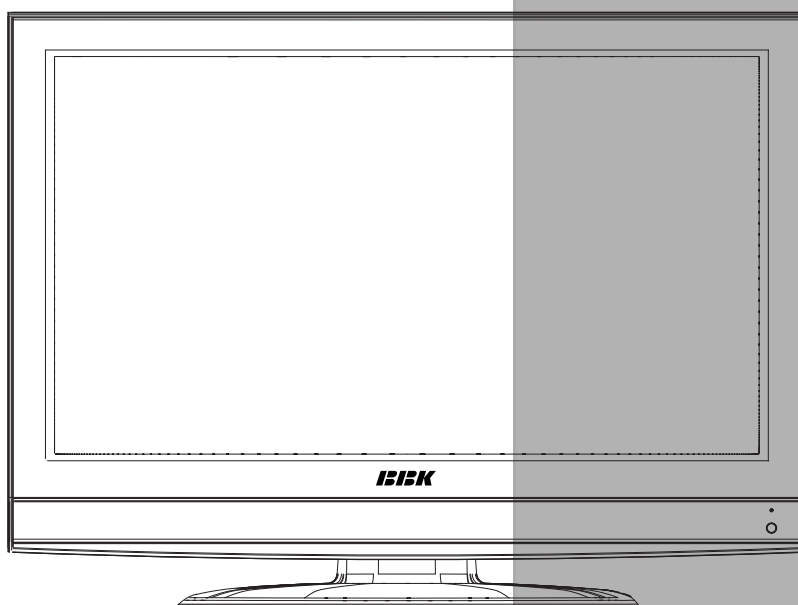


IBBK

LD3216DK(RU)

Service Manual



**Model version:V1C1V2.00
V1C5V2.00**

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Chapter One About Maintenance

1.1 Safety precautions

1.1.1 Power supply

When maintenance personnel are repairing DVD TV, he should pay special attention to the power with 220V 800V 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 display screen

1. Display screen is breakable article, so please protect carefully when carrying and prevent fingers or hard objects striking the screen to damage structure of the screen.

2. When cleaning screen, do not use organic chemicals. You should use cloth and use small amount of special cleaning liquid in places difficult to clean.

1.1.4 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.

1.1.5 About placement position

1. Never place TV 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 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.

1.2.2 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.

1.2.3 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.

1.2.4 Element substitution method

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

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 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.

1.2.7 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

- ◆ Audio Generator
- ◆ Digital oscillograph ($\geq 100\text{MHE}$)
- ◆ SMD rework station
- ◆ Multimeter
- ◆ Soldering iron
- ◆ Pointed-month pincers
- ◆ Cutting nippers
- ◆ Forceps
- ◆ Electric screw driver
- ◆ Terminals connecting cord
- ◆ Headphone
- ◆ Microphone

Chapter Two

Functions and Operation Instructions

2.1 Section One TV SEGMENT

2.1.1 Features

Technical Features

- High quality 32"(16:9) color TFT-panel
- Maximum resolution 1366x768
- Built-in DVD player with slot-in mechanism
- Multisystem TV tuner
- Built-in stereo acoustic system
- USB port, providing playback of files of supported formats from external flash memory devices
- HDMI interface provides high definition image and digital audio
- Composite audio, video inputs
- Component, S-VIDEO, RGB, SCART and VGA video inputs
- Digital coaxial audio output for multiple-channel sound playback
- Stereo headphone output
- Universal holder for furniture or wall fixation with 270 rotation angle
- 2 MIC inputs for karaoke function
- Wide range of operating power supplies(~100-240V) automatic short circuit protection

DTV mode

- DVB-T tuner for watching digital TV channels
- Parental Lock Control to protect children from watching inappropriate programmes
- Electronic Program Guide (EPG) and information Plate
- Coaxial digital audio output
- Supports Digital Radio mode
- Supports Audio language and Subtitle language
- Supports Favorite channels

ATV Channels Receiving and External Signal Playback

- Automatic and fine tuning functions with 100 channels scanning & memory
- Adjustable brightness, contrast, saturation, sharpness and 4 preset image settings
- Adjustable tone and sound balance with 4 preset audio settings

PC monitor mode

- Wide resolution range
- RGB setting and 4 presets of colour temperature
- External audio signal playback
- Adjustable tone, balance and 4 preset audio settings

Disc playback mode

- Digital video playback: DVD-Video, Super VCD, VCD compatibility
- MPEG-4 standard support
- Digital audio playback: CD-DA, HDCD and WMA compatibility
- Playback of DVD, VCD, CD+G karaoke discs
- KARAOKE++ system, expand karaoke function
- Digital graphic albums playback: Kodak picture CD and JPEG
- Compatible disc types: CD-R/CD-RW, DVD-R/DVD-RW, DVD+R/DVD+RW
- Russia, CIS and Baltic States adaption interface and filenames, ID3-tags and CD-Text support simplifies device operation
- "Q-Play" function provides direct playback and allows to skip commercial that is not possible to rewind
- "Browser" function provides easy access to playback control
- Automatic screensaver function
- Parental control function to protect children from watching inappropriate discs

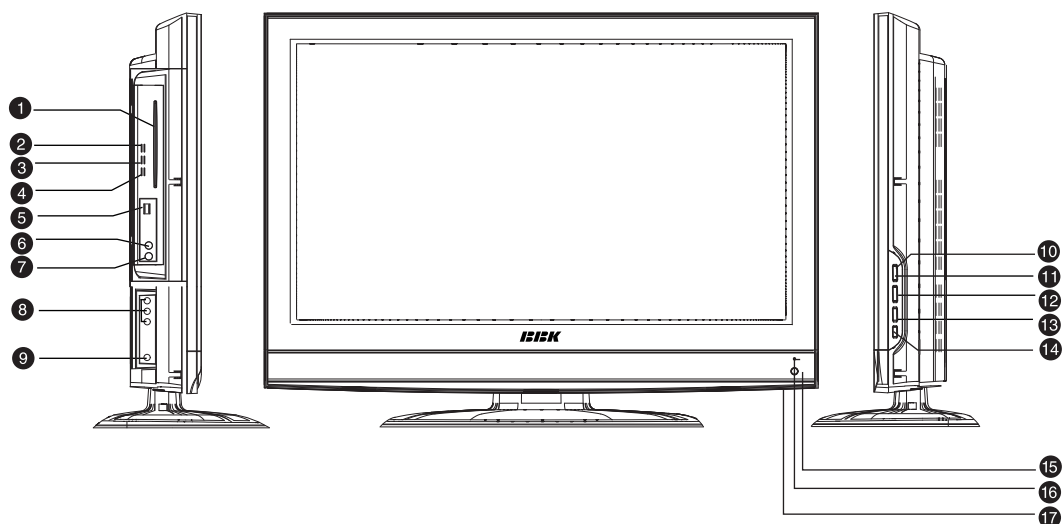
2.1.2 Set list

LCD TV	1 pcs
Remote Control	1 pcs
AAA Battery	2 pcs
RCA-RCA cord	1 pcs
2xRCA-2xRCA cord	1 pcs
Power cable	1 pcs
Microphone	1 pcs
Microphone cable	1 pcs
User manual	1 pcs
Warranty Card	1 pcs
Karaoke disc	1 pcs

2.1.3 CONTROLS AND FUNCTIONS

(1) Panel controls and indication

For LD3216DK



Left panel

- ① **Disc tray**
- ② **PLAY/PAUSE button**
Press to playback/pause.
- ③ **STOP button**
Press to stop the playback.
- ④ **EJECT button**
Press to open/close the disc tray.
- ⑤ **USB port**
- ⑥ **Microphone input 1**
- ⑦ **Microphone input 2**
- ⑧ **Composite video/audio input**
- ⑨ **Headphones output**

Front panel

- ⑮ **Remote control sensor**
- ⑯ **Power supply indicator**

Right panel

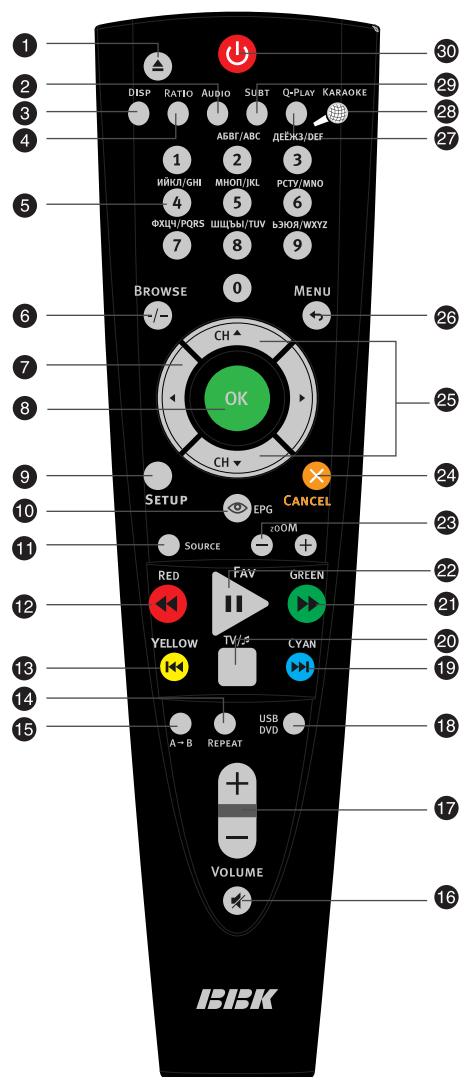
- ⑩ **SOURCE button**
Press to choose the playback mode.
- ⑪ **SETUP button**
Press to switch to setup mode.
- ⑫ **VOL+/- button**
Press to adjust the volume.
- ⑬ **CH+/- button**
Press to switch between channels/to choose menu item.
- ⑭ **STANDBY button**
Press to switch on the device/into standby mode.

Rear panel

- ⑰ **POWER button**
Turn on/off the power.

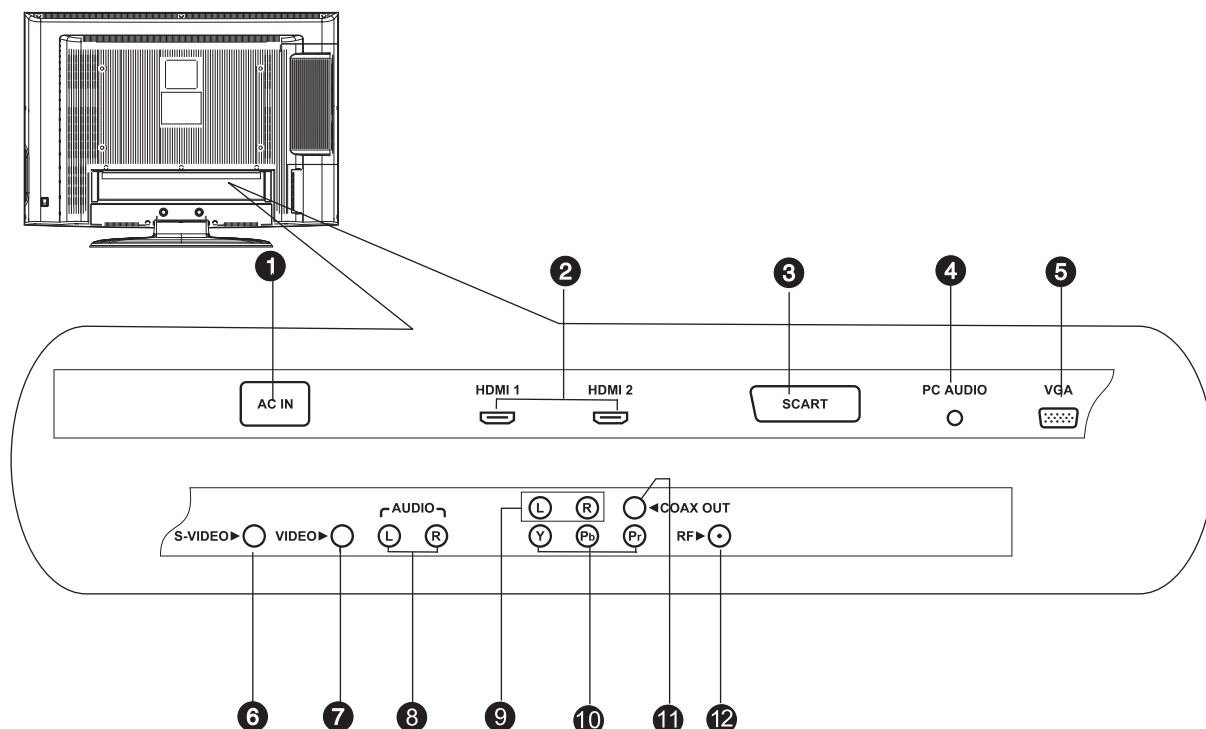
(2) Remote control general view

- 1 EJECT button**
Press to open/close the disc tray.
- 2 AUDIO button**
Press to choose NICAM mode in ATV/To change audio language in DVD/DTV mode.
- 3 DISP button**
Press to display the disc information in DVD /Press to display current source information.
- 4 RATIO button**
Press to switch to picture mode.
- 5 Numeric buttons**
- 6 BROWSE button**
Press to turn on/off the browser function /Press to switch one or two-digit program number.
- 7 CURSOR buttons (UP/DOWN/LEFT/RIGHT)**
- 8 OK button**
- 9 SETUP button**
Press to switch to setup mode.
- 10 Button / EPG**
Press to turn on/off the "Virtual Keyboard" function. / To display the program guide in DTV .
- 11 SOURCE button**
Press to change the DTV/ATV/DVD/YPbPr/AV1/AV2/SCART /HDMI1/HDMI2/VGA mode.
- 12 Button / RED**
Press to start rewind/rewind scanning in DVD mode/ Red function button.
- 13 Button / YELLOW**
Press to skip backward/YELLOW function button.
- 14 REPEAT button**
Press to repeat.
- 15 A-B button**
Press to repeat the selected section.
- 16 Button**
Press to turn on/off the sound.
- 17 VOLUME+/- button**
Press to adjust the volume.
- 18 USB/DVD button**
Press to select USB/DVD mode.
- 19 Button / CYAN**
Press to skip forward/ CYAN function button.
- 20 Button / TV/**
Press to stop the playback/Switch between digital TV and digital radio mode in DTV.
- 21 Button / GREEN**
Press to forward scanning/ GREEN function button.
- 22 Button / FAV**
Press to playback/pause/ Open favourite channel list in DTV/ATV.
- 23 ZOOM+/- button**
Press to zoom in/out.
- 24 CANCEL button**
Press to go one level back/cancel current operation.
- 25 CH / button**
Press to switch between channels/to choose menu item.
- 26 MENU / button**
DVD disk menu/PBC function/Press to return to the previous channel in ATV and DTV.
- 27 Q-PLAY button**
Press to turn the Q-PLAY mode on.
- 28 KARAOKE button**
Press to set karaoke function.
- 29 SUBT button**
Press to change the subtitles language in DVD/DTV.
- 30 Button**
Press to switch on the device/into standby mode.



2.1.4 CONNECTION AND STARTING

For LD3216DK

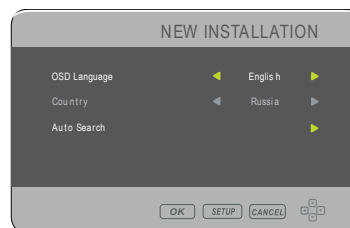


- ❶ AC Power input socket
220V AC power input.
- ❷ HDMI 1/2 IN
- ❸ **SCART socket**
Meant for external audio video signal source connection. There is no need to use additional audiocord.
- ❹ **PC AUDIO IN**
Meant for PC stereo audio output connection.
- ❺ **VGA port**
Meant for PC connection.
- ❻ S-VIDEO IN
S-Video input port.
- ❼ VIDEO 1 IN
Used for external signal source connection.
- ❽ VIDEO 1/ S-VIDEO AUDIO IN
Used for external video 1/ S-video audio input.
- ❾ YPBPR AUDIO IN
YPbPr/ YCbCr audio input port.
- ❿ YPBPR VIDEO IN
YPbPr or YCbCr video input port.
- ⓫ **COAXIAL OUT**
Meant for multi-channel sound playback.
- ⓬ **RF input**
Meant for antenna connection.

2.1.5 TV MODE

Turn on the TV, press SOURCE button to change source to DTV. When has no program, the NEW INSTALLATION menu will be display, then you can change osd language and to auto search program, then you can enjoy the rich and colorful contents of Digital Video Broadcast!

In DTV mode, press SETUP button, then press ◀/▶ button to choose DTV item, the DTV setup menu will be displayed as follow:

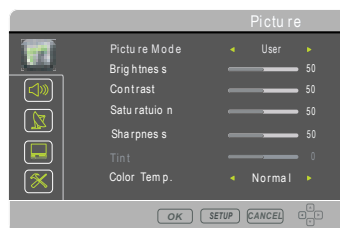


Picture

Select PICTURE item to adjust picture parameters.

You may adjust PICTURE MODE, BRIGHTNESS, CONTRAST, SATURATION, SHARPNESS and COLOR TEMP.

- PICTURE MODE item can be changed between STANDARD, DYNAMIC, SOFT and USER.
- COLOR TEMP. item can be set to: NORMAL, WARM and COOL.



NOTE

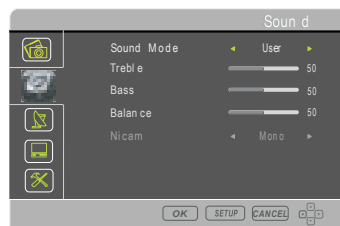
- You can't adjust TINT while watching TV channels.

Sound

Select SOUND item to adjust sound parameters.

You may adjust SOUND MODE, TREBLE, BASS and BALANCE.

- SOUND MODE item can be changed between USER, MUSIC, FILM and NEWS.

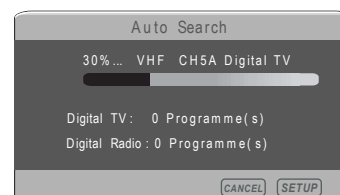
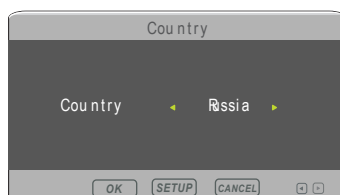
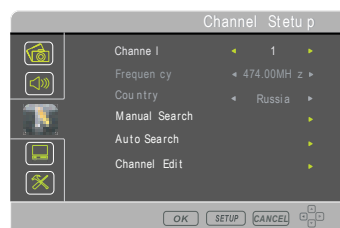


ATTENTION! We recommend watching TV at half of maximum level of the sound. Continuous listening at higher level may lead to hearing reduction.

Channel setup

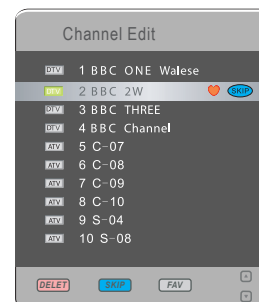
Select CHANNEL SETUP item to adjust channels. You may select CHANNEL, COUNTRY, MANUAL SEARCH, AUTO SEARCH and CHANNEL EDIT.

- CHANNEL item enables to select the number of adjustable channel.
- COUNTRY item enables to know current country set.
- MANUAL SEARCH item enables to entry manual search menu.
 - Press ◀/▶ button to change channel number, then press OK button or press SOURCE in keypad when no remote control to start auto search.
 - Press SETUP button to return to Channel Setup menu.
 - Press CANCEL button to exit DTV Manual Search Menu.
- AUTO SEARCH item enables to adjust channel setting automatically.
 - Press ▶ to entry Country Submenu.
 - In Country Submenu, COUNTRY item can be changed between Russia, Spain, Sweden, UK, France, Germany, Italy and Netherlands. After select the country, press OK button or press SOURCE in keypad when no remote control to start auto search, or press SETUP button to return to Channel Setup menu, or CANCEL button to exit.
 - In Auto Search submenu, press SETUP button to return to Channel Setup menu, press CANCEL button to exit auto search mode.



- CHANNEL EDIT submenu enables to DELETE, SKIP and FAV the channel, press SETUP button to return, press CANCEL to exit CHANNEL EDIT menu.

- Press RED button to enter channel DELETE mode, then press OK button to delete the program that you select.
- Press CYAN button to SKIP program that you do not like.
- Press FAV button to add program to your favorite program list.



When playing a program on a channel, press OK button to enter Channel List menu.

- Press ▲/▼ button to select the program that you want to change to.
- Press OK button to enter the program that you select.
- Press CANCEL button to exit Channel List menu.



When playing a program on a channel, press FAV button to enter Favorite List menu.

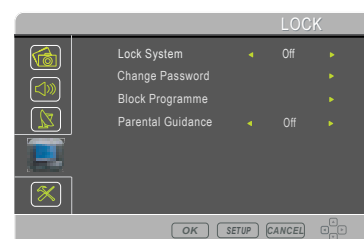
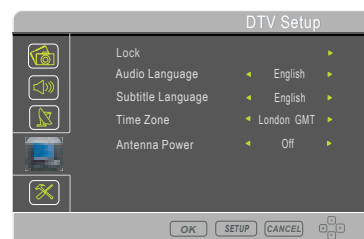
- Press ▲/▼ button to select the program that you want to change to.
- Press OK button to enter the program that you select.
- Press CANCEL button to exit Channel List menu.



DTV setup

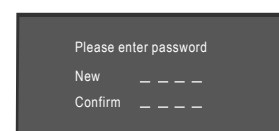
Select DTV SETUP item to adjust such parameters as LOCK, AUDIO LANGUAGE, SUBTITLE LANGUAGE, TIME ZONE, ANTENNA POWER.

- LOCK submenu enables to select Lock system, Change password, Block programme, Parental guidance.
 - Lock system item enables lock digital tv system when you want to edit channel.
 - Change password item is to change the factory password.
 - Block programme item is to enter the Block Programme.
 - Parental guidance item can set the grade of program, avoid children watching unsuitable program.
- AUDIO LANGUAGE item can be changed between Russian, Swedish, German, English, Spanish, French, Italian, Dutch.
- SUBTITLE LANGUAGE item can be changed between Russian, Swedish, German, English, Spanish, French, Italian, Dutch.
- TIME ZONE item can be changed between Moscow GMT+3, London GMT, Amsterdam GMT+1, Berlin GMT+1, Madrid GMT+1, Paris GMT+1, Rome GMT+1, Stockholm GMT+1.
- ANTENNA POWER item can be turn on/off antenna power supply.



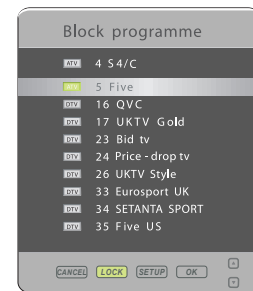
Change Password

- New: enter new password.
- Confirm: enter new password again to confirm.
- The default password is 0000.



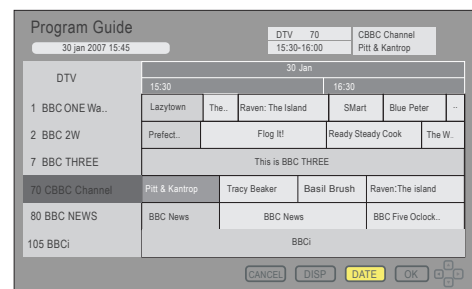
Block Programme

- CANCEL: Press CANCEL button to exit Block Program menu.
- LOCK: Press GREEN button to block the program that you select.
- SETUP: Press SETUP to return to Lock menu.
- OK: Press OK button to enter the program that you choose.



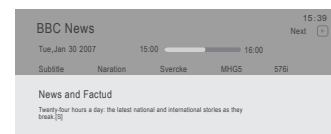
Programme Guide

When playing a program on a channel, press EPG button then the list of program information will be displayed, press ▲/▼ button to select program, press DISP button to show program information, press YELLOW button to change data, press ◀/▶ button to change time.



Program Extend

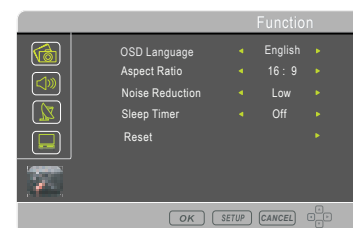
Press DISP button into PROGRAM EXTEND menu, and current program information is shown, press button to show next information.



Function

You may select OSD LANGUAGE, ASPECT RATIO, NOISE REDUCTION, SLEEP TIMER and RESET.

- OSD LANGUAGE item enables to select the OSD language.
- ASPECT RATIO item enables to adjust aspect ratio.
- NOISE REDUCTION item enables to reduce the noise of the image, it can be changed between: Off, Low, Mid, Hight and Auto.
- SLEEP TIMER item enables to set the sleep timer.
- RESET item enables to reset all values to default.

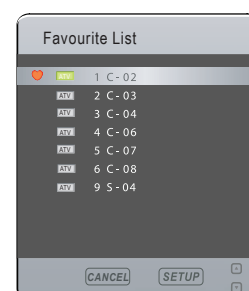
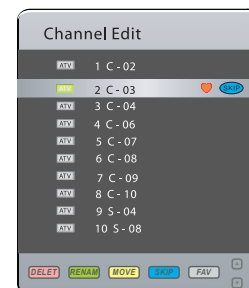
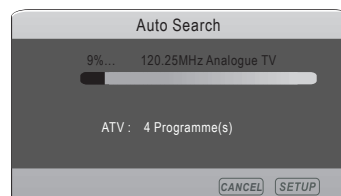
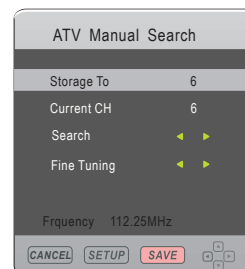
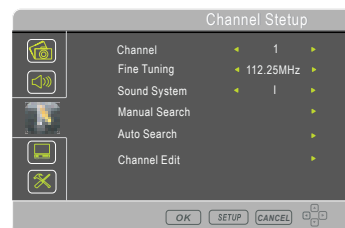


2.1.6 ATV MODE

Channel setup

Select CHANNEL SETUP item to adjust channels. You may select CHANNEL, FINE TUNING, SOUND SYSTEM, MANUAL SEARCH, AUTO SEARCH and CHANNEL EDIT.

- CHANNEL item enables to select the number of adjustable channel.
- FINE TUNING item enables to adjust the channel frequency accurately.
- MANUAL SEARCH ITEM enable to entry ATV MANUAL SEARCH menu
ATV Manual Search sub menu.
 - Storage To item enable to change channel what you want storage to
 - Current CH item enable to change current channel
 - Search item press ◀ to search down, press ▶ to search up
 - Fine Tuning item enable to fine tuning frequency
when you searched a program what you want, then press SAVE button to save the program to channel of you want storage to.
- AUTO SEARCH item enables to adjust channel setting automatically.
 - Press CANCEL to exit auto search mode.
 - Press SETUP to return to Channel Setup menu.
- SOUND SYSTEM item can be changed between Auto, BG, I, DK and L.
- CHANNEL EDIT submenu enables to DELETE, RENAM, MOVE, SKIP and FAV the channel.
 - Press RED button to enter channel DELETE mode, then press OK button to delete the program that you select.
 - Press GREEN button to enter RENAME program mode, then press ▲/▼ to change character, Press ◀/▶ button to position of character.
 - Press YELLOW button to enter MOVE mode, then press ◀/▶ button to move the program to the position where you want.
 - Press CYAN button to SKIP program that you do not like, when you press ▲/▼ button to change program, skip the program that you set to skip.
 - Press FAV button to add program to your favorite program list.



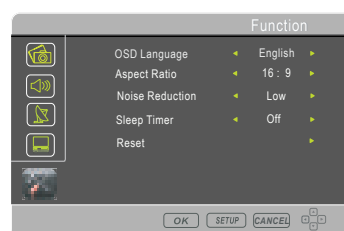
When playing a program on a channel, press OK button to enter Favorite List menu.

- Press ▲/▼ button to select the program that you want to change to.
- Press OK button to enter the program that you select.
- Press CANCEL button to exit Channel List menu.

Function

You may select OSD LANGUAGE, ASPECT RATIO, NOISE REDUCTION, SLEEP TIMER and RESET.

- OSD LANGUAGE item enables to select the OSD language.
- ASPECT RATIO item enables to adjust aspect ratio.
- NOISE REDUCTION item enables to reduce the noise of the image, it can be changed between: Off, Low, Mid, Hight and Auto.
- SLEEP TIMER item enables to set the sleep timer.
- RESET item enables to reset all values to default.



2.2 Section Two DVD SEGMENT

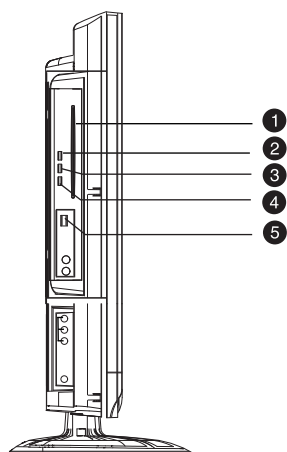
2.2.1 Supported formats

Type	Contents
	DVD: Compressed digital audio – video (dynamic image)
SVCD	Super VCD: Compressed digital audio – video (dynamic image)
	VIDEO CD: Compressed digital audio – video (dynamic image)
MPEG-4	MPEG-4: Compressed digital audio – video (dynamic image)
	CD-DA: Digital audio
WMA	WMA: Compressed digital audio
	HDCD: High definition digital audio
JPEG	JPEG: Compressed digital static image
	Kodak Picture CD: Compressed digital static image

2.2.2 Controls and functions

Front panel controls

For LD3216DK



- ① **Disc tray**
- ② **PLAY/PAUSE button**
Press to playback/pause.
- ③ **STOP button**
Press to stop the playback.
- ④ **EJECT button**
Press to open/close the disc tray.
- ⑤ **USB port**

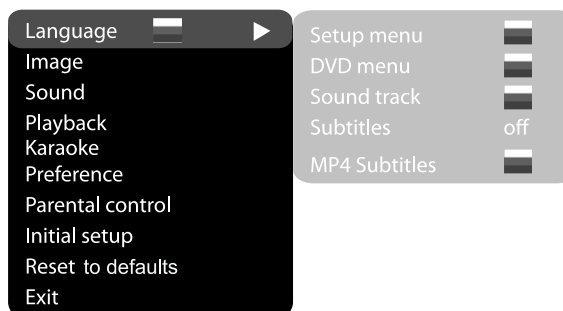
Note:

This model does not support the 8cm disc. Do not insert that type of disc into this device to avoid disc jam.

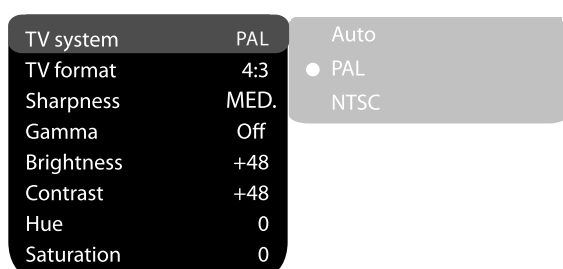
2.2.3 Function selection and change

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

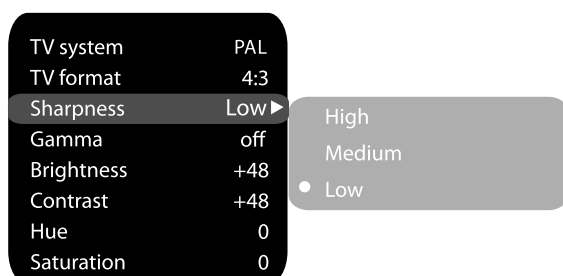
Select the desired menu item using the UP/DOWN buttons button; press the OK key for confirmation.



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



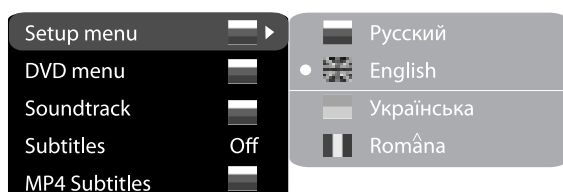
2. Using the UP/DOWN buttons, select the desired item and press OK or RIGHT button. For example, select the Sharpness item. Settings will appear on the screen. Then select the desired sharpness level and press OK for confirmation.
3. Press LEFT for exit to previous menu level.
4. Press SETUP to exit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



2.2.4 Language settings

1. Setup menu: interface language set-up

- Options: Russian, English, Ukrainian, Romanian.
- Default option: Russian.



2. DVD menu: selection of disc menu language

3. Sound: selection of translation language

- Disc menu/translation language options: Russian, English, Estonian, Latvian, Kazakh, Romanian, Byelorussian, Ukrainian, Chinese, Others.
- Default menu/translation language option: English.
- Selection of other languages: select the OTHERS item using the wheel and press OK. Enter the language code using the numeric buttons and press OK.
- If the language you selected is not recorded on the DVD disc, another available language will be used.

4. Subtitles: selection of subtitles language

- Options: Off, Russian, English, Estonian, Latvian, Kazakh, Romanian, Byelorussian, Ukrainian, Chinese and Others.
- Default option: Off.
- Selection of other languages: select the OTHERS item using the wheel and press OK. Enter the language code using numeric buttons and press OK.
- If the language you selected is not recorded on the DVD disc, another available language will be displayed.

5. MP4 Subtitles: selection of subtitles language

- Options: Russian, English, Ukrainian and Romanian.
- Default option: English.

2.2.5 Image settings menu

1. TV system: TV system selection

- Options: Auto, PAL, NTSC.
- Default option: PAL.

2. TV Format: image ratio settings

- Options: 4:3 pan&scan, 4:3 letterbox and 16:9 TV.
- Default option: 4:3 LB.
- Some discs are recorded with support of only one ratio. The selected ratio must comply with the TV screen.

3. Sharpness: image sharpness adjustment

- Options: High, Medium, Low.
- Default option: Medium.

4. Gamma: adjustment of image color temperature

- Options: High, Medium, Low, Off.
- Default option: Off.

5. Brightness: adjustment of image brightness

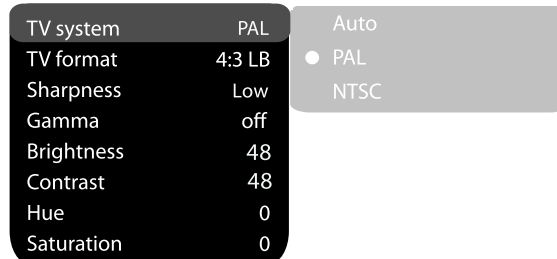
6. Contrast: adjustment of image contrast

7. Hues: adjustment of image hues

8. Saturation: adjustment of image saturation

Adjustment of image brightness, contrast, hues and saturation:

- Select the desired item of the image adjustment section using the UP/DOWN buttons. Press OK or RIGHT key to start adjusting the relevant option.
- Change the option value using the wheel.
- Upon completion press the LEFT button of the UP/DOWN buttons to return to image setup menu.



2.2.6 Sound settings menu

1. 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 LCD TV's digital outputs, the decoded signal is transferred to analog outputs. Decoding is performed by the built-in decoder of the LCD TV. 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 LCD TV'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, 192 kHz 24 bit.
- Default option: 48 kHz 16 bit.

2. Sound correction

a) Equalizer: equalizer modes

- Options: Off, rock, pop, live, dance, techno, classic, soft.
- Default option: Off.

b) Echo: echo effects

- Options: Off, concert, living room, hall, bathroom, cave, arena, church.
- Default option: Off.

c) Tone balance: adjustment of tone balance level.

- Adjust the tone balance level using the cursor buttons.
- Press the LEFT button to return to sound correction set-up menu.

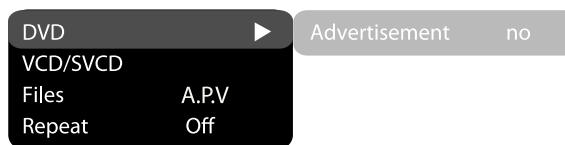


2.2.7 Playback settings

1. DVD

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

- Options: Yes, No.
- Default option: No.



2. VCD/SVCD

PBS menu: PBC menu on/off

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

3. Files: selection of reproduced files on the disc

- Options: Audio, Pictures, Video, any of there combination.
- Default option: A.P.V.

4. Repeat: file repeat mode

- Options: Off, Single, All.
- Default option: Off.

2.2.8 Karaoke settings menu

1. Microphone: microphone on/off

- Options: On, Off.
- Default option: On.

2. Kar. help: karaoke-disc playback mode

- Options: Channels L, Channels R, Channels No ast., Channels No voc.
- Default option: No vocal assist.

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

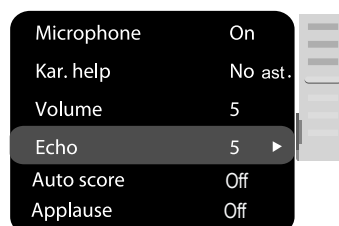
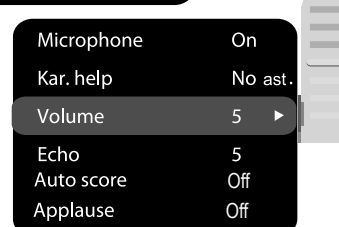
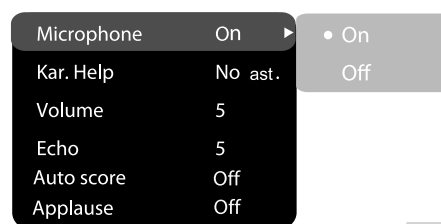
- Adjust the echo level Using the UP/DOWN buttons.
- Press LEFT key of the UP/DOWN buttons to return to karaoke settings menu.

5. Auto score: automatic scoring by the end of the song

- Options: On, Off.
- Default: Off

6. Applause: turn on/off the applause function if the mark is higher than 59

- Options: On, Off.
- Default: Off.



2.2.9 Preference settings

1. Screensaver: screen saver on/off

- Options: On, Off.
- Default option: Off.



2. Gr. equalizer: spectrum analyzer

- Options: On, Off.
- Default option: Off.

2.3.0 Parental control settings

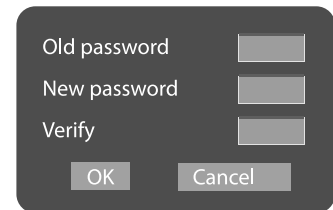
1. Category: set-up of age restrictions to prevent children from seeing undesirable discs.

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



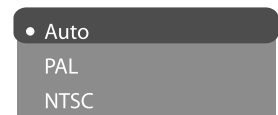
2. Change password: set-up of a four-digit password to change the level of age restrictions.

- Default option: 7890.



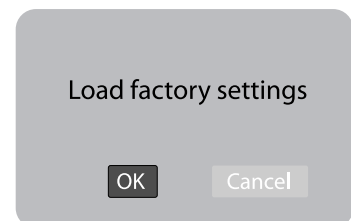
2.3.1 Initial setup menu

- Press the RIGHT key to enter the initial settings menu, then select the desired item using the cursor buttons and press OK key for confirmation.
- While being in this menu section, you cannot return to the previous level by pressing the LEFT key.



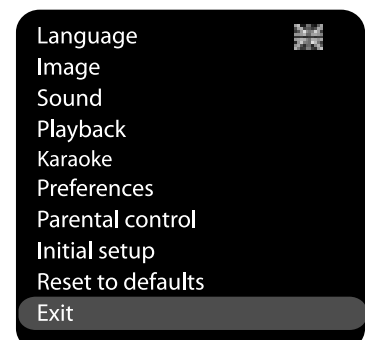
2.3.2 Reset settings to default

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



2.3.3 Exit settings menu

- Select the exit item using the UP/DOWN buttons and press the OK key to exit the menu.



2.4. OTHERS

2.4.1 Useful notes

- To extend the service life of your LCD TV make pauses of not less than 30 seconds between switching off and repeatedly switching on the LCD TV.
- Disconnect the LCD TV from the wall outlet after shutdown.
- Some LCD TV's functions may not be applied to some discs.
- Use supply sources of rated voltage, otherwise the LCD TV may not function or be damaged.
- In case of the LCD TV's occasional stops, please switch the power supply off and then on again.

2.4.2 Trouble shooting

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

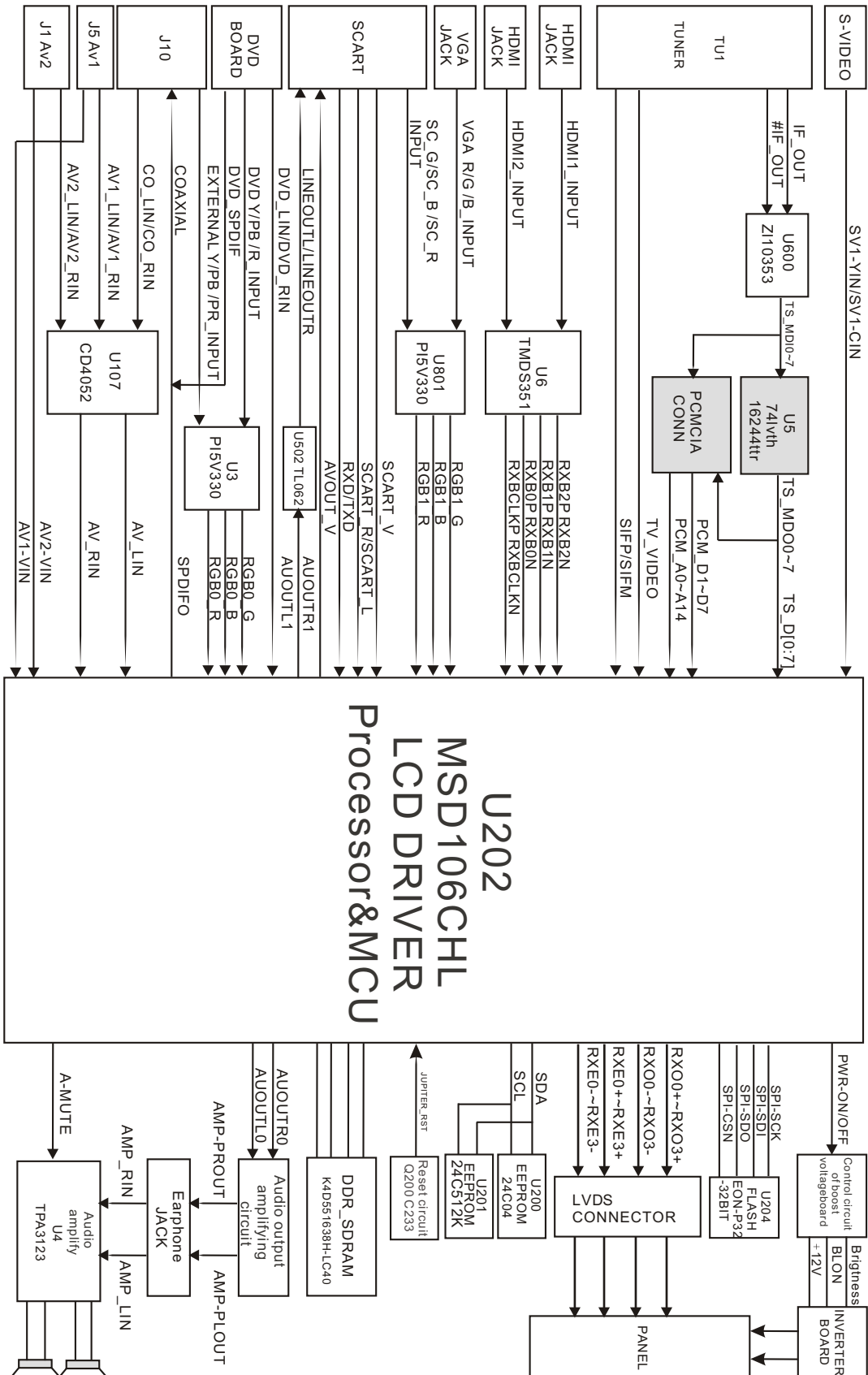
Sign of trouble	Cause of trouble	Actions to eliminate the trouble
No sound	1. Poor audio cable connection. 2. Disc dirty or damaged. 3. Sound disabled by the MUTE button.	1. Make proper connection. 2. Clean the disc. 3. Press the MUTE button.
No image	1. Poor video cable connection. 2. Incorrect settings of your TV set. 3. The TV is in the progressive scan mode while your TV set does not support this mode.	1. Make proper connection. 2. Correct the settings of your TV set. 3. Place the TV in the interlaced scan mode through the TV'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 TV 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 TV's screen. 2. Distance to the TV 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 TV. 3. Replace both batteries.
Some functions do not work	1. Disc is recorded incorrectly. 2. Incorrect key sequence. 3. Static voltage on the housing.	1. Wait 5-10 seconds and the device will automatically return to normal state. 2. Repeat the operation one more time. 3. Switch the device off for 1-2 minutes and then switch it on again.
Unstable image or abnormal picture color	1. Incorrect TV set setting 2. There is something wrong with the data in the E PROM.	1. Correct the TV set settings. 2. Reset the TV set to default setting

2.4.3 Technical characteristics

		LD3216DK
Display	Type Class	TFT, colored II (ISO 13406-2)
	Size (") Height (mm) Width (mm) Dot Pitch (H mm x V mm) Viewing Angle (H)	31.5 392.3 697.7 0.17X0.51 176°
Frequency	Vertical (Hz) Horizontal (kHz) Display color	50-75 30-75 16 700 000
Maximum Display Mode	Resolution Vertical frequency (Hz)	1366x768 75
Inputs	Video Component VGA RGB/SCART Audio Stereo PC audio Others HDMI Karaoke USB RF	 2 1 1 1 1 2 2 1 1
Audio outputs	Headphone Digital coaxial	1 1
Color system	TV tuner Video inputs	PAL, SECAM PAL, SECAM, NTSC 3.58, NTSC 4.43, PAL60
Sound system	TV tuner	DK, I, BG, L
DTV	Input connector Frequency range (VHF/UHF) Channel range (VHF/UHF)	IEC-Type, IEC 169-2, Female 174 MHz~858 MHz 7&8 MHz
Built-in DVD player	Disc types	CD-R/RW, DVD-R/RW, DVD+R/RW
	Formats	DVD-Video, DivX, XviD, SVCD, VCD, CD-DA, HDCD, WMA, Kodak Picture CD, JPEG
Power	Voltage and frequency (V, Hz)	~ 100–240, 50/60
Power supply	Power Consumption (Maximum) (W) Power Consumption (Power Saving) (W)	150 <3
Environmental consideration	Operating temperature (°, C) Operating humidity (%) Storing temperature (°, C) Storing humidity (%)	+5...+35 10–80 –20...+45 5–95
Dimensions (mm)		793.7x225x593.75
Weight	Net weight (kg)	16

- We are permanently improving the quality of our products; hence the product's design, functionality and technical characteristics may be modified without prior notice.
- We do not guarantee that all discs can be played smoothly due to the disc quality, disc recording quality and recording format.

3.1.2 Block diagram of the player



3.1.3 Principle instruction for LD3216(RU) player.

LD3216(RU) is a TV combination product which incorporates DVD/DVB functions.

1.TVpartadoptsMSD106CL+WJCE6353SL9G5+M24512WMN+TPA3123D2PWP+TDA1308+DTT X-5A1/12A25+V315B1-L01.

2.DVD part adopts: MT1389FE/L(L version)+AM5888S+AIC809-29CU+TD-S208S-SV1(62SV1 pick-up)-B. To make us conveniently search, we separate the principle instruction into two parts. The first part is principle instruction and troubleshooting flow chart,etc. for TV part. And the second part is to introduce functions and troubleshooting flow chart for DVD and USB, etc.

3.TV part is mainly divided into audio processing circuit, video processing circuit, system control circuit, TV signal receiving circuit, external input processing and input source selection circuit. As audio and video circuits are complicated, we will instruct as the key points in the following sections.

4.System control circuit: this circuit is mainly composed of MSD106,EEPROM,SDRAM and reset circuit,etc.MSD106 has built-in MCU and video processing circuit.EEPROM is mainly used to memory the settet information by users. Reset circuit is a high level effective reset circuit, which is used to reset main chip.

5.TV signal receiving circuit: circuit of CIA decryption card is not added in the DVB function for this model player. Thus, part of the components in this diagram is not used. When player is receiving external analog TV signal, TV signal is restored to be audio and video signals through TUNER, and input to inside of MSD106 directly for processing. Then they output to display screen and audio circuit to restore to be image and sound of TV signals. When receiving non-encrypted digital TV signal, switch TUNER into digital receiving state. The received digital TV signal input to A/D converting circuit (U600) for processing. TS stream signal is outputted to main chip for TS stream decoding, which is to restore audio and video signals and output them.

External input circuit has multiple groups: mainly are HDMI input, video component input, A/V input, S terminal input and audio input, etc. And each group input to external input loop.

3.1.4 Audio circuit.

TV part audio processing circuit is mainly composed of external input circuit, main chip and audio output circuit. Main chip supports 4 groups audio input built-in electronic switch; U107 is a three-election switch, which is used for external input port expansion. Audio output circuit has two parts, one is SCART output circuit and the other is audio loudspeaker amplify circuit, which adopts TPA3123 amplifying Audio processing circuit block diagram is shown in the figure 3.1.4.1:

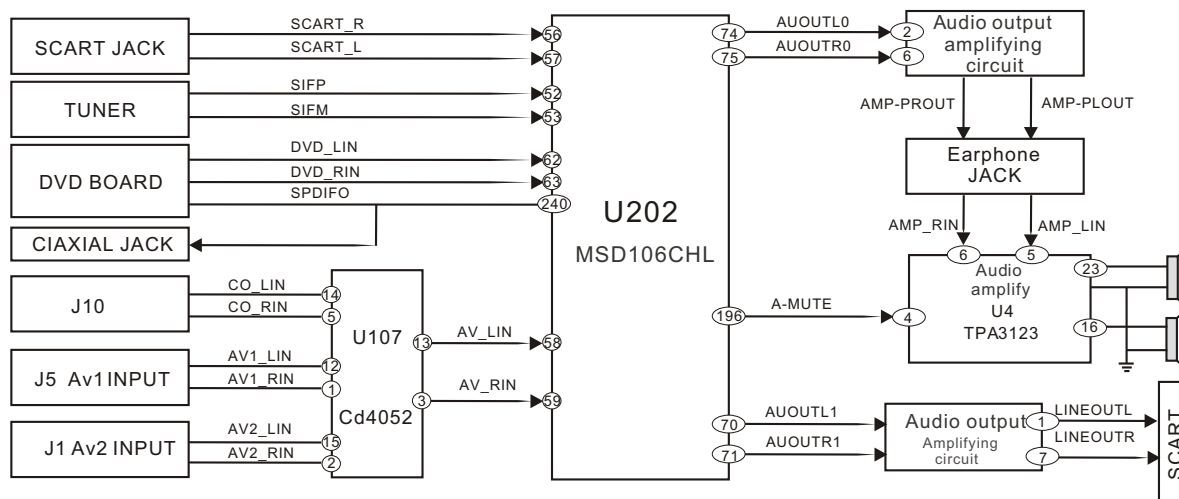


Figure 3.1.4.1 Audio processing circuit block diagram

3.1.5 Video circuit.

Video processing circuit is mainly composed of external video input circuit, video channel select circuit, video A/D converting circuit, etc. This player has multiple groups of video input. External inputted video component signal and DVD video signal input to MSD106 for A/D converting circuit and video processing circuit through U3. After that, driving LCD is processed. External inputted SCART or VGA signals input to A/D converting circuit in MSD106 through U801 for driving screen. Composite video and S-VIDEO input to electronic switch in MSD106 for selection. This player has two channel HDMI signal input to electronic switch U6 for input selection, ESD protection circuit is added in the signal interface to void damage of IC interface damage. Also MSD106 has video output function; outputted composite video signal output to external device through SCART. Video circuit block diagram is shown in the figure 3.1.5.1:

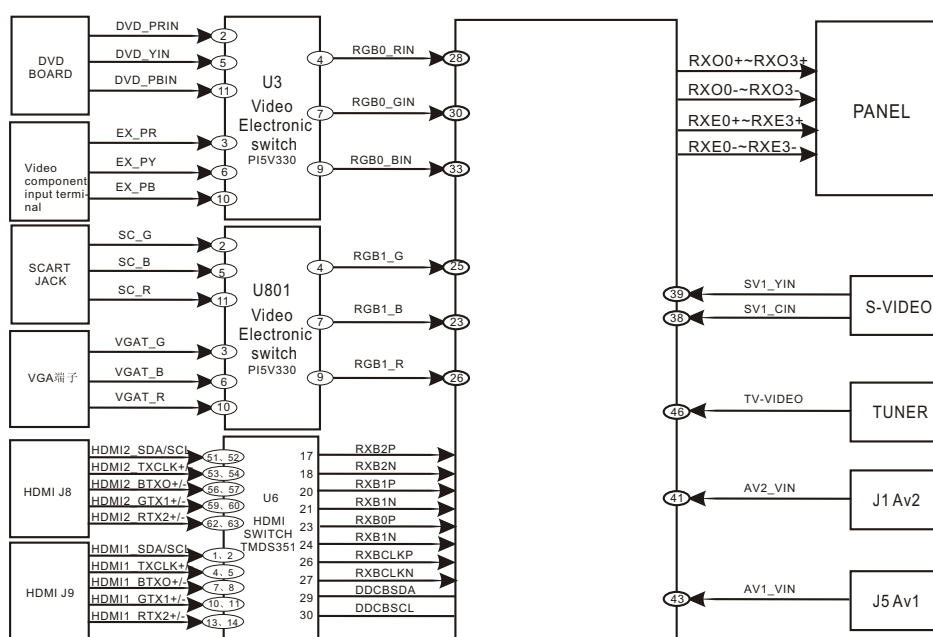
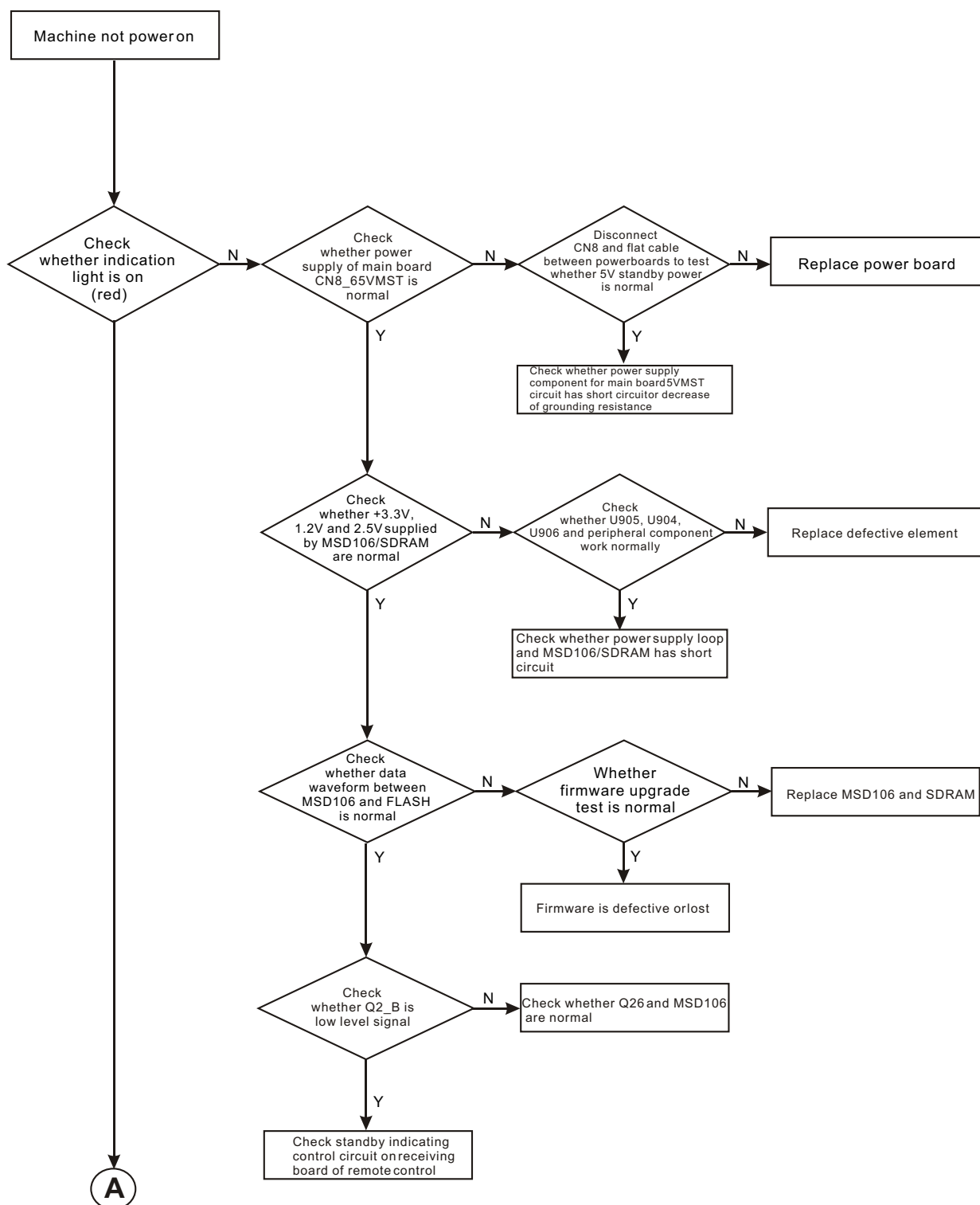


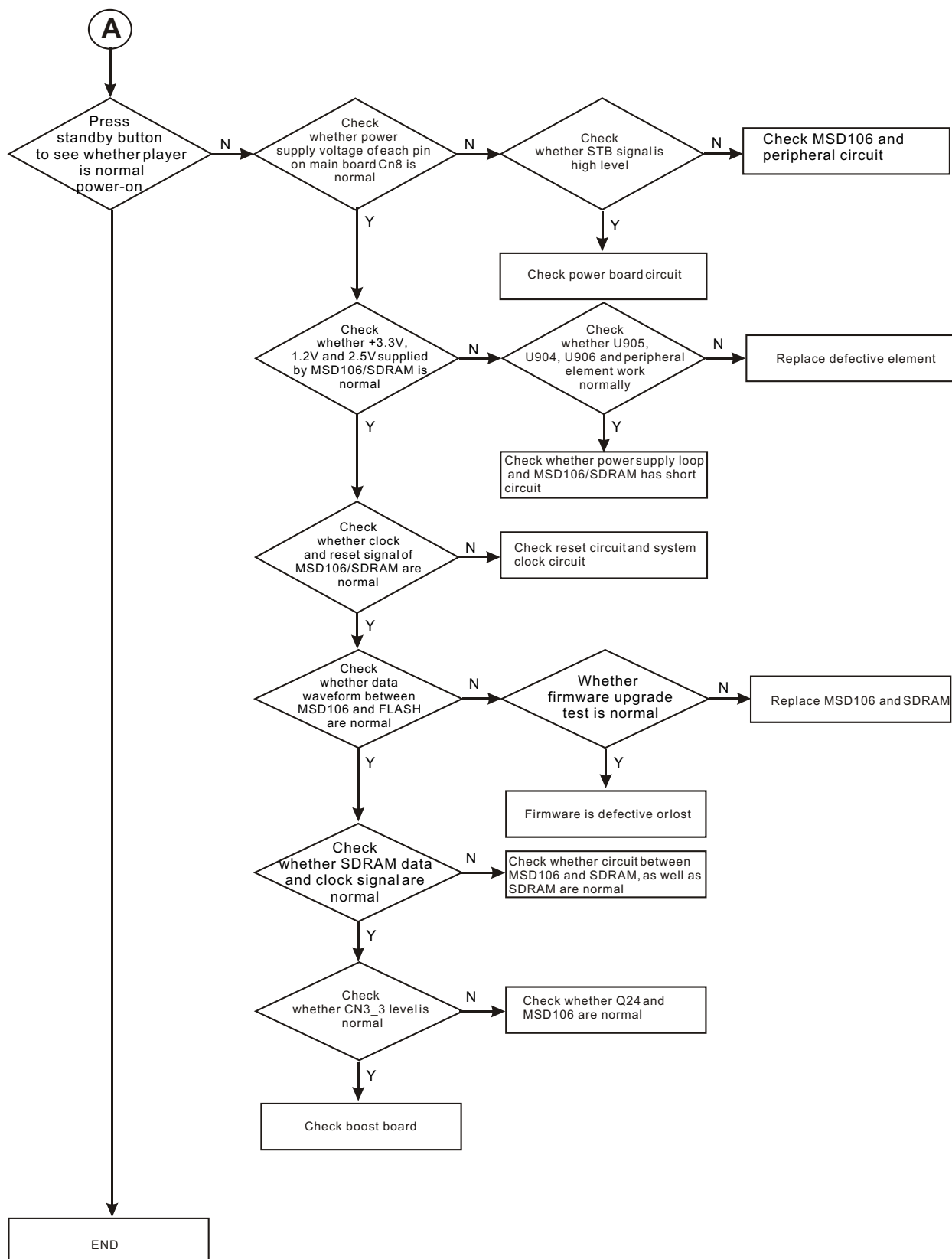
Figure 3.1.5.1 Video circuit block diagram

Section Two Troubleshooting flow chart

[Flow chart 1] Not power on

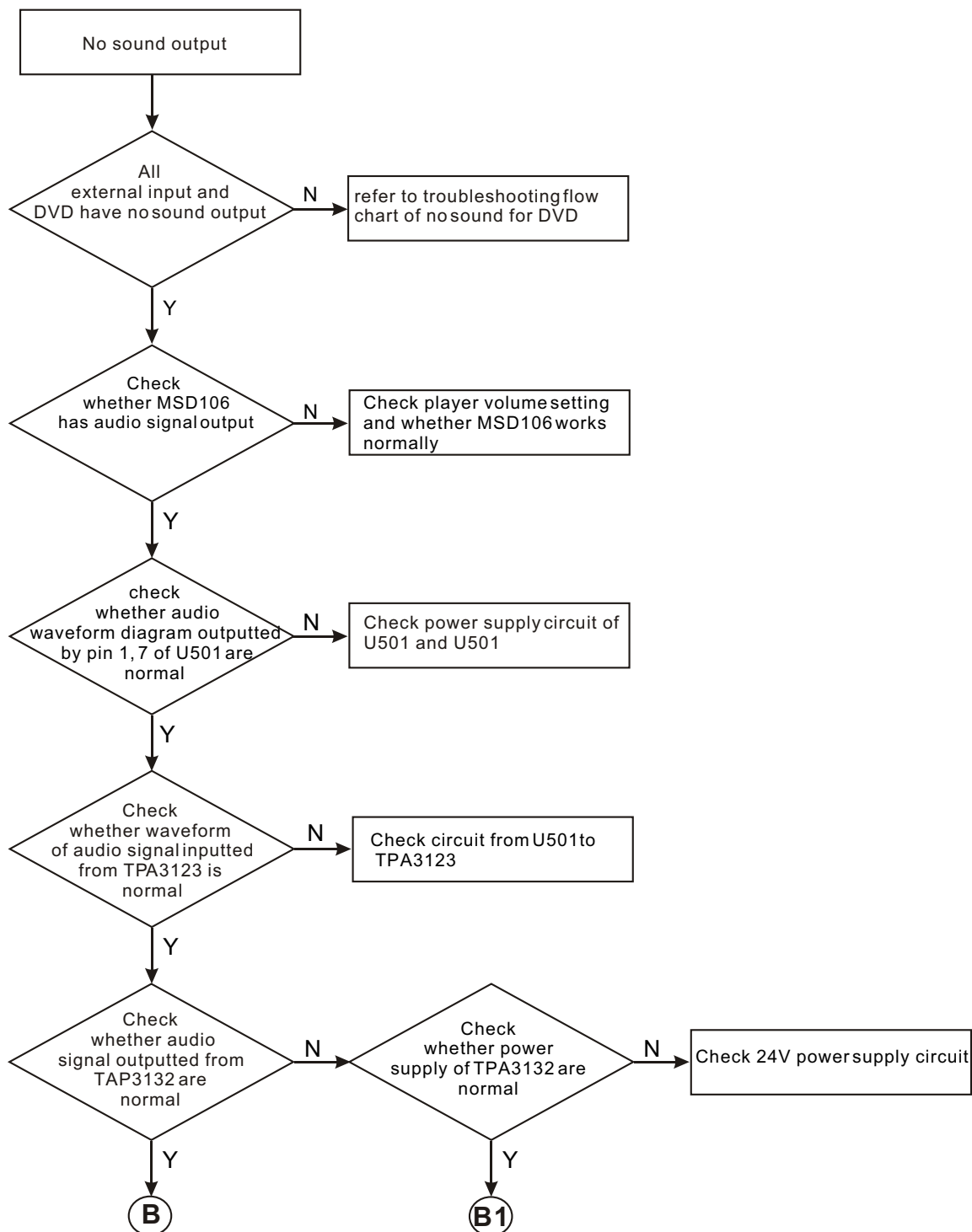
Trouble description: normal power on is unavailable

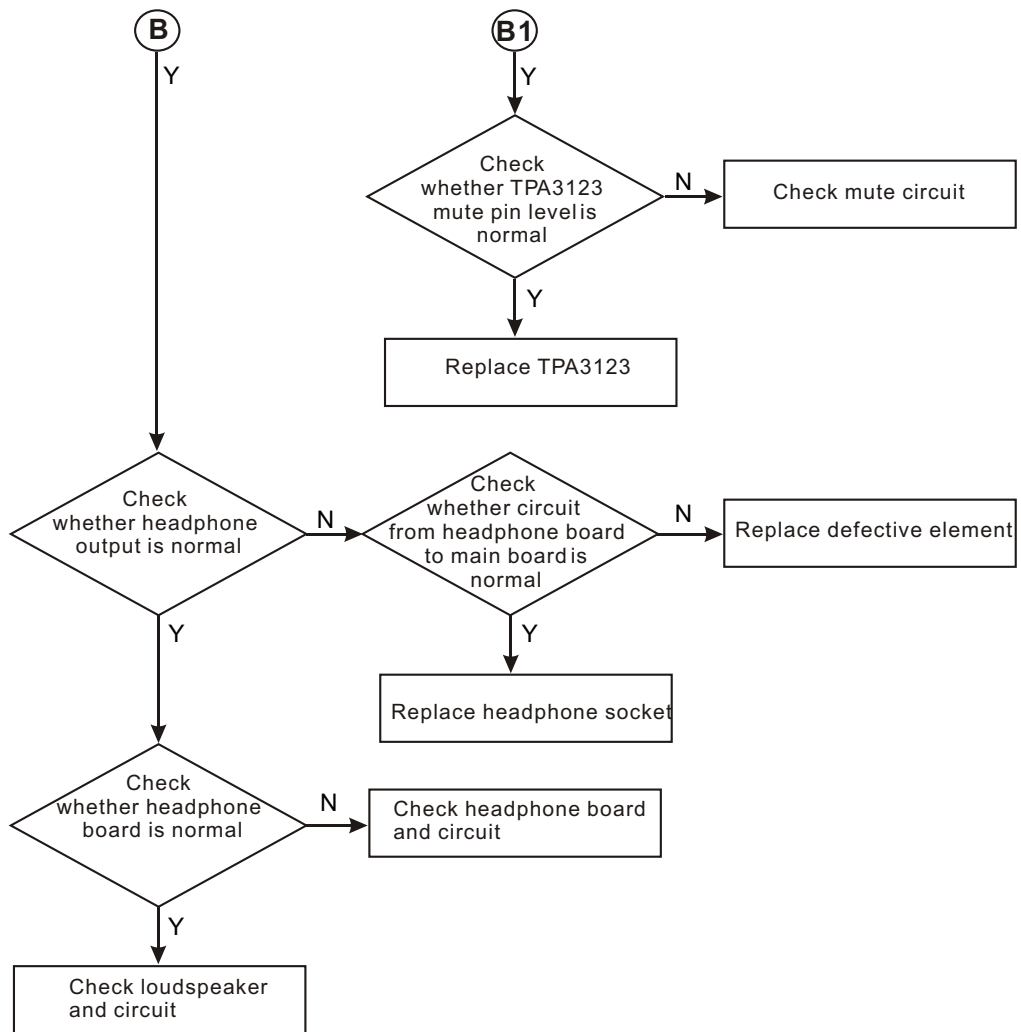




[Flow chart 2] Symptom: no sound

Description: there is image, but no audio output.



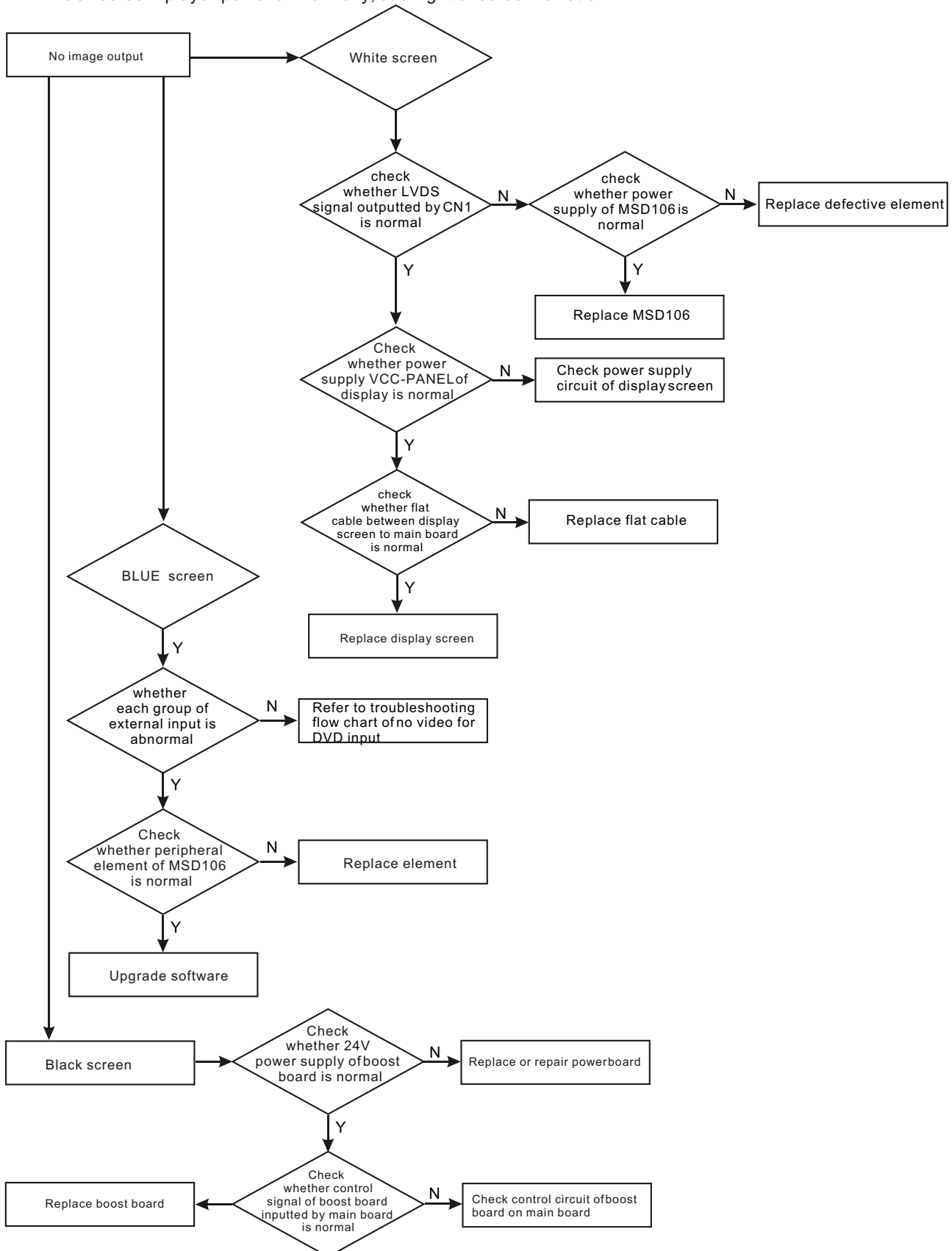


[Flow chart 3] Symptom: display screen has no image output

Description: white screen: background of player has only backlight but no image display.

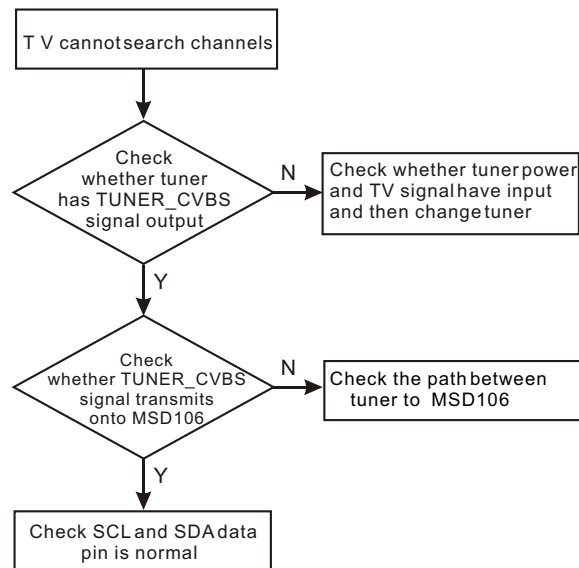
Blue screen : OSD appears blue, but no normal image display.

Black screen: player power on normally, backlight of screen is not on.



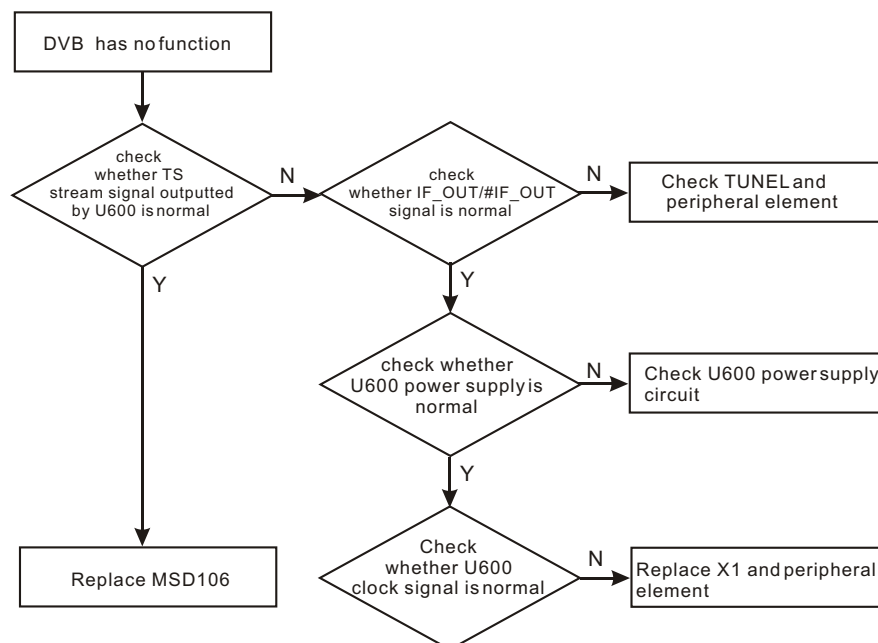
[Flow chart 4] Symptom: TV cannot search channels

Description: channel cannot be searched.



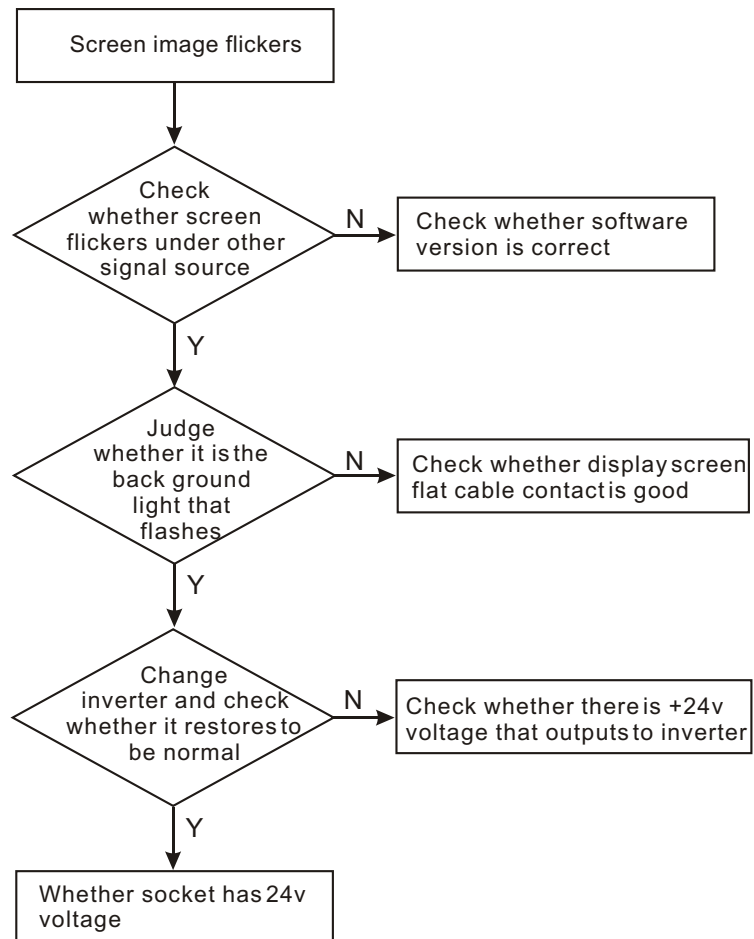
[Flow chart 5] symptom: DVB has no function

Description: DVB has no function and cannot be realized.



[Flow chart 5] Symptom: screen image flickers

Description: screen image flickers and sound is normal.



[Flow chart 6] Symptom: colour has distortion

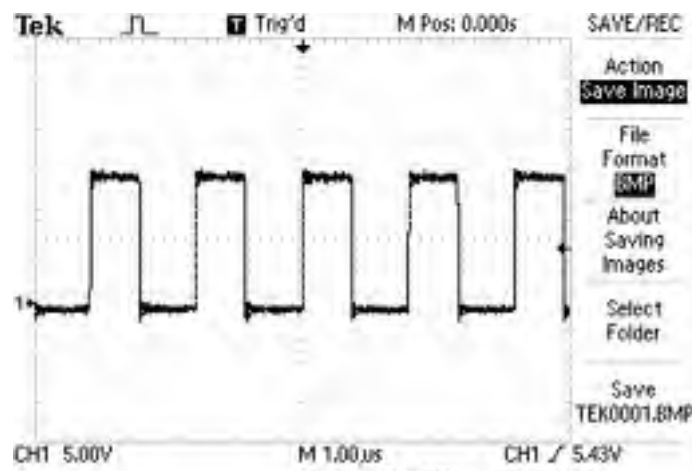
Description: picture colour has distortion.



Section Three Waveform diagram

Waveform diagram could be used as reference in repair works. All the following waveform diagrams of video, audio signal adopt test result through TV playing signal disc. As parameter of player has modification, as well as different disc content. Thus, this test result could only be used as reference instead of standard. Waveform diagram of system part is test result during playing or operating, which could be referred during repair works.

1. Waveform diagram outputted by pin U2_7 during normal working. VP-P=15.4V , average value=5.40V , frequency=503KHZ



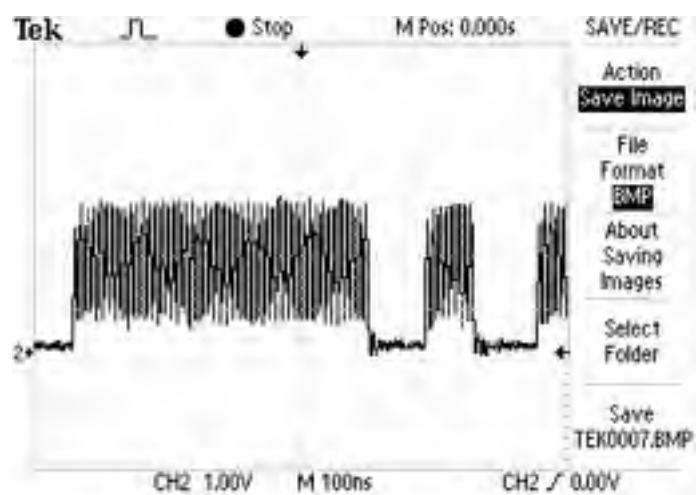
2. U203_2(SO) SPI-SDO waveform diagram.



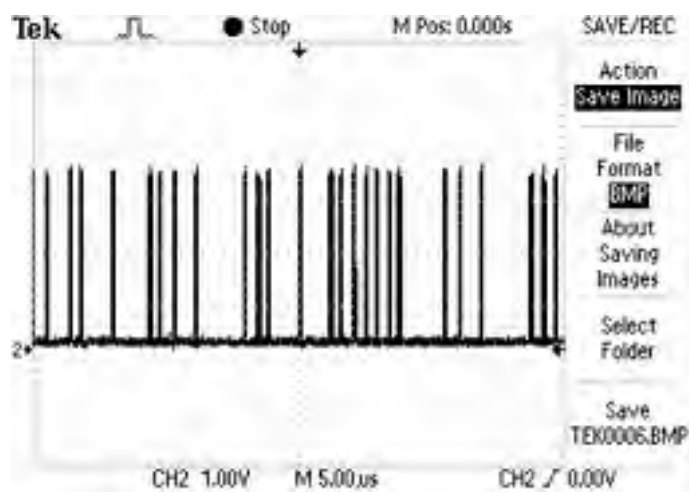
3. U203_1 (CE) gating signal waveform diagram.



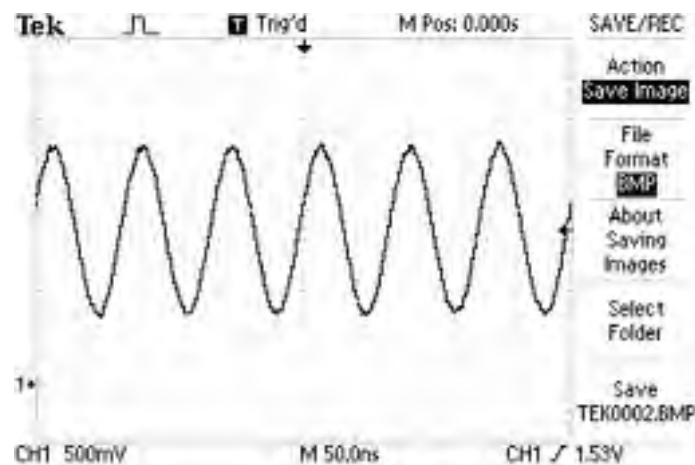
4. U203_6 (SCK) clock signal input waveform diagram.



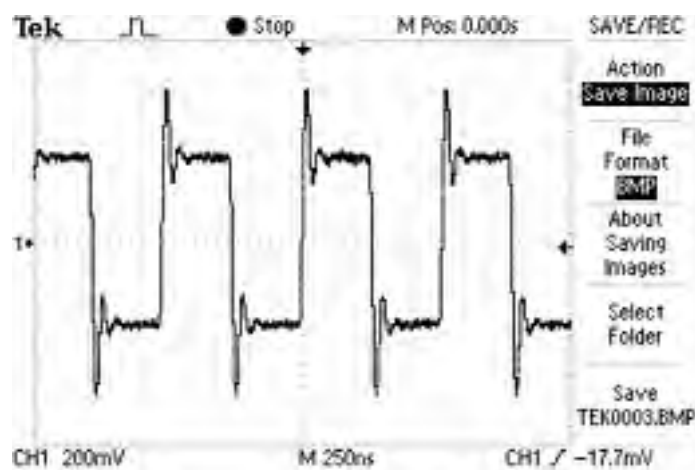
5. U203_5 (SI) data input pin waveform diagram.



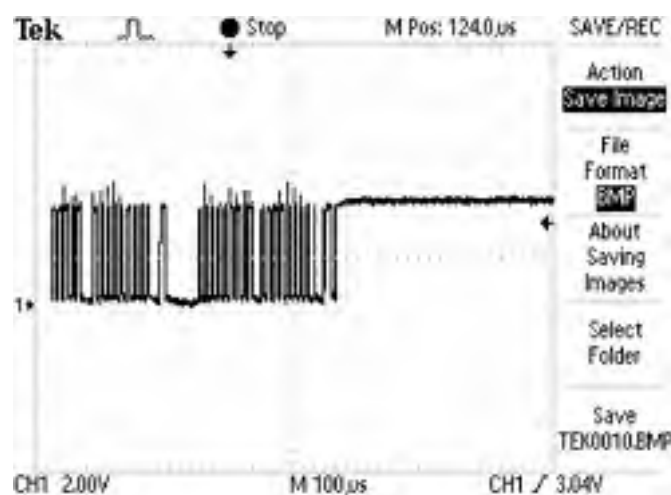
6. MS06 clock signal waveform diagram: waveform diagram when X2 is working (frequency 12MHZ,PK-PK=1.72V,CYC-RMS1.65V).



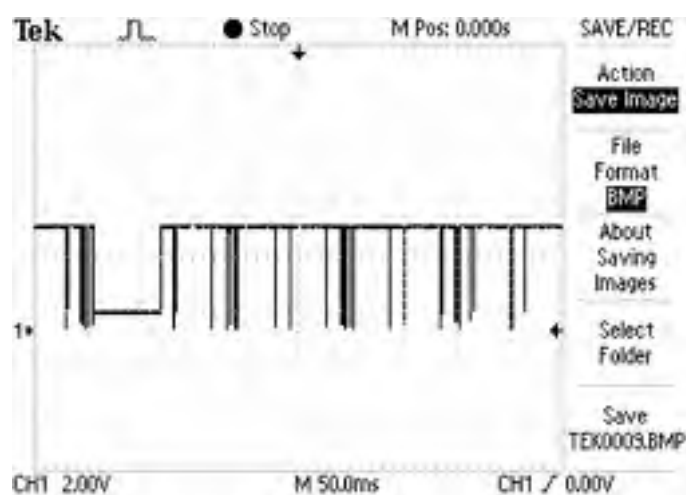
7. Outputted digital audio signal waveform diagram under DVD state, test point C20.



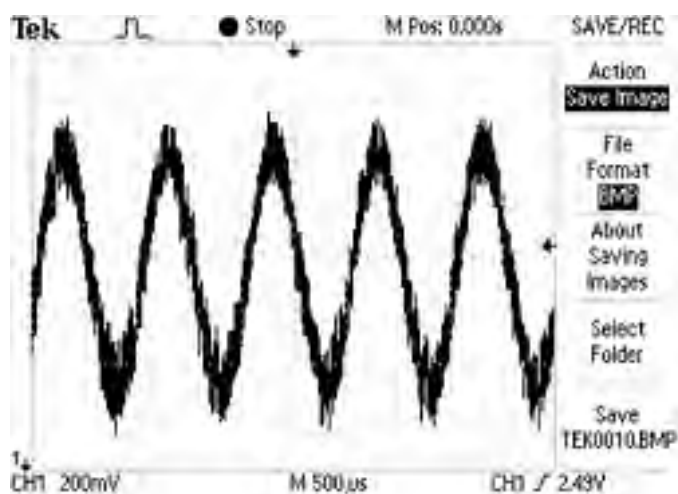
8. U201_6: waveform diagram of SCL in IIC bus.(function operation is test result)



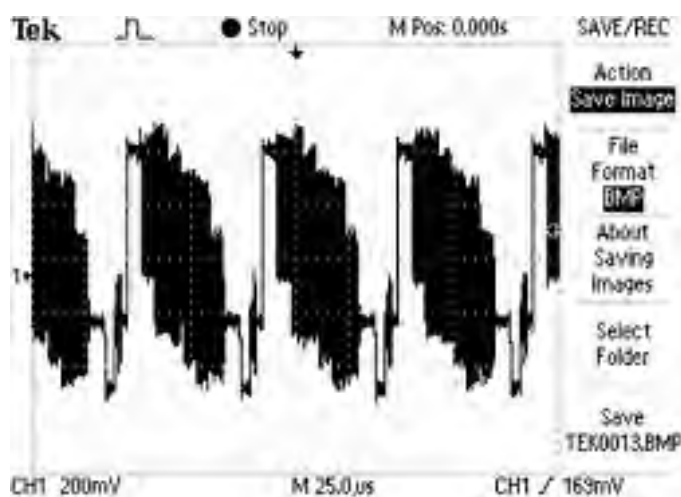
9. U103_5: waveform diagram of SDA in IIC bus.(function operation is test result)



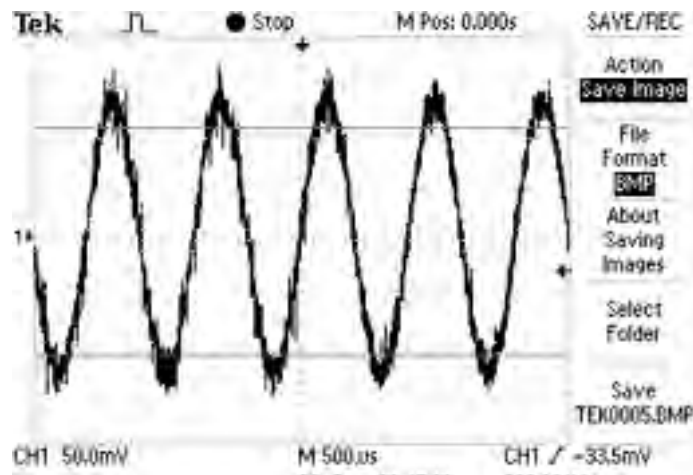
10. TV audio signal waveform diagram: waveform diagram for audio signals outputted by TU1_11 pin when machine is receiving standard signal source in TV mode.(amplitude of signal waveform is related with input source)



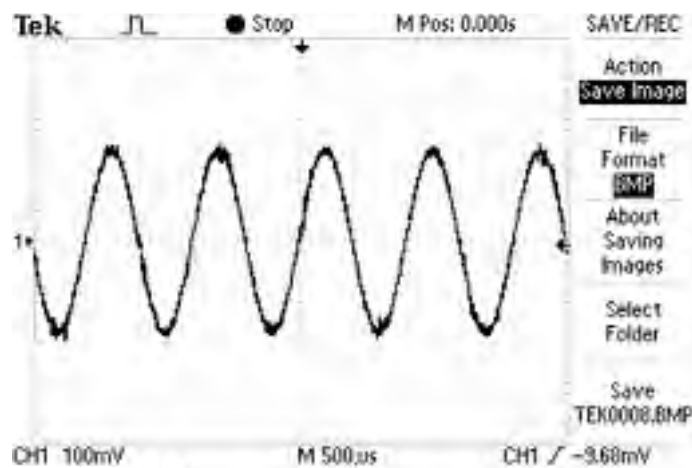
11. TV video signal waveform diagram: waveform diagram for video signals outputted by TU1_12 pin when machine is receiving standard signal source in TV mode.



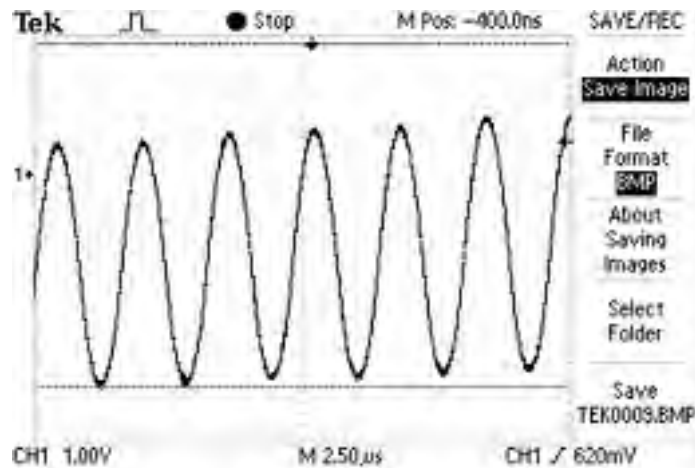
12. Waveform diagram inputted by pin CN2_9/10 under DVD state during playing test disc. Signal amplitude is varied with disc content.



14. U4_5/6 waveform diagram, this signal amplitude is related with volume. The below is tested waveform when volume is 100.



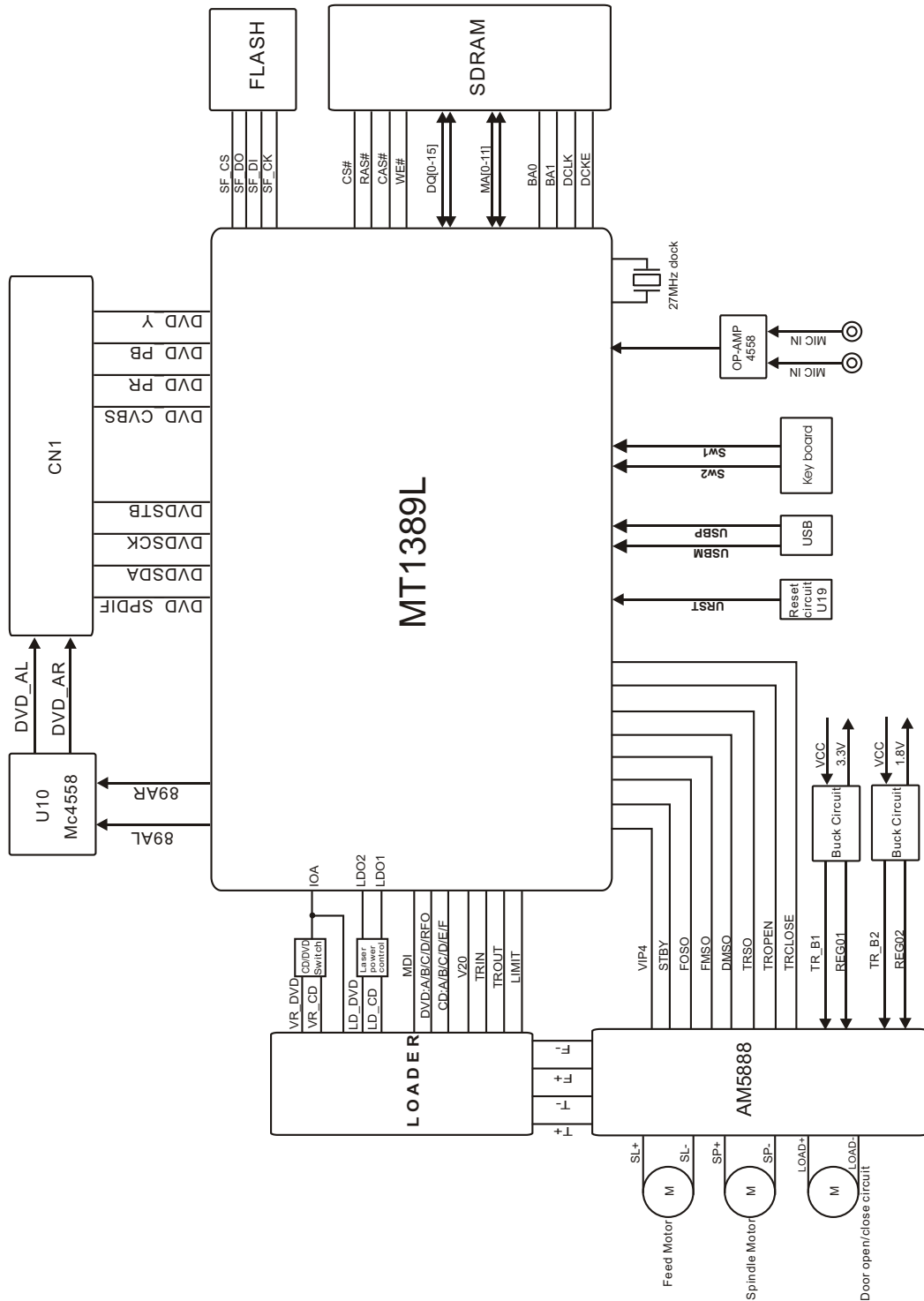
15. U4_23/16 waveform diagram, this signal amplitude is related with volume. The below is tested waveform when volume is 100.



The next manual: DVD part

Section One Principle of the player

3.1.1 Block diagram for player.



Section Two Unit circuit principle

3.2.1 Servo circuit

Servo system of this player adopt SANYO loader and MTK decoding solution. Structure part of loader adopt slot-in loader. And servo circuit is mainly composed of front-end signal processing and digital servo processing, digital signal processing chip MT1389L and driving circuit chip Am5888, of which, MT1389L is also main composing part of decoding circuit. Block diagram of servo circuit is shown in figure 3.2.1.1:

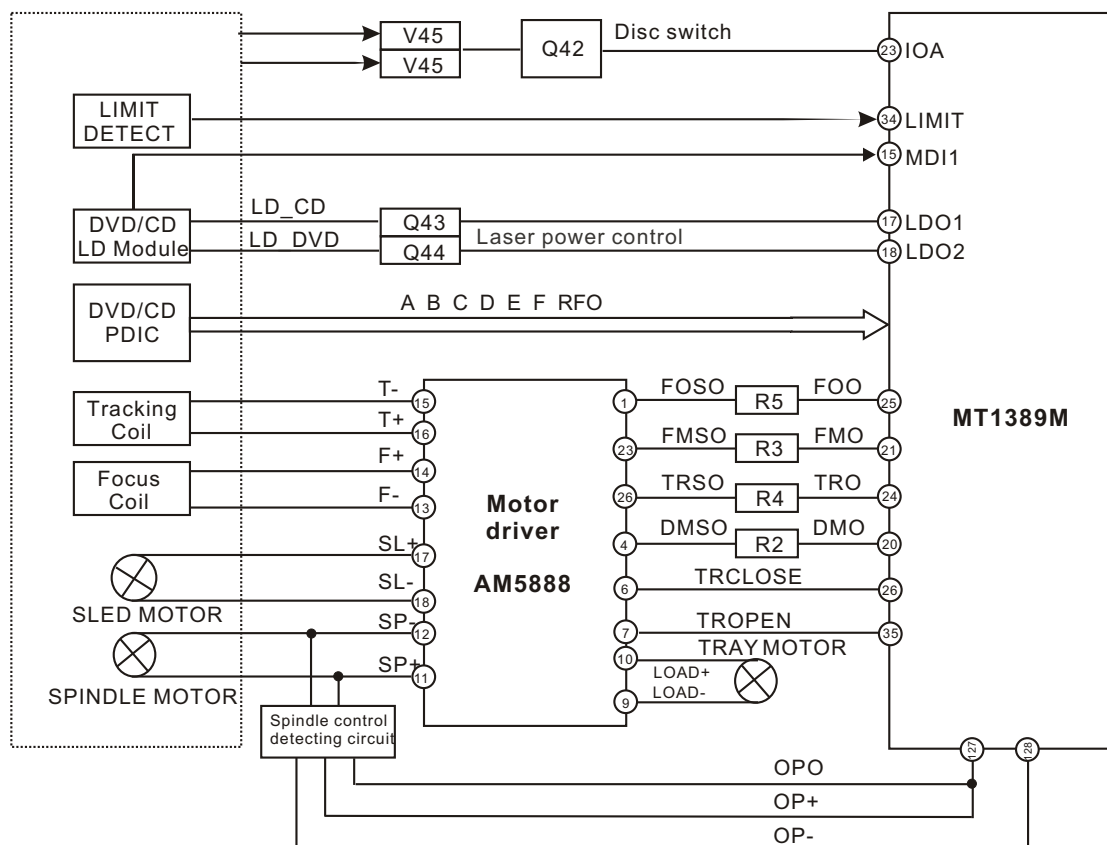


Figure 3.2.1.1 Block diagram of servo circuit

3.2.2 Decoding circuit.

Decoding circuit is mainly composed by MT1389L, SDRAM and FLASH, block diagram of circuit is shown in figure 3.2.2.1:

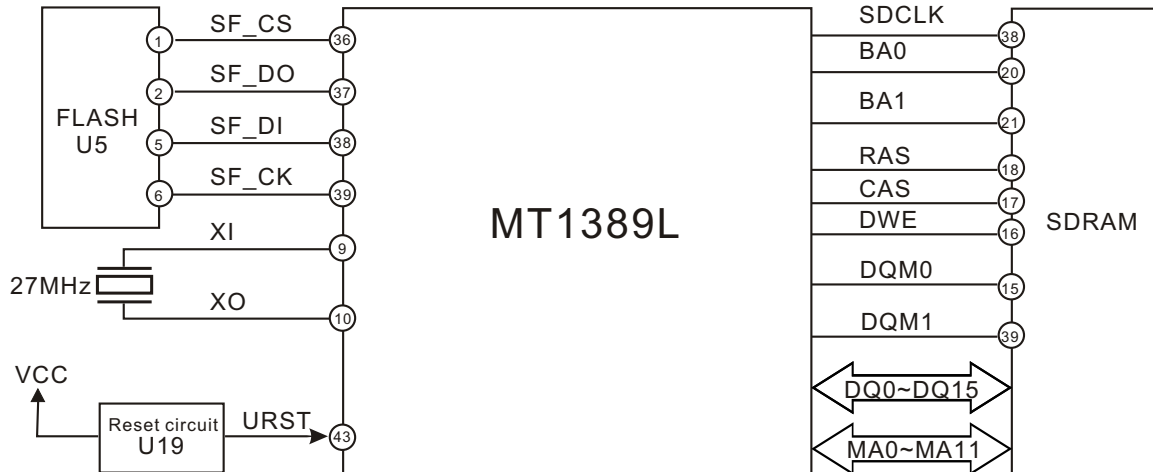


Figure 3.2.2.1 Block diagram of decoding circuit

3.2.3 Audio/Video Circuit.

Block diagram for audio circuit is shown in figure 3.2.3.1.

Audio and video processing circuit is mainly including two channel audio input and two groups of MIC input. Video output circuit is mainly including a group of composite video output and a group of video component output, which individually input to TV main board circuit and is shown through driving display screen after processed by MSD106.

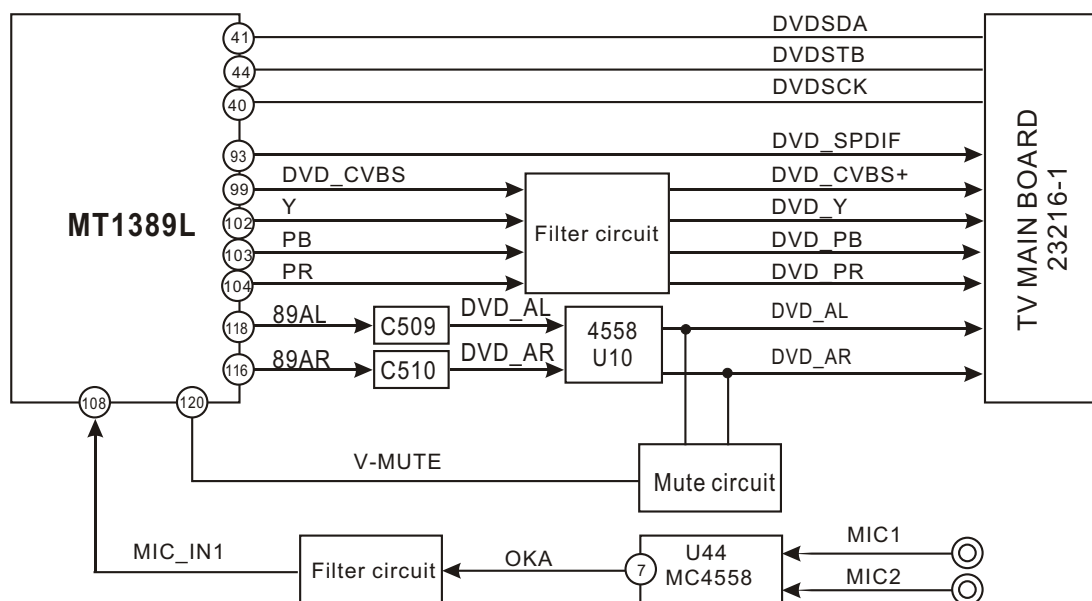
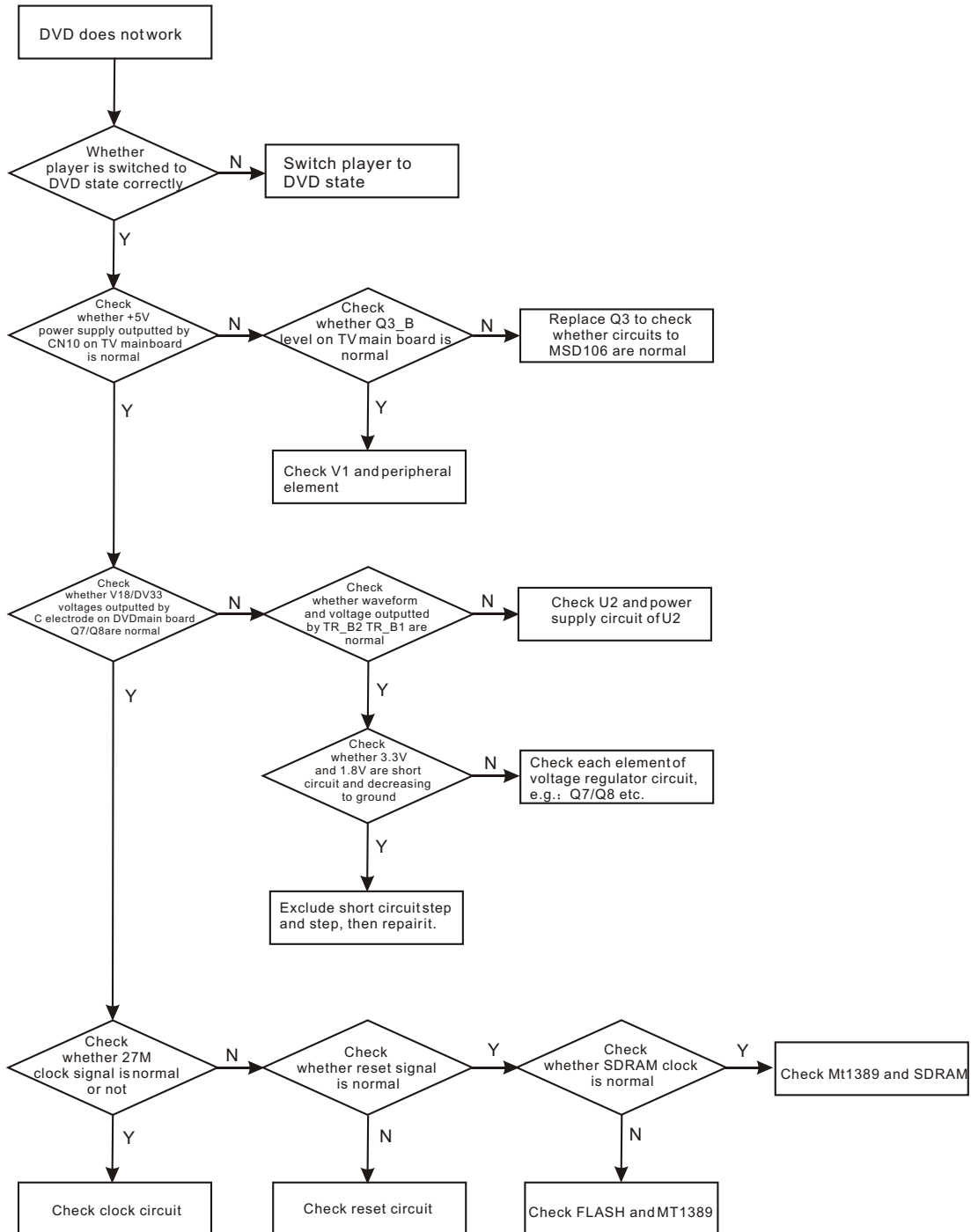


Figure 3.2.3.1 Block diagram of audio circuit

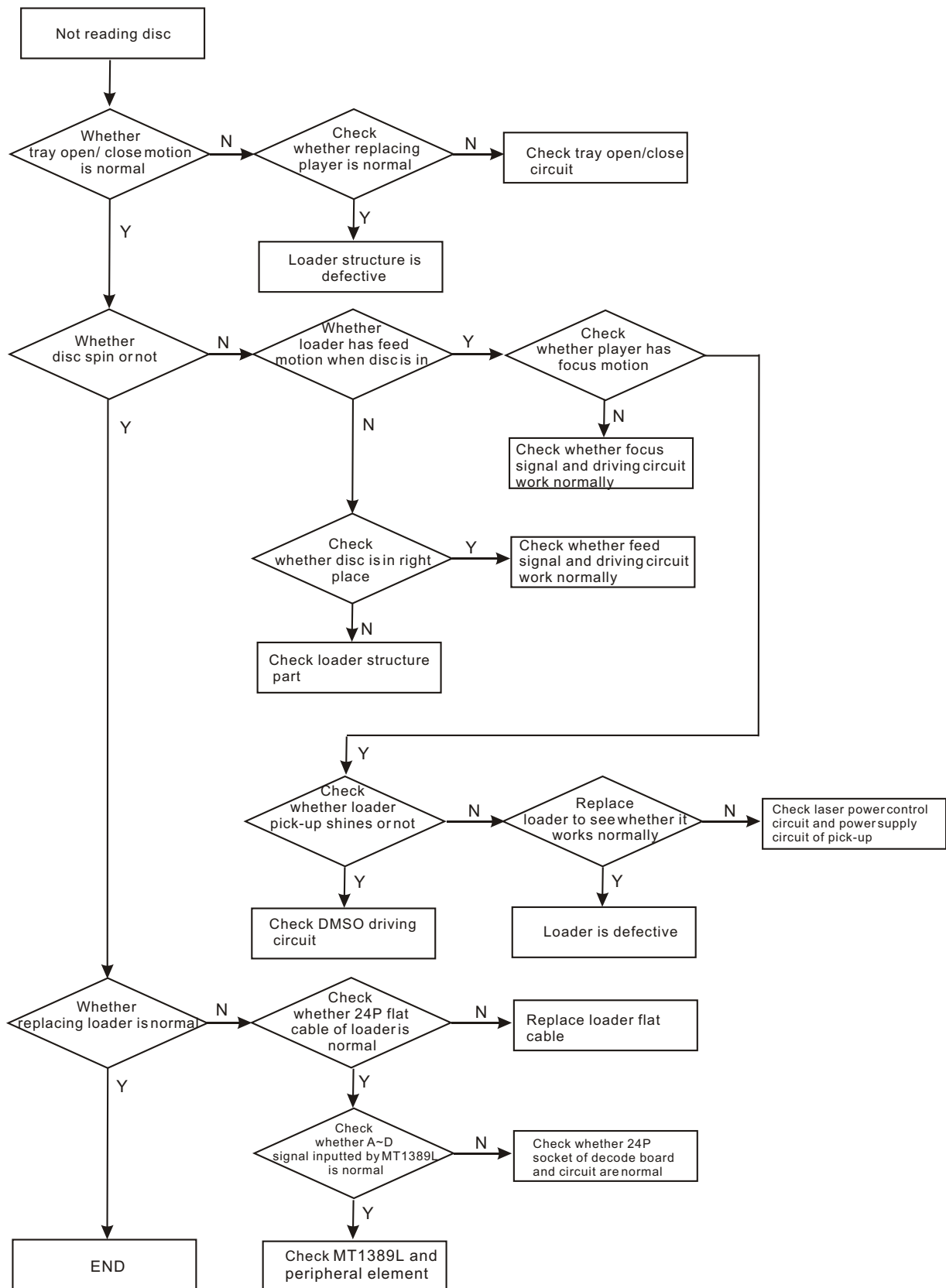
Section Three Troubleshooting flow chart

[Flow chart 1] Symptom: troubleshooting flow chart for DVD part: DVD does not work.



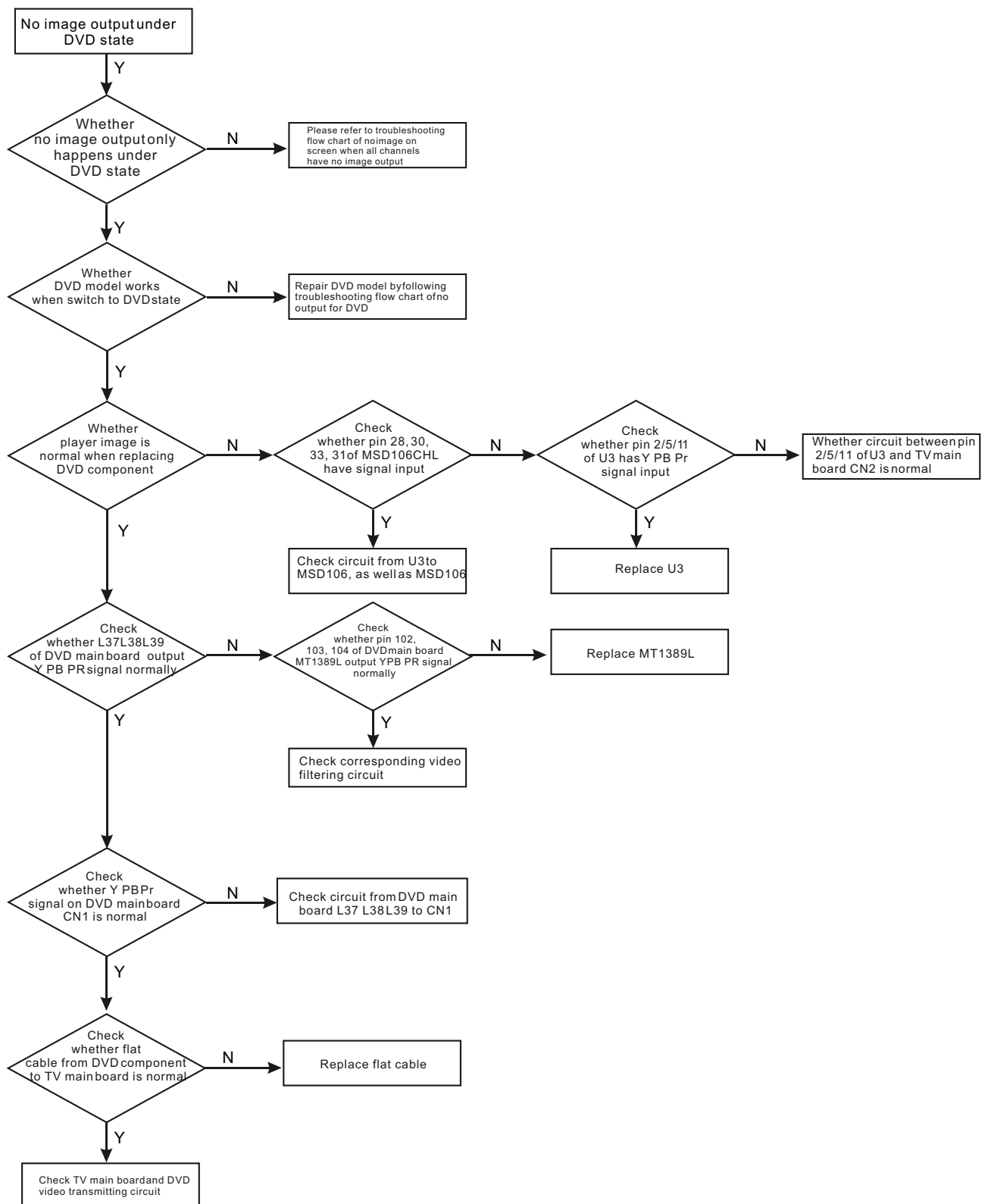
[Flow chart 2] Symptom: troubleshooting flow chart: not reading disc

Not reading disc: power-on image is normal, disc content can not be read; player ejects tray automatically or show no disc.



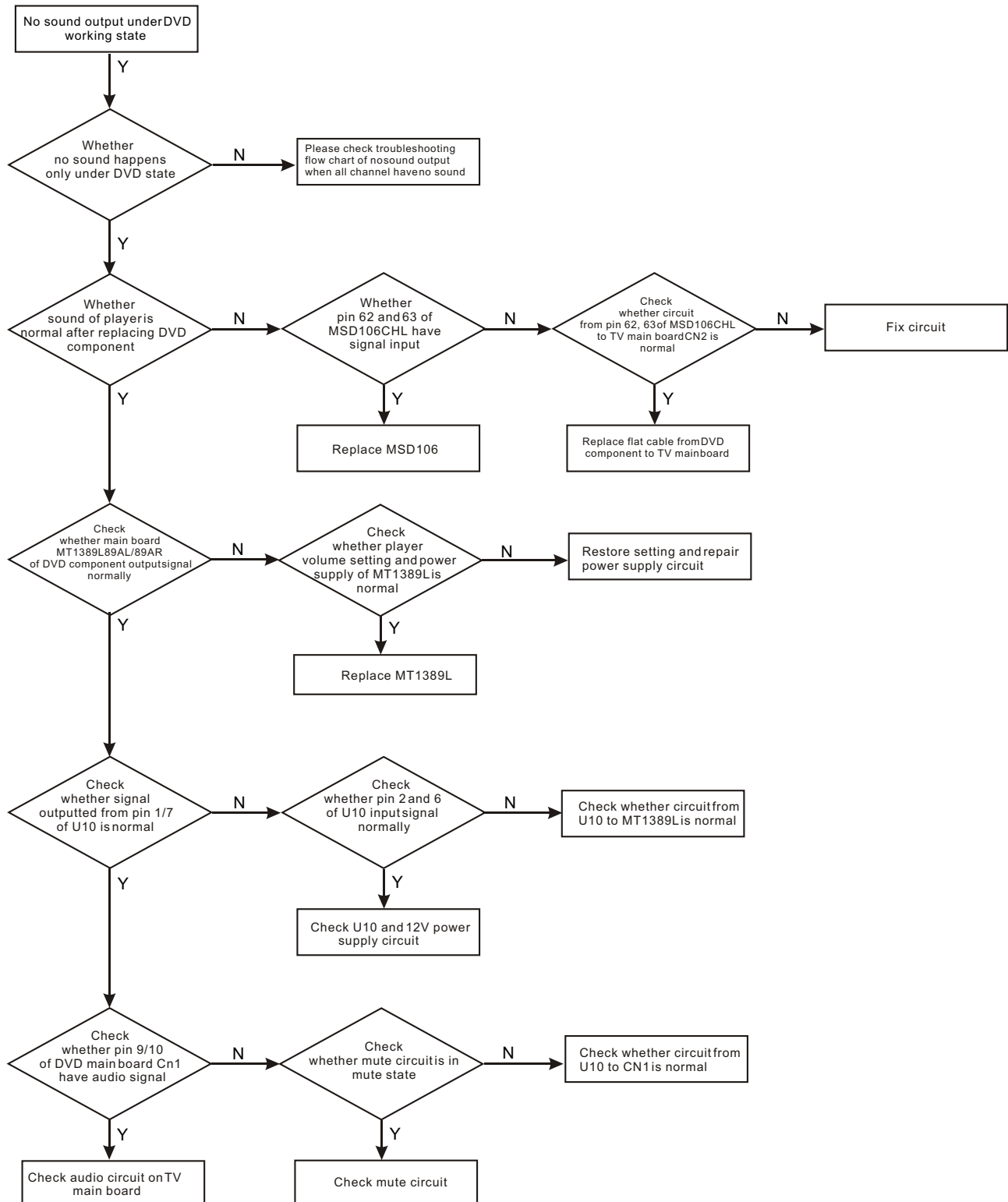
[Flow chart 3] Symptom: DVD has no image

Description: DVD has no image but has sound.

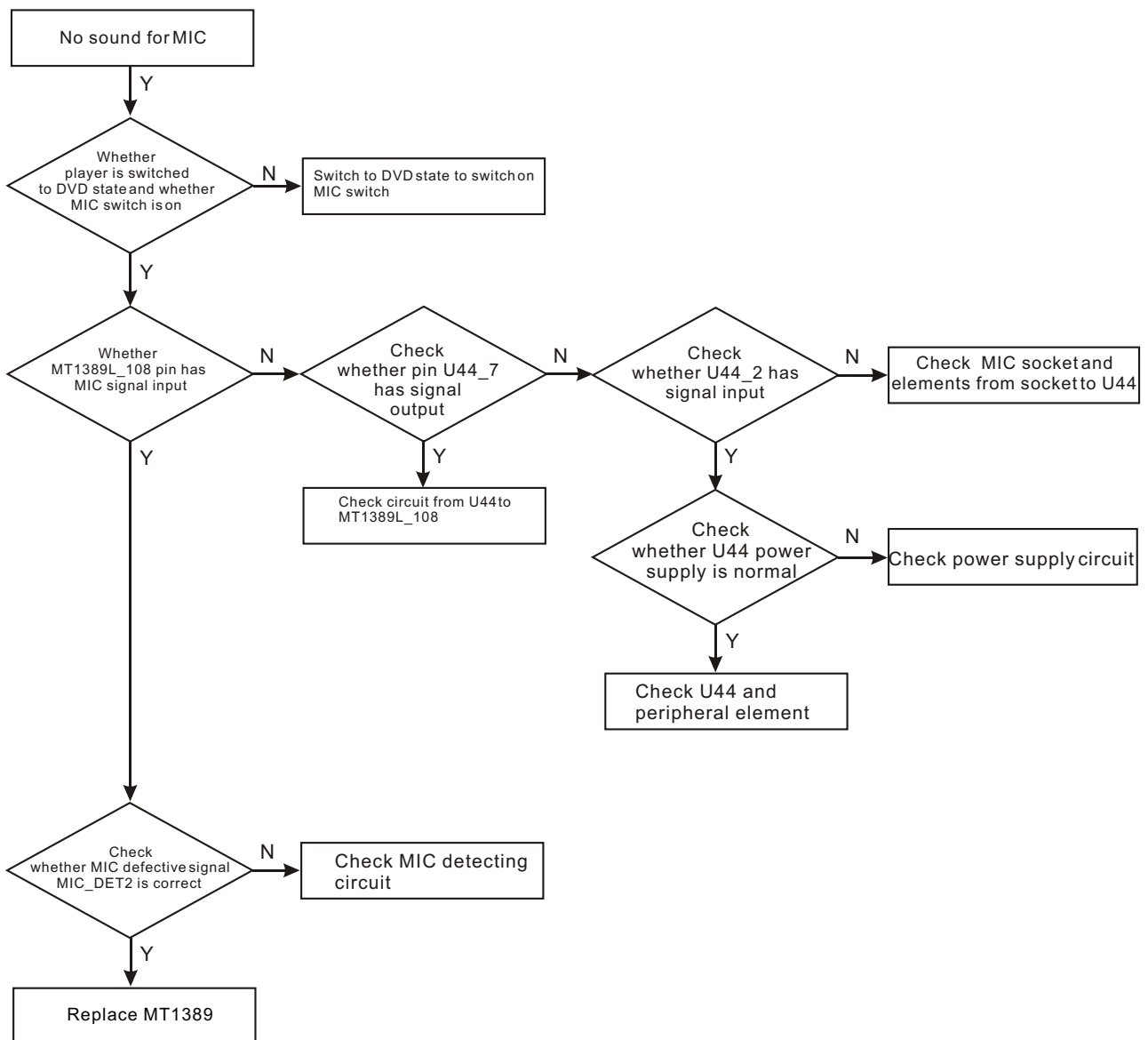


[Flow chart 4] Symptom: DVD has no sound

Trouble description: when machine is set in DVD state, there is image but no sound. External input and TV sound are normal.



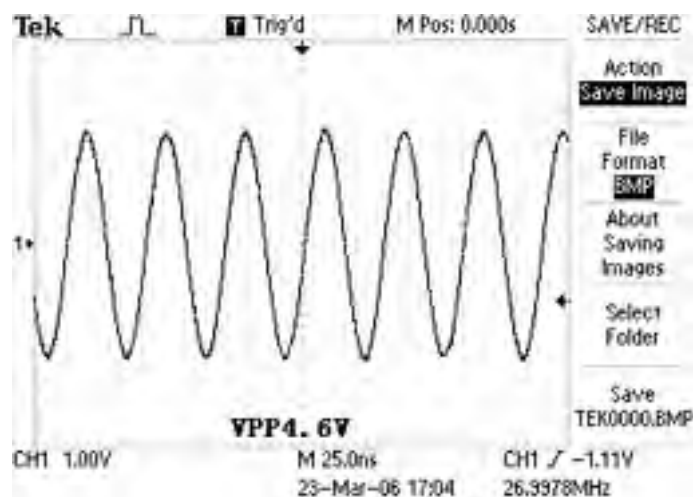
[Flow chart 5] Symptom: Troubleshooting flow chart of no sound for MIC(check whether MIC is on before detecting, whether player outputs sound normally).



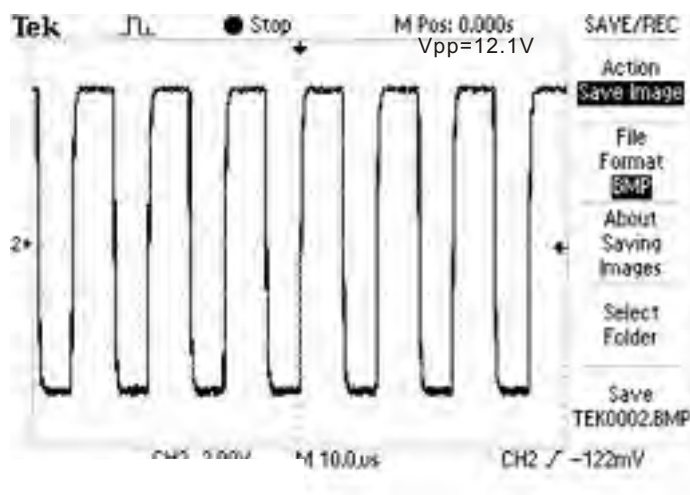
Section Four Waveform Diagram

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. Test point X1 of waveform diagram for 27M clock signal.



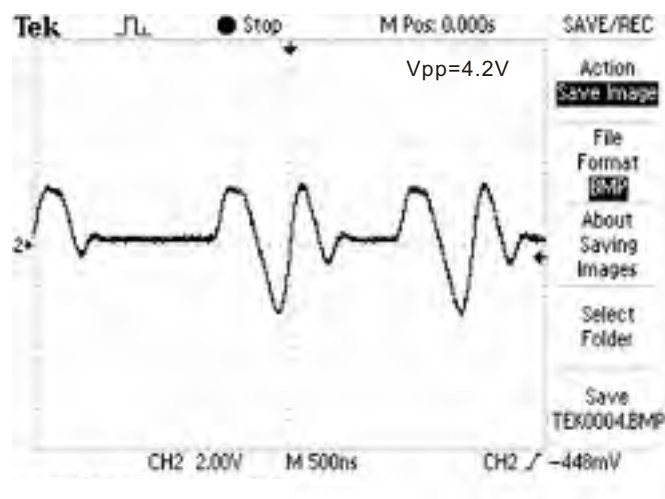
2. Waveform diagram for DMO (when DMSO has motion)



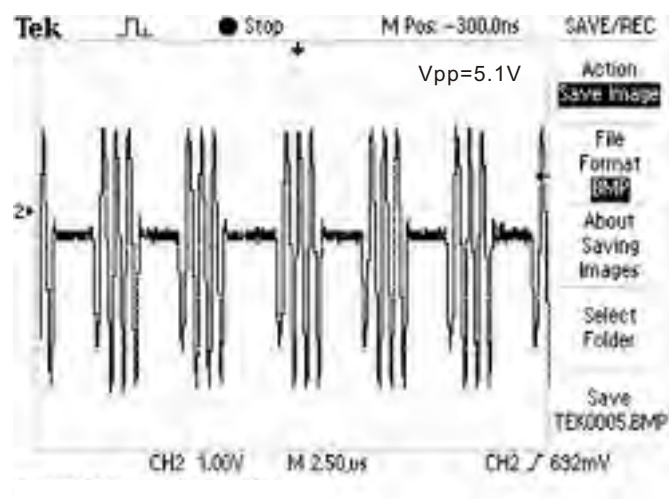
3. Waveform diagram for FMO signal (when pick-up has FMSO motion).



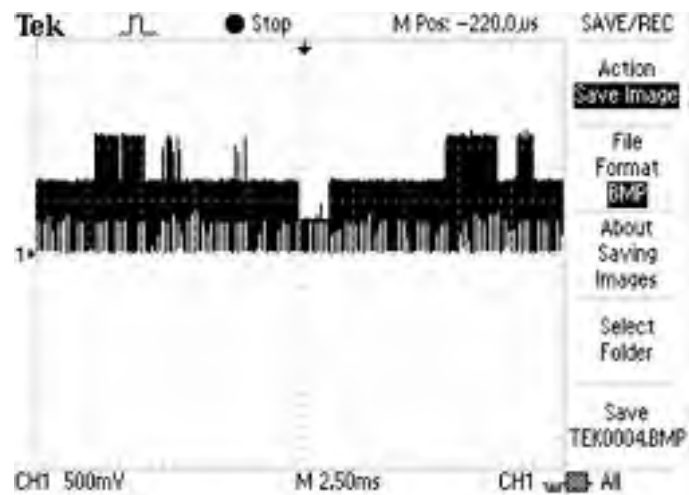
4. Waveform diagram for TRO (when pick-up has TRSO motion) .



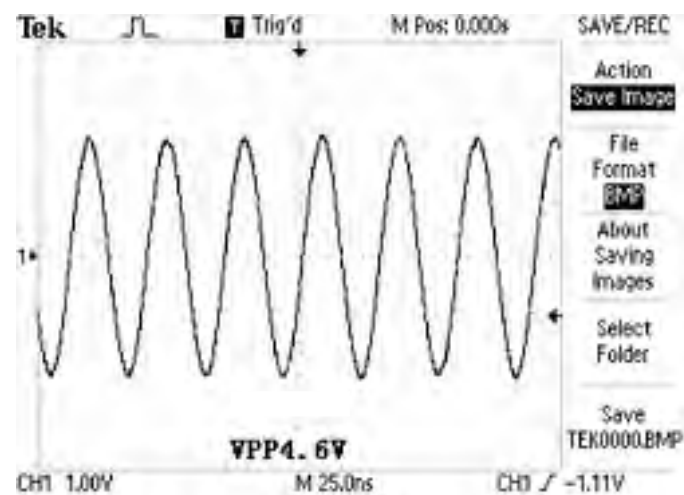
5. Waveform diagram for FOO (when pick-up has FOSO motion) .



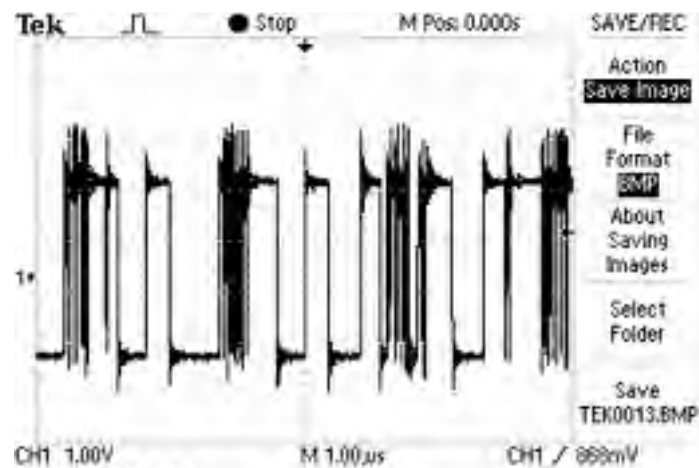
6. Video signal waveform diagram.



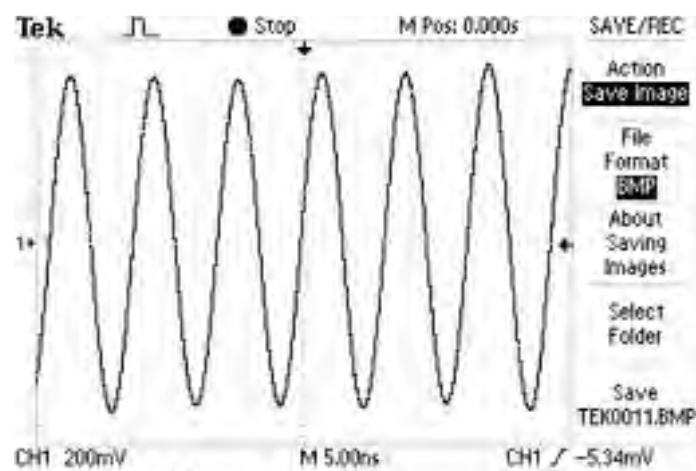
7. 1KHZ audio signal output waveform diagram(it is suggested to use test disc,if not,waveform tested will change at any time,which will affect your judgment).



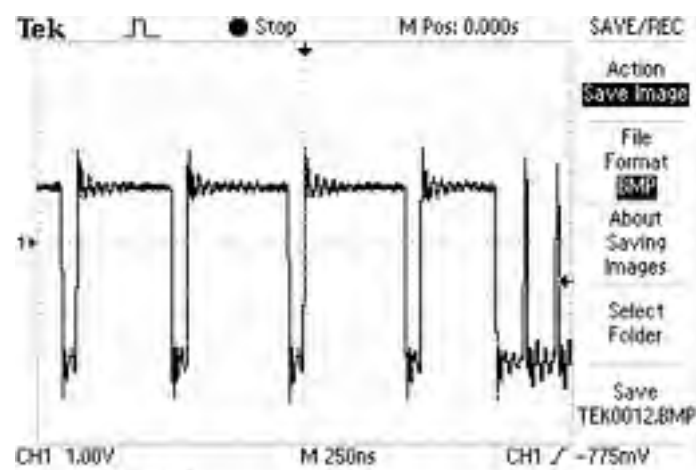
8. Data waveform diagram for pin 2 of SDRAM



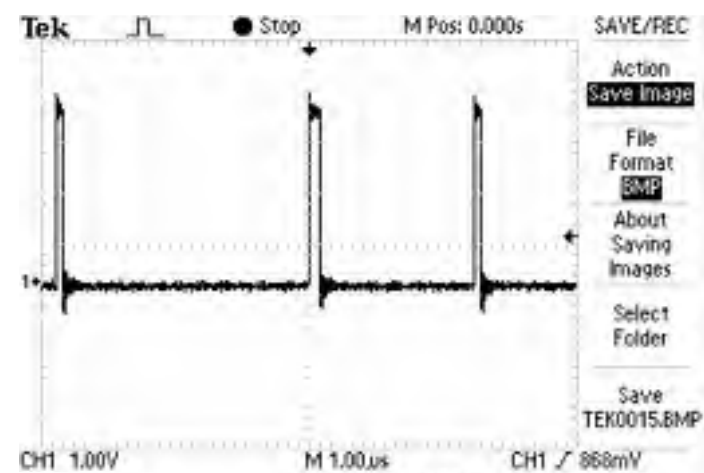
9. Waveform diagram for pin38 when SDRAM is in working state 128MHZ VPP=1.37V



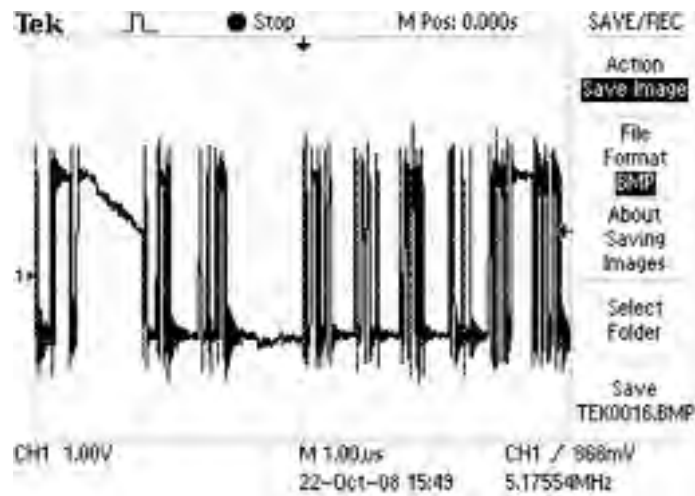
10. Waveform diagram for SDRAM DQM0 signal U3_15



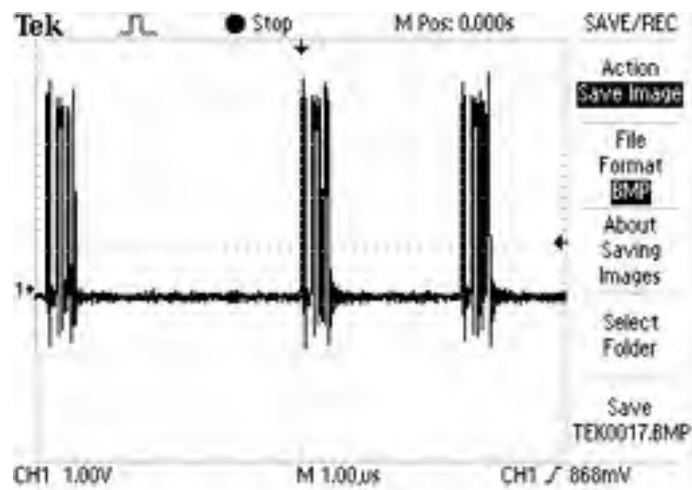
11. Waveform diagram for pin 1 SF_CS of FLASH U5



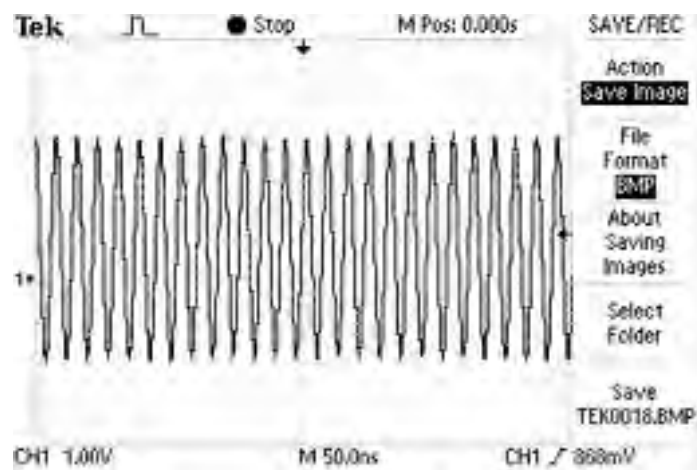
12.SF_DO waveform diagram for FLASH U5_2 pin SF_DO



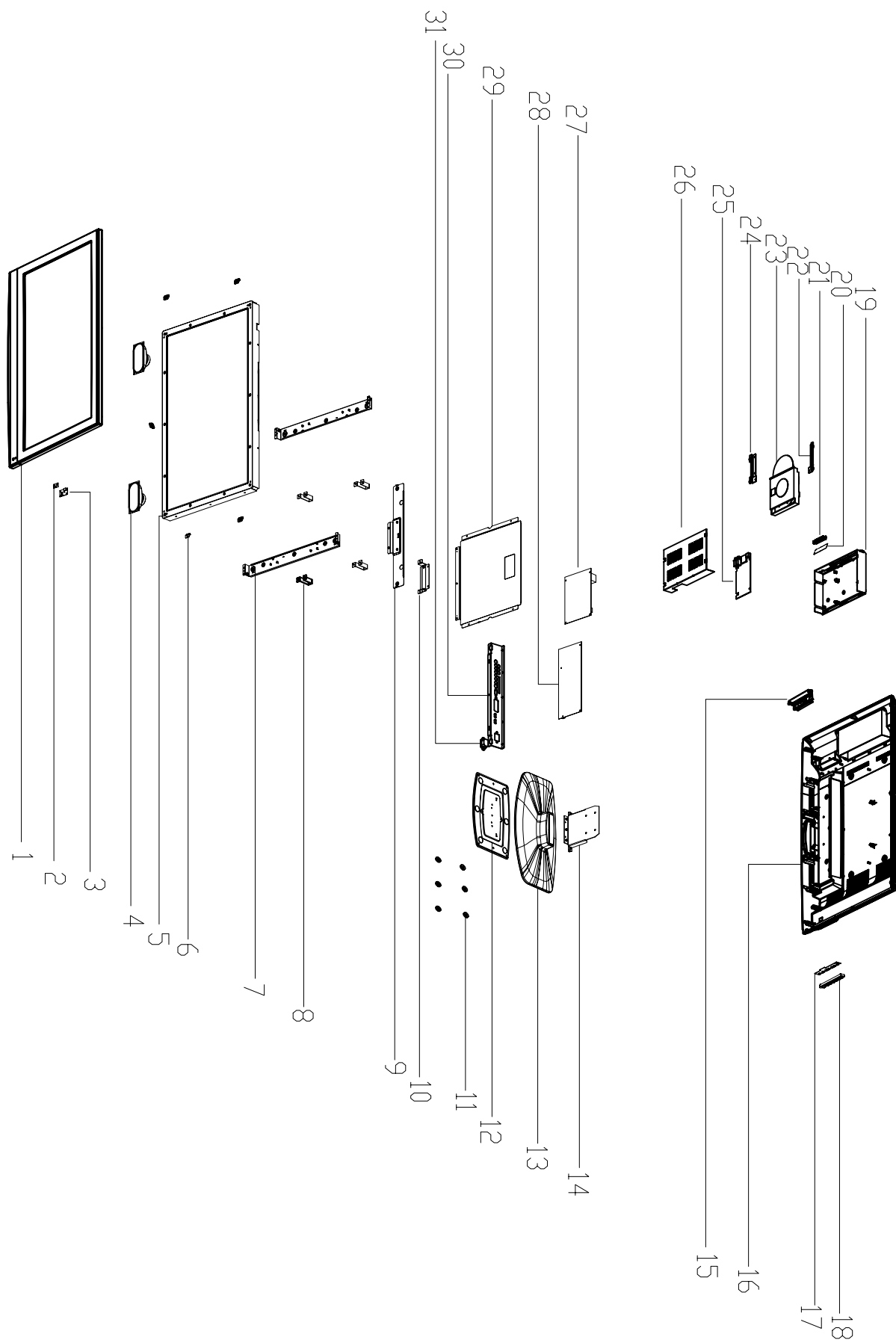
13. Waveform diagram of pin 5 SF_DI of FLASH



14. Waveform diagram for pin 6 SF_CK of FLASH.



Chapter Four Explosion Flow Chart



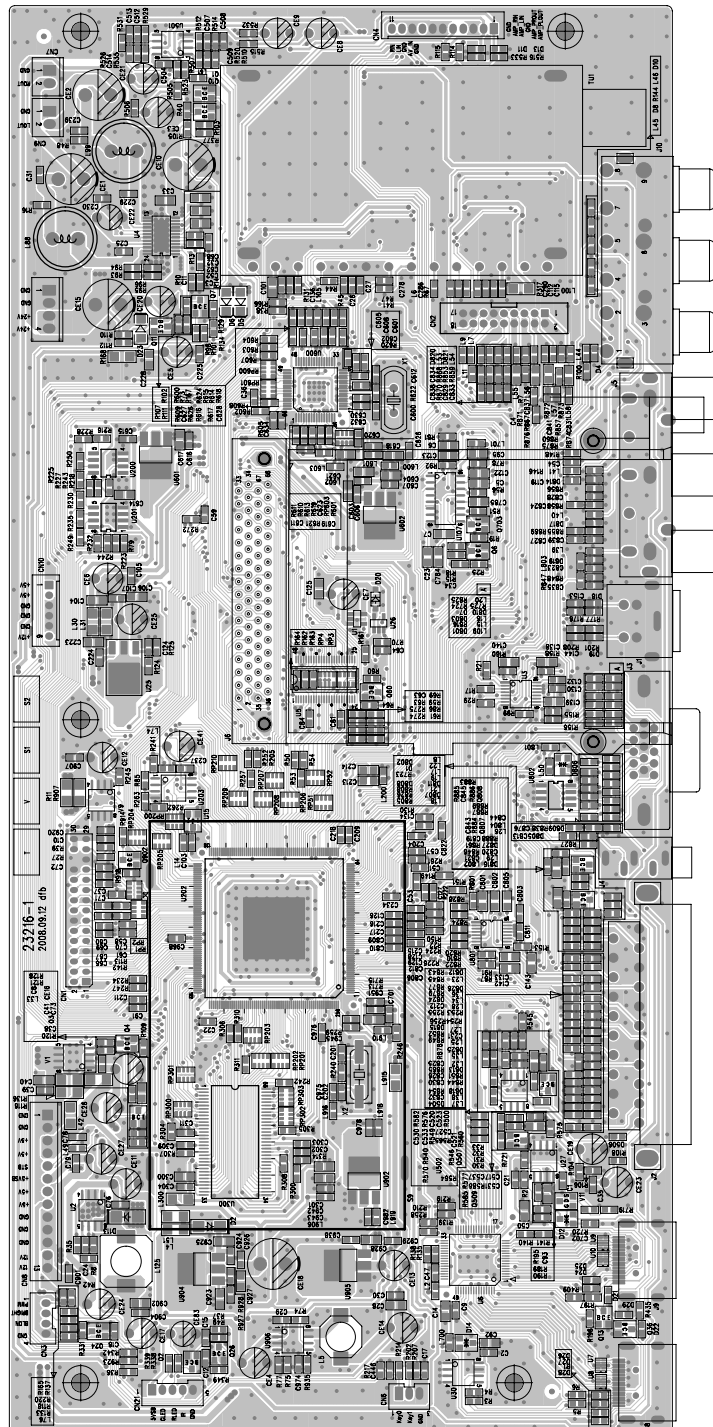
Serial number	Material code	Material name	Specification
1	3006013	Front case	LD3216DK(RU) black
2	3077169	Lens of remote control	LD3216DK(RU) transparent
3	4942170	PCB semi-manufactured product	B3216-0 LD3216DK(RU)
4	1100867	Loudspeaker	5W 8Ω external magnetic 120×52×37
5	1210580	Display screen component	V315B1-L01 31.5 inches TFT
6	3873085	Screen block(CMO)	LD3216DK(RU)
7	3873077	Display screen bracket	LD3216DK(RU)
8	3873082	Wall-mounting bracket	LD3216DK(RU) black
9	3873080	Connection board of bracket for display screen	LD3216DK(RU)
10	3873081	Connection board for pedestal	LD3216DK(RU)
11	5238245	Glue pad	Φ20×4 sigle-side glue on rear side
12	3873090	Iron board for pedestal	LD3216DK(RU)
13	3077175	Pedestal	LD3216DK(RU) black
14	3873089	Installation bracket for pedestal	LD3216DK(RU)
15	4942167	PCB semi-manufactred product	73216-0 LD3216DK(RU)
16	3013354	Rear case	LD3216DK(RU) black
17	4942168	PCB semi-manufactured product	43216-0 LD3216DK(RU)
18	3077170	TV function button	LD3216DK(RU) silvery
19	3077173	Top cover for DVD	LD3216DK(RU) black
20	4942171	PCB semi-manufactured product	J3216-0 LD3216DK(RU)
21	3077171	DVD function button	LD3216DK(RU) silvery
22	3873088	Loader bracket(right)	LD3216DK(RU)
23	2380370	DVD loader	TD-S208S-SV1(62SV1光头)-B
24	3873087	Loader bracket(left)	LD3216DK(RU)
25	4942173	PCB semi-manufactured product	2D3216-0 LD3216DK(RU)
26	3103145	Lower cover for DVD	LD3216DK(RU)
27	4942119	PCB semi-manufactured product	MLT668T-1 LD3216DK(RU)
28	4942172	PCB semi-manufactured product	23216-0 LD3216DK(RU)
29	3873076	PCB installation board	LD3216DK(RU)
30	3873079	Terminal cover board	LD3216DK(RU)
31	1870091	AC socket	3 cables shped SA-4S-091 GP with screw hole D038

Chapter Cinque

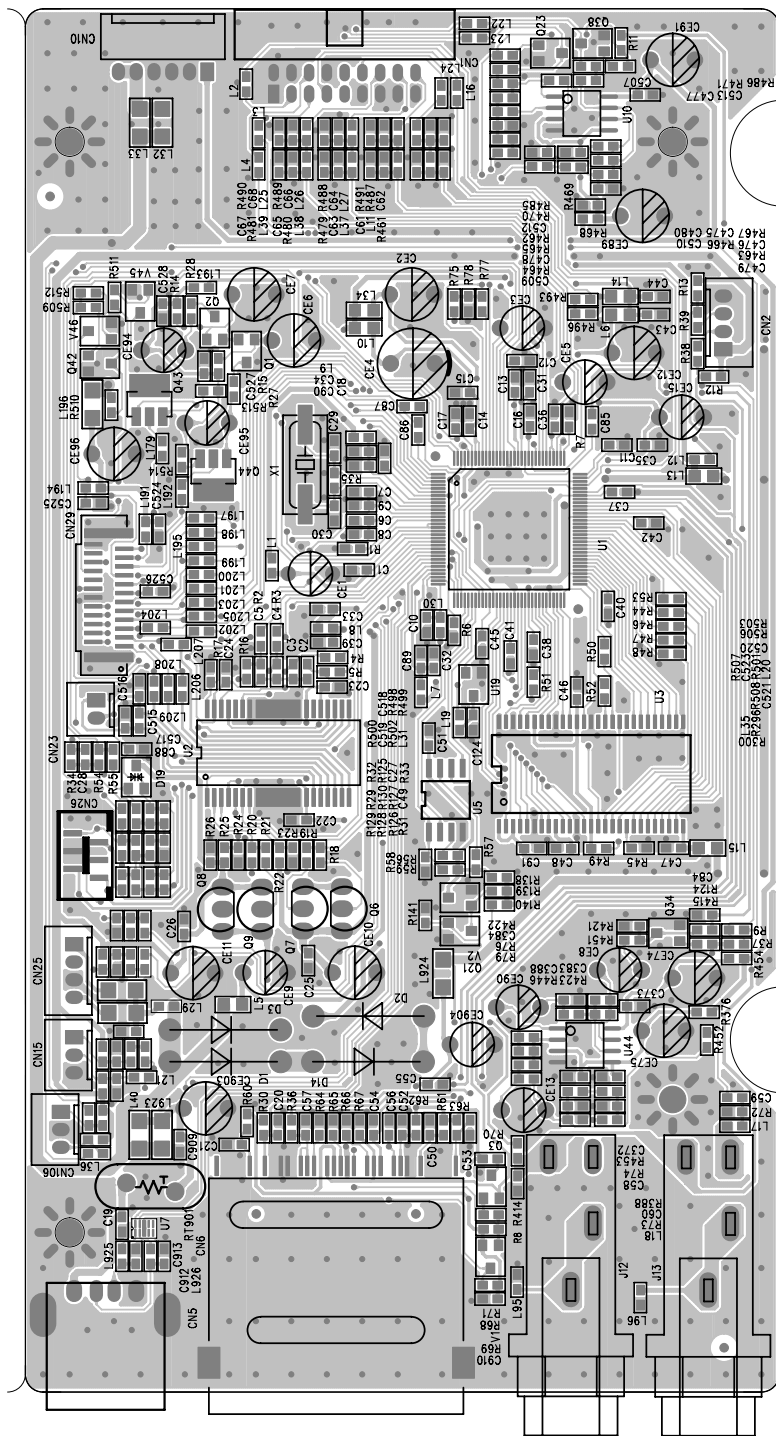
PCB Board&Circuit Diagram

Section One PCB Board

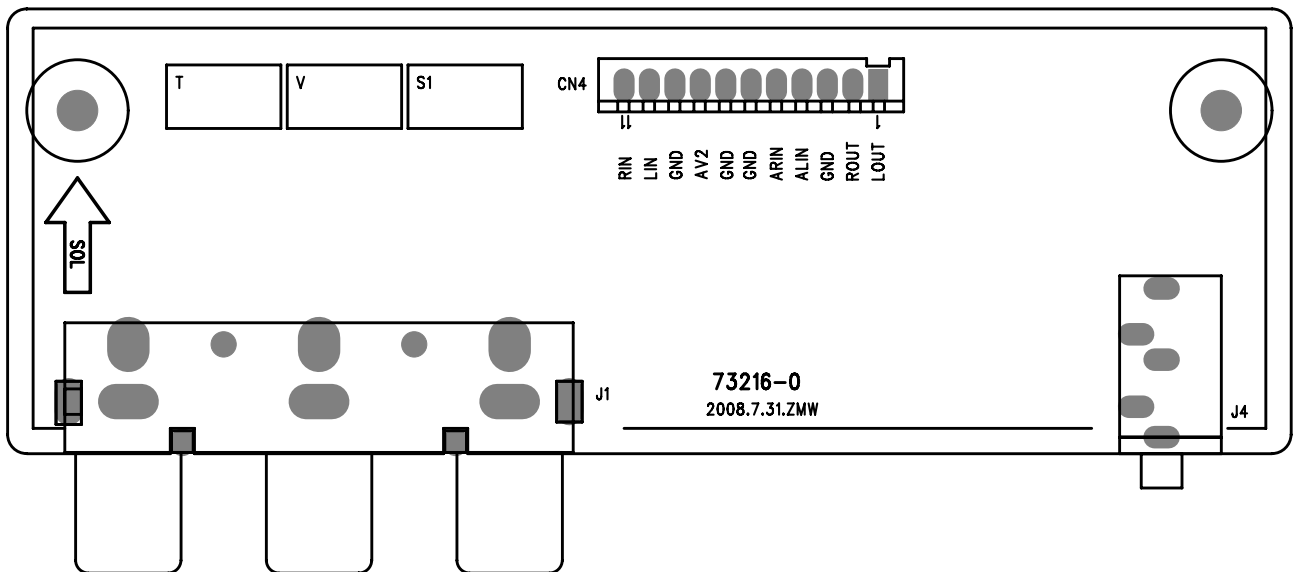
5.1.1 TOP layer of TV Main Board(23216-1)



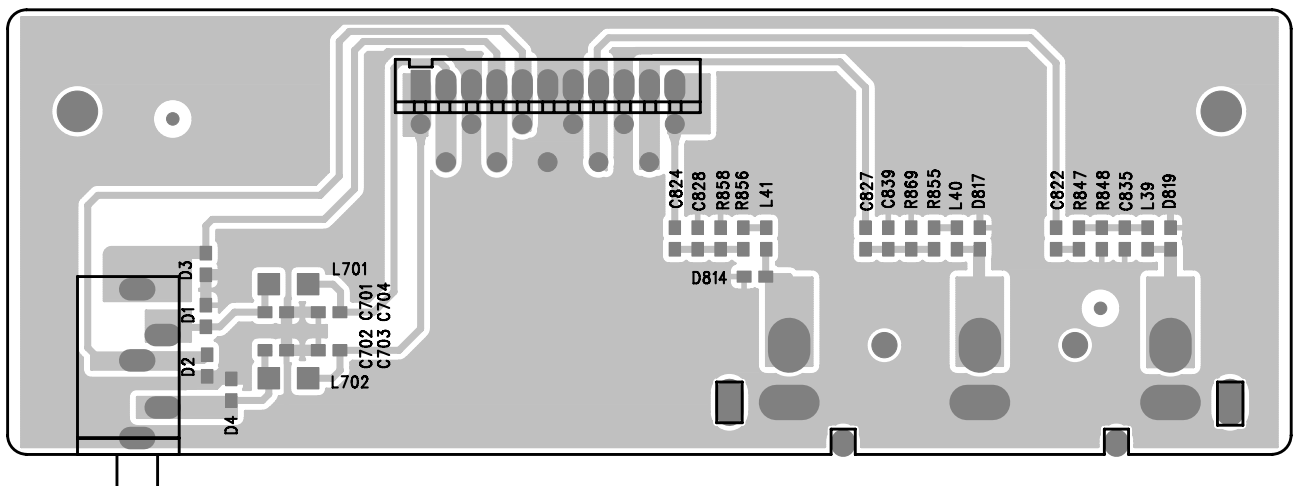
5.1.2 TOPlayer of DVD Board(2D3216-1)



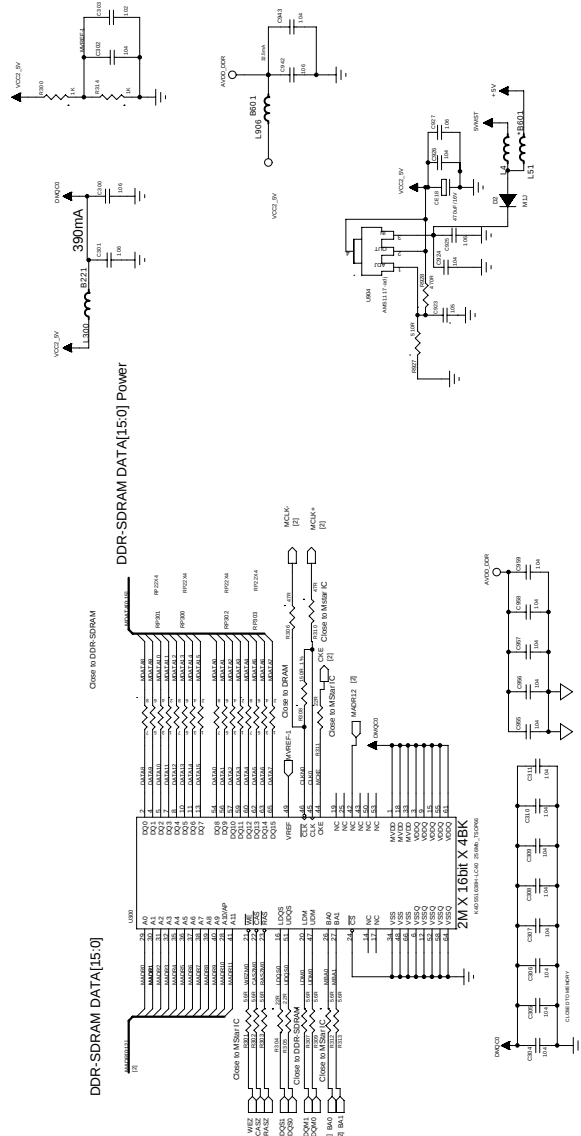
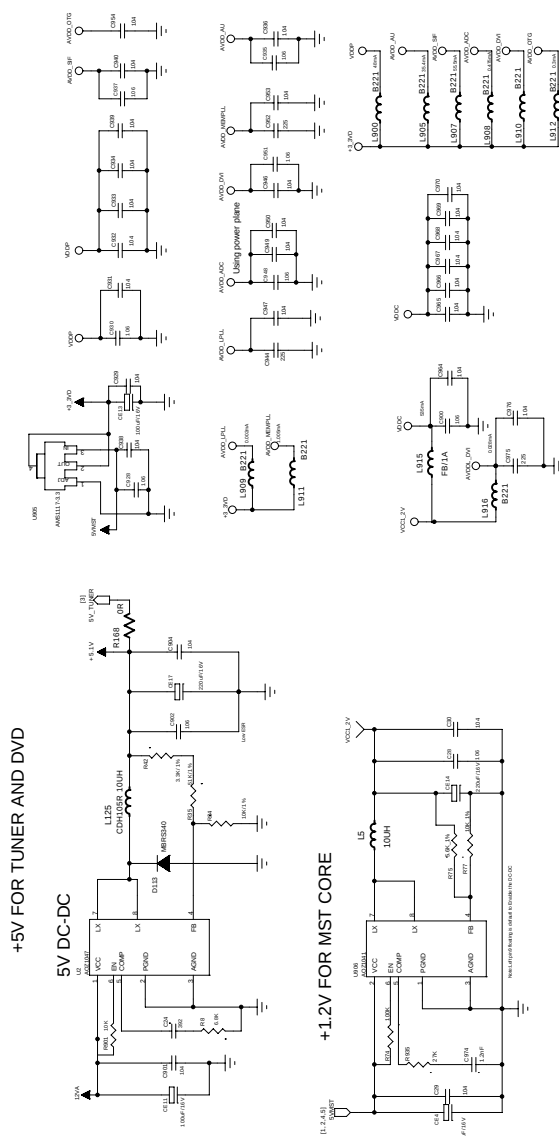
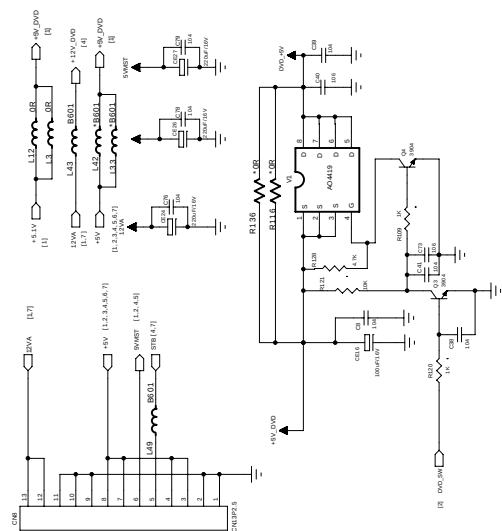
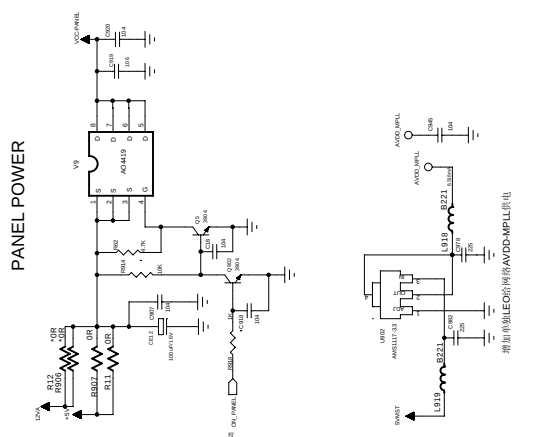
5.1.3 TOP layer of A/V input Board(73216-0)



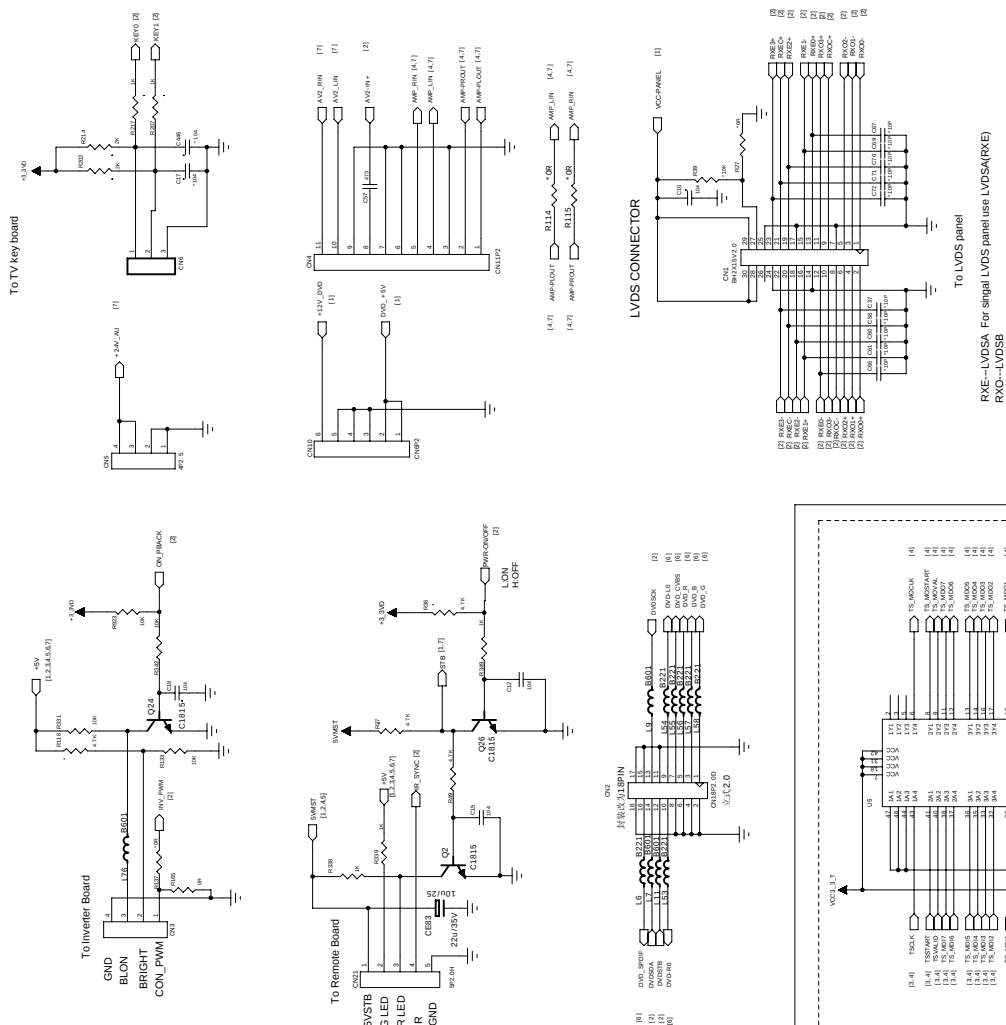
5.1.4 Bottom layer of A/V input Board(73216-0)

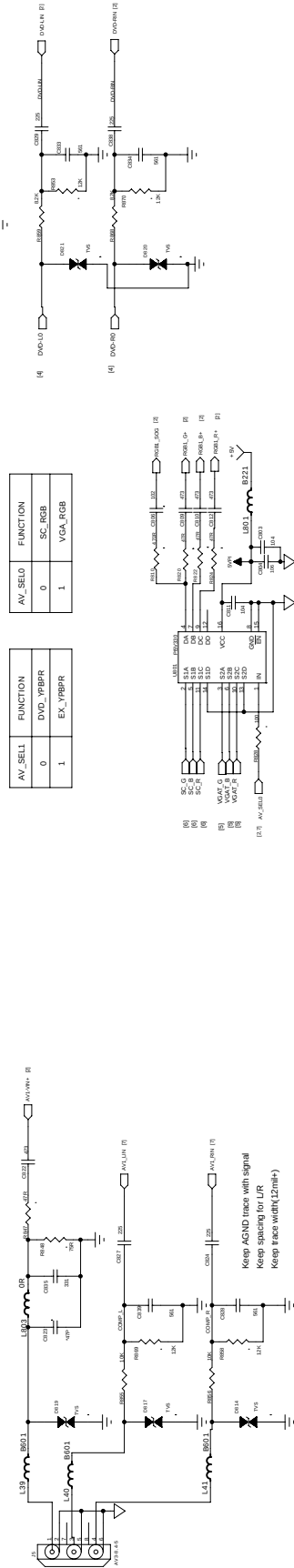
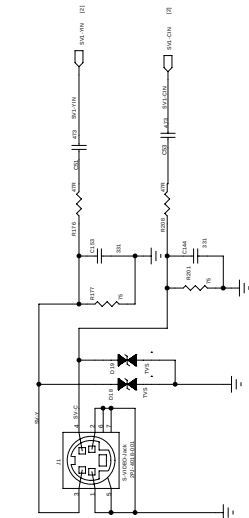
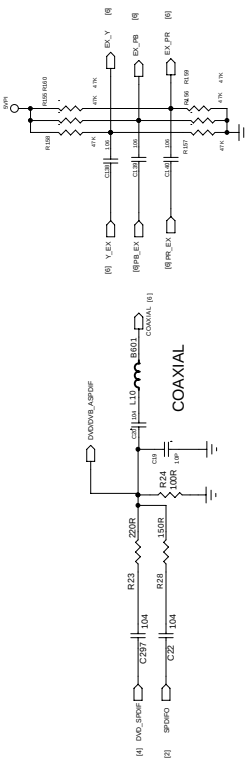
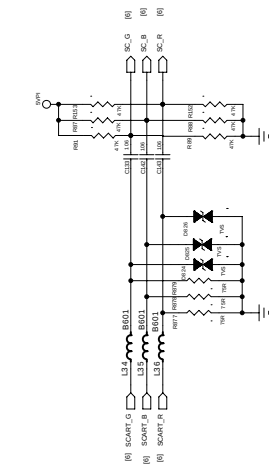
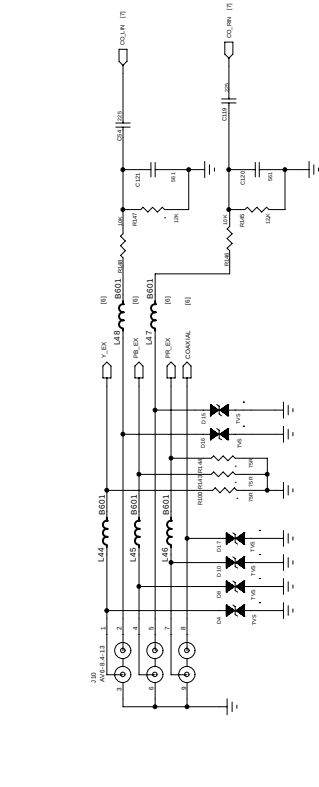


5.2.1 TV Main Board.



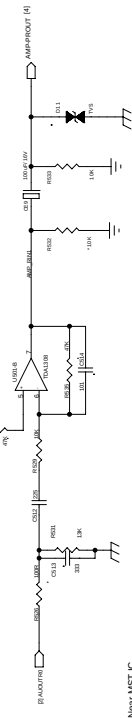
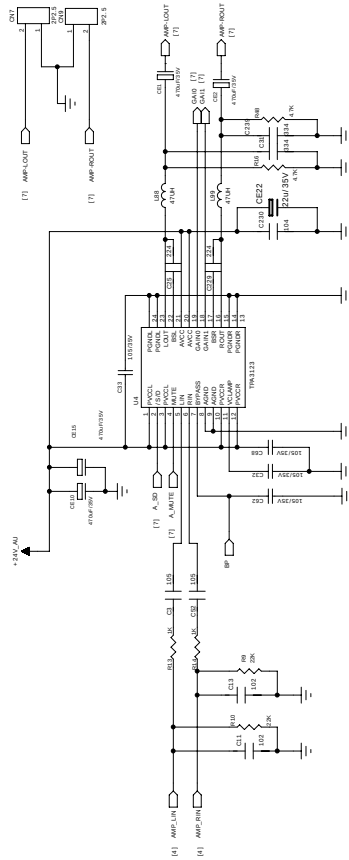




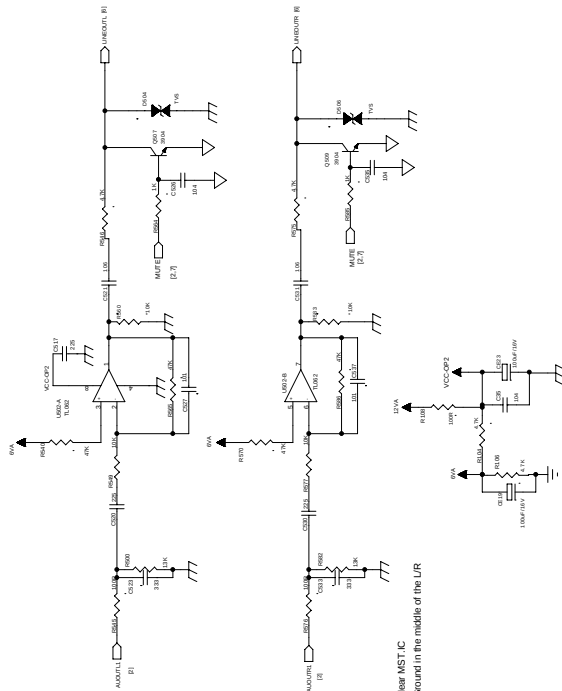
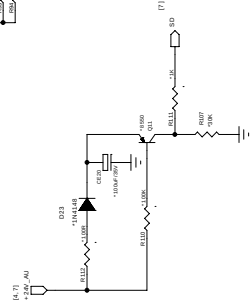
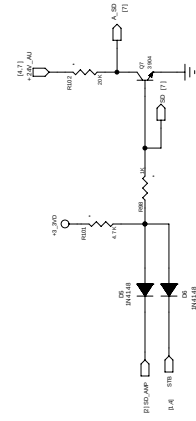


AV_SEL1	FUNCTION
0	DVD_YPBPR
1	EX_YPBPR

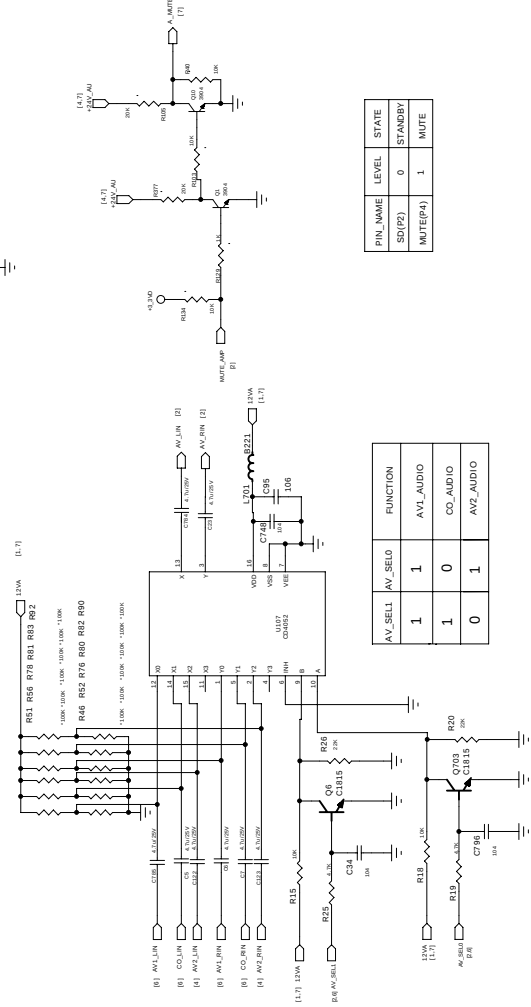
AUDIO OP



Near MST IC
Ground in the middle of the L/R



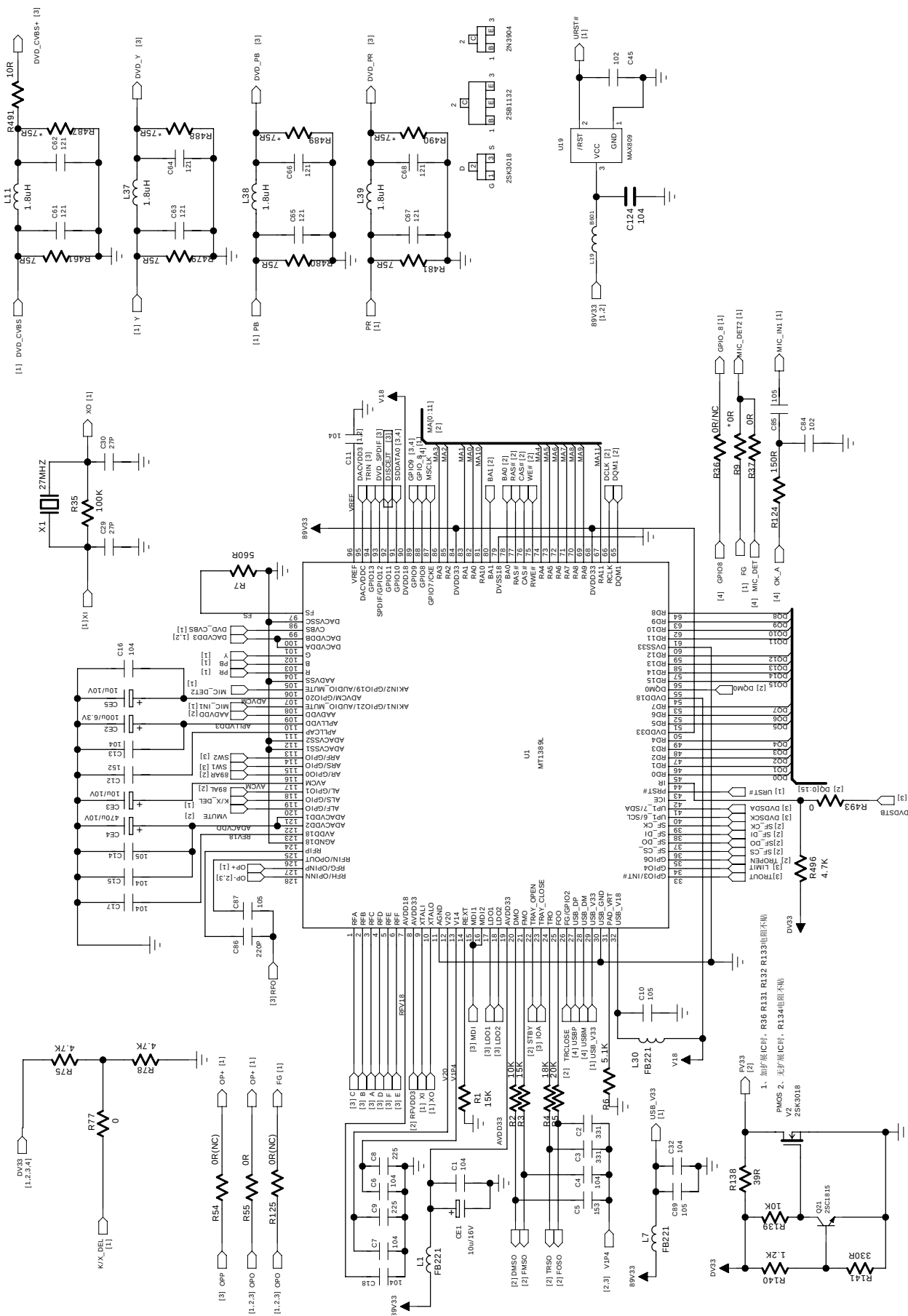
Near MST IC
Ground in the middle of the L/R

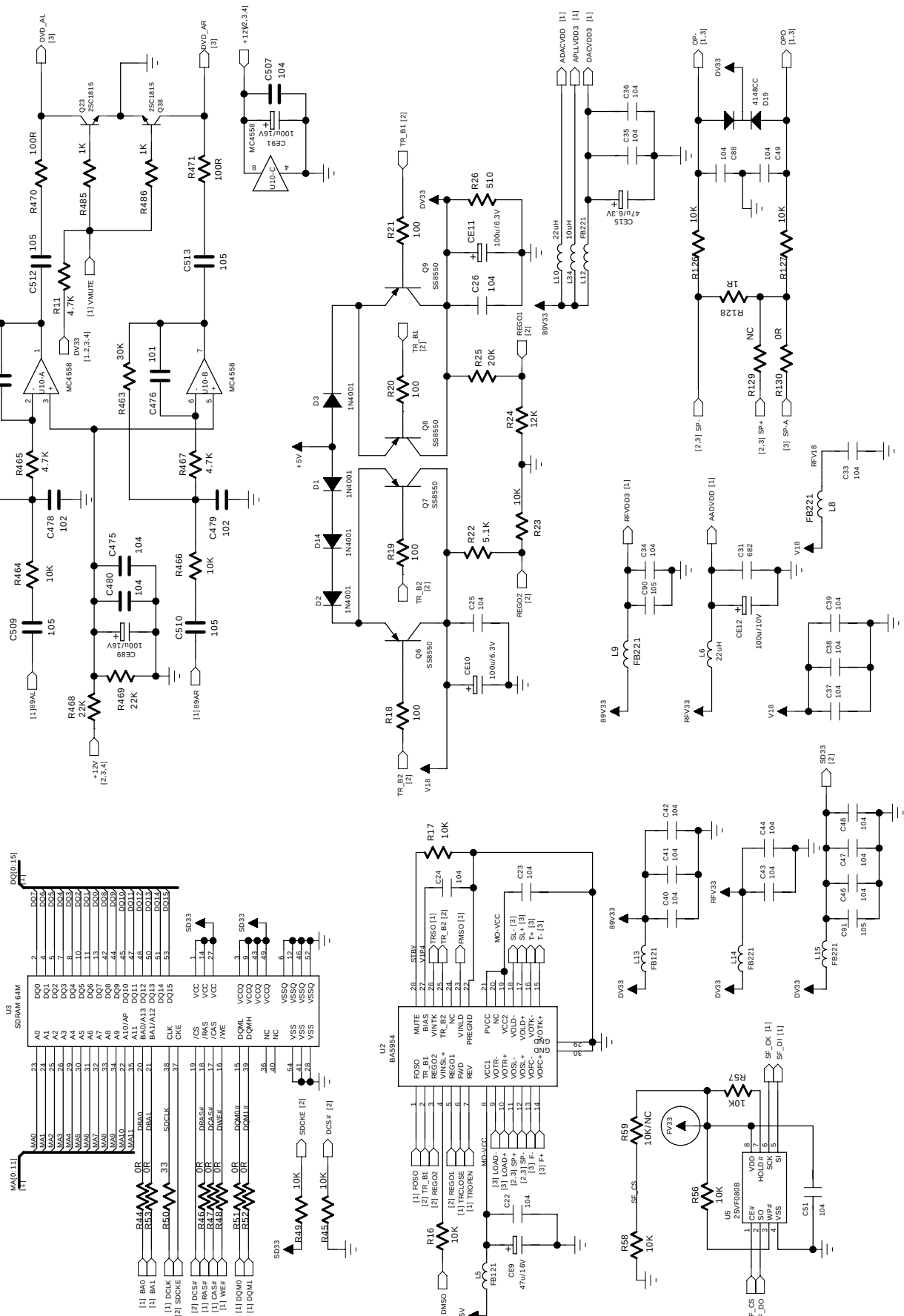


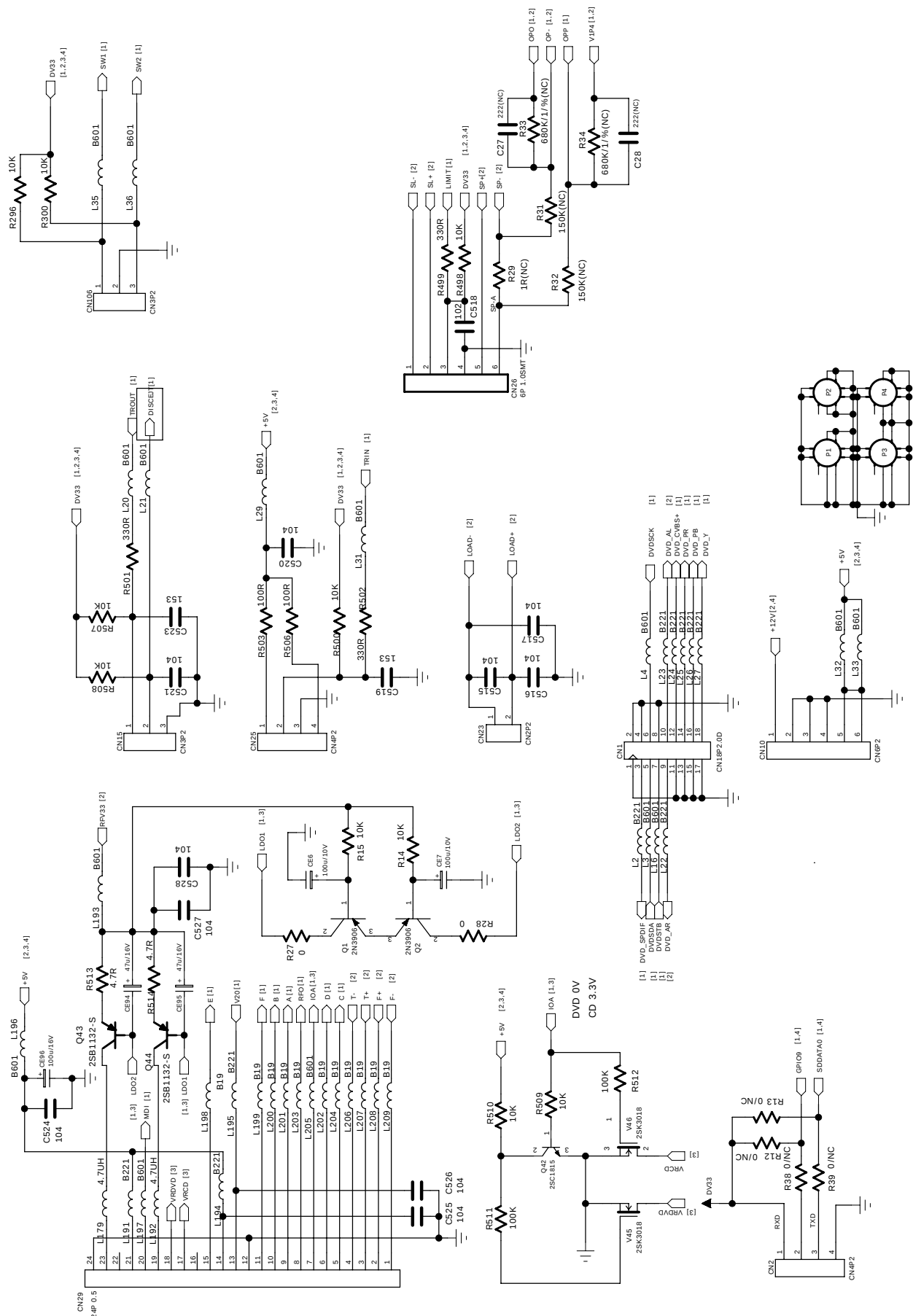
AV_SELL	AV_SEL0	FUNCTION
1	1	AV1_AUDIO
1	0	CO_AUDIO
0	1	AV2_AUDIO

PIN_NAME	LEVEL	STATE
SD(P2)	0	STANDBY
MUTE(P4)	1	MUTE

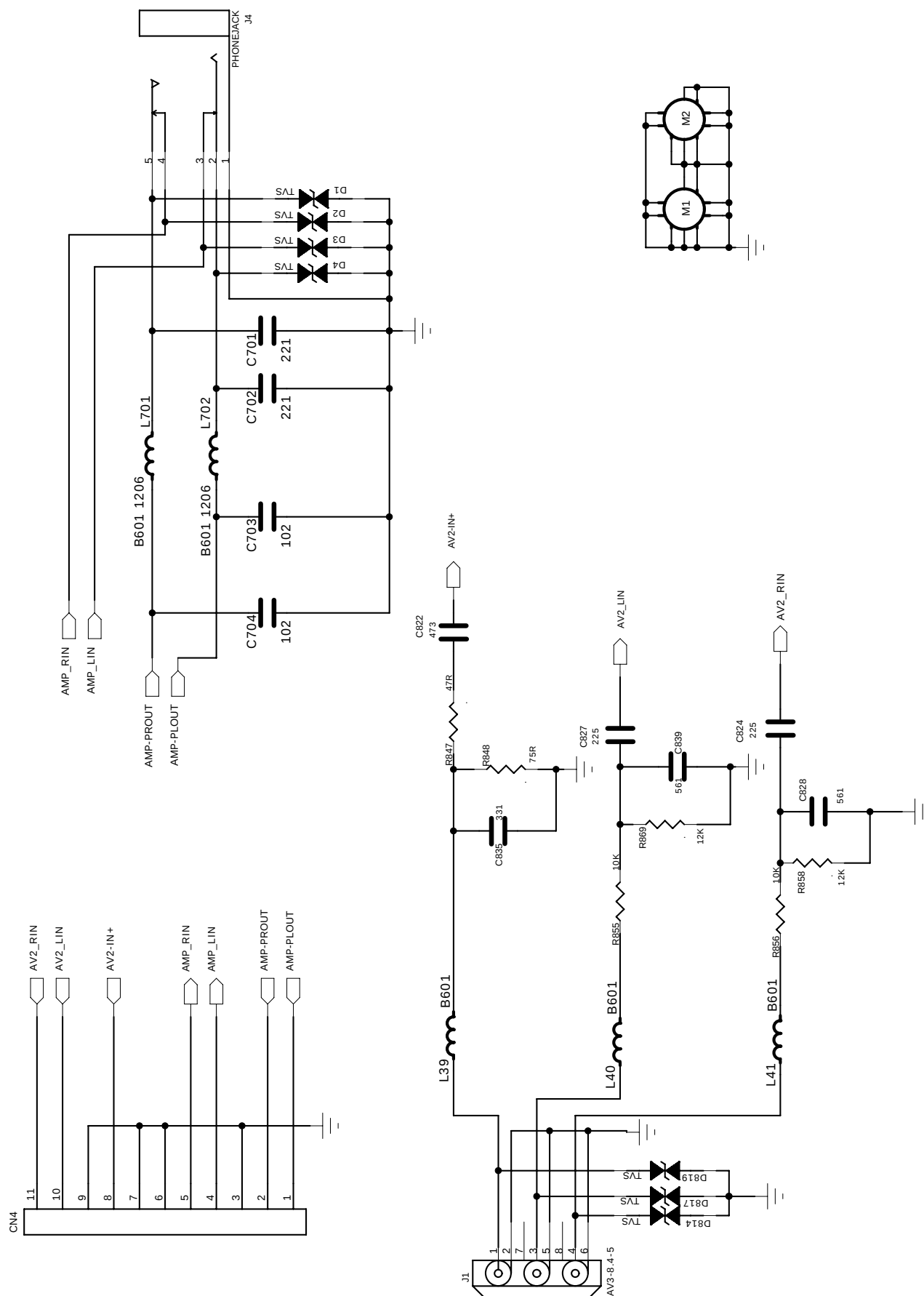
5.2.2 DVD Main Board.







5.2.3 A/Vinput Board.



Chapter Six BOM List

LD3216DK(RU)BLACK

4942172,MAIN BOARD

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0090001	SMD RESISTOR	1/16W 0Ω±5% 0603	L14,L105,L802~L803,R30~R31,R39,R57,R135,R165,R259,R435,R605,R612,R620,R723~R724,R162~R164
0090003	SMD RESISTOR	1/16W 10Ω±5% 0603	R44,R357,R843,R885
0090004	SMD RESISTOR	1/16W 22Ω±5% 0603	R304~R305,R311,R142,R113
0090005	SMD RESISTOR	1/16W 33Ω±5% 0603	R241,R255~R256,R274~R275,R600,R608~R609,R614~R615
0090006	SMD RESISTOR	1/16W 75Ω±5% 0603	R242,R7,R100,R131,R143~R144,R814~R816,R845~R846,R848,R871~R873,R877~R879,R888,R177,R201
0090007	SMD RESISTOR	1/16W 180Ω±5% 0603	R294
0090008	SMD RESISTOR	1/16W 220Ω±5% 0603	R23
0090011	SMD RESISTOR	1/16W 470Ω±5% 0603	R150,R810,R884,R928
0090014	SMD RESISTOR	1/16W 1K±5% 0603	R109,R1,R98,R120,R129,R196~R197,R207,R210~R211,R217,R300,R314,R338~R339,R349,R409,R564,R585,R606,R621,R624,R918,R13~R14
0090016	SMD RESISTOR	1/16W 1.5K±5% 0603	R852
0090019	SMD RESISTOR	1/16W 4.7K±5% 0603	R167,R101,R49,R16,R48,R19,R25,R36~R37,R62,R104,R106,R118,R126,R128,R218,R243~R244,R253~R254,R546,R575,R616~R617
0090022	SMD RESISTOR	1/16W 8.2K±5%	R613,R849,R859,R868
0090023	SMD RESISTOR	1/16W 10K±5% 0603	R901,R2~R4,R15,R18,R32~R33,R40,R43,R103,R121,R134,R139,R146,R148,R195,R219~R220,R223,R225,R231,R245~R246,R251,R258,R331,R342,R549,R577,R619,R827,R837~R840,R844,R851,R855~R856,R914,R923,R65,R70,R117,R119,R95,R512,R516,R529,R533,R96,R133
0090024	SMD RESISTOR	1/16W 15K±5% 0603	R886,R725,R726
0090025	SMD RESISTOR	1/16W 20K±5% 0603	R102,R105,R377
0090026	SMD RESISTOR	1/16W 22K±5% 0603	R9~R10,R20,R26,R811~R812
0090027	SMD RESISTOR	1/16W 27K±5% 0603	R721,R935
0090028	SMD RESISTOR	1/16W 33K±5% 0603	R883,R262
0090029	SMD RESISTOR	1/16W 47K±5% 0603	R87~R89,R91,R152~R153,R155~R160,R212,R540,R565,R570,R586,R801~R803,R817~R819,R857,R860,R867,R874~R876,R507,R520,R523,R535

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0090034	SMD RESISTOR	1/16W 100K±5% 0603	R74,R715
0090114	SMD RESISTOR	1/8W 0Ω±5% 1206	R11,R907,R168,L12,L3
0090181	SMD RESISTOR	1/16W 100Ω±5% 0603	R21,R216,R227~R228,R235,R249,R828,R24,R41,R47,R50,R53~R54,R67,R73,R189~R190,R215,R230,R232,R317,R322,R545,R576,R610~R611,R626,R719,R805,R808,R825~R826,R108,R510,R526
0090187	SMD RESISTOR	1/16W 12K±5% 0603	R97,R145,R147,R829,R853~R854,R858,R865,R869~R870
0090192	SMD RESISTOR	1/16W 51K±5% 0603	R713
0090214	SMD RESISTOR	1/16W 2.2MΩ±5% 0603	R240,R622
0090220	SMD RESISTOR	1/16W 51Ω±5% 0603	R5~R6
0090223	SMD RESISTOR	1/16W 2K±5%	R202,R214
0090224	SMD RESISTOR	1/16W 3.9K±5% 0603	R505~R506
0090230	SMD RESISTOR	1/16W 47Ω±5% 0603	R306,R310,R22,R130,R132,R149,R151,R222,R224,R226,R248,R261,R820,R822,R824,R847,R861,R176,R208
0090232	SMD RESISTOR	1/16W 150Ω±5% 0603	R28
0090241	SMD RESISTOR	1/16W 13K±5% 0603	R500,R582,R514,R531
0090249	SMD RESISTOR	1/16W 510Ω±5% 0603	R927
0090291	SMD RESISTOR	1/16W 56Ω±5% 0603	R301~R303,R307,R309,R312~R313
0090304	PRECISION SMD RESISTOR	1/16W 10K±1% 0603	R77,R34
0090519	PRECISION SMD RESISTOR	1/16W 5.6K±1% 0603	R75
0090533	PRECISION SMD RESISTOR	1/16W 4.32K±1% 0603	R140
0090543	PRECISION SMD RESISTOR	1/16W 1k±1% 0603	R221,R239
0090550	PRECISION SMD RESISTOR	1/16W 330Ω±1% 0603	R141
0090622	SMD RESISTOR NETWORK	1/16W 47Ω±5% 0603×4 8P	RP603
0090625	PRECISION SMD RESISTOR	1/16W 51K±1% 0603	R35
0090730	PRECISION SMD RESISTOR	1/16W 390Ω±1% 0603	R233,R887
0090766	PRECISION SMD RESISTOR	1/16W 120Ω±1% 0603	R889
0090767	PRECISION SMD RESISTOR	1/10W 150Ω±1% 0603	R308
0090912	PRECISION SMD RESISTOR	1/16W 910Ω±1% 0603	R200

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0100019	SMD RESISTOR NETWORKS	1/16W33Ω±5% 0603×4 PROTRUDING	RP200,RP600~RP601
0100020	SMD RESISTOR NETWORK	1/16W100Ω±5% 0603×4 CONCAVE	RP51~RP52
0100028	SMD RESISTOR NETWORK	1/16W 22Ω±5% 8P	RP300~RP303,RP1,RP2,RP3,RP4
02606039	CD	CD11T 35V470U M 10×20 5 BELT	CE1~CE2,CE10,CE15
02606859	CD	C11T 16V100u±20%6×12 C5 BELT	CE16,CE4,CE11~CE13,CE41,CE3,CE8~CE9,CE19,CE21,CE23
02607139	CD	C11T 16V220U±20%6×12 C5 BELT	CE14,CE24,CE26,CE27,CE5,CE17
02607359	CD	C11T 16V47U±20%5×11 C5 BELT	CE83
02607989	CD	C11T 16V470U±20%8×12 C5 BELT	CE18
02608659	CD	CD11T 50V22U M 5×11 C5 BELT	CE22
0310042	SMD CAPACITOR	50V 15P±5% NPO 0603	C286,C290
0310044	SMD CAPACITOR	50V 33P±5% NPO 0603	C600,C612
0310047	SMD CAPACITOR	50V 101±5% NPO 0603	C212,C231,C527,C537,C509,C514
0310056	SMD CAPACITOR	16V 473±10% 7R 0603	C127~C129,C134,C137,C204,C215~C217,C234,C809~C810,C812,C819,C822,C57,C51,C53
0310063	SMD CAPACITOR	50V 331±10% 7R 0603	C144,C153
0310066	SMD CAPACITOR	50V 102±10% 7R 0603	C11,C13,C126,C200,C232,C303,C806
0310072	SMD CAPACITOR	50V 103±10% 7R 0603	C979
0310188	SMD CAPACITOR	50V 10P±5% NPO 0603	C19
0310197	SMD CAPACITOR	50V 561±10% 7R 0603	C120~C121,C815,C818,C826,C828,C832~C834,C839
0310202	SMD CAPACITOR	50V 223±10% 0603	C609
0310231	SMD CAPACITOR	50V 122±10% 0603	C974
0310234	SMD CAPACITOR	16V 105 +80%-20% Y5V 0603	C3,C52,C102,C112,C209
0310354	SMD CAPACITOR	50V 224 +80%-20% Y5V 0603	C25,C229
0310361	SMD CAPACITOR	25V 333 +80%-20% Y5V 0603	C523,C533,C508,C513
0310371	SMD CAPACITOR	50V 334 ±10% X7R 0603	C31,C239
0310389	SMD CAPACITOR	10V 106 +80%-20% Y5V 0805	C902,C73,C4,C14,C28,C40,C50,C92~C93,C95,C101,C111,C133,C138~C140,C142~C143,C213~C214,C227~C228,C233,C300~C301,C521,C531,C603~C604,C614,C617~C619,C621,C801~C802,C804~C805,C816,C831,C837,C841,C843,C845,C900,C919,C925,C927~C928,C930,C935,C937,C942,C948,C951

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0310461	SMD CAPACITOR	10V 475+80%-20% 0805	C5~C7,C23,C122~C123,C784~C785
0310566	SMD CAPACITOR	10V 225 +80%-20% Y5V 0603	C54,C119,C517,C520,C530,C620,C813,C824~C825,C827,C829~C830,C838,C876,C944,C952,C975,C978,C982,C507,C512
0310594	SMD CAPACITOR	25V 104±10% 0603	C1~C2,C8~C10,C12,C15~C16,C18,C20~C22,C26~C27,C29~C30,C34~C35,C38~C39,C41~C49,C901,C904,C76,C78,C79,C100,C115,C130,C132,C203,C206,C208,C210,C218~C220,C222,C225~C226,C237~C238,C278,C297,C302,C304~C311,C418,C504,C526,C535,C601,C606~C608,C613,C615~C616,C622~C635,C701~C702,C748,C796,C803,C811,C844,C907,C918,C920,C924,C926,C929,C931~C934,C936,C938~C940,C943,C945~C947,C949~C950,C953~C959,C964~C970,C976,C230
0310543	SMD CAPACITOR	50V 104±10% 7R 0603	
0310190	SMD CAPACITOR	50V 27P±5% NPO 0603	C201~C202
0310749	SMD CAPACITOR	25V 22P±5% NPO 0603	C602,C605
0310169	SMD CAPACITOR	50V 105 +80%-20% 0805	C32~C33,C62,C68,C923
0310855	SMD CAPACITOR	25V 331 ±5% NPO 0603	C821,C835
0390095	SMD MAGNETIC BEADS	FC160822105	L2,L6,L8,L15,L50,L53~L58,L74,L109,L200,L600~L603,L700~L701,L801,L804,L900,L905,L907~L912,L916,L918~L919
0390300	SMD MAGNETIC BEADS	600Ω/100MHZ±25% 1608	L1,L7,L9~L11,L16~L23,L25~L29,L32,L34~L41,L43~L49,L76,L906,L61
0390301	SMD MAGNETIC BEADS	600Ω/100MHZ±25% 3216	L4,L915
0390332	SMD CORES INDUCTOR	10UH ±20% CDRH8D28	L5
0390417	SMD MAGNETIC BEADS	PZ3216D221-2R0T	L300
0410255	CHOKE COIL	VERTICAL 47UH ±20% 2.1A 10.5×14.2 5mm	L88,L99
0680037	SMD SCHOTTKY DIODE	B54C SO23	D12,D14,D55,D806
0700001	SMD DIODE	LS4148	D5~D6
0700064	SMD TRIODE	B991 SO23	D200
0680028	SMD SCHOTTKY DIODE	MBRS340	D113,D2
0780040	SMD TRIODE	3904(100-300) SO23	Q1,Q3~Q5,Q7~Q10,Q507,Q509,Q808,Q902
0780041	SMD TRIODE	3906(100-300) SO23	Q200,Q807

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0780197	SMD TRIODE	C1815	Q2,Q6,Q13,Q24,Q26,Q36,Q703
0790044	SMD FIELD EFFECT TRANSISTOR	27002E SO23	V11
0790097	FIELD EFFECT TRANSISTOR	AO4419 SO8	V1,V9
0880768	IC	C4558 SOP	U502
0881537	IC	1308 SOP	U501
0881914	IC	R9701CB SO25	U44
0882267	IC	FS330 TSSOP	U3,U801
0882461	IC	AZ1117ADJ SO223	U904
0882485	IC	AZ11173.3 SO223	U601,U902,U905
0882515	IC	HE4052BT SOP	U107
0882871	IC	WJCE6353SL9G5 LQFP	U600
0883069	IC	AZ11171.8 SO223	U602
0884054	IC	M24512-WMN SO8	U201
0884067	IC	TPA3123D2PWP TSSOP	U4
0884097	IC	HY5DU561622FTP-4 TSOP II	U300
0884102	IC	MSD106CL QFP	U202
0884111	IC	AOZ1041AI SO-8	U906
0884351	IC	TMDS250PAGR TQFP	U6
0900500	SOFTWARE PROGRAM EPROM	ROM1907T-0A(512B)	U200
0900501	SOFTWARE PROGRAM EPROM	ROM1907T-0B(512B)	U30
0900509	SOFTWARE PROGRAM EPROM	ROM1907T-0D(512B)	U27
0090021	SMD RESISTOR	1/16W6.8K±5% 0603	R8
0090516	PRECISION SMD RESISTOR	1/16W3.3K±1% 0603	R42
0090623	SMD RESISTOR NETWORK	1/16W75Ω±5% 0603×4 8P	RP201~RP203
0310323	SMD CAPACITOR	50V 392 ±10% X7R 0603	C24
0390021	SMD INDUCTOR	10UH ±10% 3216	L100,L101
0390678	SMD CORES INDUCTOR	10UH ±20% CDH105R	L125

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0884110	IC	AOZ1047AI SO-8	U2
1940005	SOCKET	6芯 2.0mm	CN10
0900526	SOFTWARE PROGRAM EPROM	ROM2216DXRU-0A(128B)	U802
0912175	PROGRAM FLASH	ROM3216DKRU-0A(32M)	U204
0960237	SMD CRYSTAL OSCILLATOR	12.00MHz 49-S	X2
0960277	CRYSTAL OSCILLATOR	20.48MHz±30PPM 49-S 20P	X1
1020119	TUNER	DTTX-5A1/12A25	TU1
1030036	SMD PRESS SENSITIVITY RESISTOR	S1608E180C600NPT 0603	D1,D4,D7~D8,D10,D11,D13,D15~D19,D21~D22,D24~D29,D504,D506,D801~D803,D805,D807~D821,D824~D827
1090099	ESD ELEMENT	RCLAMP0524P SLP2510	U7~U10
1635479	PCB	23216-1 FR4 D1.6 PX	
1860080	HDMI SOCKET	19P SMD 0406A	J8~J9
1860103	SCART SOCKET	112 FLEX INSERT,BLACK	J2
1860104	VGA SOCKET	15P HORIZONTAL,WITH BOLT,BLACK	J3
1910218	TERMINAL SOCKET	S TERMINAL D6 FLEX INSERT,WITH SHIELD,BLACK	J1
1910311	AV SOCKET	H-AV6-8.4-13/PB-186 WRBK/GBR FLEX INSERT SHIELD	J10
1910312	AV SOCKET	H-AV3-8.4-5/PB-1 YWR FLEX INSERT SHIELD	J5
1940001	SOCKET	2P 2.5mm	CN7,CN9
1940003	SOCKET	4P 2.5mm	CN5
1940022	SOCKET	4P 2.0mm	CN3
1940024	SOCKET	5P 2.0mm	CN21
1940026	SOCKET	3P 2.0mm	CN6
1940077	SOCKET	11P 2.0mm	CN4
1940171	SOCKET	11P 2.5mm	CN8
1940349	SOCKET	9 P 2.0mm DUAL RANK STRINGHT INSERT BH	CN2
1970102	DUAL FLAT NEEDLE	2×15(29 NEEDLE) 10mm 2.0mm STRINGHT INSERT	CN1
1980143	EARPHONE SOCKET	Φ3.5 ST-215N-050-100 STRAIGHT PLUG	J4

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
5141756	VERSION LABEL	2.01SQUARENESS WHITE	
08810798	IC	AT24C04 SOP\$	

LD3216DK(RU)BLACK

4942168,TV BUTTON BOARD

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0000124	CARBON FILM RESISTOR	1/6W470Ω±5% SHAPED 7.5	R403,R407
0000129	CARBON FILM RESISTOR	1/6W1K±5% SHAPED 7.5	R408
0000676	CARBON FILM RESISTOR	1/8W 330Ω±5% SHAPED 7.5	R402,R406
1340088	LIGHT TOUCH RESTORE SWITCH	VERTICAL 6×6×5	K401~K407
1565343	PCB	43216-0 HB D1.6 PX	
2122978	FLAT CABLE	3P400 2.0 T2 WITH L NEEDLE, REVERSE	CN402
5141755	VERSION LABEL	2.00SQUARENESS WHITE	

LD3216DK(RU)BLACK

4942167,TERMINAL BOARD

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0090006	SMD RESISTOR	1/16W 75Ω±5% 0603	R848
0090023	SMD RESISTOR	1/16W 10K±5% 0603	R855~R856
0090187	SMD RESISTOR	1/16W 12K±5% 0603	R858,R869
0090230	SMD RESISTOR	1/16W 47Ω±5% 0603	R847
0310056	SMD CAPACITOR	16V 473±10% 7R 0603	C822
0310066	SMD CAPACITOR	50V 102±10% 7R 0603	C703~C704
0310195	SMD CAPACITOR	50V 221±10% 7R 0603	C701,C702
0310197	SMD CAPACITOR	50V 561±10% 7R 0603	C828,C839
0310566	SMD CAPACITOR	10V 225 +80%-20% Y5V 0603	C824,C827
0310855	SMD CAPACITOR	25V 331 ±5% NPO 0603	C835
0390300	SMD MAGNETIC BEADS	600Ω/100MHZ±25% 1608	L39~L41
0390301	SMD MAGNETIC BEADS	600Ω/100MHZ±25% 3216	L701~L702

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
1030036	SMD PRESS SENSITIVITY RESISTOR	S1608E180C600NPT 0603	D814,D817,D819
1565342	PCB	73216-0 HB D1.6 PX	CN4
1910312	AV SOCKET	H-AV3-8.4-5/PB-1 YWR FLEX INSERT SHIELD	J1
1980143	EARPHONE SOCKET	Φ3.5 ST-215N-050-100 STRAIGHT PLUG	J4
2122965	FLAT CABLE	11P360 2.0 T2 WITH NEEDLE, THE SAME DIRECTION	
5141755	VERSION LABEL	2.00SQUARENESS WHITE	

LD3216DK(RU)BLACK

4942173,DVD BOARD

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0090001	SMD RESISTOR	1/16W 0Ω±5% 0603	R37,R44,R46~R48,R51~R53,R55,R130,R27~R28,R77,R493
0090003	SMD RESISTOR	1/16W 10Ω±5% 0603	R454,R491
0090005	SMD RESISTOR	1/16W 33Ω±5% 0603	R50
0090006	SMD RESISTOR	1/16W 75Ω±5% 0603	R461,R479~R481
0090009	SMD RESISTOR	1/16W 330Ω±5% 0603	R141,R499,R501,R502
0090012	SMD RESISTOR	1/16W 560Ω±5% 0603	R7,R452~R453
0090014	SMD RESISTOR	1/16W 1K±5% 0603	R76,R451,R485~R486
0090015	SMD RESISTOR	1/16W 1.2K±5% 0603	R140
0090019	SMD RESISTOR	1/16W 4.7K±5% 0603	R11,R75,R78,R414~R415,R465,R467,R496
0090020	SMD RESISTOR	1/16W 5.1K±5% 0603	R6,R22,R74,R423,R446
0090023	SMD RESISTOR	1/16W 10K±5% 0603	R2,R14~R17,R23,R45,R49,R56~R58,R72~R73,R126~R127,R139,R296,R300,R464,R466,R498,R500,R507~R510
0090024	SMD RESISTOR	1/16W 15K±5% 0603	R1,R3
0090025	SMD RESISTOR	1/16W 20K±5% 0603	R25,R5
0090026	SMD RESISTOR	1/16W 22K±5% 0603	R376,R388,R468~R469
0090029	SMD RESISTOR	1/16W 47K±5% 0603	R422
0090034	SMD RESISTOR	1/16W 100K±5% 0603	R35,R421,R511~R512
0090106	SMD RESISTOR	1/16W 4.7Ω±5% 0603	R513~R514

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0090181	SMD RESISTOR	1/16W 100Ω±5% 0603	R18~R21,R470~R471
0090187	SMD RESISTOR	1/16W 12K±5% 0603	R24
0090188	SMD RESISTOR	1/16W 18K±5% 0603	R4
0090189	SMD RESISTOR	1/16W 30K±5% 0603	R462~R463
0090232	SMD RESISTOR	1/16W 150Ω±5% 0603	R124
0090237	SMD RESISTOR	1/16W 39Ω±5% 0603	R138
0090249	SMD RESISTOR	1/16W 510Ω±5% 0603	R26
0090272	SMD RESISTOR	1/16W 1Ω±5% 0603	R128
0090589	SMD RESISTOR	1/4W 100Ω±5% 1206	R503,R506
02600057	CD	CD11 50V1U±20%5×11 C5 BELT\$	CE13
02601889	CD	C11 16V100U±20%6×12 C5 BELT	CE2,CE10~CE11,CE12,CE89,CE91,CE96,CE6,CE7,CE74~CE75,CE903
02603859	CD	C11 16V470U±20%8×12 C5 BELT	CE4
02604379	CD	C11 16V10U±20%5×11C5 BELT	CE1,CE3,CE5,CE8,CE90
02607359	CD	C11T 16V47U±20%5×11 C5 BELT	CE9,CE94~CE95,CE15
0310047	SMD CAPACITOR	50V 101±5% NPO 0603	C383~C384,C476~C477
0310049	SMD CAPACITOR	50V 221±5% NPO 0603	C86
0310051	SMD CAPACITOR	50V 331±5% NPO 0603	C2~C3
0310066	SMD CAPACITOR	50V 102±10% 7R 0603	C45,C84,C388,C478~C479,C518
0310071	SMD CAPACITOR	50V 682±10% 7R 0603	C31
0310072	SMD CAPACITOR	50V 103±10% 7R 0603	C58
0310190	SMD CAPACITOR	50V 27P±5% NPO 0603	C29~C30
0310201	SMD CAPACITOR	50V 153±10% 7R 0603	C5,C519,C523
0310234	SMD CAPACITOR	16V 105 +80%-20% Y5V 0603	C10,C14,C85,C87,C89~C91,C59~C60,C509~C510,C512~C513
0310326	SMD CAPACITOR	50V 121±5% NPO 0603	C61~C68
0310543	SMD CAPACITOR	50V 104±10% 7R 0603	C1,C4,C6~C7,C11,C13,C15~C18,C22~C26,C32~C44,C46~C49,C124,C51,C88,C19,C372~C373,C475,C480,C507,C515~C517,C520~C521,C524~C528,C909
0310566	SMD CAPACITOR	10V 225 +80%-20% Y5V 0603	C8~C9

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0310774	SMD CAPACITOR	25V 152±5% 7R 0603	C12
0390044	SMD INDUCTOR	10UH±10% 2012	L34
0390095	SMD MAGNETIC BEADS	FC160822105	L1,L7~L9,L12,L30,L2,L22~L27,L191,L194~L195,L17~L18,L95~L96
0390096	SMD INDUCTOR	1.8UH±10% 1608	L11,L37~L39
0390287	SMD MAGNETIC BEADS	19Ω/100mHZ±25% 1608	L198~L204,L206~L209,L925~L926
0390300	SMD MAGNETIC BEADS	600Ω/100MHZ±25% 1608	L19,L3~L4,L16,L20~L21,L29,L31,L35~L36,L193,L197,L205
0390355	SMD INDUCTOR	4.7UH±10% 1608	L179,L192
0390385	SMD INDUCTOR	22uH±10% 2012	L6,L10
0390394	SMD MAGNETIC BEADS	PZ2012U221	L14,L15
0390444	SMD MAGNETIC BEADS	PZ2012U121	L5,L13
0390446	SMD MAGNETIC BEADS	600Ω/100MHZ±25% 1A 3216	L40,L32~L33,L196,L923
05700039	DIODE	1N4001 BELT	D1~D3,D14
0700057	SMD DUAL DIODE	MMBD4148CC SO23	D19
0780041	SMD TRIODE	3906(100-300) SO23	Q1,Q2
0780115	SMD TRIODE	2SB1132	Q43,Q44
0780193	SMD TRIODE	2S3018	V2,V45~V46
0780197	SMD TRIODE	C1815	Q34,Q21,Q23,Q38,Q42
07803199	TRIODE	SS8550 TO-92 BELT	Q6~Q9
0880768	IC	C4558 SOP	U10,U44
0882802	IC	5888S HSOP	U2
0883532	IC	HY57V641620FTP-7 SOP	U3
0883596	IC	MT1389FE/L(L) LQFP	U1
0883718	IC	AIC809-29CU SOT-23	U19
0912184	PROGRAM FLASH	ROM2216DKRU-0C(2M)	U5
0960236	SMD CRYSTAL OSCILLATOR	27.00MHz 49-S	X1
10500169	HEAT SENSITIVITY RESISTOR	PTC FRU135F-30V BELT	RT901
1090099	ESD ELEMENT	RCLAMP0524P SLP2510	U7

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
1635480	PCB	2D3216-1 FR4 D1.6 PX	
1860074	USB SOCKET	2UB-0001000	CN5
1940022	SOCKET	4P 2.0mm	CN25
1940026	SOCKET	3P 2.0mm	CN15,CN106
1940027	SOCKET	2P 2.0mm	CN23
1940264	CABLE SOCKET	6P 1.0 DUAL RANK TOUCH POINT,SMD,VERTICAL	CN26
1940496	CABLE SOCKET	24P 0.5mm SMD VERTICAL	CN29
1940307	SOCKET	9P 2.0mm DUAL RANK,FLEX INSERT BH	CN1
1980018	MICROPHONE SOCKET	C3-6.35-24	J12~J13
5141756	VERSION LABEL	2.01 SQUARENESS WHITE	
1940135	SOCKET	6P 2.0mm STRAIGHT FLEX	CN10
35802578	HEAT RADIATION PIECE	13×13×10 2#	U1
0883713	IC	AT26DF161-SU SOIC	