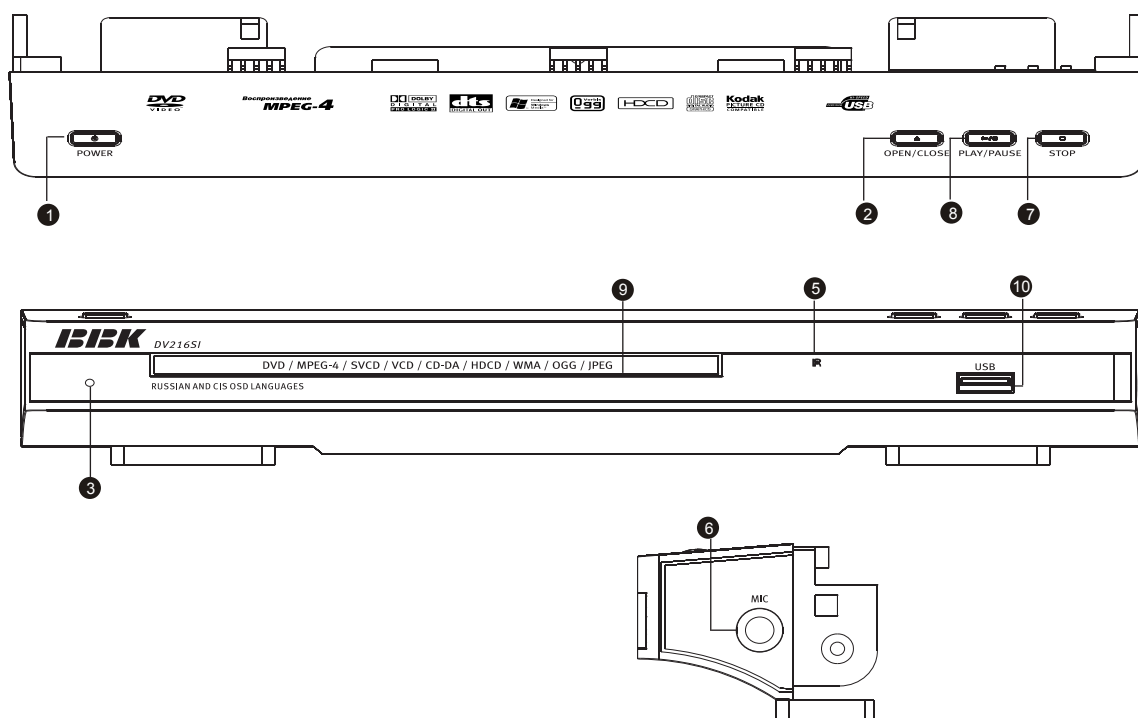
#Automatic Screensaver function

#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



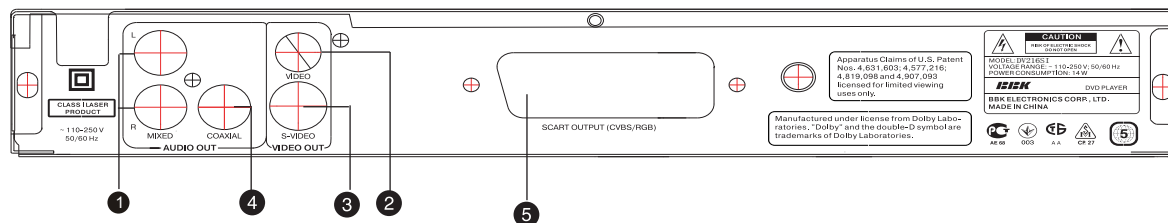
- ❶ POWER button(Press to switch ON/OFF the device)
- ❷ OPEN/CLOSE button(Press to open/close the disc tray)
- ❸ The indicator of operating mode/Standby mode
- ❹ Sensor of infrared beams
- ❺ Microphone input
- ❻ STOP button(Press to stop the playback)
- ❼ PLAY/PAUSE button(Press to playback/pause)
- ❽ Disc tray
- ❾ USB port
- ❿ Phones jack

NOTE:

#Presence and location of the buttons, sockets and regulators depend on a model of DVD player.

2.2.2 Rear Panel general view

DV216SI



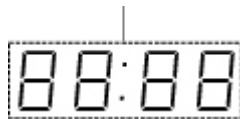
- ❶ Stereophonic audio output
- ❷ Socket of video output S-Video
- ❸ Socket of composite video output
- ❹ Socket of coaxial digital audio output
- ❺ SCART socket

NOTE:

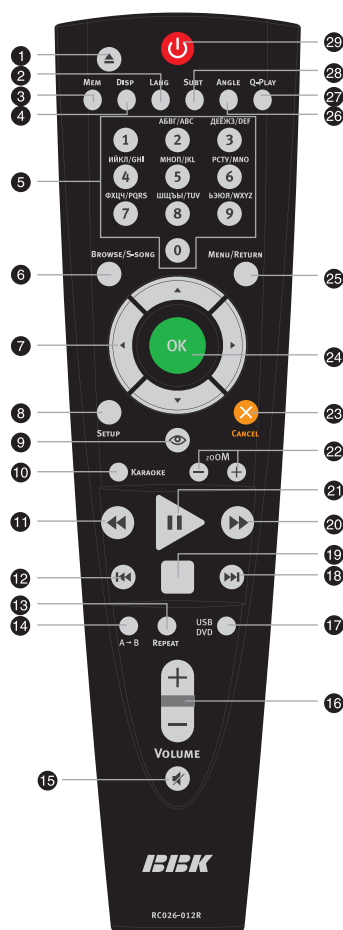
#Presence and location of the buttons, sockets and regulators depend on a model of DVD player.

2.2.3 LED display general view

Playback time



2.2.4 Remote Control general view



- 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 **BROWSE button**
Press to turn on/off the browser function
- 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 models.
- 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**
- 25 **MENU button**
DVD-disc menu/PBC function
- 26 **ANGLE button**
Press to change camera angle
- 27 **Q-PLAY button**
Press to turn the Q-Play mode on.
- 28 **SUBT button**
Press to change the subtitles language/JPEG mode.
- 29 **Button** [🔌]
Press to switch the device on/into standby.

2.3 Set list

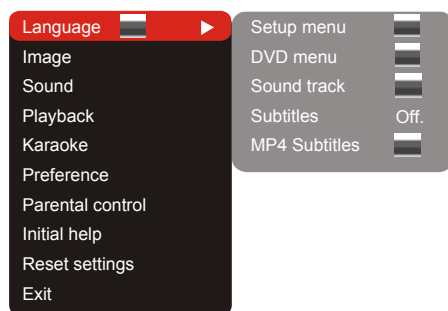
DVD player.....	1PCS
Audio cord	1PCS
Video cord.....	1PCS
Remote control.....	1PCS
Battery AAA	2PCS
Warranty card.....	1PCS
User's manual.....	1PCS

2.4 FUNCTION SETTINGS

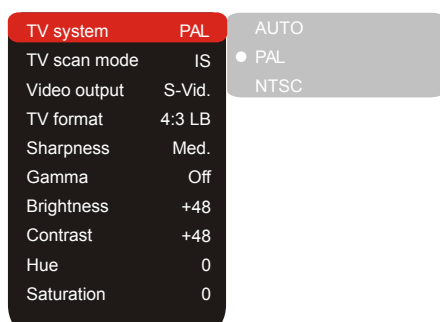
2.4.1 Function selection and change

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

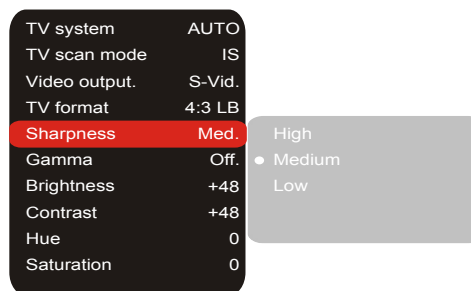
Select the desired menu item using the UP and DOWN buttons; press OK for confirmation.



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



2. 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.
3. Press LEFT key of the UP and DOWN buttons for exit to previous menu level.
4. 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.

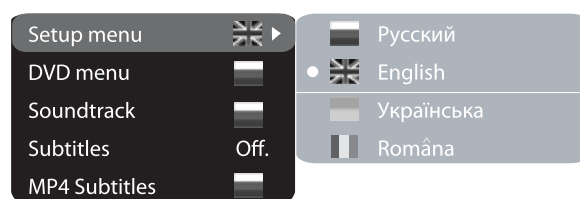
#Selection of other languages: select the OTHERS item using the UP and DOWN buttons and press OK. Enter the language code using numeric buttons and press OK.

#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: S-Video.

4.TV Format: image ratio settings

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

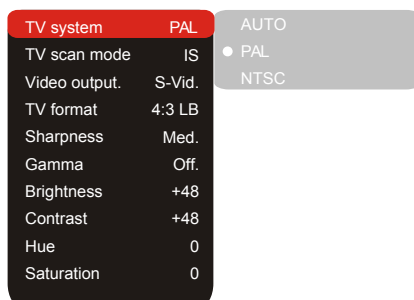
#Default option: 4:3 letterbox.

#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: Medium.



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:

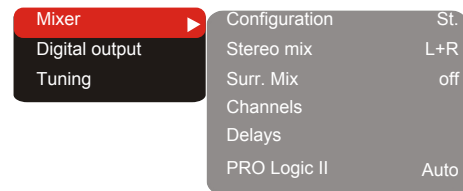
#Select the desired item of the image adjustment section using the Up and Down buttons. Press OK or RIGHT key to start adjusting the relevant option.

#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 stereo signal

#Options : Stereo

#Default option: Stereo.

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.

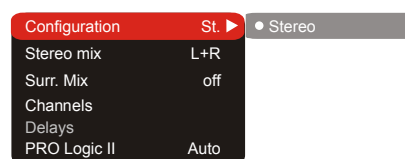
#Options : Off, Virt. Surr.

#Default options: Off.

D. Low band: distribution of low frequencies through channels.

#Default options: Front F

#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.

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 undecoded 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.

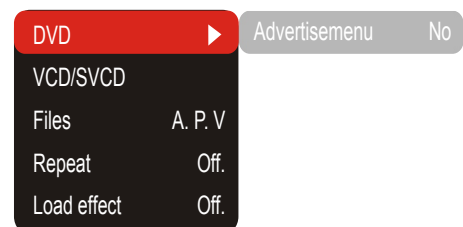
#Default option: No.

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 with no disc loaded.

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.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

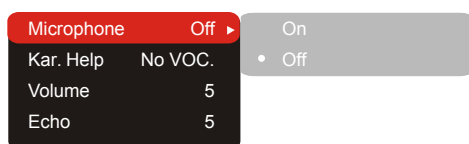
#Options: On, Off.

#Default option: Off.

2. Kar. help: karaoke disc playback mode

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

#Default option: No ast .

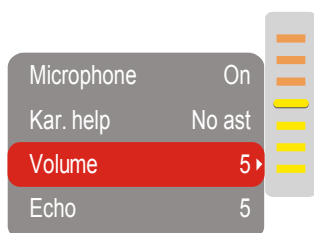


3. Volume:

Microphone: microphone sound volume level.

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

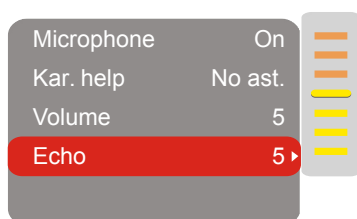
#Press LEFT key of the UP/DOWN buttons to return to karaoke settings menu.



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

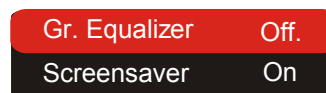
#Options: On, Off.

#Default option: Off.

3.Screensaver:screen saver on/off

#Options: On, off.

#Default option: On.

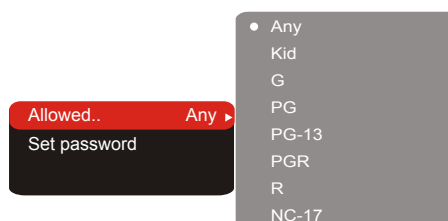


2.4.8 Parental Control

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

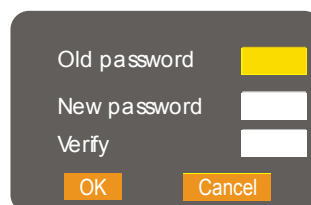
#Options: Any, Kid, G, PG, PG-13, PGR, R, NC-17.

#Default option: Any.



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

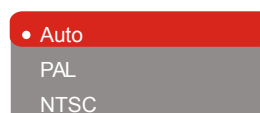
#Default option: 7890.



2.4.9 Initial setup menu

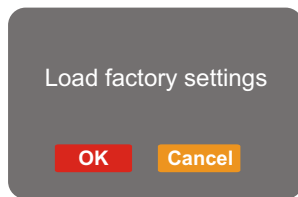
#Press the RIGHT key of the UP/DOWN buttons to enter the initial setup menu, then select the desired item using the buttons Up and Down and press OK key for confirmation.

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



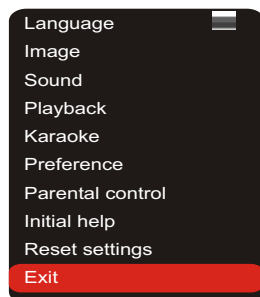
2.4.10 Reset to default ts

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 in the figure).Crossing point of those two lines on the chart will give the recommended delay value.

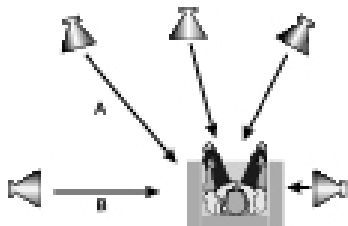


Fig.1.Take into account the A-B distance; use both figures for setting the desired time delay.

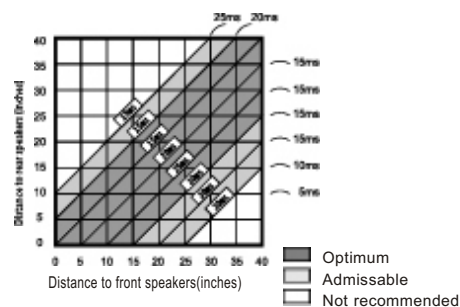


Fig.2.Determine delay value as to Dolby Pro Logic mode

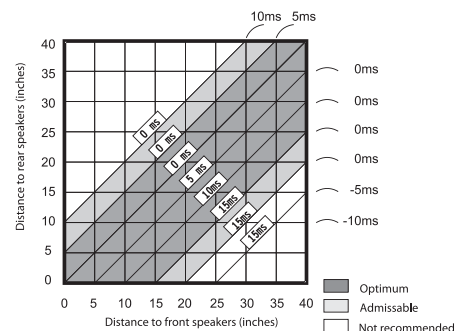


Fig.3.Determine delay value as to Dolby Digital mode.

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

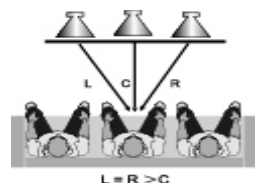
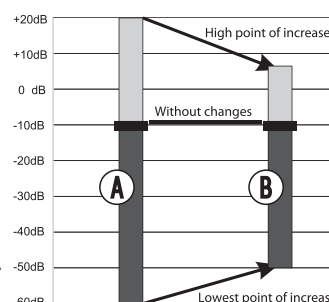


Fig.3.Small area Delay of central channel=0
L=R>C

“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	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.

Miscellaneous	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 MISCELLANEOUS

2.5.1 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.

2.5.2 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 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 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: SET UP>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 switch it on again.
Unstable image	1.Incorrect TV set settings.	1.Correct the TV set settings.

2.5.3 Specification

Supported formats	DVD-Video, Super VCD, VCD, MPEG-4, CD-DA, CD+G, HDCD, MP3, WMA, Kodak Picture CD, JPEG		
Data medium	CD-R, CD-RW, DVD-R, DVD+R, DVD-RW, DVD+RW		
Inputs	Microphone input(two microphone inputs for(DV611SI,DV624SI,DV626SI ,DV628SI models.one microphone inputs for DV214&216SI)		
Outputs	Audio outputs	Analog outputs:	2.0CH output.
		Digital outputs :	Coaxial audio out
	Video outputs:	S-Video output, RGB/SCART output, Composite output	
Video characteristics	Signal swing of composite video output:		1.0Vp-p(75 Ω)
	Signal swing of S-Video output:		1.0Vp-p(75 Ω)
	Signal swing of component video output:		C:0.286Vp-p(75 Ω) 1.0Vp-p(75 Ω)
			Cb/Cr:0.7Vp-p(75 Ω)
Audio characteristics	Frequency:		20-20000 Hz(± 1 db)
	Signal-to-noise ration:		> 100 db
Voltage range	~110-250V, 50/60 Hz		
Temperature requirement	5-35°C		
Moisture requirement	15-75%(not condensate)		

Model	Dimensions(mm)	Weight(kg)	Power consumption(watt)
DV214SI	260×175×38	1.3	14
DV216SI	260×175×38	1.3	

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

#Some discs, recorded in any supported format on any compatible device, can't playback or can playback incorrect over peculiarity of their record.

Chapter Three Block Diagram

3.1 OVERALL WIRING DIAGRAM FOR PLAYER

Overall wiring diagram of DV214&216SI(RU)player is shown in figure 3.1.1.

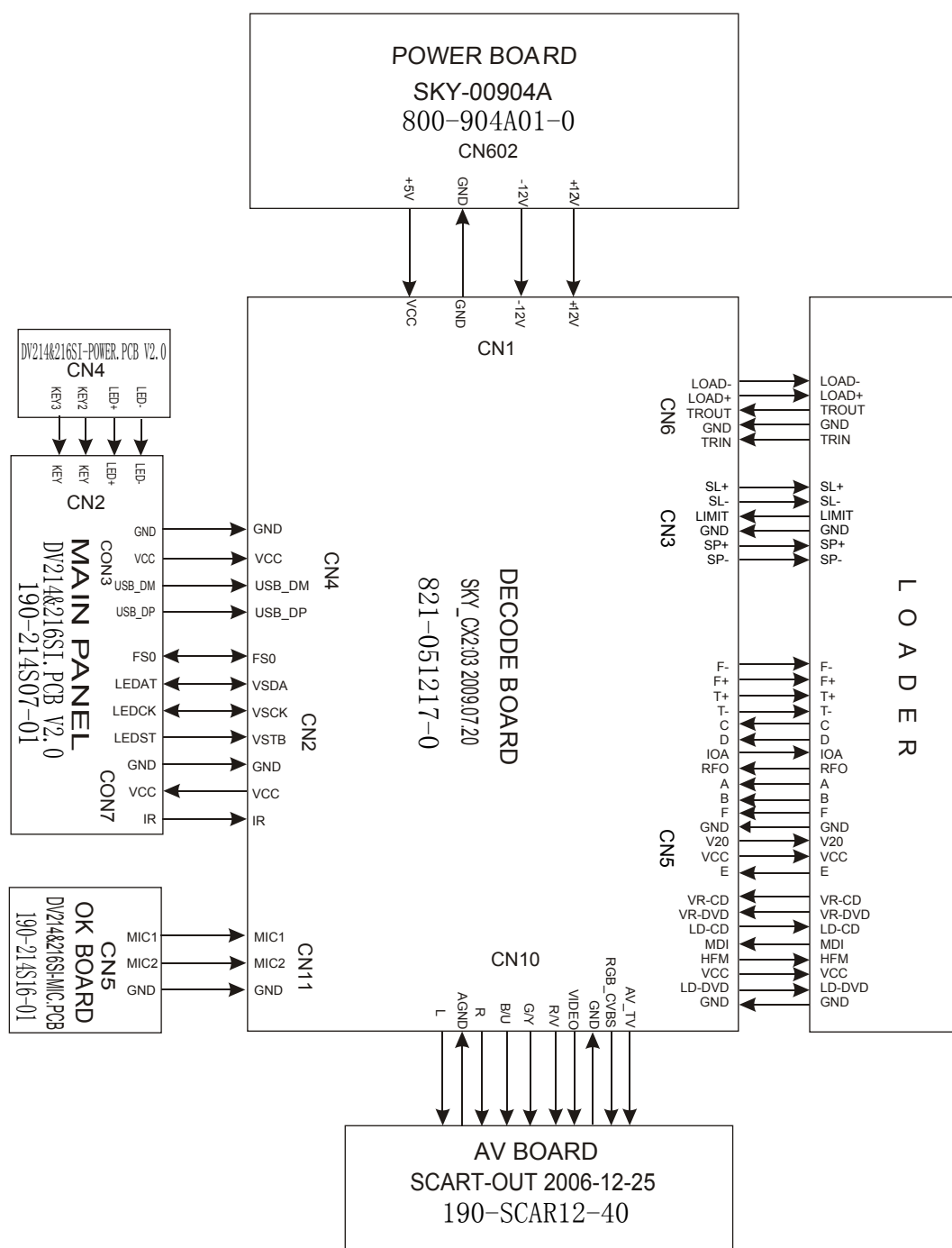


Figure 3.1.1 Overall Wiring Diagram of DV214&216SI(RU)

3.2 BLOCK DIAGRAM FOR PLAYER

Block diagram for DV214&216SI(RU) player is shown in figure 3.2.1.

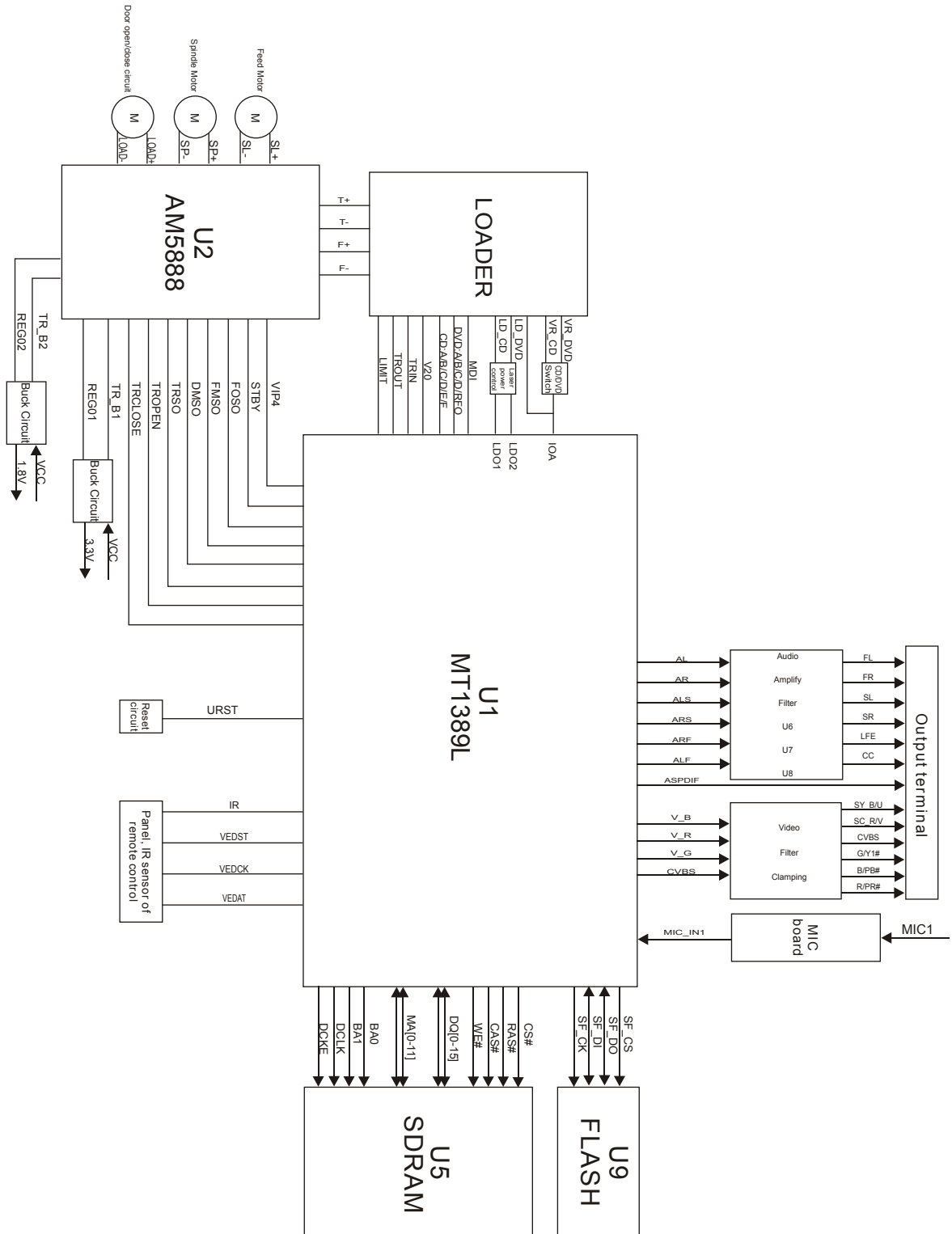


Figure 3.2.1 Block diagram of DV214&216SI(RU)

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.

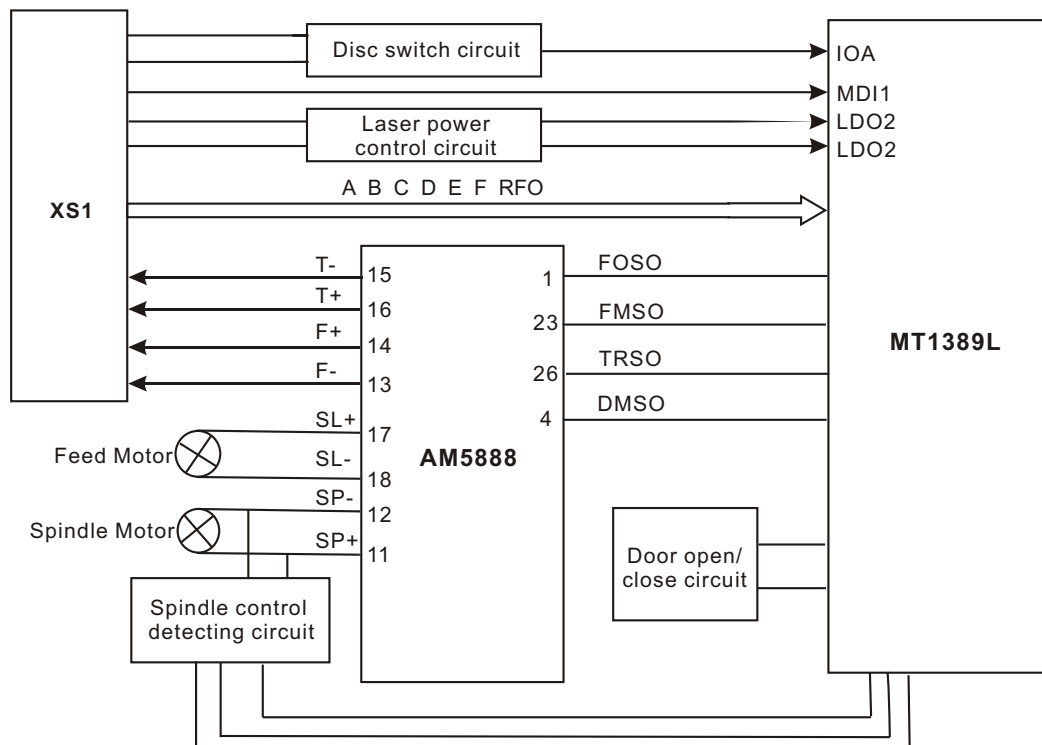


Figure 4.1.1 Block diagram of servo circuit

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.

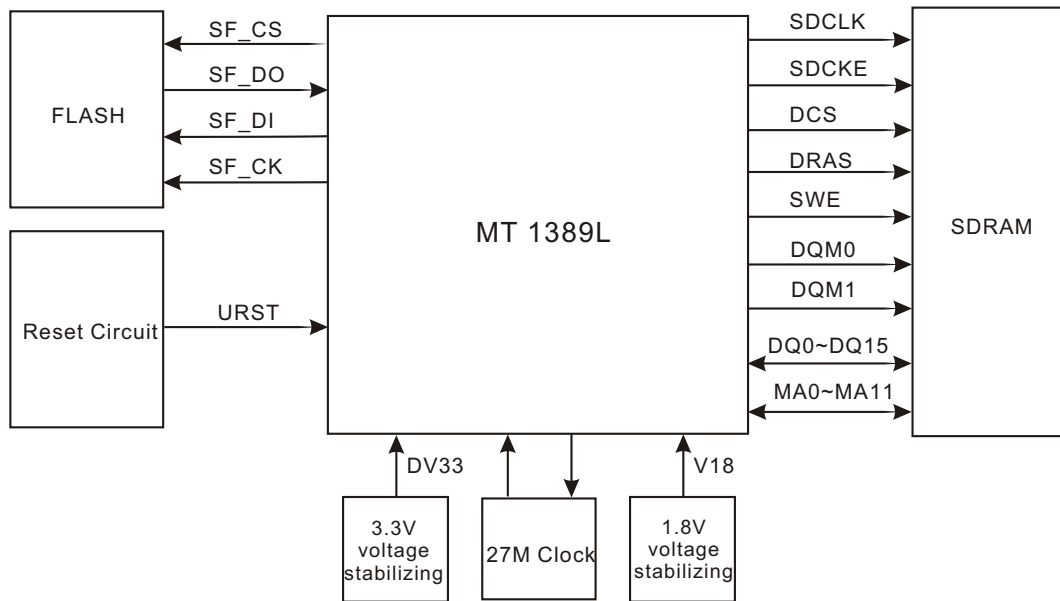


Figure 4.2.1 Block diagram of decode circuit

4.3 Video Circuit

MT1389L 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.

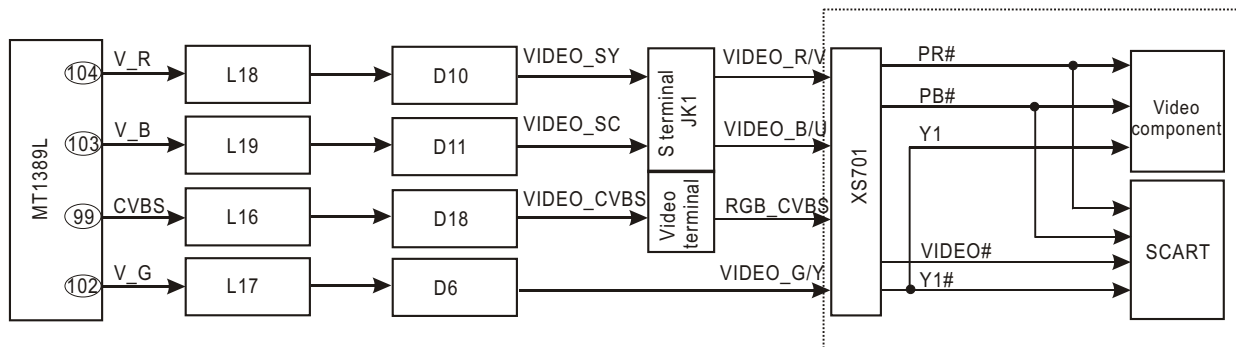


Figure 4.3.1 Block diagram of video signal process

4.4 Audio Circuit

Block diagram for audio circuit is shown in figure 4.4.1:

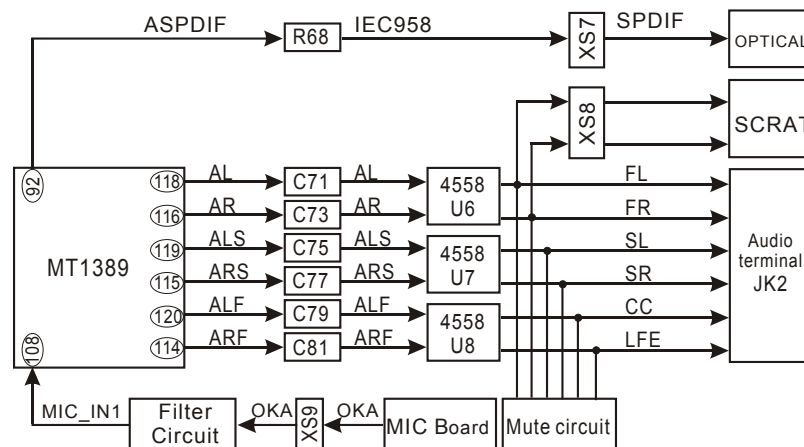


Figure 4.4.1 Block diagram of audio circuit

4.5 Power Circuit

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

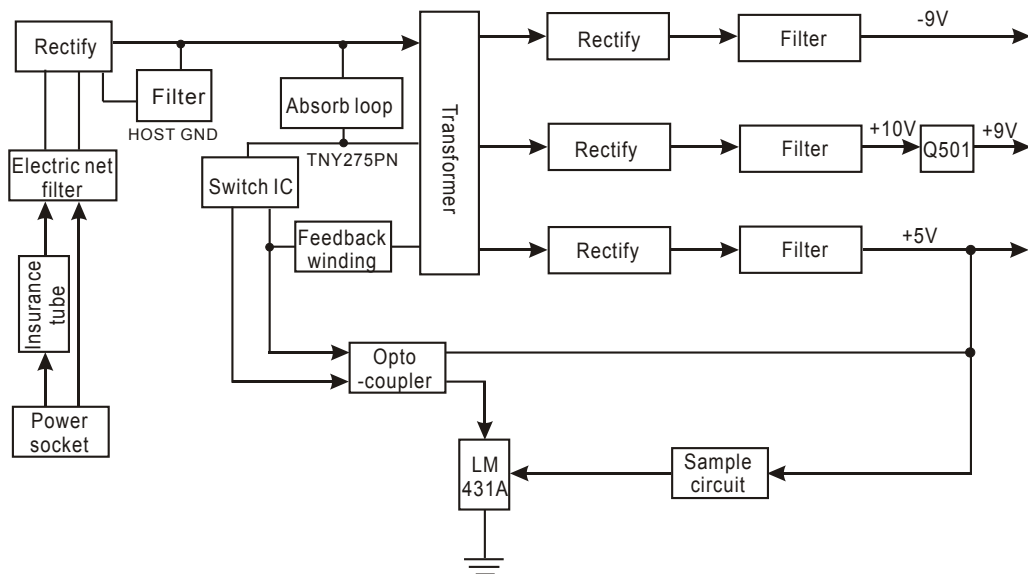
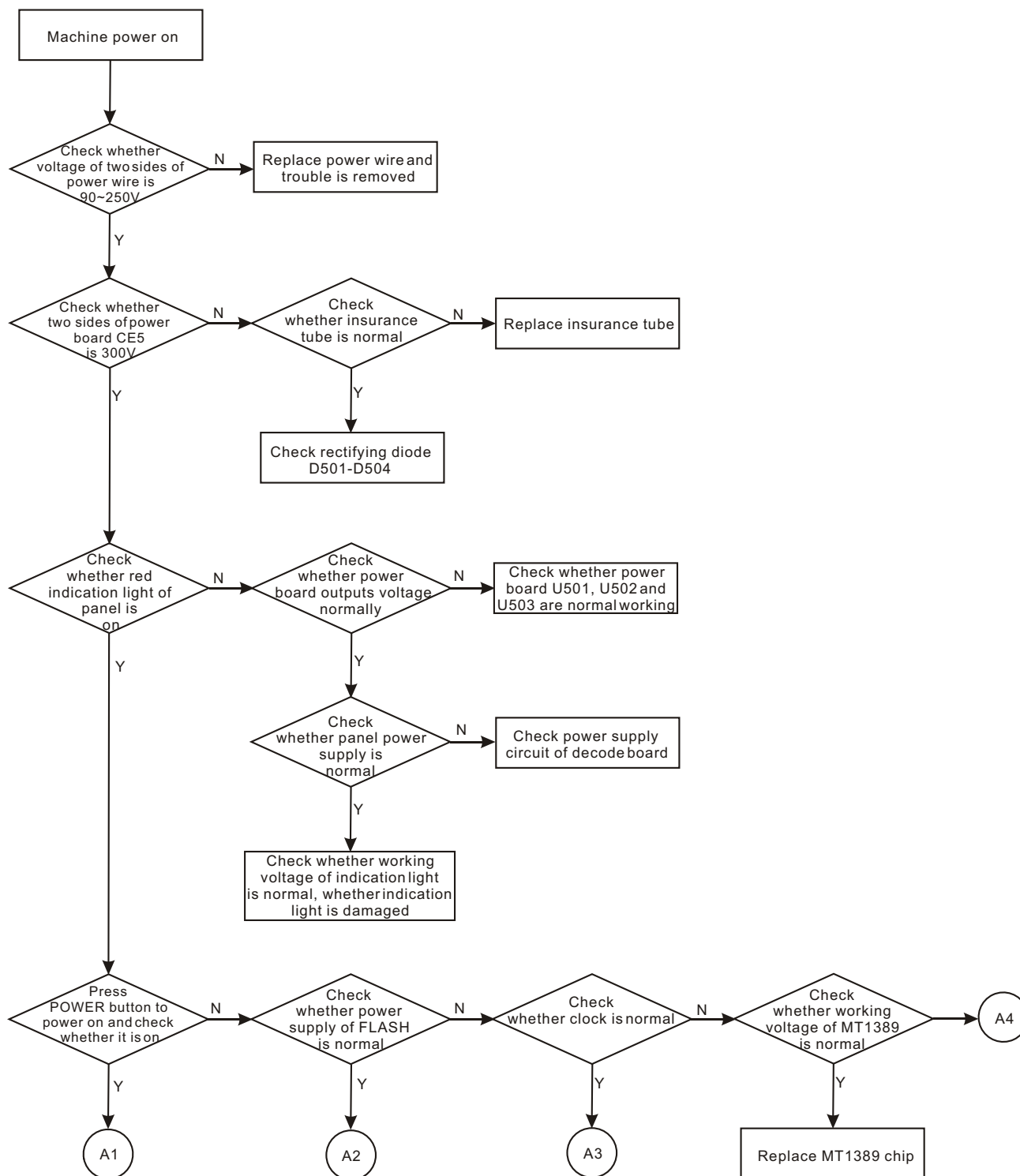
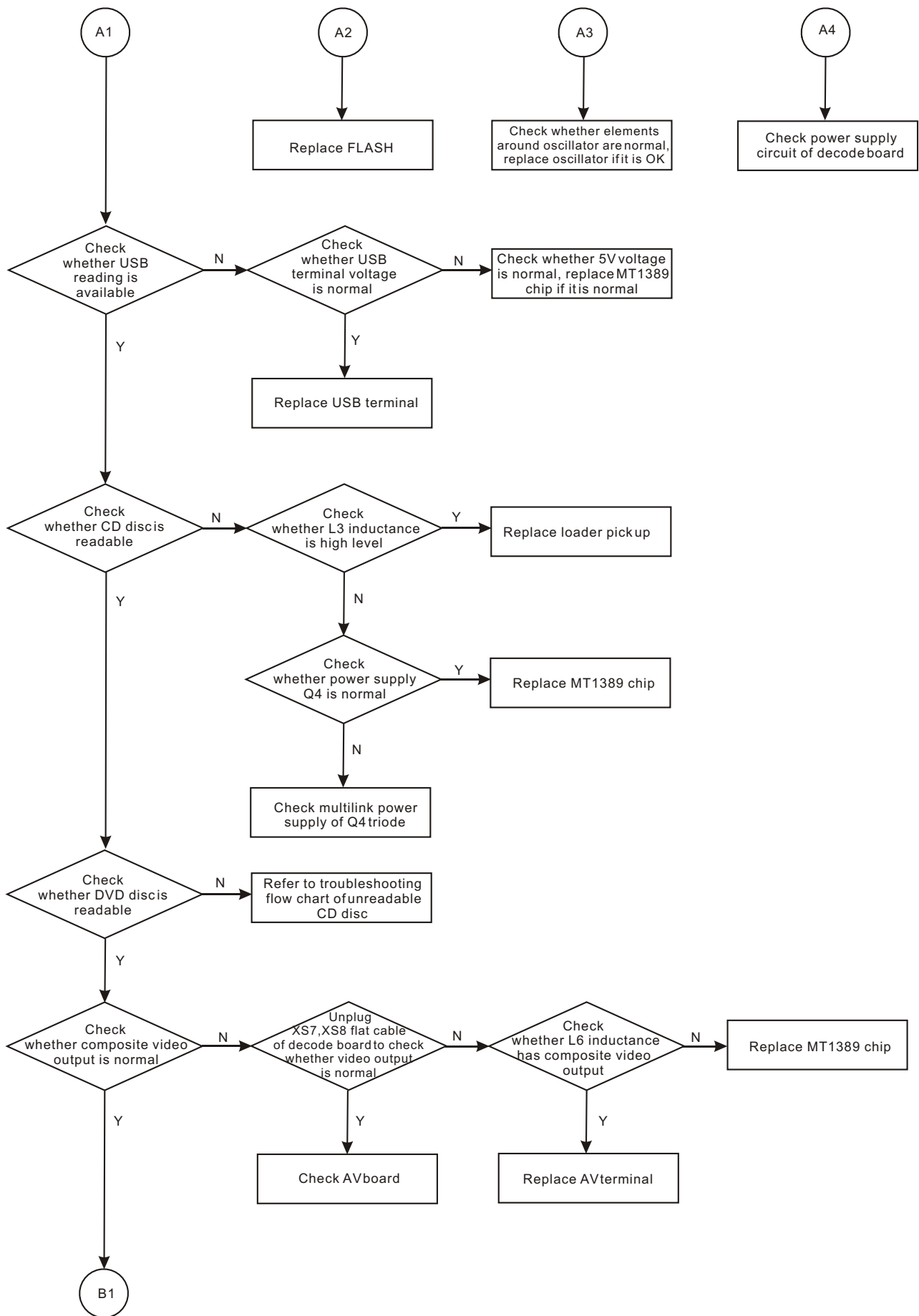


Figure 4.5.1 Block diagram of power circuit

Chapter Five Troubleshooting Flow Chart



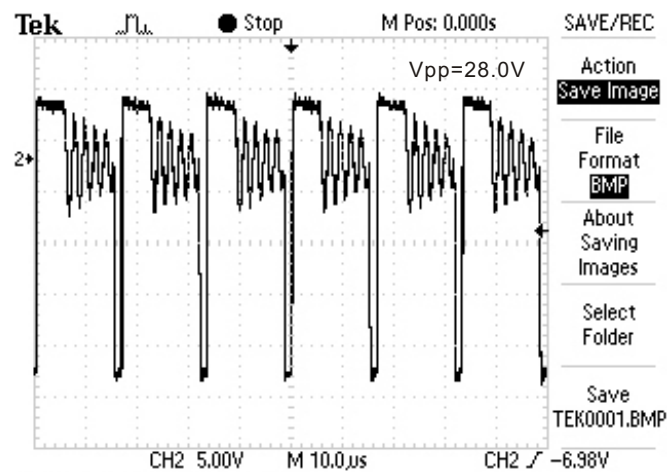




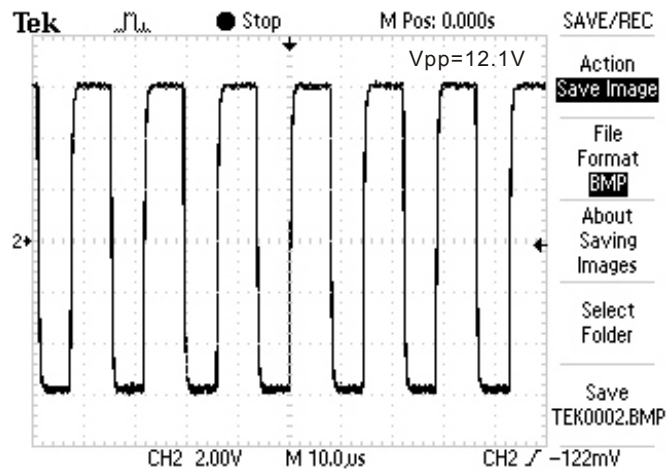
Chapter Six Waveform Diagram

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.

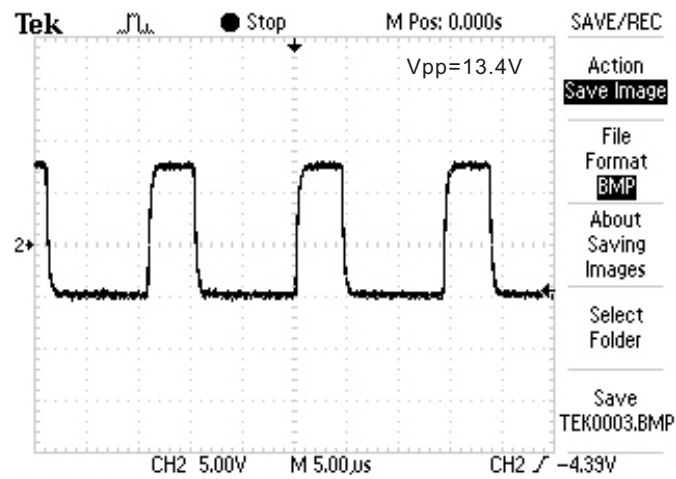
1. Waveform diagram for pulse DC of power board D510 anode.



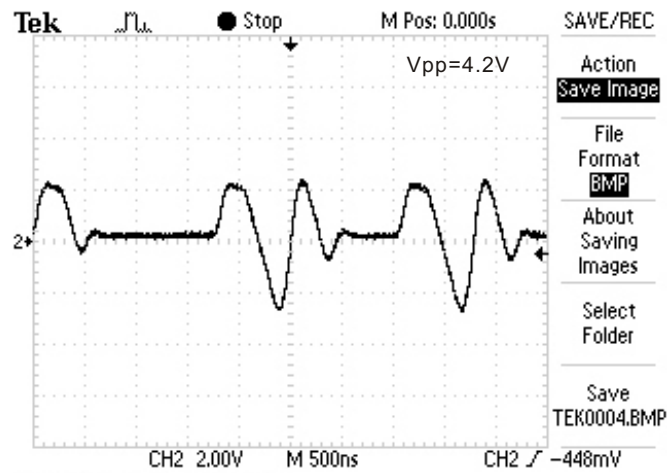
2. Waveform diagram for spindle signal DMO(when spindle has motion).



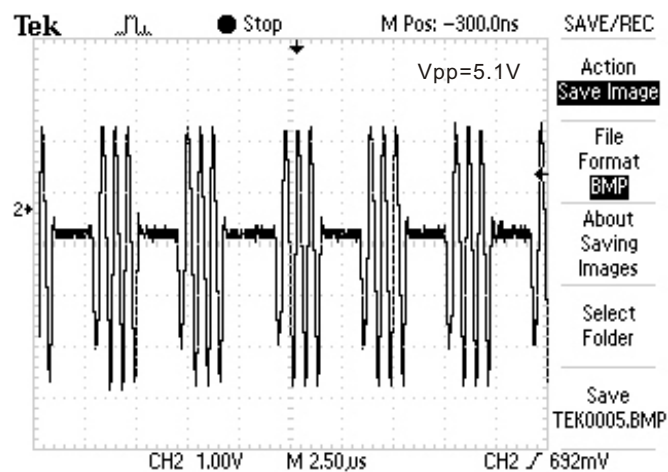
3. Waveform diagram for feed signal FMO(when pick up has feed motion).



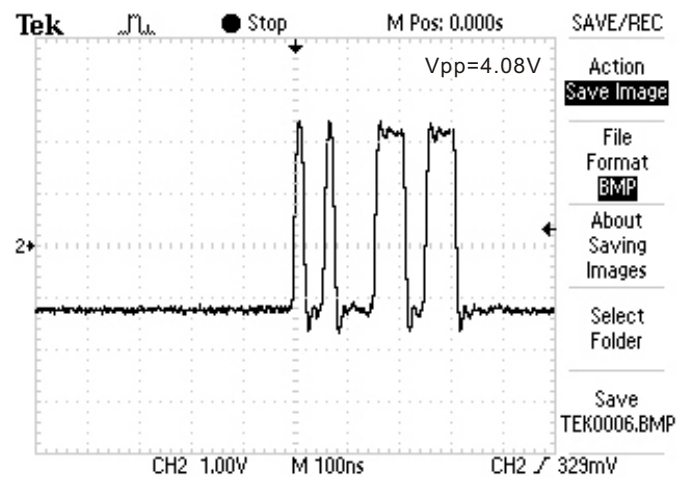
4. Waveform diagram for traction signal TRO(when pick up has traction motion).



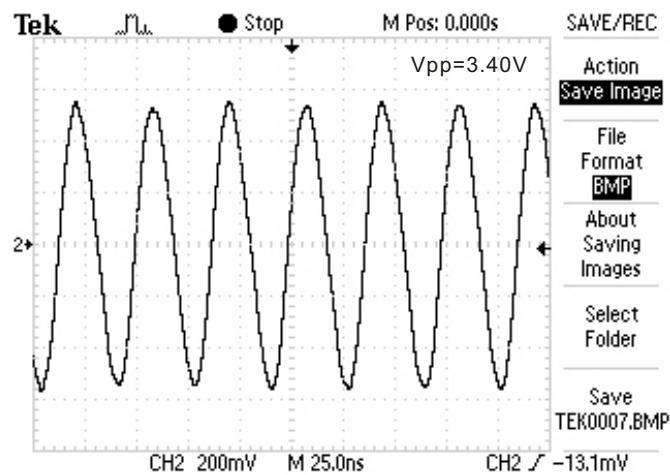
5. Waveform diagram for focus signal FOO(when pick up has focus motion).



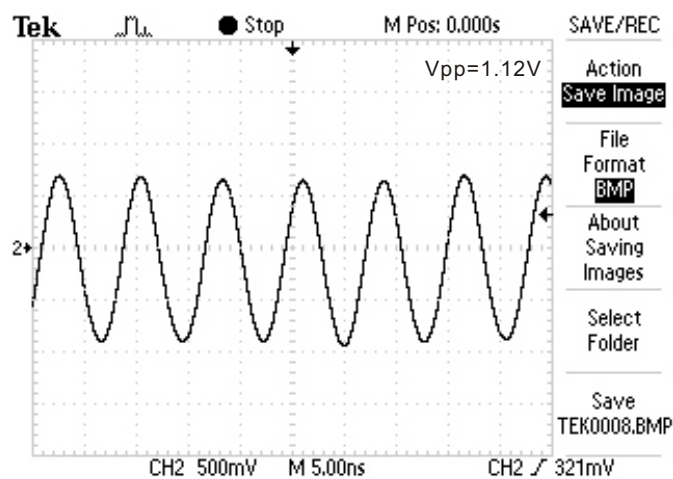
6. Waveform diagram for FLASH chip SF_DI(pin 5 of U5).



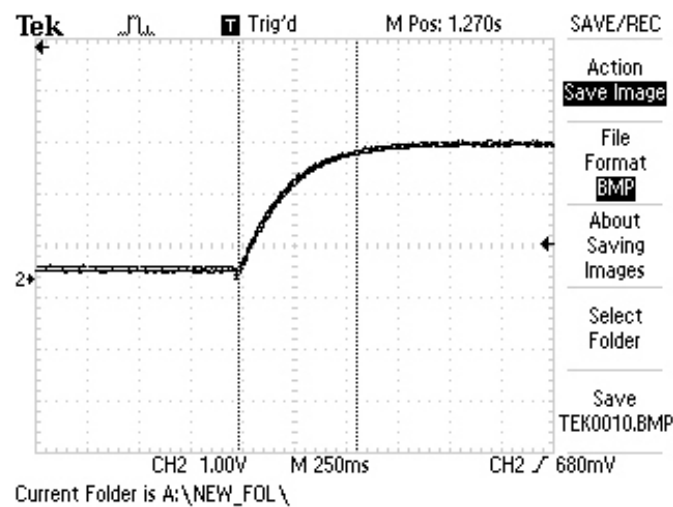
7. Waveform diagram for FLASH chip SF_CK(pin 6 of U5).



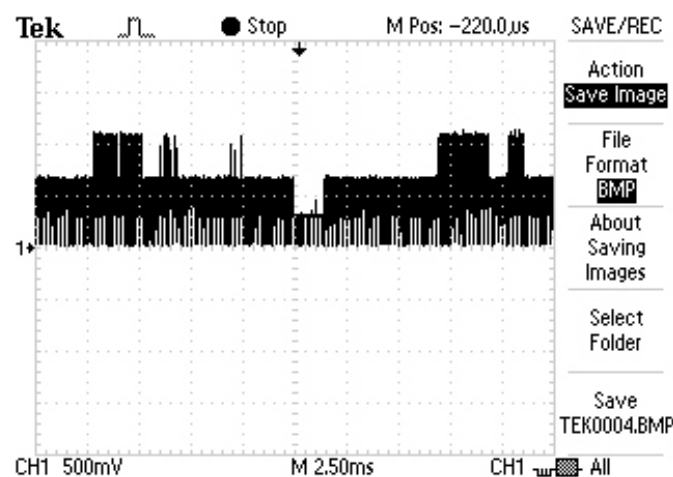
8. Waveform diagram for 27MHz clock (X1).



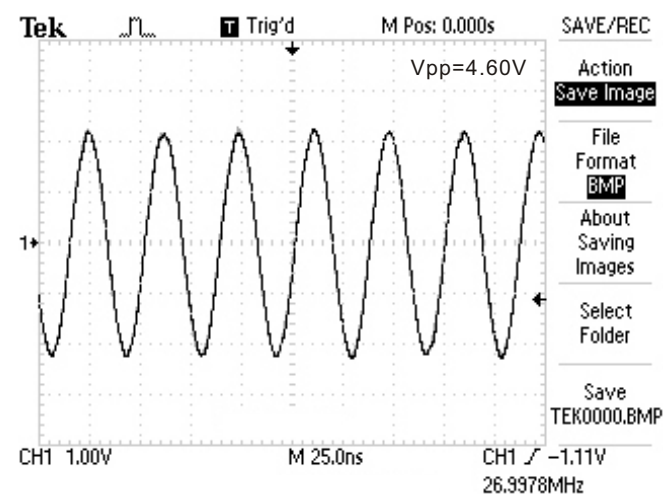
9. Reset signal URST waveform diagram.



10. Video signal waveform diagram.

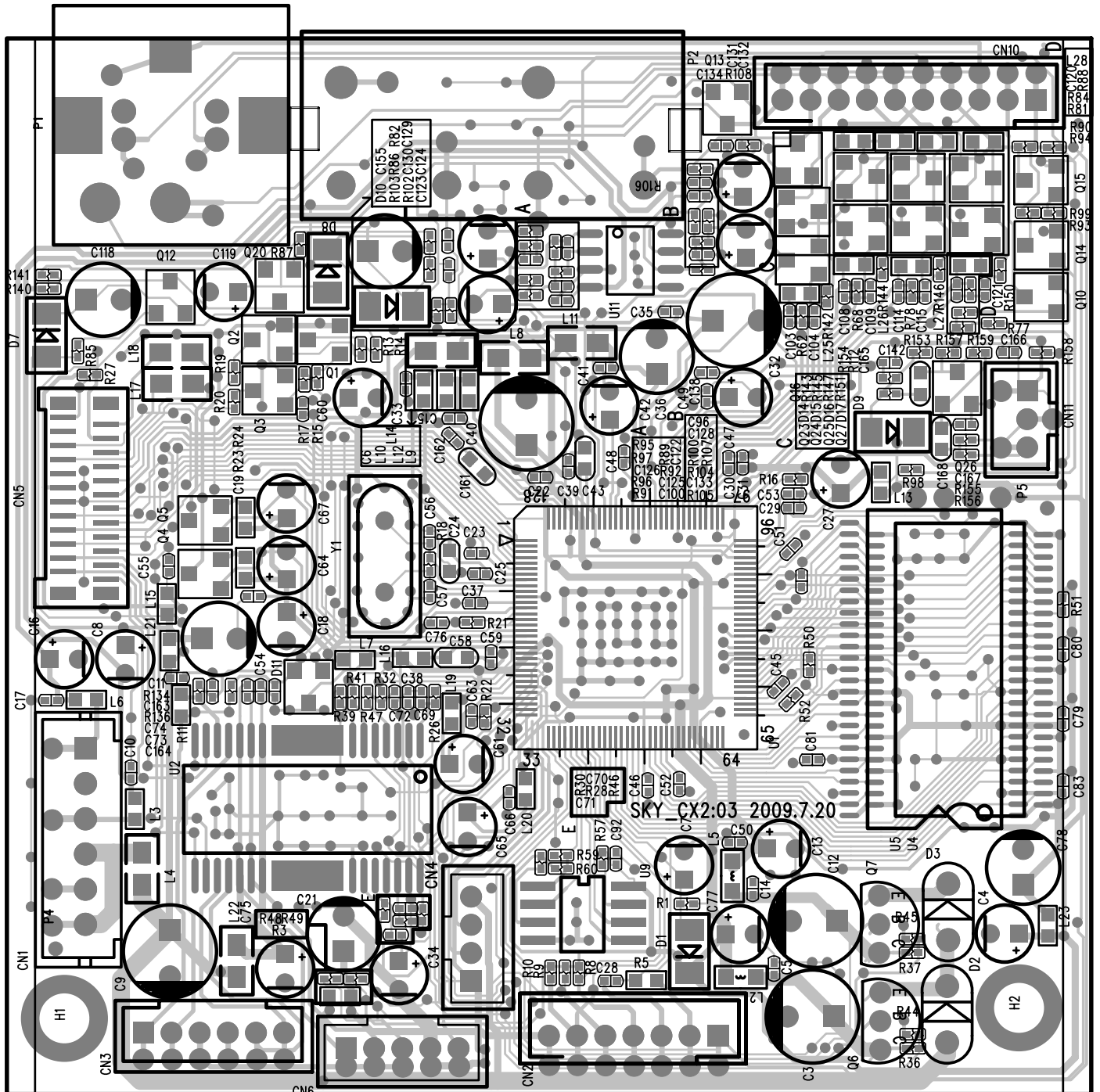


11. 1KHZ audio signal output waveform diagram(it is suggested to use test disc,if not,waveform tested will change at any time,which will affect your judgment).

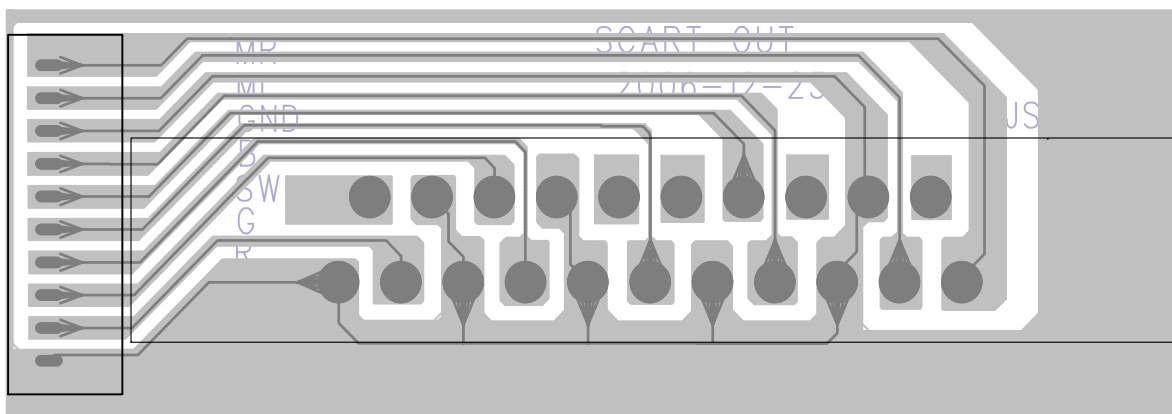


Chapter Seven PCB Board

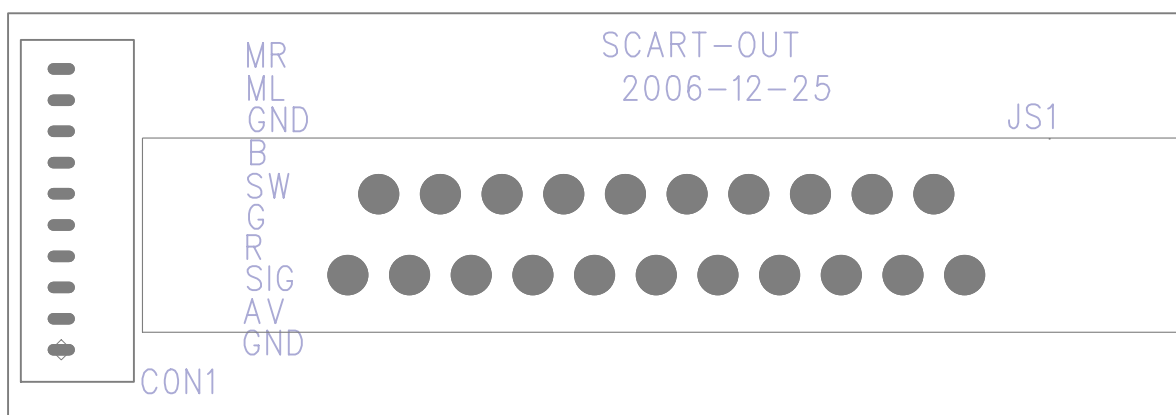
7.1 Surface layer of Decode Board(SKY_CX2:03 2009.07.20)



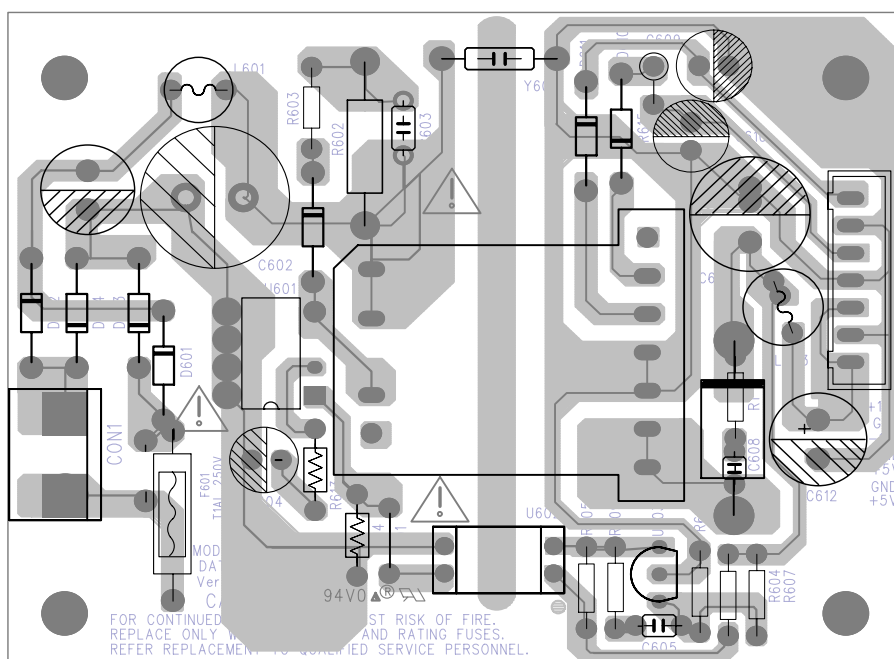
7.2 Surface layer of AV Board(DV214&216SI)



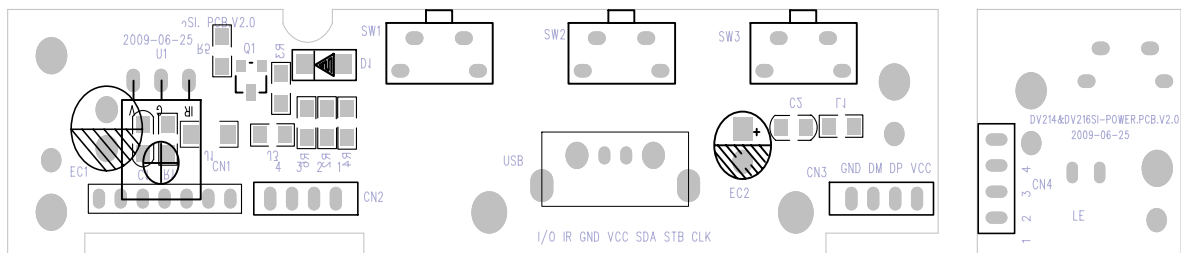
7.3 Bottom layer of AV Board(DV214&216SI)



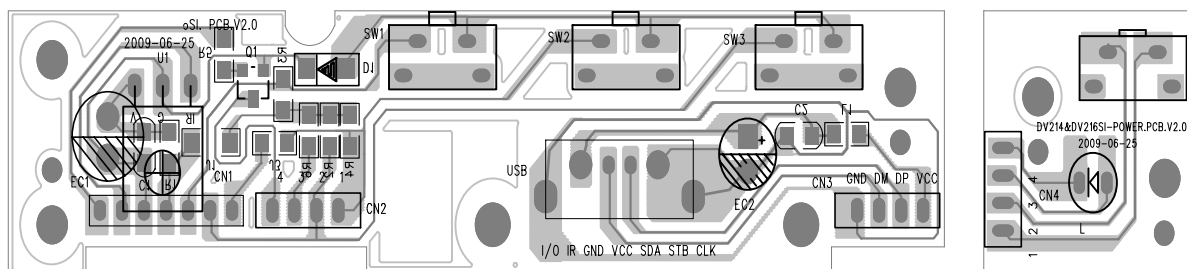
7.4 Power Board (SKY-P00904A)



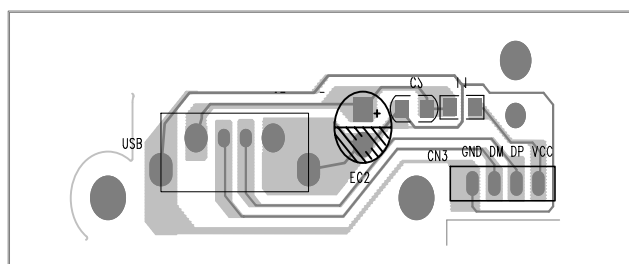
7.5 Surface layer of Main Panel (DV214&216SI.PCB V2.0)



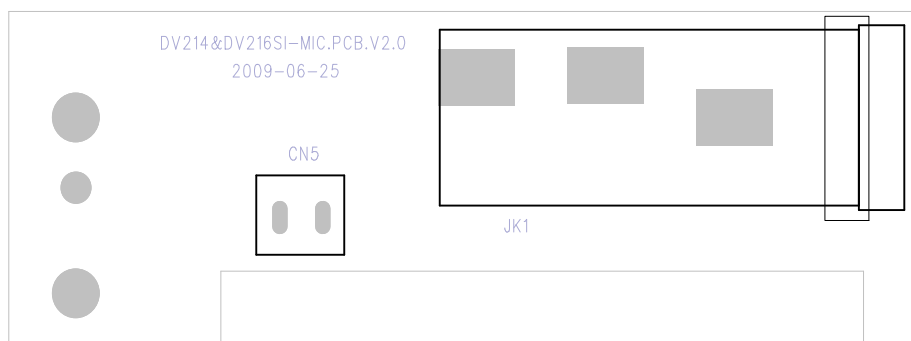
7.6 Bottom layer of Main Panel (DV214&216SI.PCB V2.0)



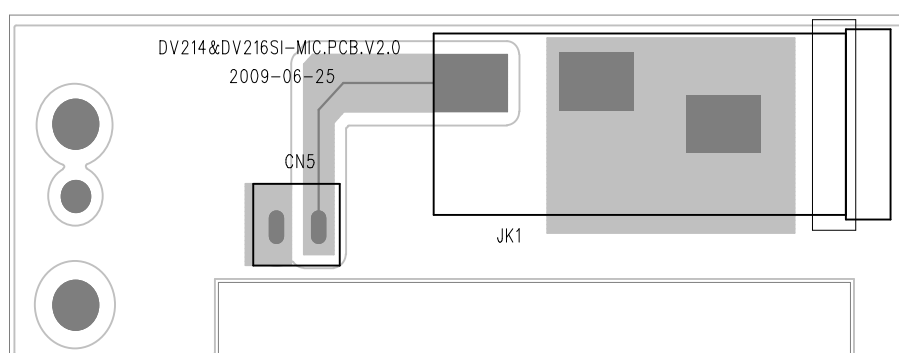
7.7 USB Board (DV214&216SI.PCB V2.0)



7.8 Surface layer of OK Board (DV625SI-MIC.PCB V2.0)

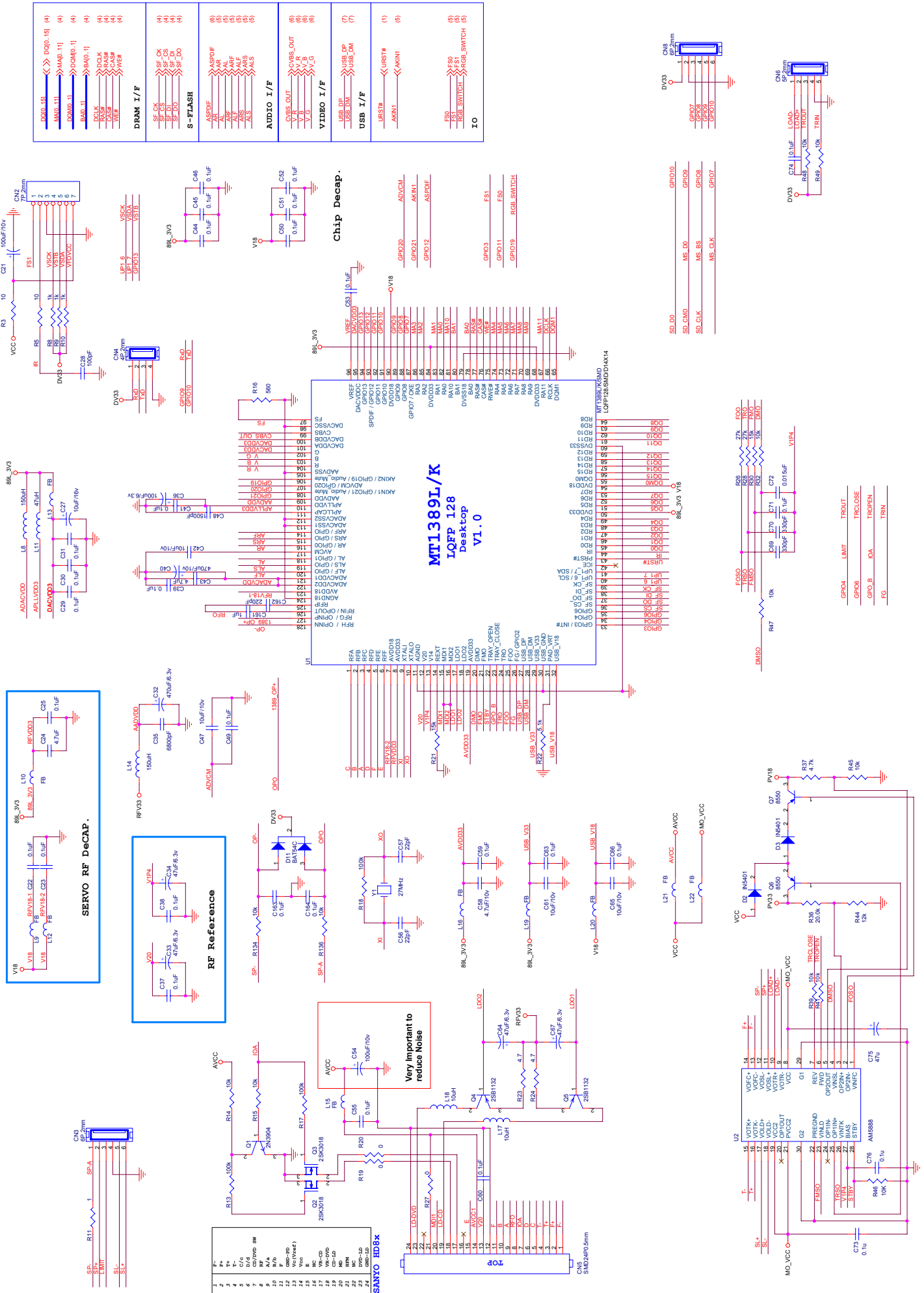


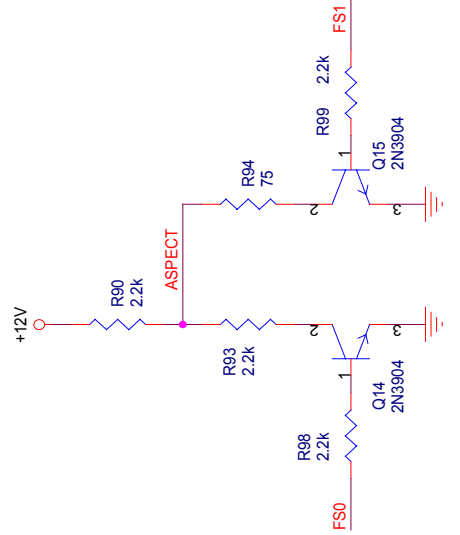
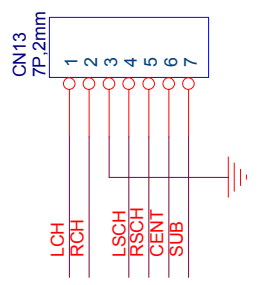
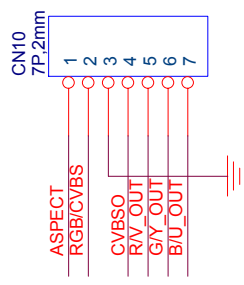
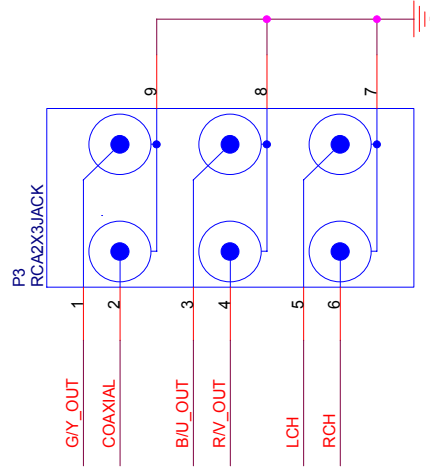
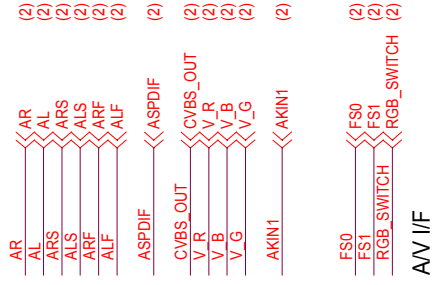
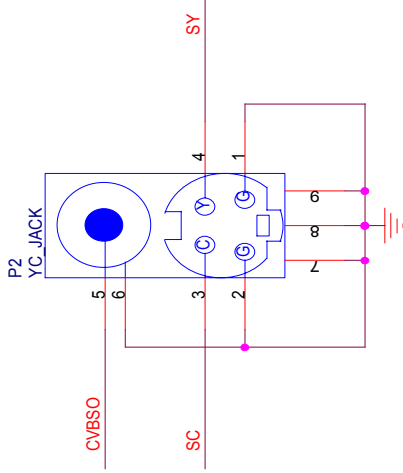
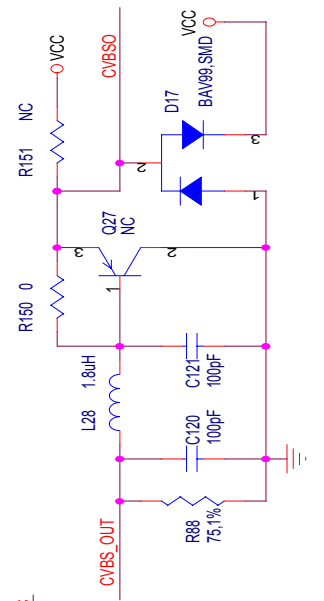
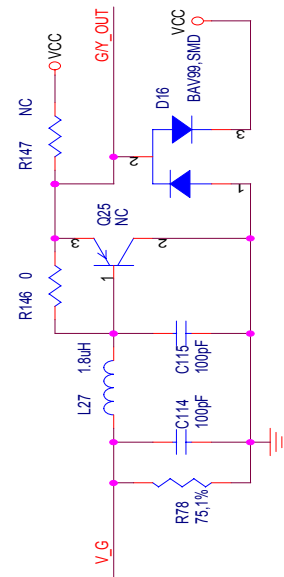
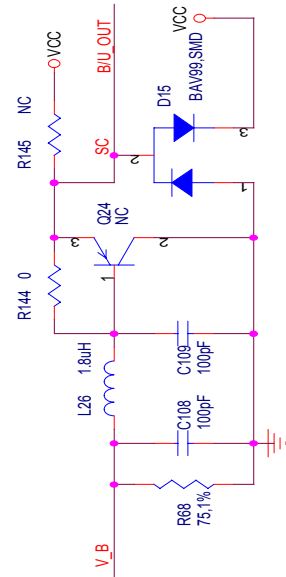
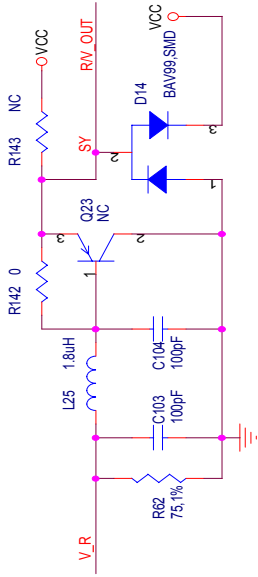
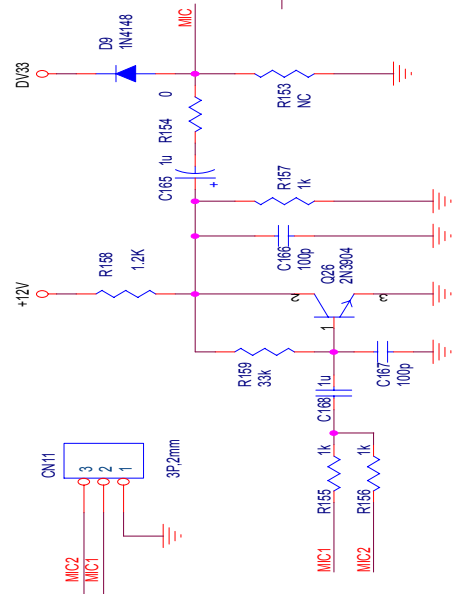
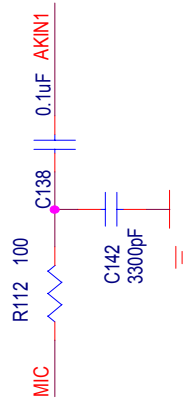
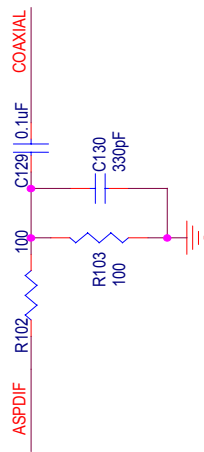
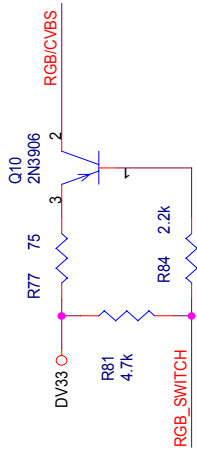
7.9 Bottom layer of OK Board (DV625SI-MIC.PCB V2.0)

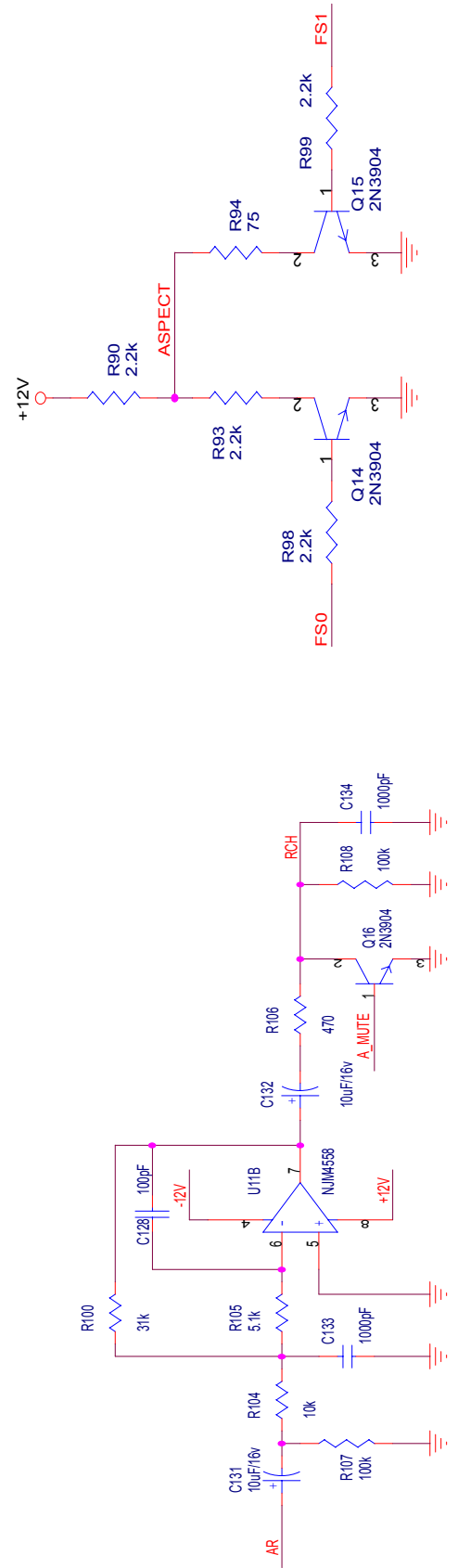
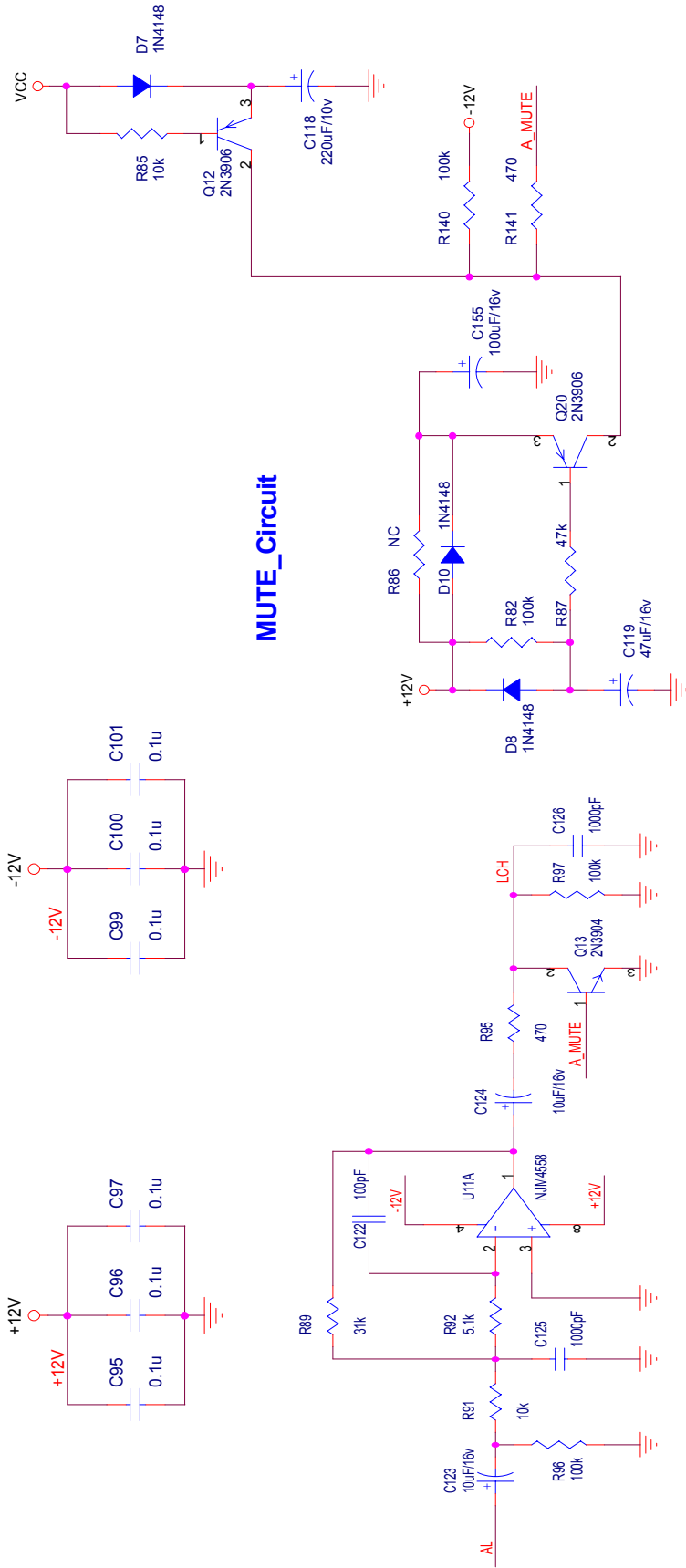


Chapter Eight Circuit Diagram

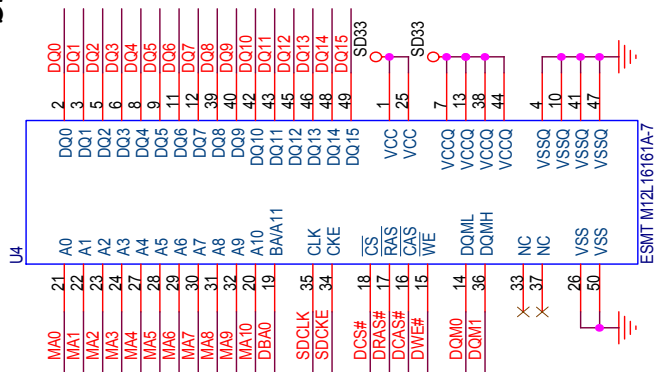
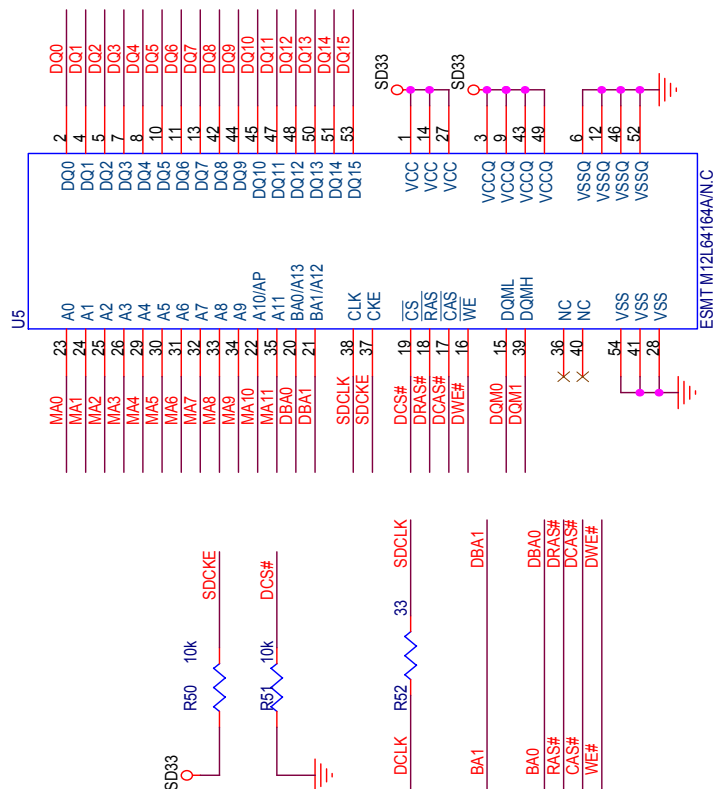
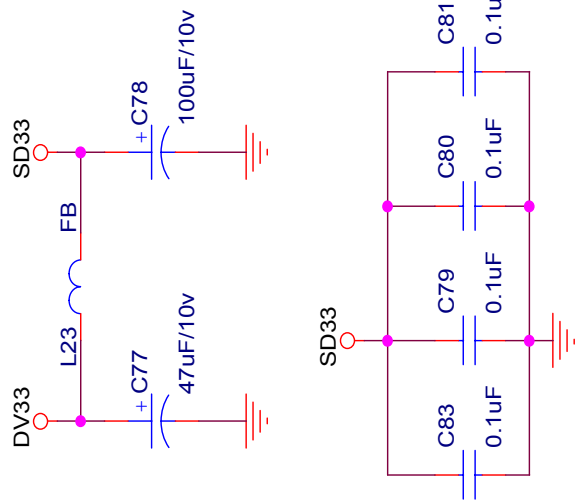
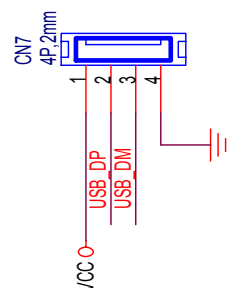
8.1 Decode Board(SKY_CX2:03 2009.07.20)





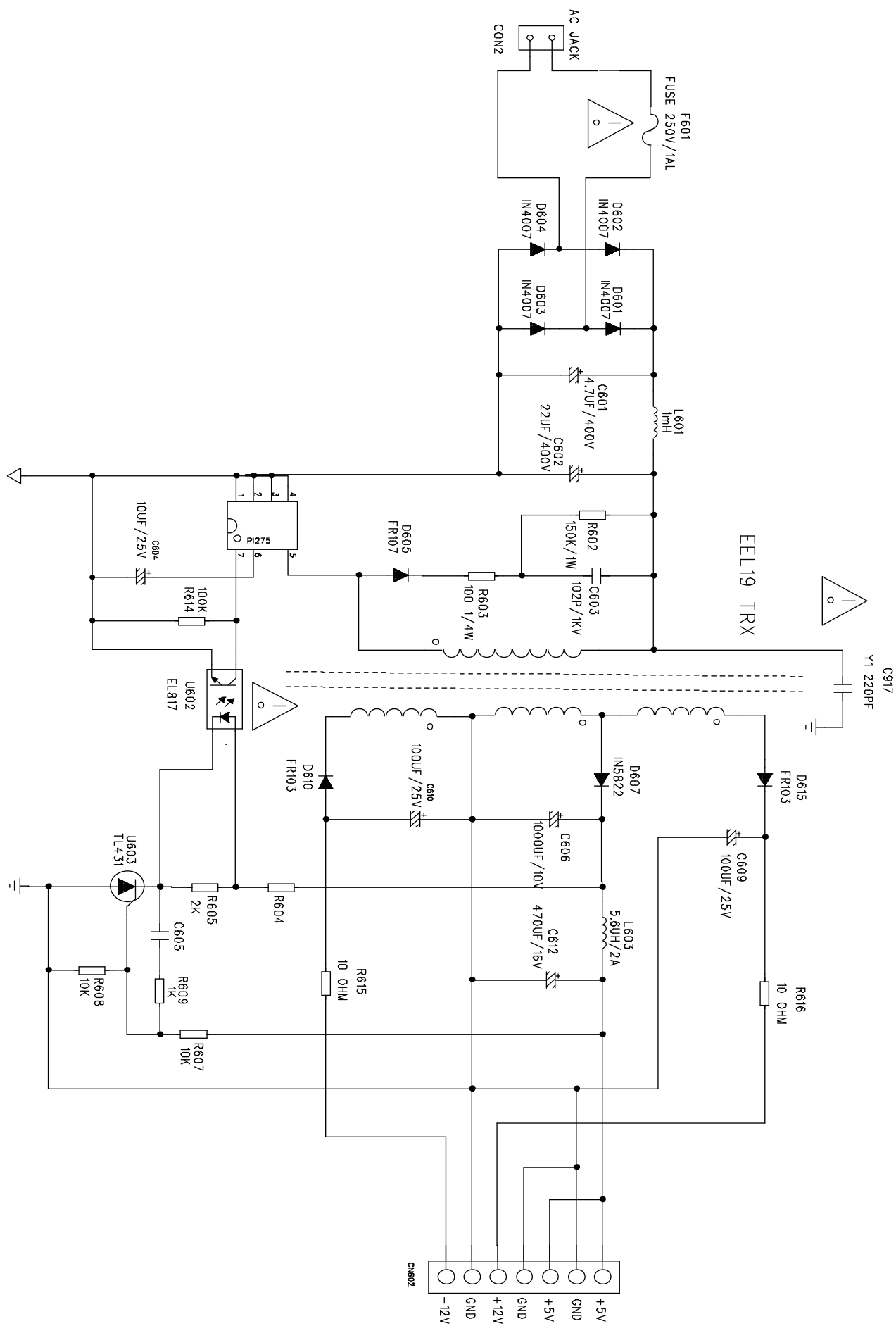


$\overline{\text{DQ}[0..15]}$ $\llcorner \llcorner$ $\text{DQ}[0..15]$ (2) $\overline{\text{MA}[0..11]}$ $\llcorner \llcorner$ $\text{MA}[0..11]$ (2) $\overline{\text{DQM}[0..1]}$ $\llcorner \llcorner$ $\text{DQM}[0..1]$ (2) $\overline{\text{BA}[0..1]}$ $\llcorner \llcorner$ $\text{BA}[0..1]$ (2) CLK $\llcorner \llcorner$ CLK (2) $\text{RAS\#}$ $\llcorner \llcorner$ $\text{RAS\#}$ (2) $\text{CAS\#}$ $\llcorner \llcorner$ $\text{CAS\#}$ (2) $\text{WE\#}$ $\llcorner \llcorner$ $\text{WE\#}$ (2)	SF_CK $\llcorner \llcorner$ SF_CK (2) SF_CS $\llcorner \llcorner$ SF_CS (2) SF_DI $\llcorner \llcorner$ SF_DI (2) SF_DO $\llcorner \llcorner$ SF_DO (2)
DRAM I / F	
$\overline{\text{USB_DP}}$ $\llcorner \llcorner$ USB_DP (2) $\overline{\text{USB_DM}}$ $\llcorner \llcorner$ USB_DM (2)	$\overline{\text{USB_DP}}$ $\llcorner \llcorner$ USB_DP (2) $\overline{\text{USB_DM}}$ $\llcorner \llcorner$ USB_DM (2)
S - FLASH	
$\overline{\text{USB_DP}}$ $\llcorner \llcorner$ USB_DP (2) $\overline{\text{USB_DM}}$ $\llcorner \llcorner$ USB_DM (2)	$\overline{\text{USB_DP}}$ $\llcorner \llcorner$ USB_DP (2) $\overline{\text{USB_DM}}$ $\llcorner \llcorner$ USB_DM (2)

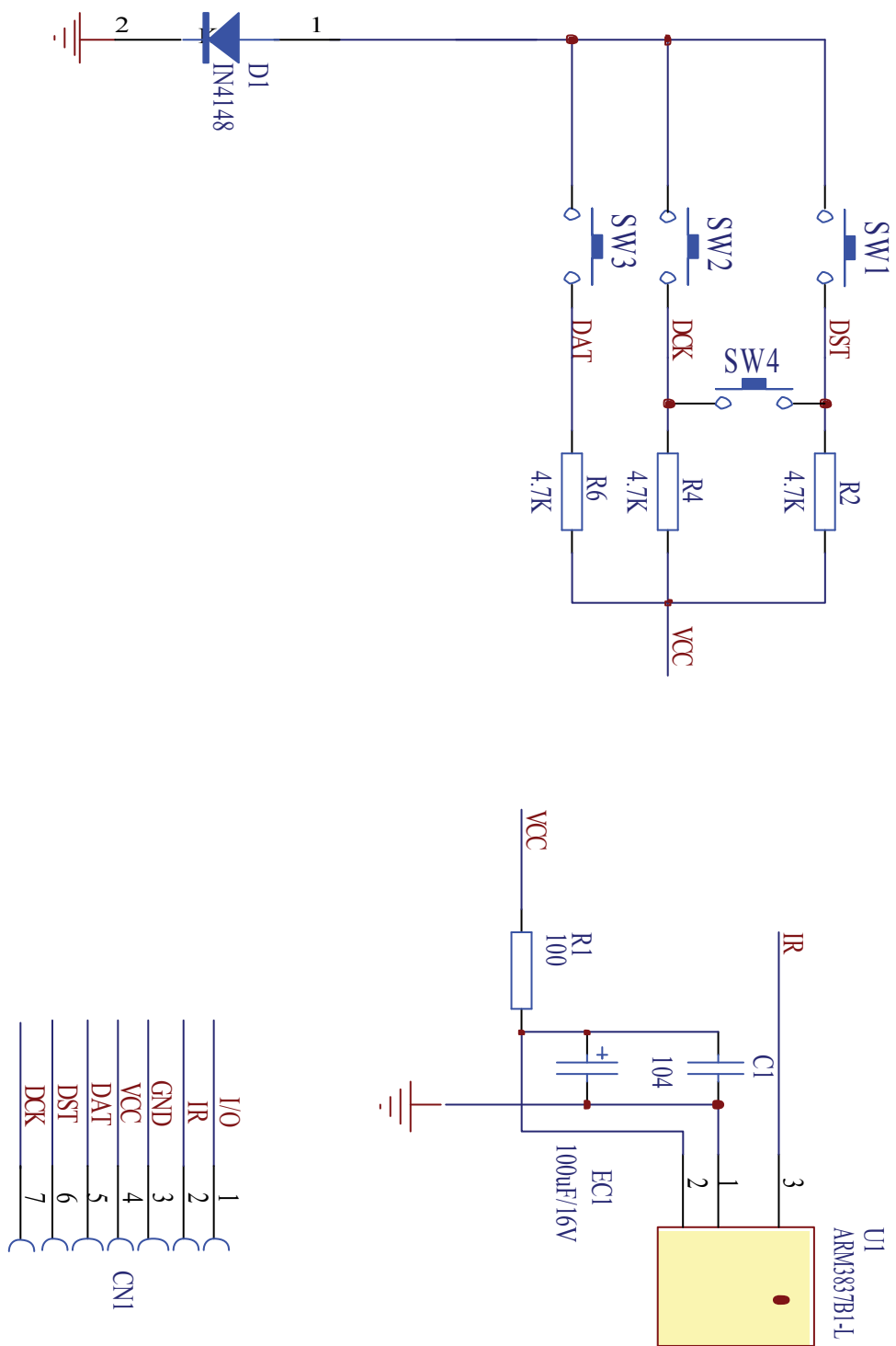
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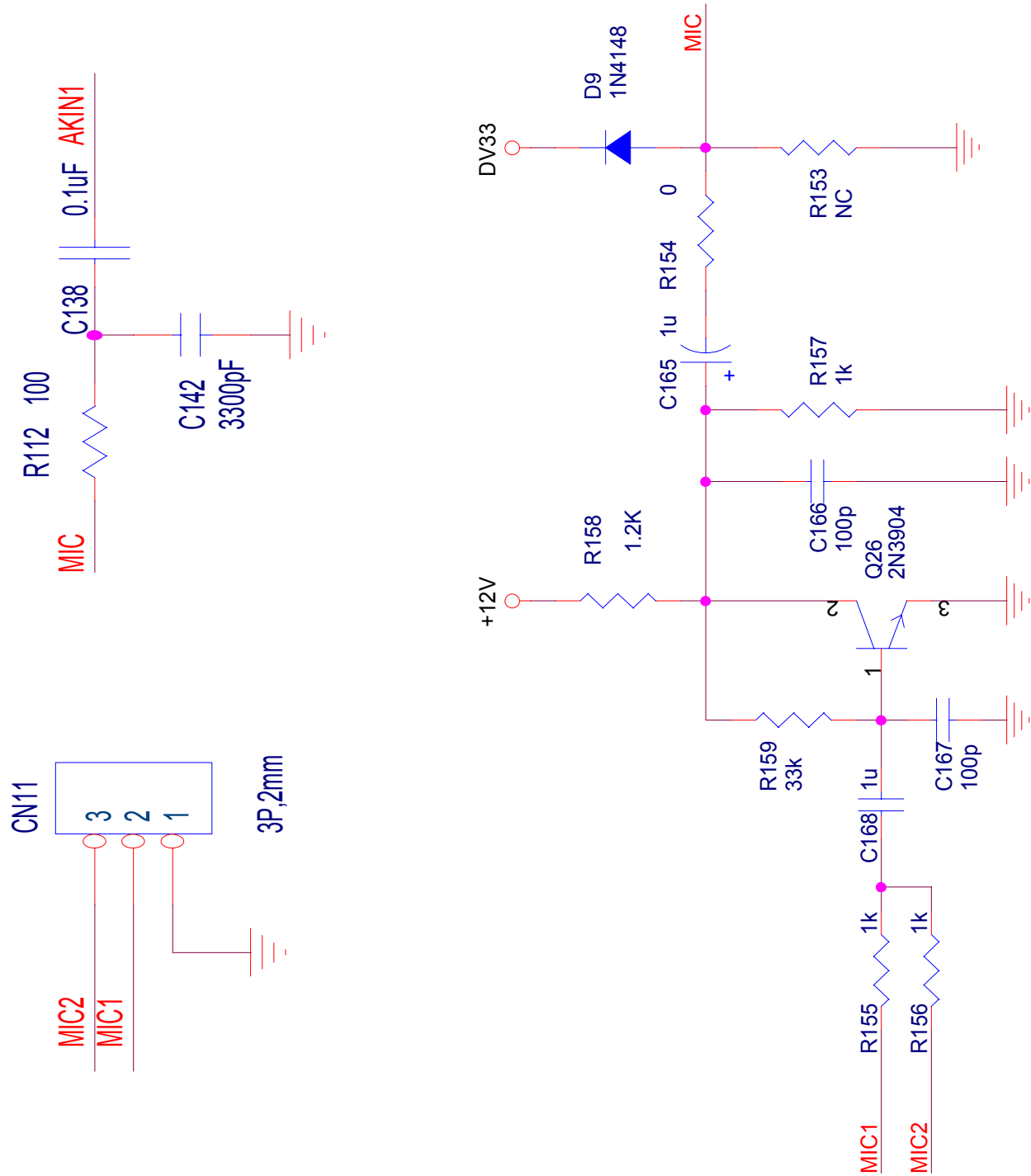
Only for MT1389L

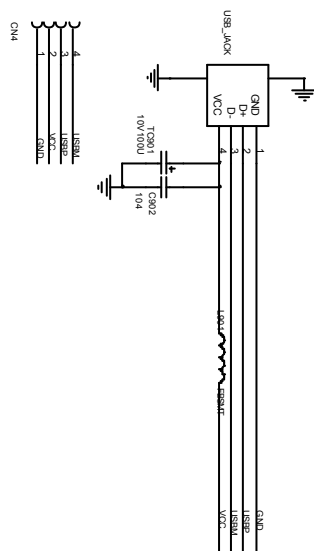
8.3 Power Board (SKY-P00904A)



8.4 Main Panel (DV214&216SI.PCB V2.0)







DVD PLAYER DV216SI BLACK (RU MTK1389DE-L(2.1CH+USB+Scart+Coaxial+S-Video+Video+ DivX3,4,5,6,Xvid Mpeg4+Firmware))

SERIAL NUMBER	MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	UNIT	QTY	LOCATION
1.1	832-216S04-0	USB&MIC&KEY BOARD		SET	1	
1.2	832-216S16-0	POWER KEY BOARD		SET	1	
1.4	803-216S03-0	PLASTIC COMPONENTS OF FRONT PANEL		SET	1	
2	804-216S01-0	HARDWARE COMPONENTS		SET	1	
3	821-051217-0	DECODER BOARD		SET	1	
4	820-030801-01	DVD LOADER COMPONENTS		SET	1	
5	832-904A10-0	POWER BOARD		SET	1	
6	805-216S01-0	PACKAGE MATERIAL		SET	1	
7	832-0RBK27-1	SCART BOARD		SET	1	

BOM LIST VERSION NO.: SI09.11

1.1. DV216SI BLACK USB&MIC&KEY BOARD 832-216S04-0						
SERIAL NUMBER	MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	UNIT	QTY	LOCATION
1.1	832-216S04-0	USB&MIC&KEY BOARD	DV214SI&DV216SI	PCS	1	
1.1.1	190-214S07-01	PCB	DV214SI&DV216SI.PCB V2.0	PCS	1	
1.1.2	190-214S16-01	PCB	DV214SI&DV216SI-MIC.PCB V2	PCS	1	
1.1.3	136-603837-C	RECEIVING HEAD	ARM-3837B1-L	PCS	1	
1.1.4	501-060709-20	SPONGE	6*7*9	PCS	1	
1.1.5	127-227042-7	CAPACITOR	220uF/16V ±20% 6.3*7mm-40+1	PCS	1	CE2
1.1.6	127-107042-6	CAPACITOR	100uF/16V ±20% 5*7mm -40℃+	PCS	1	CE1
1.1.7	147-001110-2	LIGHT TOUCH RESTORE SWITCH	KFC-WA3.85	PCS	3	
1.1.8	162-010430-2	USB SOCKET	USB 4PIN	PCS	1	
1.1.9	161-3650B2-3	MIC SOCKET	CK6.35-18	PCS	1	JK1
1.1.10	013-100005-20	RESISTOR	10Ω 0805 1/8W ±5% "SMD"	PCS	1	R1
1.1.11	013-221005-20	RESISTOR	220Ω 0805 1/8W ±5% "SMD"	PCS	1	R6
1.1.12	013-103005-20	RESISTOR	10K 0805 1/8W ±5% "SMD"	PCS	4	R2/3/4/5
1.1.13	013-000005-20	RESISTOR	0Ω 0805 1/8W "SMD"	PCS	1	J3
1.1.14	013-000005-30	RESISTOR	0Ω 1206 1/4W "SMD"	PCS	1	J1
1.1.15	023-104074-20	CAPACITOR	0.1UF 50V -20+80% 0805	PCS	2	C1/C2
1.1.16	030-004148-1	DIODE	1N4148	PCS	1	D1
1.1.17	031-009014-0	TRIODE	9014 SMD SOT-23	PCS	1	Q1
1.1.18	085-600B25-2	CHIP BEAD	FB60/0805/2A (60Ω)	PCS	1	L
1.1.19	191-078170-2I	FLAT CABLE	7PIN 2.0MM L=170MM	PCS	1	FRONT PANEL
1.1.20	191-048250-26	FLAT CABLE	4PIN 26# 2.0MM L=250MM	PCS	1	FRONT PANEL

1.1.21	191-046220-23	FLAT CABLE	4PIN 22#/28# 2.0MM L=220MM	PCS	1	USB BOARD
1.1.22	191-036210-52	FLAT CABLE	A3PIN(2.0MM), B2PIN(2.54MM)	PCS	1	MIC BOARD

1.2. DV216SI BLACK POWER KEY BOARD 832-216S16-0						
SERIAL NUMBER	MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	UNIT	JANTITY	LOCATION
1.2	832-216S16-0	POWER KEY BOARD	DV214SI&DV216SI	SET	1	
1.2.1	190-214S22-01	PCB	DV214SI&DV216SI-POWER.PCB	PCS	1	
1.2.2	147-001110-A	LIGHT TOUCH SWITCH	6*6*5mm	PCS	1	
1.2.3	130-053007-5	LED LIGHT	φ3mm	PCS	1	
1.2.4	214-0SKY07-0	PILLOR OF LED LIGHT		PCS	1	

1.4. DV216SI BLACK PLASTIC COMPONENTS OF FRONT PANEL 803-216S03-0						
SERIAL NUMBER	MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	UNIT	JANTITY	LOCATION
1.4	803-216S03-0	PLASTIC COMPONENTS OF FRONT PANEL	DV216SI	SET	1	
1.4.1	200-216S00-01	FRONT PANEL	DV216SI ABS BLACK OIL PAINTING	PCS	1	
1.4.2	206-216S00-01	CD DOOR	DV216SI ABS BLACK OIL PAINTING	PCS	1	
1.4.3	254-216S00-01	PANEL MIRROR FILM	DV216SI ABS BLACK OIL PAINTING	PCS	1	
1.4.4	230-216S00-01	POWER KEY	DV216SI ABS BLACK OIL PAINTING	PCS	1	
1.4.5	234-216S00-01	PLAY/STOP/OPEN KEY	DV216SI ABS BLACK OIL PAINTING	PCS	1	

2. DV216SI BLACK HARDWARE COMPONENTS 804-216S01-0						
SERIAL NUMBER	MATERIAL CODE	MATERIAL NAME	SPECIFICATION	UNIT	JANTITY	LOCATION
2.1	303-216S03-00	BOTTOM COVER	260*38*173mm	PCS	1	
2.2	301-216S03-00	BACK COVER	260*38MM	PCS	1	
2.3	302-216S00-00	TOP COVER	260*38*173mm	PCS	1	
2.4	358-300606-2	SELF-TAPPING SCREW	6BB3*6	PCS	5	TOP COVER
2.5	368-306706-2	SELF-TAPPING SCREW	7PWB3*6	PCS	1	BETWEEN FRONT AND BUTTOM COVER
2.6	351-301506-2	SELF-TAPPING SCREW	KM3*6	PCS	2	TWO SIDE OF FRONT PANEL
2.7	368-301708-2	SELF-TAPPING SCREW	7PWB3*8	PCS	4	LOADER
2.8	358-300105-2	SELF-TAPPING SCREW	BB3*5	PCS	4	POWER BOARD
2.9	358-300105-2	SELF-TAPPING SCREW	BB3*5	PCS	2	MPEG BOARD
2.10	361-230107-0	SELF-TAPPING SCREW	PA2.3*7	PCS	7	FRONT PANEL PCB
2.11	361-230107-0	SELF-TAPPING SCREW	PA2.3*7	PCS	4	KEYS
2.12	361-230107-0	SELF-TAPPING SCREW	PA2.3*7	PCS	2	MIC SOCKET
2.13	358-300108-1	SELF-TAPPING SCREW	BB3*8	PCS	2	SCART BOARD
2.14	358-300108-1	SELF-TAPPING SCREW	BB3*8	PCS	2	OUT PUT JACK

2.15	530-214S00-0	INSULATION PAPER	97*93	PCS	1	POWER BOARD
2.16	530-214S00-1	INSULATION PAPER	80*65	PCS	1	TOP COVER
2.17	281-088801-0	POWER CABLE BANDING WIRE KNOT	L=125MM W=10MM'	PCS	1	
2.18	501-250805-10	RUBBER	EVA90 L25*8MM*5MM(25*8)	PCS	2	LOADER
2.19	502-140040-11	SPRRONG CUSHION	EVA90 φ14MM*4MM	PCS	2	BUTTOM CABINET
2.20	501-170808-12	SPRRONG CUSHION	EVA90 L17*W8*H6MM	PCS	2	FRONT PANEL
2.21	551-318S01-0	DOUBLE-FACE YELLOW ADHESIVE TAPE	150MM (9M/R 9MM)	PCS	1	
2.23	533-080310-0	RED PAD	φ8MM*3MM H=1.0MM	PCS	2	MPEG BOARD
2.24	191-078080-3D	FLAT CABLE	A: 7PIN, B:6PIN 24# 2.54MM L=	PCS	1	
2.25	171-430120-0	POWER CABLE	(H03VVH2-F):L=1200MM+200MM	PCS	1	

3. DV216SI BLACK MTK1389DE-L DECODER BOARD COMPONENTS 821-051217-0						
SERIAL NUMBER	MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	UNIT	QTY	LOCATION
3	821-051217-0	DECODER BOARD	MTK1389DE-L(SKY-CX2:022009-06-25)	SET	1	
3.1	160-006300-0	PIN SOCKET	XH-6A 6PIN	PCS	1	CN1
3.2	160-006200-0	PIN SOCKET	PH-6A 6PIN	PCS	1	CN3
3.3	160-004200-0	PIN SOCKET	PH-4A 4PIN	PCS	1	CN4
3.4	160-005200-0	PIN SOCKET	PH-5A 5PIN	PCS	1	CN6
3.5	160-007200-0	PIN SOCKET	PH-7A 7PIN	PCS	1	CN2
3.6	160-010200-0	PIN SOCKET	PH-10A 10PIN	PCS	1	CN10
3.7	160-003200-0	PIN SOCKET	PH-3A 3PIN	PCS	1	CN11
3.8	060-124051-0	FPC SOCKET	FPC 24PIN	PCS	1	CN5
3.9	161-434054-0	AV-S VIDEO JACK	S-VIDEO	PCS	1	P1
3.10	161-134234-0	RCA JACK	3RCA	PCS	1	P2
3.11	127-106042-3	CAPACITOR		PCS	10	C27,C123,C124,C131,C132,C7
3.12	127-476048-0	CAPACITOR	47uF/16V +80% -20% 4*7mm	PCS	12	C4,C13,C18,C33,C34,C64,C67
3.13	127-107032-5	CAPACITOR	100uF 10V ±20% Φ6.3*7mm -40℃+105℃	PCS	4	C21,C54,C78,C36
3.14	127-107042-3	CAPACITOR	100uF/16V ±20% 6.3*7mm	PCS	1	C155
3.15	127-227032-8	CAPACITOR	220uF/10V ±20% 6.3*7mm -40+105℃	PCS	5	C32,C118,C9,C3,C12
3.16	127-477032-1	CAPACITOR	470uF/10V ±20% 8*12MM	PCS	1	C40
3.17	023-270040-00	CHIP CAPACITOR	27PF 16V ±5% 0402	PCS	2	C56,C57
3.18	023-101040-00	CHIP CAPACITOR		PCS	13	C28,C103,C104,C108,C115,C1
3.19	023-221041-00	CHIP CAPACITOR	220PF 16V ±10% 0402	PCS	1	C162
3.20	023-331041-00	CHIP CAPACITOR	330PF 16V ±10% 0402	PCS	2	C69,C70,C130
3.21	023-152041-00	CHIP CAPACITOR	1500PF 16V ±10% 0402	PCS	3	C48
3.22	023-102041-00	CHIP CAPACITOR		PCS	4	C125,C126,C133,C134,
3.23	023-332041-00	CHIP CAPACITOR	3300PF 16V ±10% 0402	PCS	1	C142
3.24	023-682041-00	CHIP CAPACITOR	6800PF 16V ±10% 0402	PCS	1	C35
3.25	023-153041-00	CHIP CAPACITOR	15nF 16V ±10% 0402	PCS	1	C72
3.26	023-104042-00	CHIP CAPACITOR	100nF 16V ±20% 0402	PCS	24	C5/6/10/11/19/22/23/25/29/3

3.27	023-104042-00	CHIP CAPACITOR	100nF 16V ±20% 0402	PCS	22	C52/53/55/59/60/63/79/80/81
3.28	023-105042-10	CHIP CAPACITOR	1UF 16V ±20% 0603	PCS	3	C161,C165,C168
3.29	023-475022-10	CHIP CAPACITOR	4.7UF 6.3V ±20% 0603	PCS	3	C58, C43,C24
3.30	085-121R25-2	CHIP BEAD	(PZ2012U121) FB120R/0805	PCS	4	L2,L4,L5,L22,
3.31	085-121R25-1	CHIP BEAD	FB120R/0603	PCS	13	L3,L6,L7,L9,L10,L13,L15,L19,
3.32	005-101100-1	INDUCTANCE	100uH 0805 ±10%	PCS	2	L8,L14
3.33	005-470100-1	INDUCTANCE	47uH 0805 ±10%	PCS	1	L11
3.34	005-100100-1	INDUCTANCE	10uH 0805 ±10%	PCS	2	L17,L18
3.35	005-189100-0	INDUCTANCE	1.8uH 0603(1608) ±10%	PCS	4	L25,L26,L27,L28
3.36	030-004148-1	DIODE	1N4148, LL-34	PCS	5	D1,D7,D8,D9,D10
3.37	030-06T54C-0	DIODE ARRAYS	BAT54C/SOT23 P(NN)P	PCS	1	D11
3.38	030-06AV99-0	DIODE ARRAYS	BAV99/SOT23 1W P(NP)N	PCS	4	D14,D15,D16,D17
3.39	031-2N3904-0	TRIODE	2N3904 (SOT-23) 1W EBC(NP)	PCS	6	Q1,Q13,Q14,Q15,Q16,Q26
3.40	031-003018-0	TRIODE	2SK3018(SOT-23) SMD	PCS	2	Q3,Q2
3.41	031-008550-0	TRIODE	S8550LT1 SOT-23 HEF=120-200	PCS	2	Q5,Q4
3.42	031-2N3906-0	TRIODE	2N3906(SOT-23) 1W PNP SMD	PCS	3	Q10,Q12,Q20
3.43	131-0S8550-0	TRIODE	SS8550 TO-92	PCS	2	Q6,Q7
3.44	130-005395-0	DIODE	1N5395	PCS	2	D3,D2
3.45	013-000005-00	CHIP RESISTOR	0Ω 0402 1/16W "SMD"	PCS	8	R19,R20,R27,R144,R146,R150, R154
3.46	013-109005-10	CHIP RESISTOR	1Ω 0603 1/10W ±5% "SMD"	PCS	1	R11
3.47	013-479001-10	CHIP RESISTOR	4.7Ω 0603 1/10W ±1% "SMD"	PCS	2	R24,R23
3.48	013-100005-10	CHIP RESISTOR	10Ω 0603 1/10W ±5% "SMD"	PCS	2	R3,R5
3.49	013-330005-00	CHIP RESISTOR	33Ω 0402 1/16W ±5% "SMD"	PCS	1	R52
3.50	013-750001-00	CHIP RESISTOR	75Ω 0402 1/16W ±1% "SMD"	PCS	4	R62,R68,R78,R88
3.51	013-750005-00	CHIP RESISTOR		PCS	2	R94,R77
3.52	013-101005-00	CHIP RESISTOR	100Ω 0402 1/16W ±5% "SMD"	PCS	3	R102,R103,R112
3.53	013-471005-00	CHIP RESISTOR	470Ω 0402 1/16W ±5% "SMD"	PCS	3	R95,R106,R141
3.54	013-561005-00	CHIP RESISTOR	560Ω 0402 1/16W ±5% "SMD"	PCS	1	R16
3.55	013-102005-00	CHIP RESISTOR	1K 0402 1/16W ±5% "SMD"	PCS	5	R8,R9,R10,R155,R157
3.56	013-122005-00	CHIP RESISTOR	1.2K 0402 1/16W ±5% "SMD"	PCS	2	R158/153
3.57	013-222005-00	CHIP RESISTOR		PCS	6	R84,R90,R93,R98,R99,R156
3.58	013-472005-00	CHIP RESISTOR	4.7K 0402 1/16W ±5% "SMD"	PCS	2	R81,R37
3.59	013-512005-00	CHIP RESISTOR	5.1K 0402 1/16W ±5% "SMD"	PCS	3	R22,R92,R105
3.60	013-103005-00	CHIP RESISTOR	10K 0402 1/16W ±5% "SMD"	PCS	19	R1/14/15/32/39/46/47/48/49/50/
3.61	013-123005-00	CHIP RESISTOR	12K 0402 1/16W ±5% "SMD"	PCS	3	R44,R91,R104
3.62	013-153005-00	CHIP RESISTOR	15K 0402 1/16W ±5% "SMD"	PCS	2	R30,R21
3.63	013-203001-00	CHIP RESISTOR	20K 0402 1/16W ±1% "SMD"	PCS	1	R36
3.64	013-273005-00	CHIP RESISTOR	27K 0402 1/16W ±5% "SMD"	PCS	2	R28,R26
3.65	013-313005-00	CHIP RESISTOR	31K 0402 1/16W ±5% "SMD"	PCS	2	R89,R100
3.66	013-333005-00	CHIP RESISTOR	33K 0402 1/16W ±5% "SMD"	PCS	1	R159
3.67	013-473005-00	CHIP RESISTOR	47K 0402 1/16W ±5% "SMD"	PCS	1	R87
3.68	013-104005-00	CHIP RESISTOR	100K 0402 1/16W ±5% "SMD"	PCS	9	R13,R17,R18,R82, R96,R97,R107
3.69	033-1389DE-1	IC	MT1389DE-L/SMD LQFP-128	PCS	1	U1

3.70	033-AM5888-0	IC	IC: AM5888	PCS	1	U2
3.71	033-641620-3	IC	内存IC : HY57V641620FTP-6(现	PCS	1	U5
3.72	033-000F16-1	IC	EON F16-100HCP	PCS	1	U9
3.73	033-004558-0	IC	NJM4558 / SOP-8	PCS	1	U11
3.74	137-270000-30	CRYSTAL OSCILLATOR	JHX 27.000MHz	PCS	1	X1
3.75	190-0CX202-02	PCB	SKY-CX2:02 2009.6.25 7.5*7.7	PCS	1	

4. DV216SI BLACK LOADER COMPONENTS 820-030801-01						
SERIAL NUMBER	MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	UNIT	QUANTITY	LOCATION
4	820-030801-01	DVD LOADER	JL-028+ SONY OPTICAL LENSE	SET	1	
4.1	830-020001-4	DVD LENS	SONY313(with small frame)	PCS	1	
4.2	829-002801-0	PLASTIC FRAME OF LOADER(BIG)	JL-028	PCS	1	
4.3	150-0300C5-0	MOTOR	RF-300C-11440 D/V:5V	PCS	1	
4.4	150-0350F6-0	MOTOR	JQ24-35I350F D/V:5.9V	PCS	1	
4.5	150-003006-0	MOTOR	JQ24-35G300 D/V:5.9V	PCS	1	
4.6	191-053130-2F	FLAT CABLE	5PIN L=130MM	PCS	1	LOADER CABLE
4.7	191-063100-21	FLAT CABLE	6PIN L=100MM	PCS	1	LOADER CABLE
4.8	197-242101-0	FLAT CABLE	24PIN L=210MM	PCS	1	OPTICAL LENS

5. DV216SI BLACK POWER BOARD COMPONENTS 832-904A10-0						
SERIAL NUMBER	MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	UNIT	QUANTITY	LOCATION
5	832-904A10-0	POWER BOARD	SKY-P00904A 09-06-27 VER:2.0	SET	1	
5.1	190-904A01-01	PCB	SKY-P00904A 09-06-27 VER:2.0	PCS	1	
5.2	113-100405-12	CARBON FILM RESISTOR	10Ω 1/4W ±5%	PCS	1	R615
5.3	113-101805-12	CARBON FILM RESISTOR	100Ω 1/8W ±5%	PCS	1	R604
5.4	113-101405-12	CARBON FILM RESISTOR	100Ω 1/4W ±5%	PCS	1	R603
5.5	113-220405-12	CARBON FILM RESISTOR	22Ω 1/4W ±5%	PCS	1	R606
5.6	113-300805-12	CARBON FILM RESISTOR	30Ω 1/8W ±5%	PCS	1	R613
5.7	113-202805-12	CARBON FILM RESISTOR	2K 1/8W ±5%	PCS	1	R605
5.8	113-102805-12	CARBON FILM RESISTOR	1K 1/8W ±5%	PCS	1	R609
5.9	113-872801-65	CARBON FILM RESISTOR	8.78K 1/8W ±1%	PCS	1	R608
5.10	113-103801-62	CARBON FILM RESISTOR	10K 1/8W ±1%	PCS	1	R607
5.11	113-104805-12	CARBON FILM RESISTOR	100K 1/8W ±5%	PCS	1	R614
5.12	113-154A05-12	CARBON FILM RESISTOR	150K 1W ±5%	PCS	1	R602
5.13	123-102660-0	PORCELAIN CAPACITOR	1000PF 1KV ±20%	PCS	1	C603
5.14	123-104370-0	PORCELAIN CAPACITOR	0.1uF 50V +80/-20%	PCS	1	C605
5.15	123-102150-0	PORCELAIN CAPACITOR	1000PF 100V ±10%	PCS	1	C608
5.16	123-221451-0	PORCELAIN CAPACITOR	220PF 400V ±10%	PCS	1	Y601
5.17	130-004007-0	DIODE	1N4007	PCS	4	D601.D602.D603.D604
5.18	130-005822-0	DIODE	1N5822(DO-201AD	PCS	1	D607

5.19	130-000107-0	DIODE	FR107	PCS	1	D605
5.20	130-000104-0	DIODE	FR104	PCS	2	D610, D611
5.21	127-106052-1	ELECTROLYTIC CAPACITOR	10uF/25V ±20% 5*11mm 105°C	PCS	1	C604
5.22	127-107052-1	ELECTROLYTIC CAPACITOR	100uF/25V ±20% Φ6.3*12MM 105°C	PCS	2	C609, C610
5.23	127-158042-0	ELECTROLYTIC CAPACITOR	1500uF 16V ±20% 105°C (Φ10*25)	PCS	1	C606
5.24	127-477042-0	ELECTROLYTIC CAPACITOR	470uF/16V ±20% 8*12mm -40+105°C	PCS	1	C612
5.25	127-475402-0	ELECTROLYTIC CAPACITOR	4.7uF/400V ±20% 105°C(D:8MM)	PCS	1	C601
5.26	127-226402-3	ELECTROLYTIC CAPACITOR	22uF/400V ±20% -40+105°C φ13	PCS	1	C602
5.27	101-19EL19-19	TRANSFORMER	EEL19	PCS	1	U604
5.28	105-102101-1	INDUCTANCE	DR6*8 1mH/±10%	PCS	1	L601
5.29	105-569101-1	INDUCTANCE	DR6*8 5.6uH/±10%	PCS	1	L603
5.30	133-00275P-0	IC	PWM IC PI TNY275PN 8PIN	PCS	1	U601
5.31	133-0EL817-0	IC	IC:EL817	PCS	1	U602
5.32	133-TL431A-0	IC	IC TL431A TO-92	PCS	1	U603
5.33	182-321000-2	FUSE	1A 250V	PCS	1	
5.34	172-000060-00	EXTENSION CABLE	L=6.0MM	PCS	1	J601
5.35	333-0PCB01-0	GROUNDING SOLDERING PAD	Φ7.5MM Φ4.2MM :16MM	PCS	1	
5.36	552-600001-0	YELLOW SILICA GEL		PCS	1	

6. DV216SI BLACK PACKAGE MATERIAL 805-216S01-0						
SERIAL NUMBER	MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	UNIT	QUANTITY	LOCATION
6.1	619-566110-3	RCA CABLE	L=1000MM	PCS	1	
6.2	828-390102-0	REMOTE CONTROL	RC026-012R	PCS	1	
6.3	617-3R0315-3	BATTERY	Zn/MnO2 GR03P 1.5V AAA	PCS	2	
6.4	630-0RBK14-00	MANUAL	DV214SI/DV216SI(SKY-001)	PCS	1	
6.5	631-0RBK49-00	WARRANTY CARD		PCS	1	
6.6	643-111103-09	SERIAL NO. STICKERS	48MM*10MM	PCS	1	
6.7	643-211103-09	SERIAL NO. STICKERS	30MM*10MM	PCS	1	
6.8	643-411103-09	SERIAL NO. STICKERS	48MM*10MM	PCS	1	
6.9	643-311103-09	SERIAL NO. STICKERS	24MM*5MM	PCS	4	
6.10	643-511103-09	SERIAL NO. STICKERS (LOADER FRAME)	25MM*8MM	PCS	1	
6.11	650-0RBK02-0	ADVERTISEMENT PAPER	210mm*148mm	PCS	1	
6.12	650-0RBK03-0	ADVERTISEMENT AND PUBLICITY PAPER	210mm*148mm	PCS	1	
6.13	633-0RBK02-0	AFTER-SALES SERVICE CONTACT LIST		PCS	1	
6.14	648-0RBK07-2	STANDARD KARAOKE STICKER		PCS	1	
6.15	648-0RBK51-1	USB STICKER		PCS	1	
6.16	648-216S28-0	UNIT VERSION NO. STICKER	15*6MM (: SI09.11)	PCS	2	GIFT BOX & UNIT
6.17	648-MPEG28-H	DECODER BOARD NO. VERSION	10*6MM (V4.B)	PCS	1	
6.18	648-LEAR02-6	FRAGILE STICKER	25*10MM	PCS	1	
6.19	648-LOAD02-0	FRAGILE STICKER	Φ5MM	PCS	1	
6.20	648-LEAR02-B	OPEN-PREVENTATION STICKER	SIZE:75*55MM	PCS	1	

6.21	648-0RBK12-1	COLOR STICKER	φ5mm	PCS	0.333	
6.22	600-214S01-00	POLYFOAM-L	38MM	PCS	1	
6.23	600-214S02-00	POLYFOAM-R	38MM	PCS	1	
6.24	607-0BOX01-0	GIFT BOX HANDEL		PCS	1	
6.25	602-216S01-00	GIFT BOX	328*78*260MM	SET	1	
6.26	604-216S01-00	SHIPPING BOX	654*343*280MM	PCS	0.167	
6.27	601-0RBK21-00	PE BAG	340*400MM	PCS	1	
6.28	601-0RBK02-00	PE BAG	185*278MM 0.04MM	PCS	1	
6.29	601-082740-01	PE BAG	80*270MM*0.04MM	PCS	1	

7.DV216SI BLACK SCART BOARD 832-0RBK27-1						
SERIAL NUMBER	MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	UNIT	QUANTITY	LOCATION
7	832-0RBK27-1	SCART+YUV+OPTICAL OUTPUT BOARD	SCART+YUV+OPTICAL+COAXIAL	SET	1	
7.1	190-SCAR12-40	PCB	2006-12-25 72*25MM H=1.6MM	PCS	1	
7.2	162-052110-0	21 PIN SCART JACK	CS-114	PCS	1	
7.3	191-108120-2A	FLAT CABLE	10PIN 2.0MM L=120MM	PCS	1	