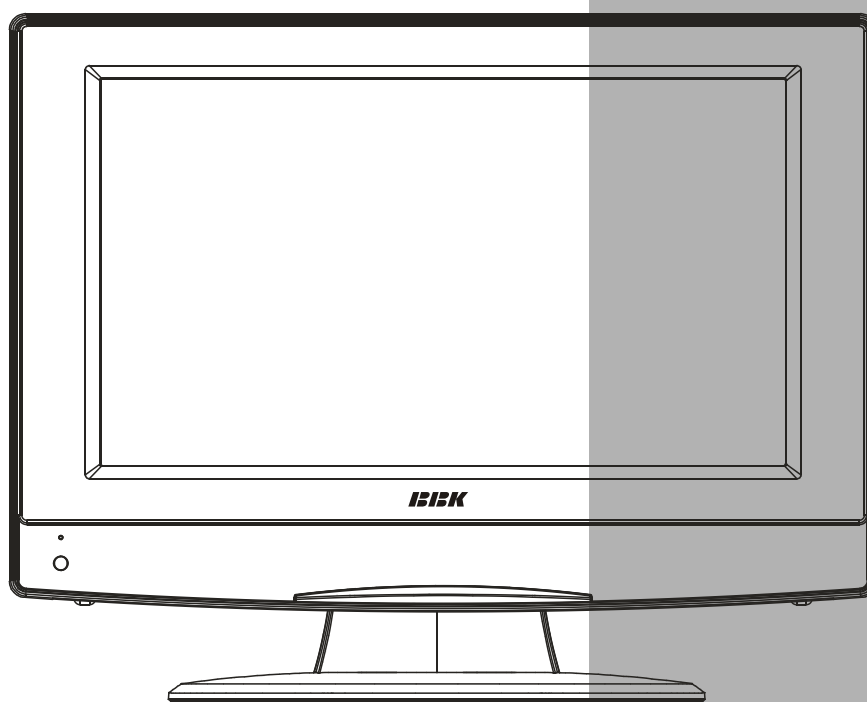


IBK

LT1516D(RU)

Service Manual



**Model version:M1B1V2.10
M1B2V2.10**

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Chapter One About Maintenance

1.1 Safety precautions

1.1.1 Power supply

When maintenance personnel are repairing 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 Features

Technical Features

- #High quality color TFT panel
- #Maximum resolution 1366x768 for LT1516D.
- #Multisystem TV tuner with NICAM decoding
- #Built-in stereo audio system
- #Composite video ,audio input
- #Component, RGB/SCART and VGA video input
- #Digital coaxial output for multi-channel sound playback
- #Headphones output
- #Universal holder for furniture or wall fixation with 270 rotation angle

TV Channels Receiving and External Signal Playback

- #DVB-T tuner for watching digital TV channels.
- #Automatic and fine tuning functions with 100 channels memory
- #Adjustable brightness, contrast, saturation, hue and 4 preset image settings
- #Tone and sound balance adjustment and 4 preset audio settings

PC monitor mode

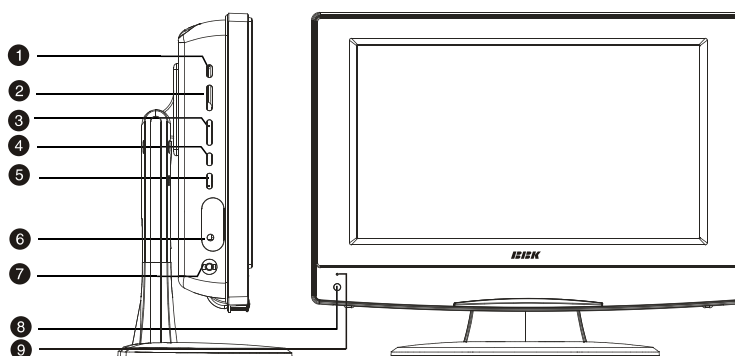
- #Wide resolutions range
- #RGB setting and 4 presets of color temperature
- #Tone and sound balance adjustment and 4 preset audio settings
- #External audio signal playback.

2.2 Set list

LCD TV	1pcs
Remote Control	1pcs
AAA Battery	2pcs
Power Adapter	1pcs
Power Cord	1pcs
RCA-RCA cord	1pcs
2XRCA-2XRCA cord	1pcs
Wall Mount Holder	1pcs
Screw M5X15	1pcs
Screw PA5X25	4pcs
Screw PM4X10	4pcs
Screw BM 4x10	7pcs
Pedestal componet	1pcs
Supporting componet of pedestal	1pcs
Expandable pipe	4pcs
User manual	1pcs
Warranty Card	1pcs

2.3 CONTROLS AND FUNCTIONS

2.3.1 Panel controls and indication



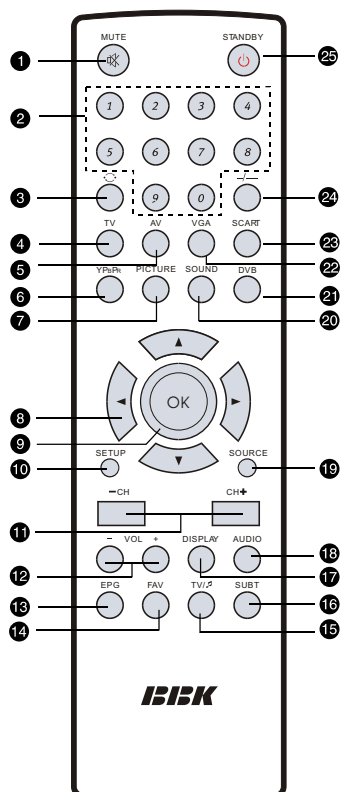
Left panel

- 1 SETUP button**
Press to switch to setup mode
- 2 _VOL+ button**
Press to adjust the volume.
- 3 _CH+ button**
Press to switch between channels/to choose menu item.
- 4 SOURCE button**
Press to choose the playback mode.
- 5 STANDBY button**
Press to switch on the device/into standby mode.
- 6 Headphones output**
- 7 POWER button**
Turn on/off the power.

Front panel

- 8 Remote control sensor**
- 9 Power supply indicator**

2.3.2 Remote control general view

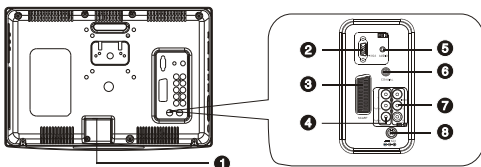


- 1 MUTE button**
Press to turn on/off the sound.
- 2 Numeric buttons**
- 3 Button**
Press to switch to previous channel.
- 4 TV button**
Press to switch to TV mode.
- 5 AV button**
Press to switch to AV IN mode of video signal.
- 6 YPbPr button**
Press to switch to YPbPr mode of video signal.
- 7 PICTURE button**
Press to select picture mode.
- 8 Cursor buttons**
- 9 OK button**
Press to switch to setup mode.
- 10 SETUP button**
Press to switch to setup mode.
- 11 -CH+ buttons**
Press to change the channel number.

- 12 **-VOL+ buttons**
Press to decrease/increase volume.
- 13 **EPG button**
To display the program guide valid in DVB mode.
- 14 **FAV button**
In DVB mode, open favourite channel list.
- 15 **TV/  button**
Switch between TV and radio modes, valid in DVB mode.
- 16 **SUBT button**
Press to change the subtitles language.
- 17 **DISPLAY button**
Press to display information.
- 18 **AUDIO button**
Switch NICAM mode in TV mode/Switch Audio language in DVB mode.
- 19 **SOURCE button**
Press to enter or exit source menu.
- 20 **SOUND button**
Press to select different sound field modes.
- 21 **DVB button**
Press to switch to DVB mode.
- 22 **VGA button**
Press to switch to VGA mode of video signal.
- 23 **SCART button**
Press to switch to SCART mode of video signal.
- 24 **-/-- button**
Press to switch one or two-digit program number.
- 25 **STANDBY button**
Press to switch between standby mode and power-on mode.

2.4 CONNECTION AND STARTING

2.4.1 Switching interfaces



- 1 **RF input**
Meant for antenna connection.
- 2 **VGA port**
Meant for PC connection.
- 3 **SCART socket**
Meant for external audio video signal source connection. There is no need to use additional audiocord.

- 4 **Y Cb(Pb) Cr(Pr)**
- 5 **PC AUDIO IN**
Meant for PC stereo audio output connection.
- 6 **COAXIAL OUT**
Meant for multi-channel sound playback.
- 7 **AUDIO VIDEO IN**
Used for external signal source connection.
- 8 **12 V socket**
Meant for adapter connection.

2.5 TV MODE

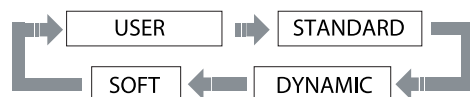
This LCD TV can store up to 100 channels and enables to scan channels thought automatic, manual and fine tuning scanning mode. Built-in TV tuner supports stereo audio playback in NICAM system.

2.5.1 Adjusted channels selection

#Press +CH-buttons on the left panel or CH▲/▼ buttons on the remote control each time, when you want to change a channel.
#Use numeric buttons to enter the number of the channel.
#Press  button to return to the previous channel.

2.5.2 Default picture settings selection

#You may select one of the default picture settings:
USER, STANDARD, DYNAMIC and SOFT.
#You may adjust necessary parameters in the device menu.
#Turn to Picture item on this page for details.



2.5.3 Default sound settings selection

#You may select one of the default sound settings:
USER, MUSIC, FILM and NEWS.
#You may adjust necessary parameters in the device menu.
#Turn to page. 13 for details.

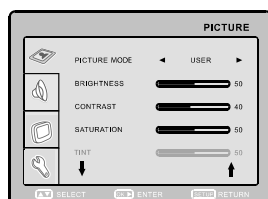


2.5.4 Accompanying sound type

#Only some of the TV channels have stereo accompanying sound in NICAM system.
#Press NICAM button to select accompanying sound.

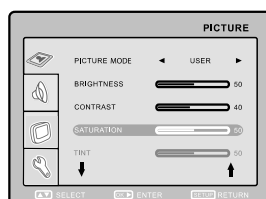
2.5.5 TV settings

#Press SETUP button to display the menu.
#Use cursor buttons on the remote control or +CH-buttons on the left panel to select the item.
Use ◀/▶ buttons to adjust selected parameter.
Use OK button for confirmation. Press SETUP button again to return to the main menu or to exit TV SETUP.



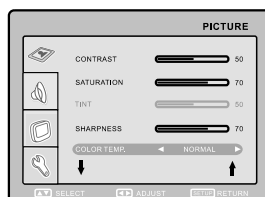
2.5.6 Picture

#Select PICTURE item to adjust picture parameters.
#You may adjust BRIGHTNESS, CONTRAST, SATURATION, TINT, SHARPNESS and COLOR TEMP.



NOTE

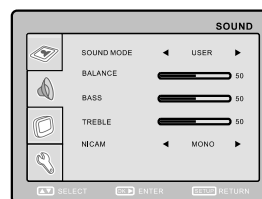
You can't adjust TINT while watching TV channels.



2.5.7 Sound

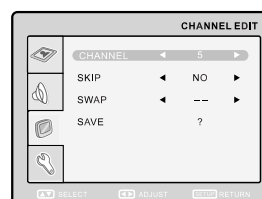
#Select SOUND item to adjust sound parameters.
#You may adjust BALANCE, BASS, TREBLE and NICAM.

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

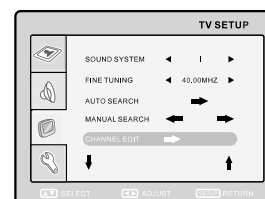
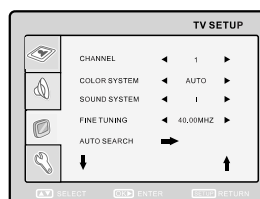


2.5.8 TV setup

Select TV SETUP item to adjust channels.
CHANNEL, COLOR SYSTEM, SOUND SYSTEM, FINE TUNING, AUTO SEARCH, MANUAL SEARCH and CHANNEL EDIT.
#CHANNEL item enables to select the number of adjustable channel.
#CHANNEL EDIT submenu enables to select, skip and swap the channel.
#CHANNEL parameter enables to select current channel.
#SKIP function enables to make current channel inaccessible while using +CH-button to browse channels.



#SWAP function enables to select the channel number to swap with current channel.
#SAVE parameter enables to confirm the swap function.
#FINE TUNING item enables to adjust the channel frequency accurately.
#MANUAL SEARCH item enables to change channel settings.
#AUTO SEARCH item enables to adjust channel setting automatically.
#COLOR SYSTEM item can be changed between: AUTO, PAL and SECAM. We recommend to set this item to AUTO.
#SOUND SYSTEM item can be changed between: B/G, D/K, and I.



2.5.9 Function

You may select LANGUAGE, TRANSPARENCY, SLEEP and RATIO.

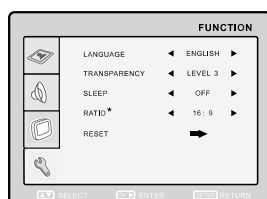
#LANGUAGE item enables to select the OSD language.

#TRANSPARENCY item enables to adjust transparency of OSD.

#SLEEP item enables to set the sleep timer.

#RATIO item can be changed between 16:9 and 4:3, ZOOM1 and ZOOM2.

#RESET item enables to reset all values to default.



2.5.10 Video settings

#Press SETUP button to display the menu.

#In external video signal playback mode the menu is the same as the menu, described on pages 12 and 13.

NOTE:

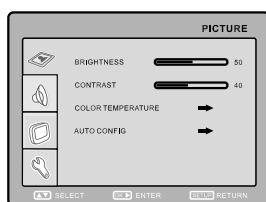
In external video signal playback mode TV SETUP item is inaccessible.

2.6 PC MONITOR MODE

2.6.1 Picture

Select PICTURE item to adjust picture parameters.

You may adjust BRIGHTNESS, CONTRAST, COLOR TEMPERATURE and AUTO CONFIG.



#Select COLOR TEMPERATURE sub menu to adjust color temperature of the picture.

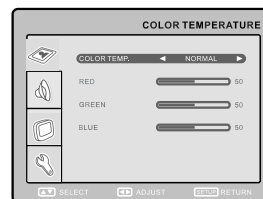
#COLOR TEMP. Item can be set to :USER, NORMAL, WARM and COOL.

#RED, GREEN and BLUE items enables to adjust RGB value of color temperature.

#Use AUTOCONFIG to configure display parameters automatically.

NOTE:

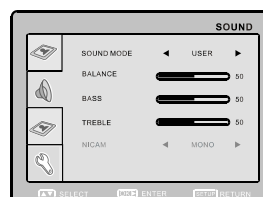
The picture can be displayed incorrectly while adjusting.



2.6.2 Sound

Select SOUND item to adjust sound parameters.

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



2.6.3 Monitor setup

Select MONITOR item to adjust such parameters as PHASE, FREQUENCY, H-POSITION and V-POSITION.



2.6.4 Function

You may select LANGUAGE, TRANSPARENCY, SLEEP and RATIO.

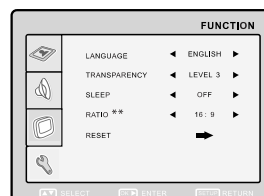
#LANGUAGE item enables to select the OSD language.

#TRANSPARENCY item enables to adjust transparency of OSD.

#SLEEP item enables to set the sleep timer.

#RATIO item can be changed between 16:9 and 4:3, ZOOM1 and ZOOM2.

#RESET item enables to reset all values to default except ratio function.



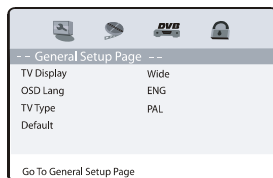
2.7 DVB FUNCTION SETTINGS

Turn on the TV. Press SOURCE button to change source to DVB, then you can enjoy the rich and colorful contents of Digital Video Broadcast!

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

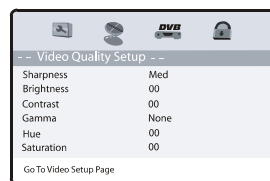
2.7.1 General setup

- 1.TV Display: This item is used to set the output picture ratio of this unit.
#Optional settings: Normal/PS, Normal/LB, Wide, Squeeze; Default: Wide.
- 2.OSD language: This item is used to set the OSD language.
#Optional settings: English, Russian; Default: English.
- 3.TV Type: To set the output video system of this player.
#Optional settings: PAL, Auto, NTSC; Default: PAL.
- 4.Default: This item is used to restore all settings to the default value except "Parental control" and "Password" in the setup menu.



2.7.2 Video setup

- 1.Sharpness: This item is used to set the sharpness of video outputs.
#Optional settings: High, Medium, Low; Default: Med.
- 2.Brightness: This item is used to set the brightness of video outputs.
- 3.Contrast: This item is used to set the contrast of video outputs.
- 4.Gamma: This item is used to set the color temperature of video output.
#Optional settings: High, Medium, Low, None; Default: None.
- 5.Hue: This item is used to set the hue of video outputs.
- 6.Saturation: This item is used to set the saturation of video outputs.



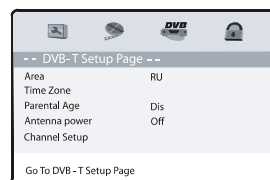
2.7.3 DVB-T setup

The DVB-T Setup Page is composed of five parts: Area, Time Zone, parental Age, Antenna Power, Channel Setup.

Note:

Press ▲/▼ button to select different item, and press OK or ▶ button to enter it.

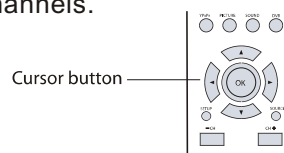
Press ◀ button to return to the previous menu or to exit the current menu.



1.Area

You can choose the area of your country.
Optional settings: Australia, Austria, Belgium, Russian, Denmark, Estonia, Germany, Spain, France, Italy, Netherlands, Taiwan, Others;
Default: Russian.

Note: you must set the correct area before searching channels.



2.Time zone

To choose your time zone, it is set depending on your country. If you don't know the exact time, please ask local time manage department.

Default: 03:00

3.Parental age

This item is used to set the parental control ratings. To prevent your children watching undesired programmes.

#Optional settings:

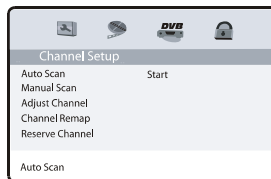
4,5,6,7,8,9,10,11,12,13,14,15,16,17,18, Disable
Default: Disable

4.Antenna power

Turn on/off antenna power supply. Optional settings: On. Off; Default: Off

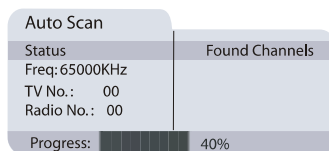
5.Channel setup

This item is used to search channels, edit the channel list or your favourite channel list. View program guide information, etc.



- Auto Scan

Connect the antenna to the Therefore socket on the TV, if the antenna needs a power supply, turn on/off antenna power supply in the menu. Then you can automatically search channels without entering any other information. In the scan process, the scan result will be displayed in the Auto Scan window. Press SETUP button to enter setup menu, then choose the DVB item; Using the ▲/▼ button to select the Auto Scan item, and press OK or ► button to select Start item, then press OK button; A prompting message will be displayed to request that you confirm, select "OK" and press the OK button to confirm.



Note: If you press the SETUP button during scanning, the operation is stopped and a prompting message will be displayed at the bottom of Auto Scan window. Select "OK" and press [OK] button to abort auto scan operation, and the channels found until then will be saved. And select "Cancel" and press OK button to return to auto scan process. Wait while the TV searches for the channels, this may take a few minutes.

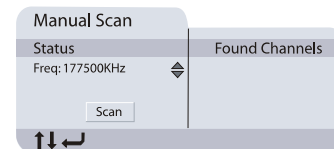
Once you press OK button to start auto search operation, all the saved channels will be cleared. Please don't press any button during the course of default operation.

Manual scan

1. In setup menu, select "Manual Scan", a manual scan will be shown as follows:

2. Enter the frequency you want to scan by the number buttons, then press "OK", the scan button seems to be pressed, press "OK" again to scan, a scan sign: scanning will be shown on the window.

3. The scan result will be displayed on the right half of the manual scan window, you can save the found channels or delete them if the TV has the same program.



- Adjust channel

You can set your favorite channel, set parental control age for some channels or delete channel in Adjust Channel window.

1. Select channel using ▲/▼ button, Press number button 1 to set this channel as one of your favorite channels.
2. Select channel using ▲/▼ button, if you don't like this channel press number button 2 to skip it.
3. Select channel using ▲/▼ button, press number button 3 to set this channel as a protected one, to prevent children from watching the undesired program.

Note: If you set a channel protected, a password will need to be inputted in the Protect Channel window.

The default password is 000000.

- Channel remap

You can change every channel position as you like in channel remap window.

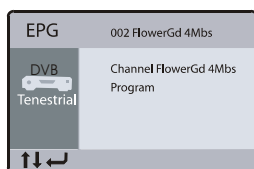
- Reserve channel

If you want to watch a special program on a channel at a later time, you can reserve it.

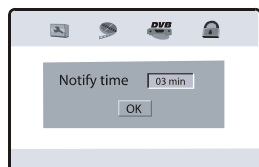
Then a reminding signal will be displayed on screen several minutes before it starts.

When playing a program on a channel, press EPG button, then a program information list of current channel will be displayed in a window, move the cursor to PROGRAM, then press OK button, a more detailed program list will be displayed, move the cursor to the program which you want to watch, then press OK button on remote control as shown in the window.

The program is saved in your reserved channel.



You can set the time when the reminding signal should be displayed before the program starts.



2.7.4 Password setup

Password: This item is used to set a six digit password to enable you to change the parental control ratings.



Password Mode:

To set whether parental control function needs a password, optional setting: On, Off; Default: On.

Password:

To change the password of the parental control function, default:000000

2.8 OTHERS

2.8.1 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.

#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.

2.8.2 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 antenna connection. 2. Sound disabled by the button.	1. Make proper connection. 2. Press the button.
No image	1. Poor antenna 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.
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. Batteries are empty.	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. Incorrect key sequence. 2. Static voltage on the housing.	1. Repeat the operation one more time. 2. Switch the device off for 1-2 minutes and then switch it on again.
Unstable image or abnormal picture color	1. Incorrect TV set settings. 2. There is something wrong with the date in the E PROM.	1. Correct the TV set settings. 2. Reset the TV set to default setting.

2.8.3 Technical characteristics

		LT 1516D
Display	Type Class	TFT, colored II (ISO 13406-2)
	Size (") Height (mm) Width (mm) Pixel Pitch (H mm x V mm) Viewing Angle (H)	15 193.53 344.23 0.252x0.252 120°
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 Composite Component VGA RGB/SCART Audio Stereo PC audio Others RF	1 1 1 1 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
Power adapter	Voltage and frequency (V, Hz)	~ 100–240, 50/60
	Voltage of external (V, A)	= : +12
Power supply	Power Consumption (Maximum) (W)	54
	Power Consumption (Power Saving) (W)	<3
DVB	Input connector Frequency range (VHF/UHF) Channel range (VHF/UHF)	IEC-Type, IEC 169-2, Female 174 MHz~858 MHz 7&8 MHz
Environmental consideration	Operating temperature (°, C) Operating humidity (%) Storing temperature (°, C) Storing humidity (%)	+5...+35 10–80 –20...+45 5–95
Dimensions (mm)		435x350x175
Weight	Net weight (kg)	5.9

#We are permanently improving the quality of our products; hence the product's design, functionality and technical characteristics may be modified without prior notice.

Chapter Three Principle and Servicing

Section One Principle of the player

3.1.1 System control principle

System control schematic diagram is shown in the figure 3.1.1.1:

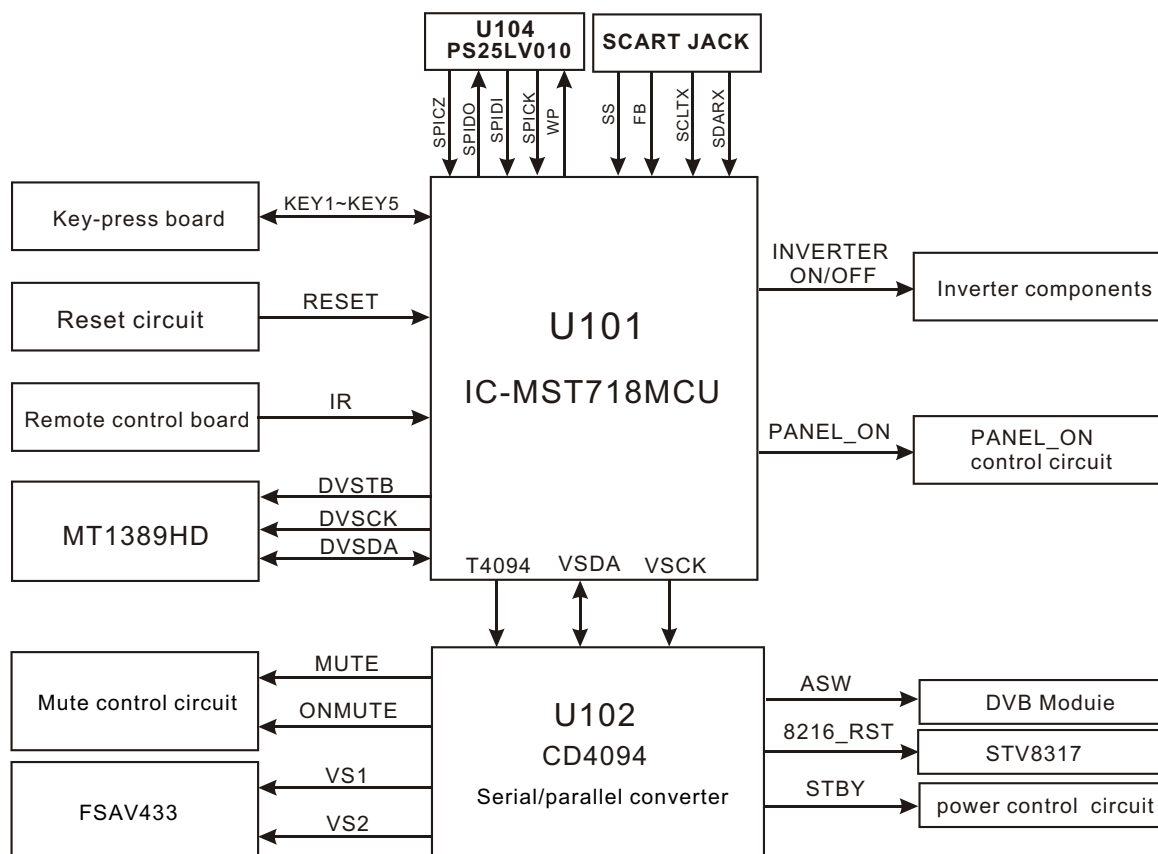


Figure 3.1.1.1 System control schematic diagram

3.1.2 OVERALL WIRING DIAGRAM

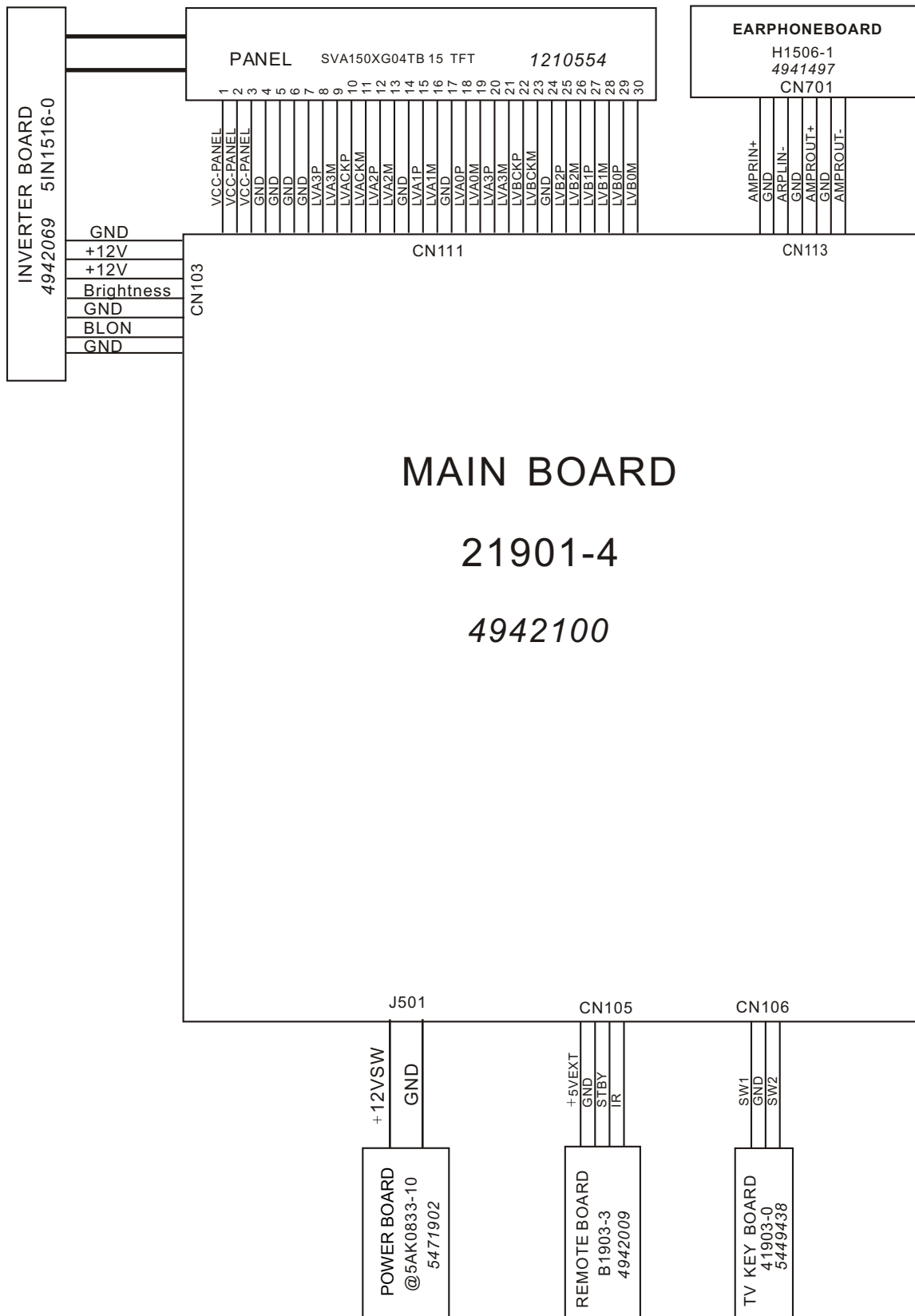


figure 3.1.2.1 overall wiring diagram

3.1.3 Block diagram of the player

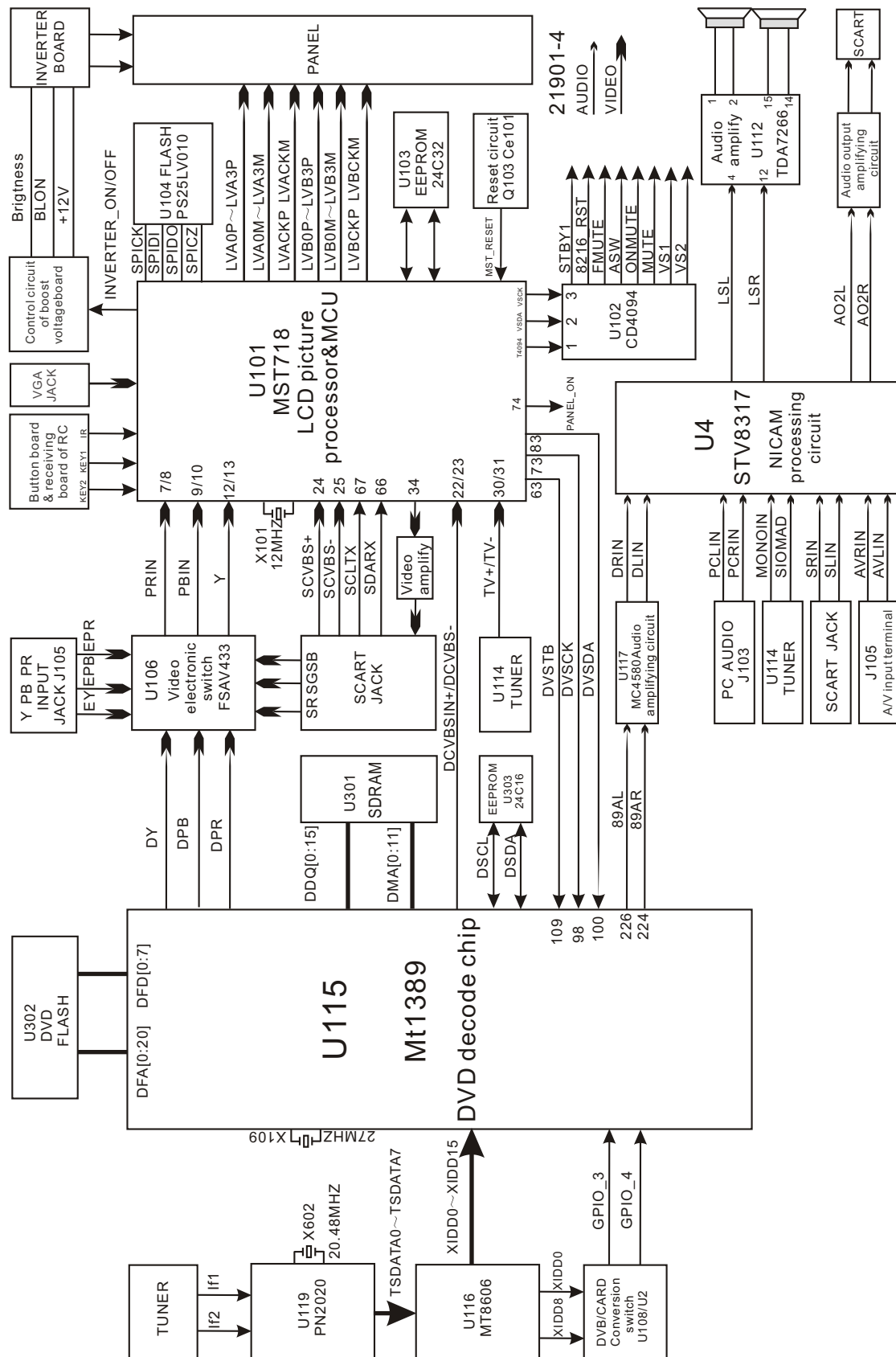


figure 3.1.3.1 Block diagram of the player

3.1.4 Audio circuit

Audio processing circuit is mainly responsible for the switch, amplifying and restore of audio and composed of audio source input selection and NICAM processing circuit, audio amplifying circuit and mute control circuit. Audio processing circuit block diagram is shown in the figure 3.1.4.1:

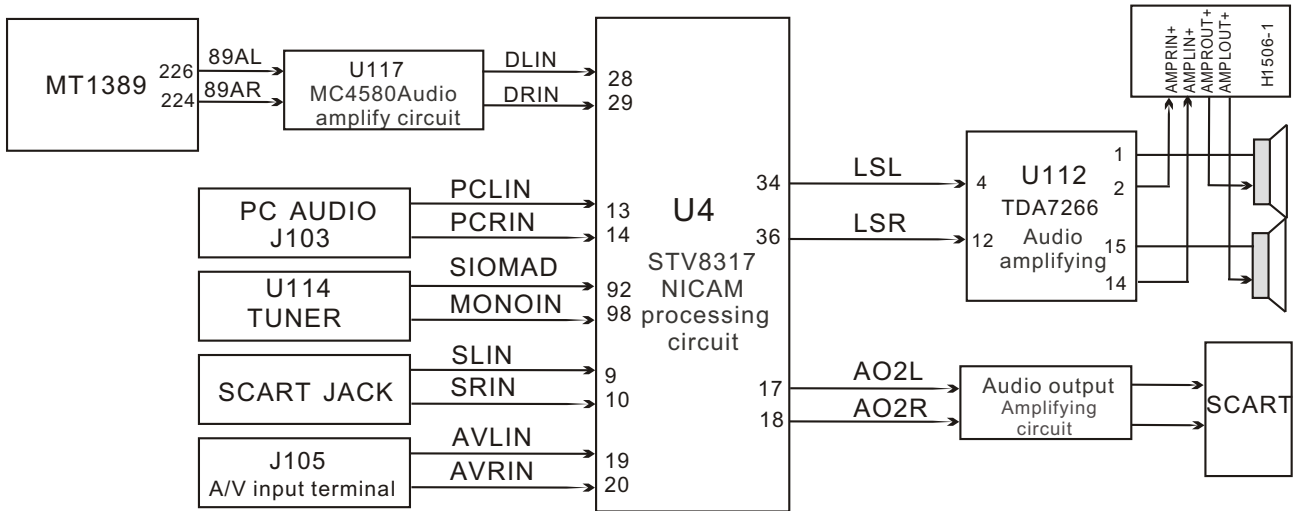


Figure 3.1.4.1 Audio processing circuit block diagram

3.1.5 Power circuit

Power circuit supplies stable and pure power for each unit circuit to ensure normal working of the player. Power circuit block diagram is shown in the figure 3.1.5.1:

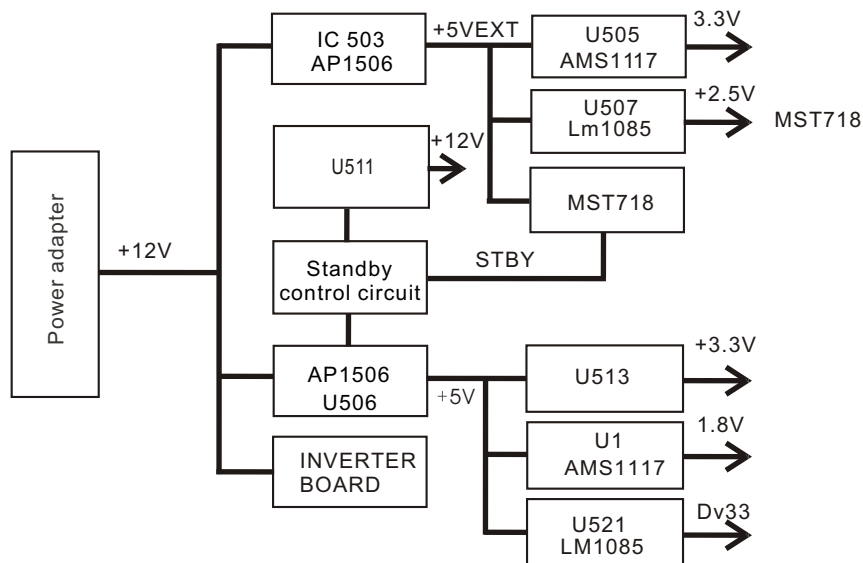


Figure 3.1.5.1 Power circuit block diagram

3.1.6 Video circuit

Video circuit is mainly responsible for the input of external video signals, the processing of video signals send from tuner, and the drive processing of LCD screen, including video input selection, video A/D conversion circuit, LCD picture processing circuit and video output circuit. Video circuit block diagram is shown in the figure 3.1.6.1:

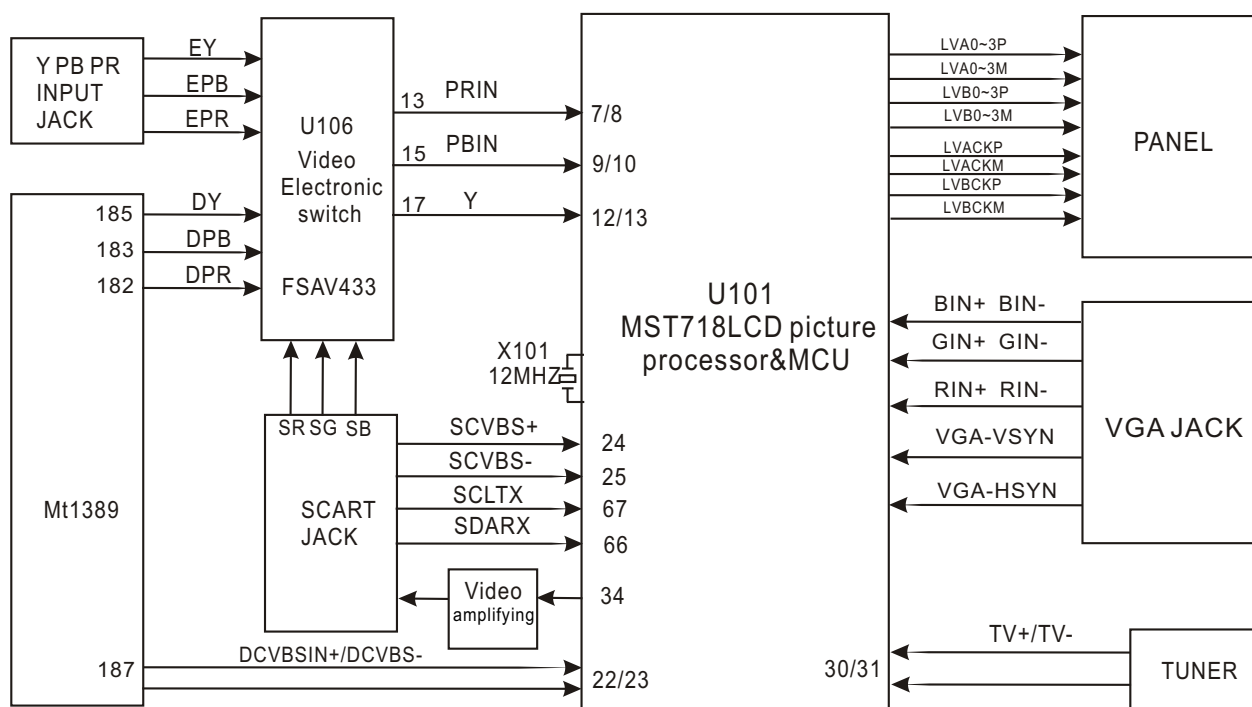


Figure 3.1.6.1 Video circuit block diagram

3.1.7 Block diagram of DVB is shown in figure 3.1.7.1:

1.LT1516D machine consists DVB function and can demodulate DVB-T signal.LT1516D does not consist this circuit.DVB part of this machine adopts PN2020AT+MT8606 and other elements. Block diagram of DVB part is shown as follows:

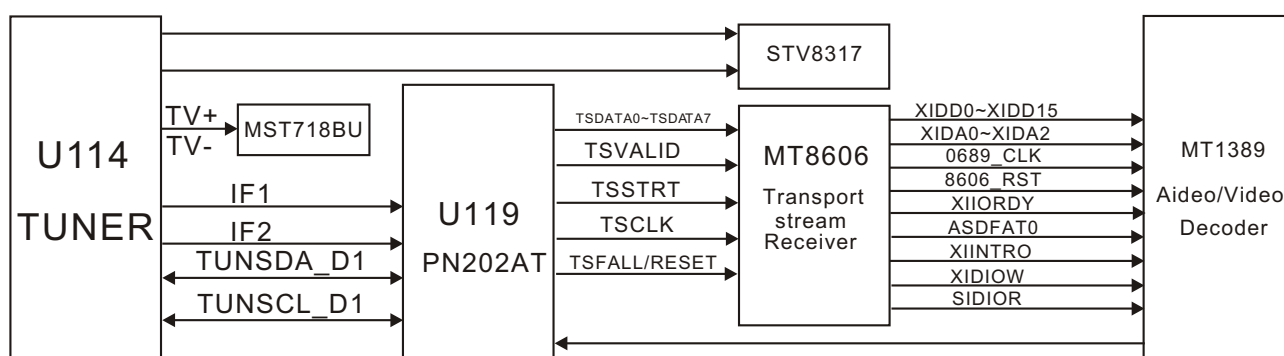
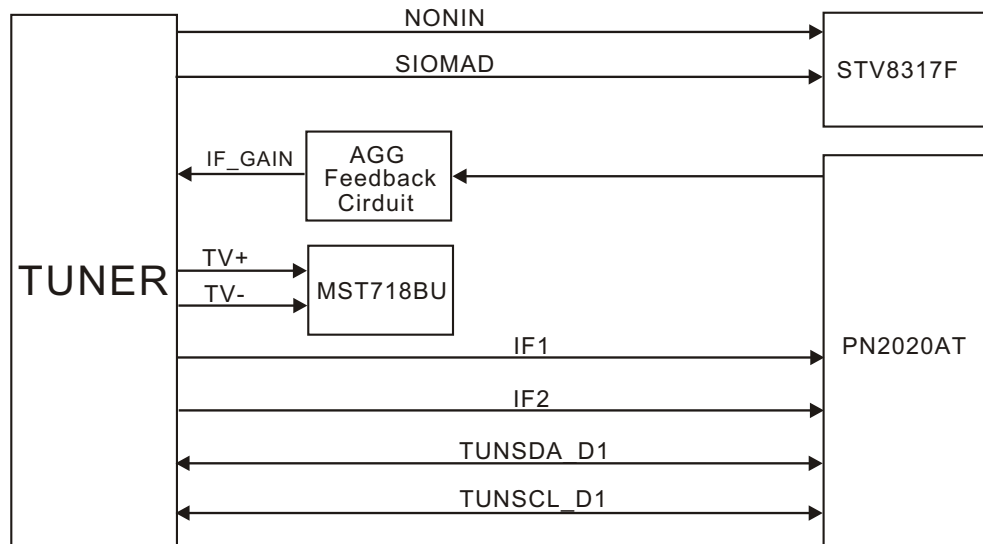


Figure 3.1.7.1 DVB circuit block diagram

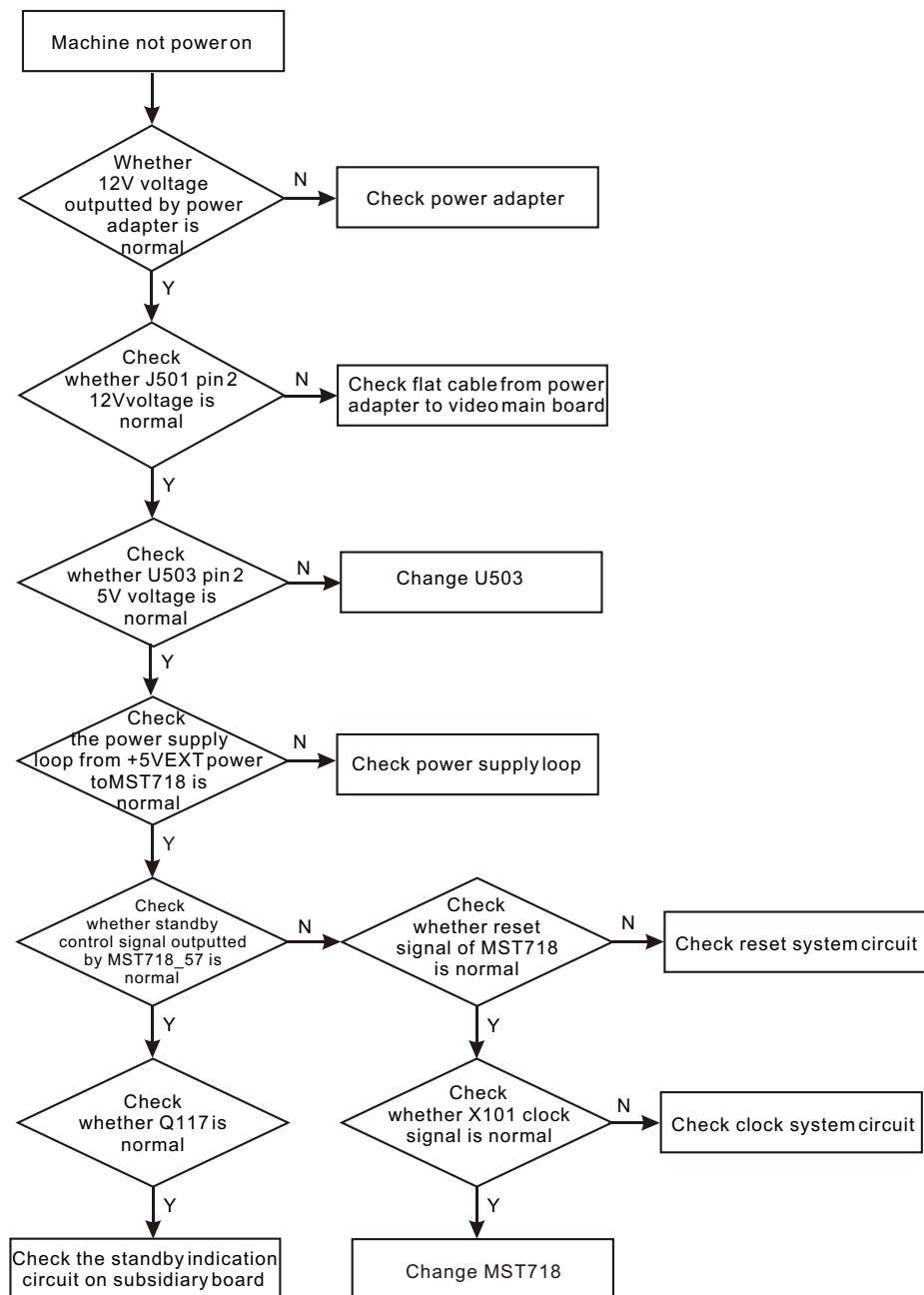
2. Block diagram of DVB receiving circuit is shown in figure 3.1.7.2:



Section Two Troubleshooting flow chart

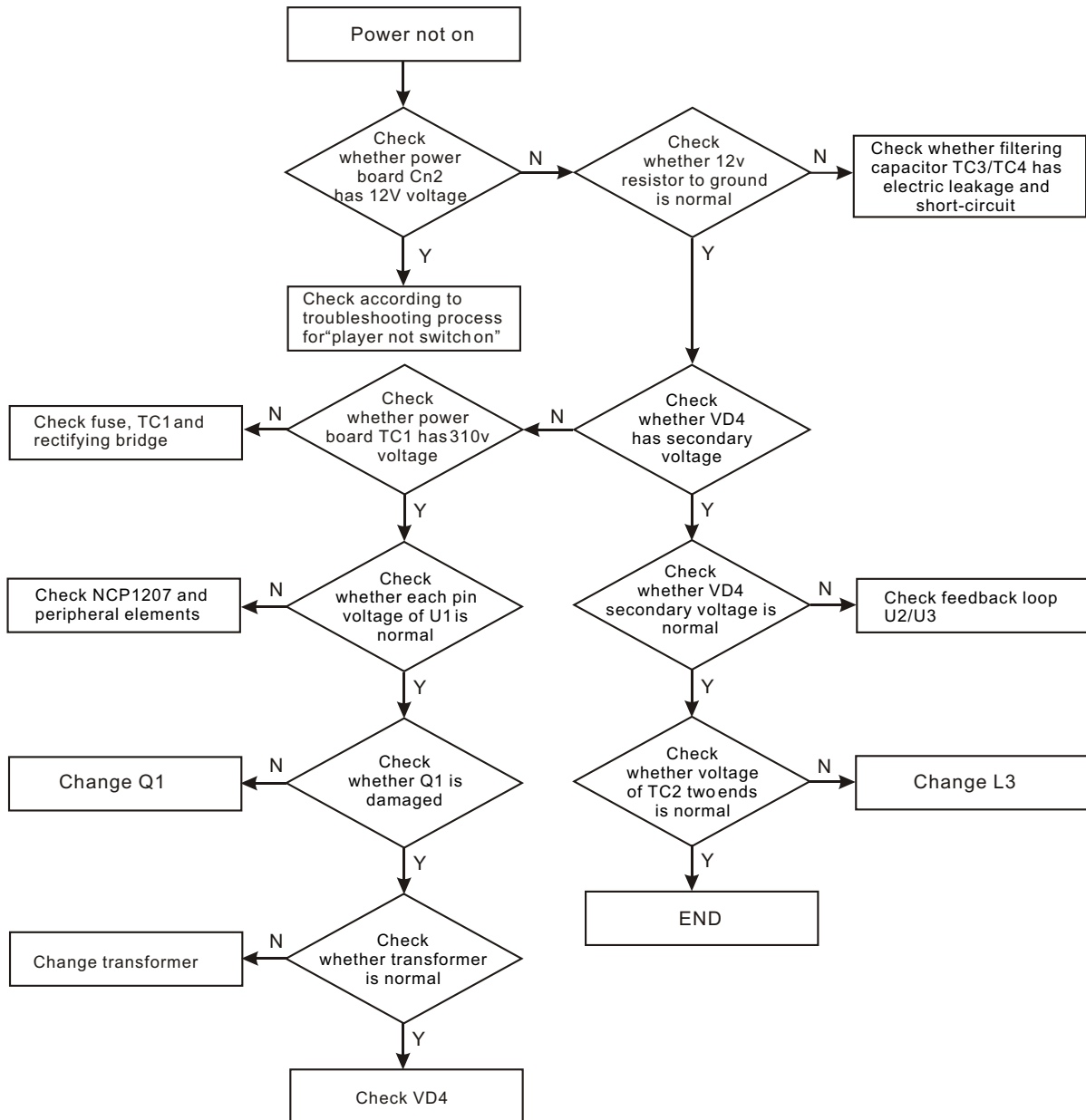
[Flow chart 1] Trouble symptom: standby light is not on

Trouble description: connect with power, standby indicator light is not on, machine has no response and buttons have no function.



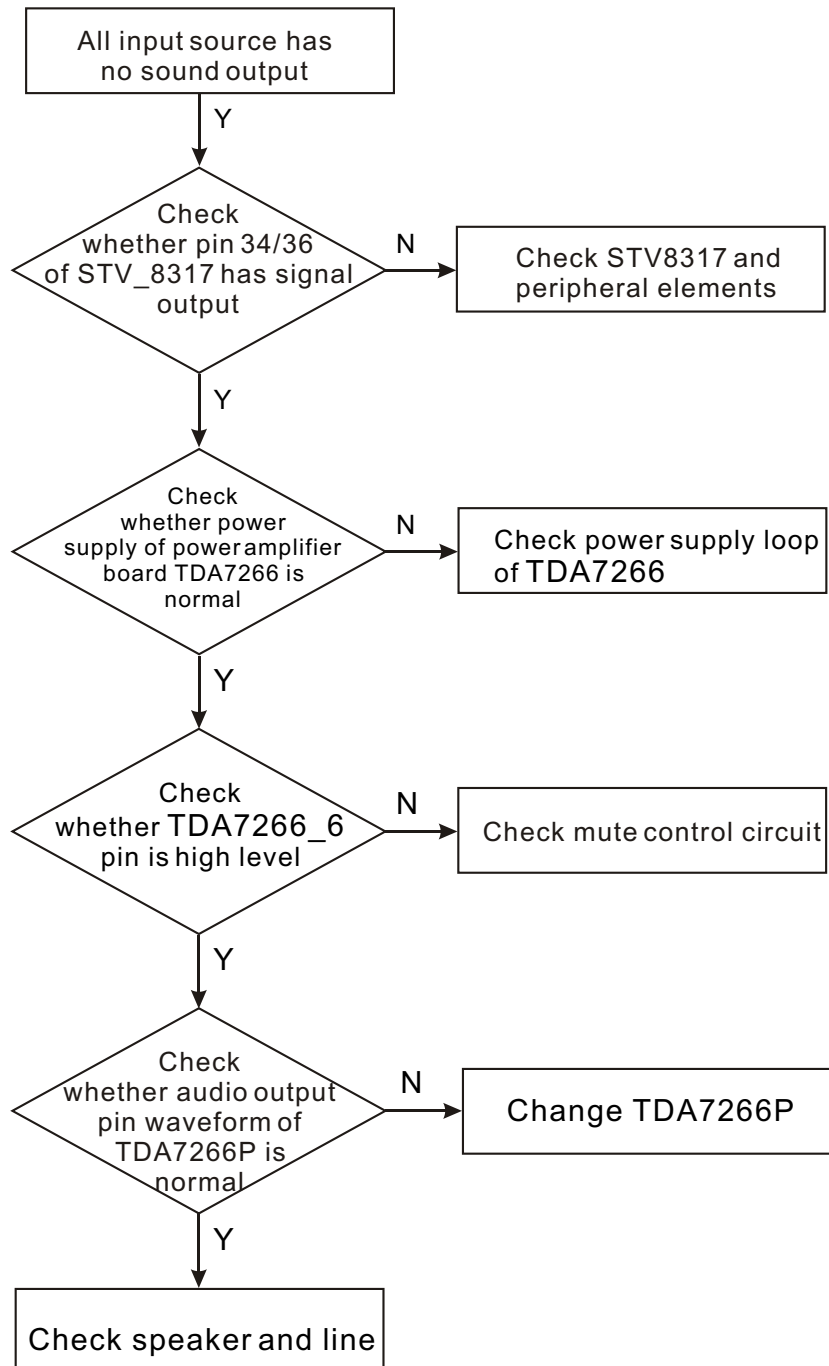
[Flow chart 2] Symptom: power not on

Trouble description: test after machine power on, standby indicator light is not on and +12V power outputted by power adapter is abnormal.



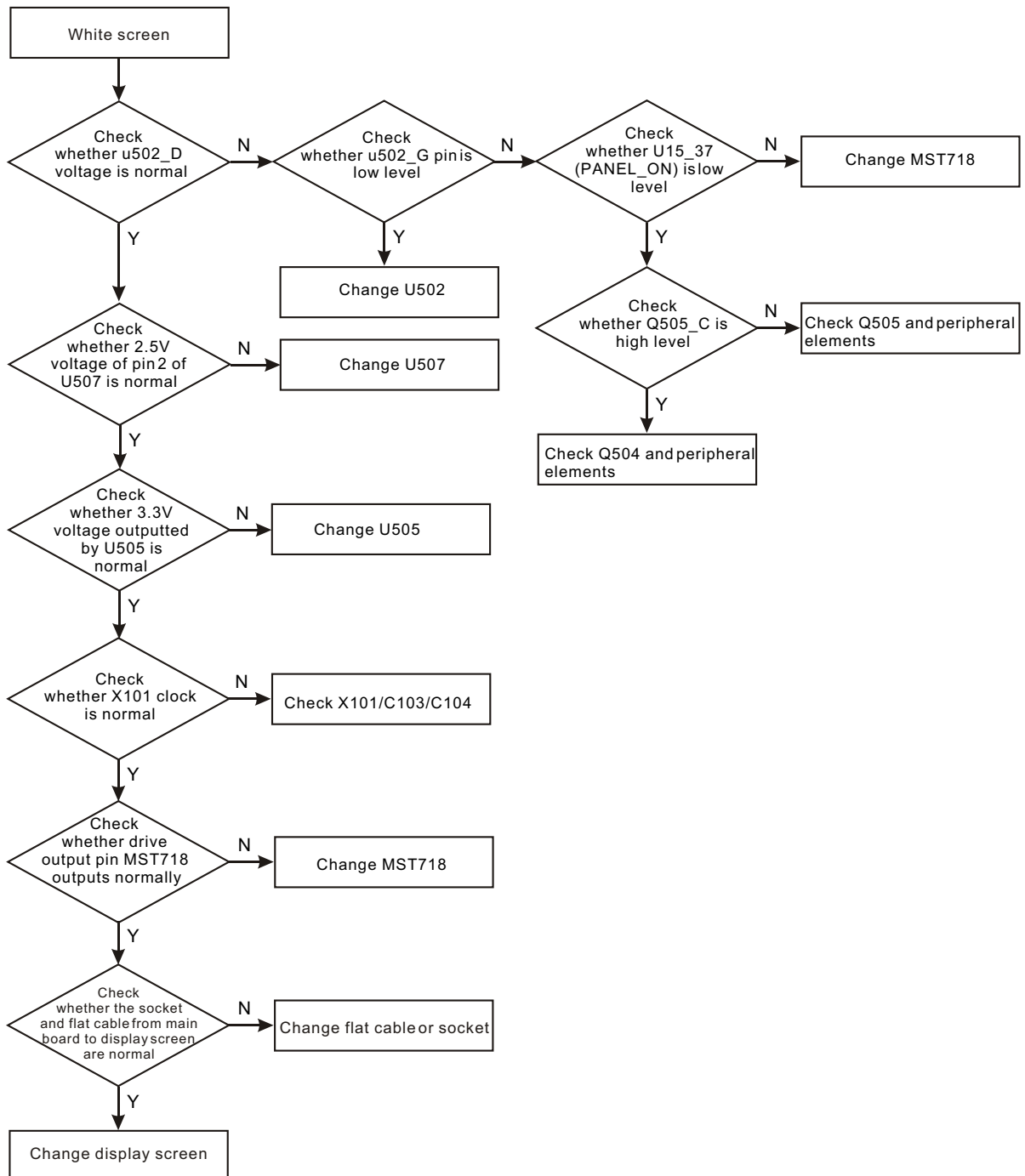
[Flow chart 3] Symptom: no sound

Description: there is image, but no audio output.



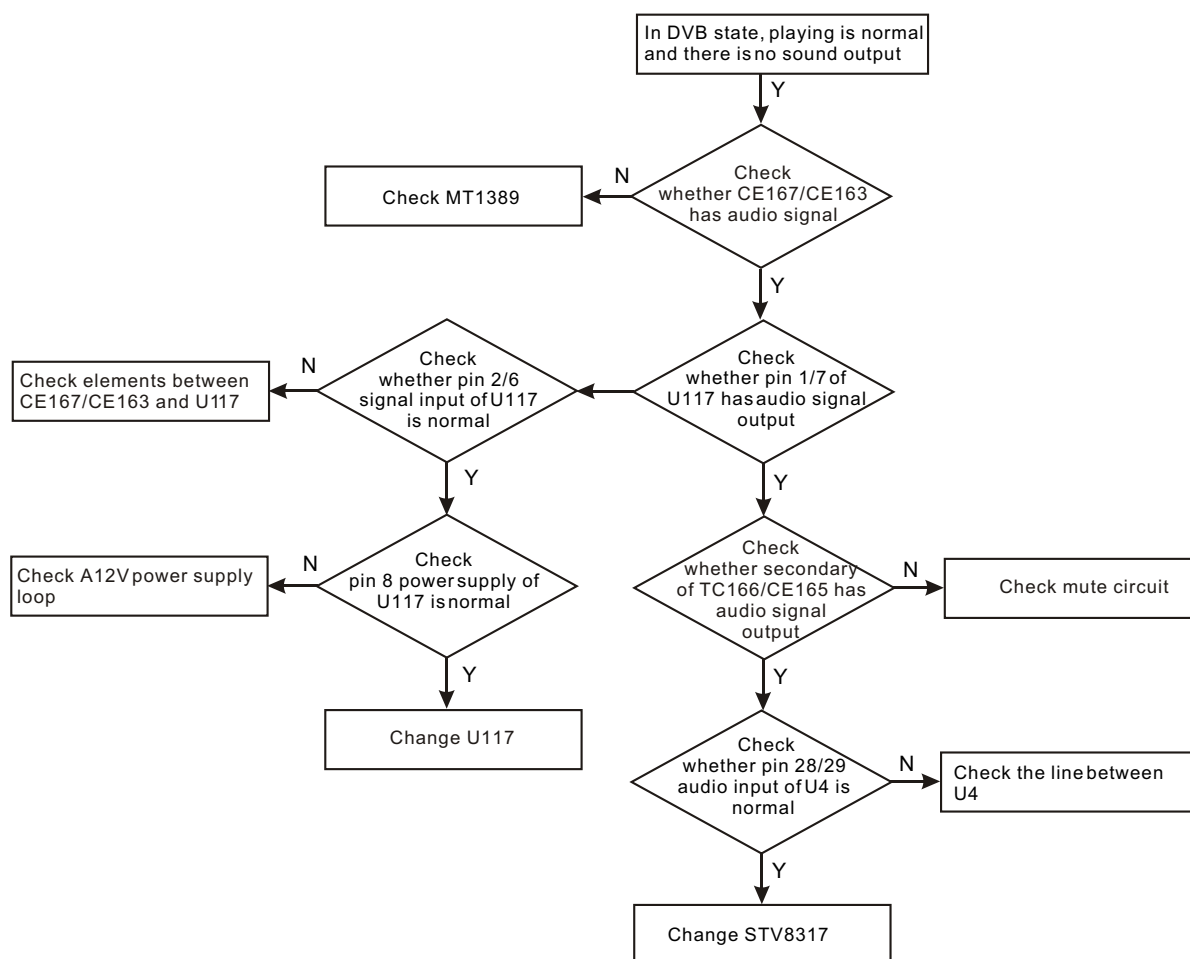
[Flow chart 4] Symptom: white screen

Description: screen is white and indicator on.



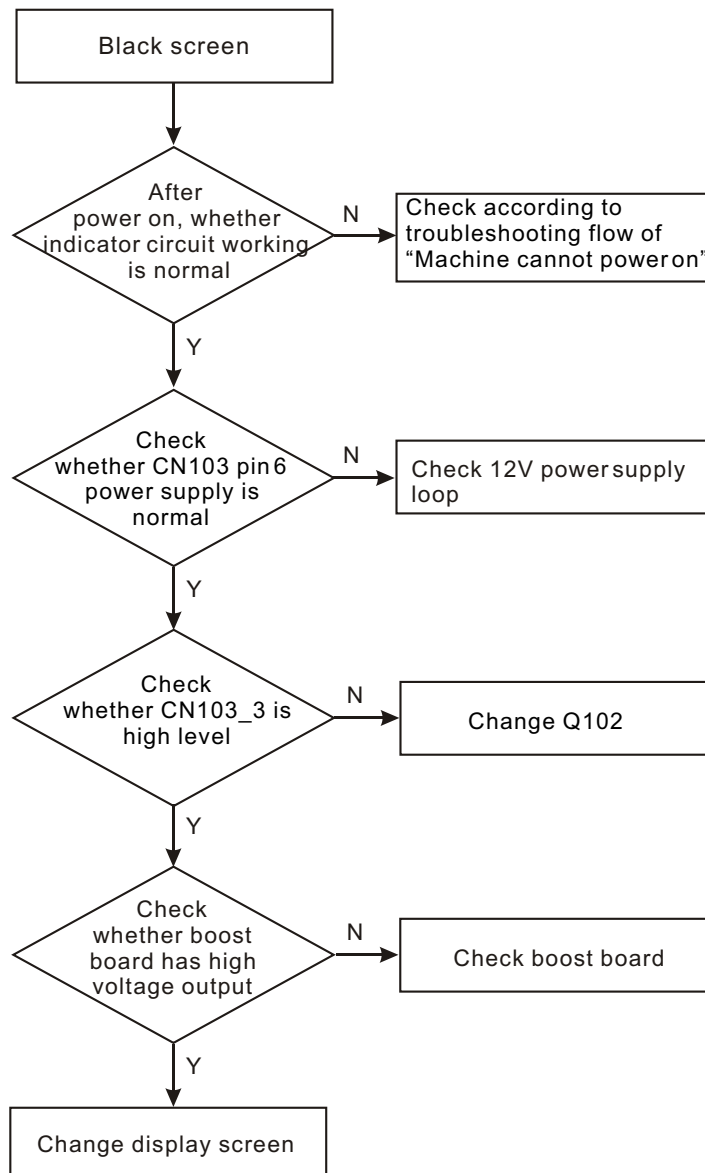
[Flow chart 5] Symptom: DVB has no sound

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



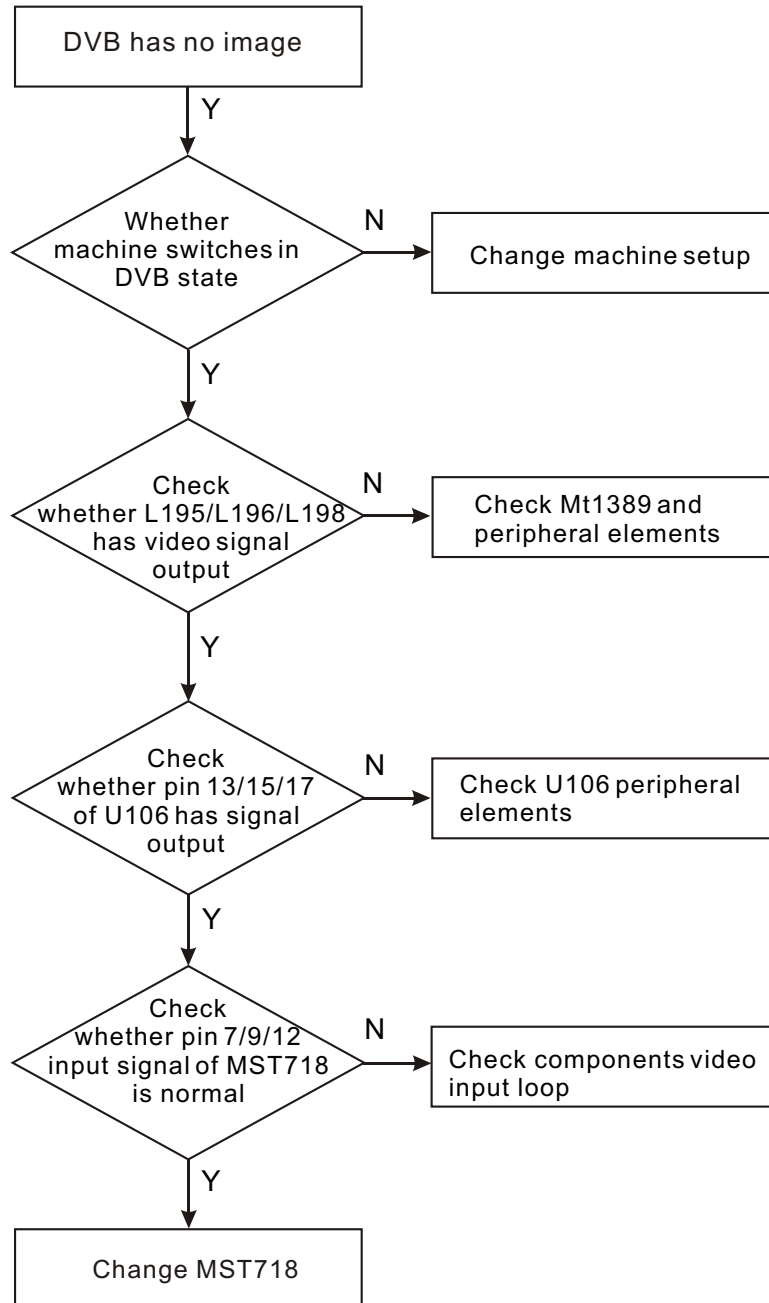
[Flow chart 6] Symptom: black screen

Trouble description: after power on, screen has no display and backlight cannot be on.



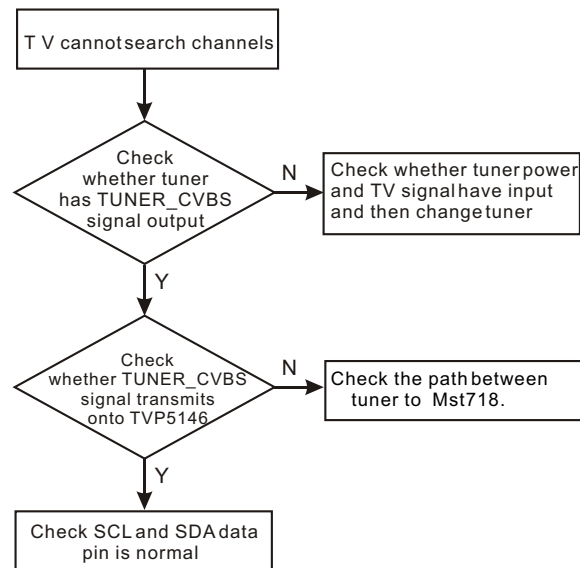
[Flow chart 7] Symptom: DVB has no image

Description: DVD has no image but has sound.



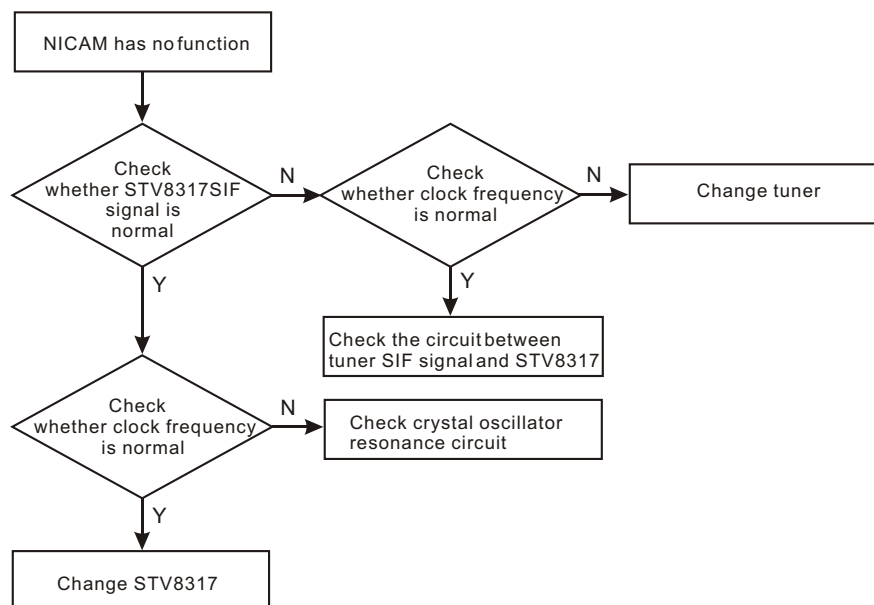
[Flow chart 8] Symptom: TV cannot search channels

Description: channel cannot be searched.



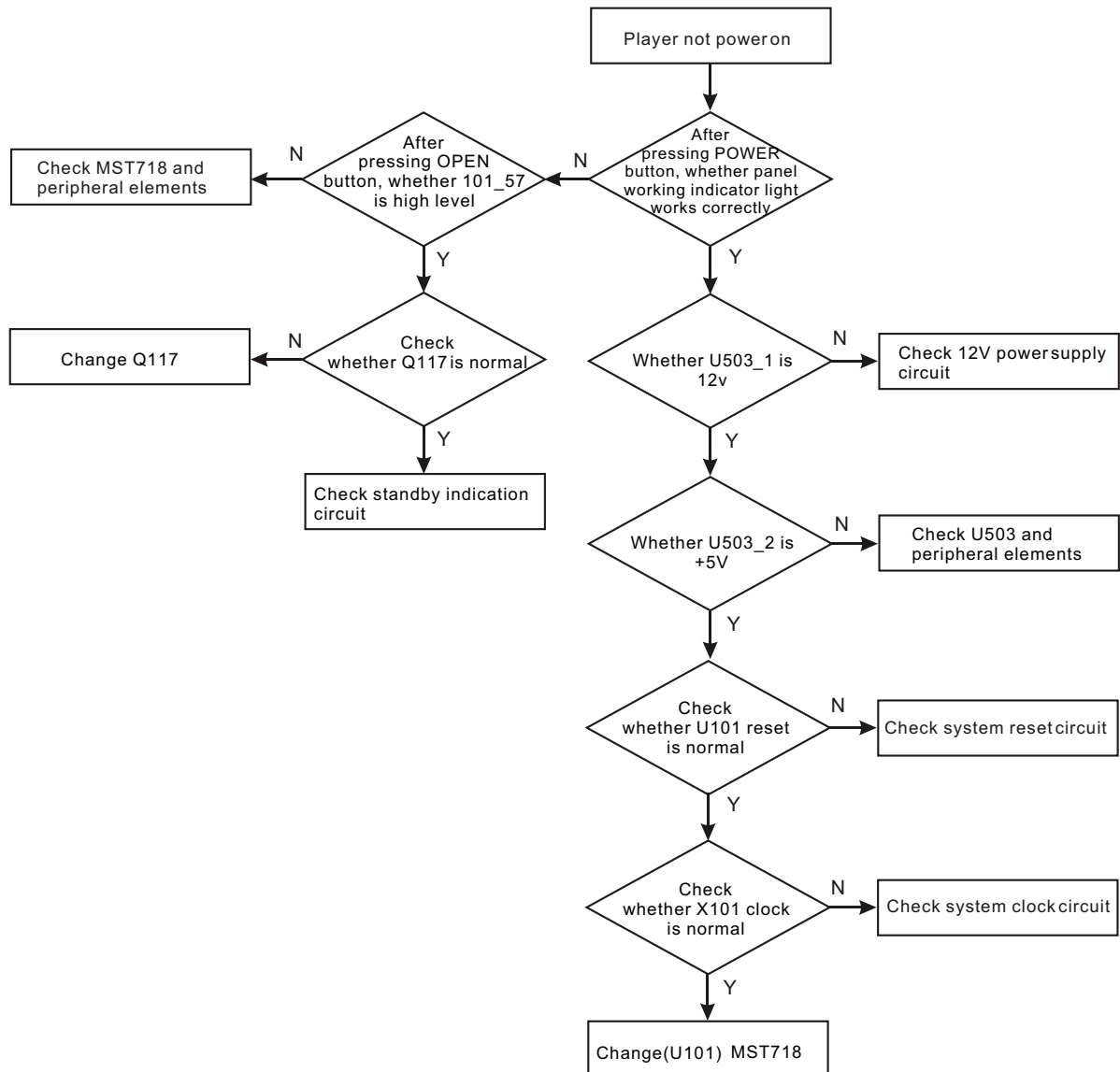
[Flow chart 9] symptom: NICAM has no function

Description: NICAM has no function and cannot be realized.



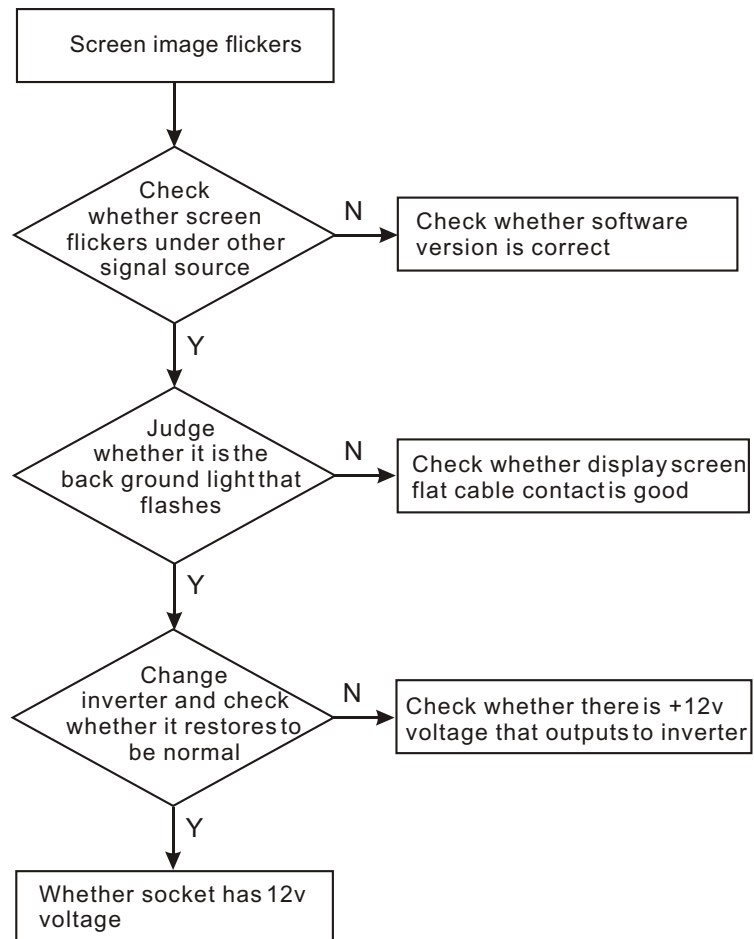
[Flow chart 10] Symptom: player not power on

Description: switch on power, indicator light is not on and buttons have no function.



[Flow chart 11] Symptom: screen image flickers

Description: screen image flickers and sound is normal.

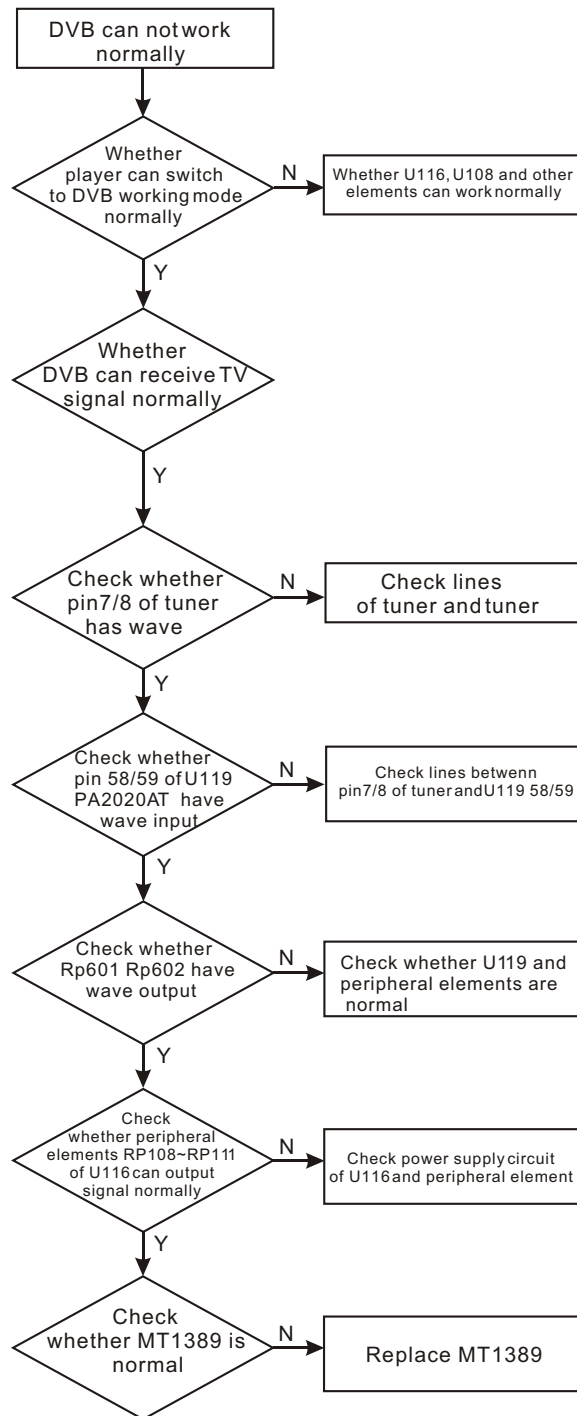


[Flow chart 12] Symptom: colour has distortion

Description: picture colour has distortion.



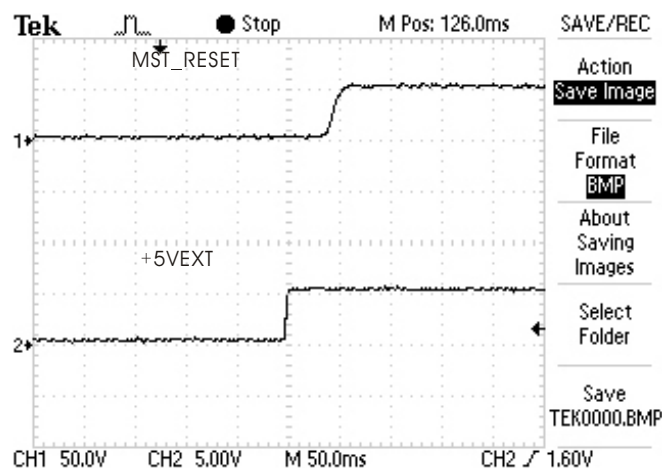
[Flow chart 13]Symptom: “Troubleshooting flow chart of DVB module”



Section Three 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.

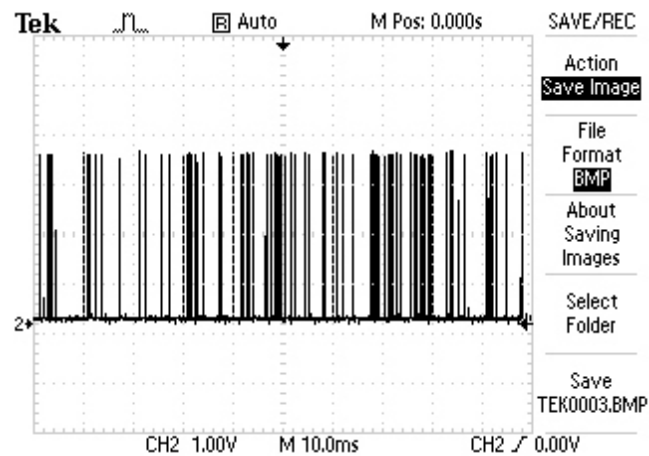
1. System reset signal waveform diagram: waveform comparison diagram for +5VEXT and system reset pin during the course of power on.



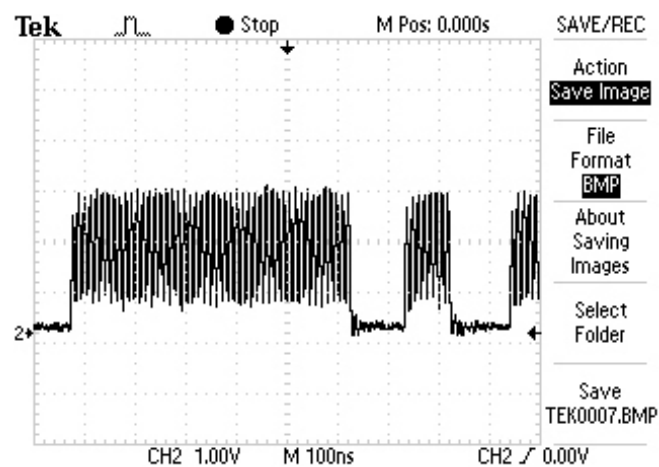
2. U104_2(SO) waveform diagram.



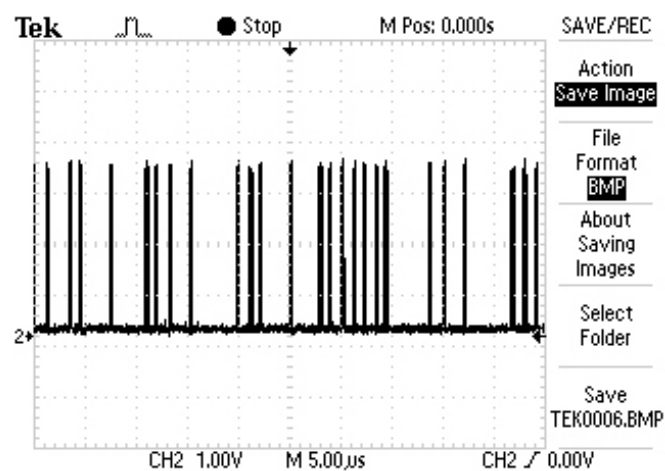
3. U104_1 (CE) gating signal waveform diagram.



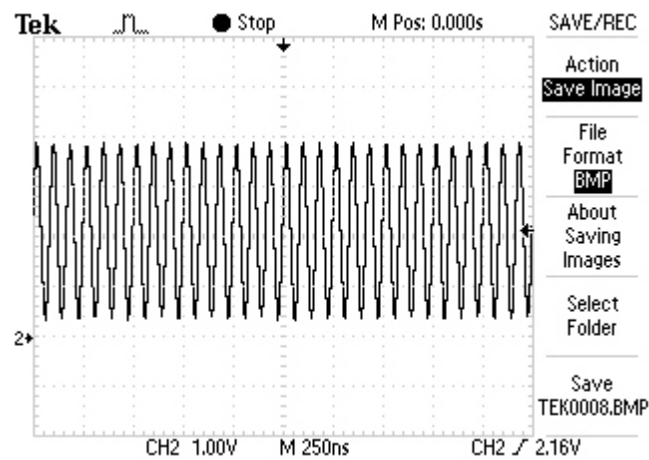
4. U104_6 (SCK) clock signal input waveform diagram.



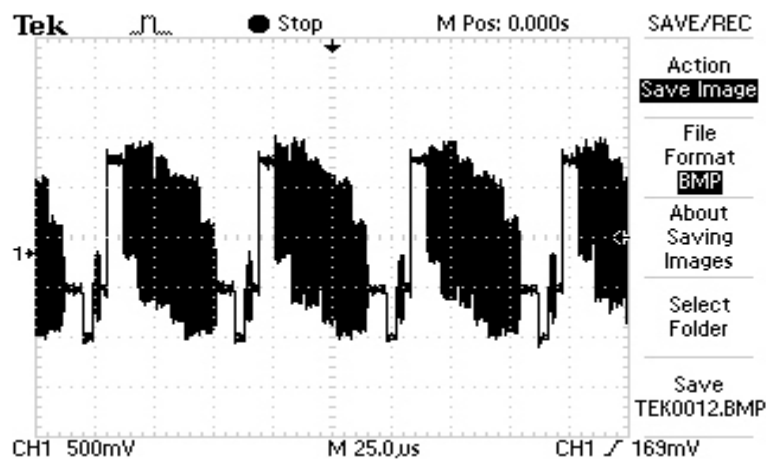
5. U104_5 (SI) data input pin waveform diagram.



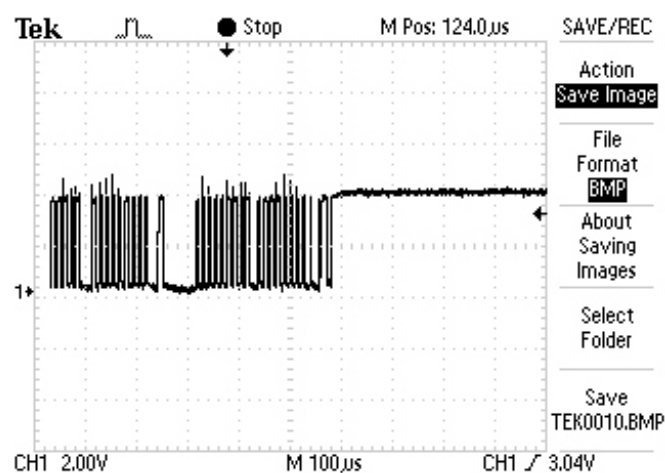
6. MST718 clock signal waveform diagram: waveform diagram when X101 is working (frequency 12MHZ).



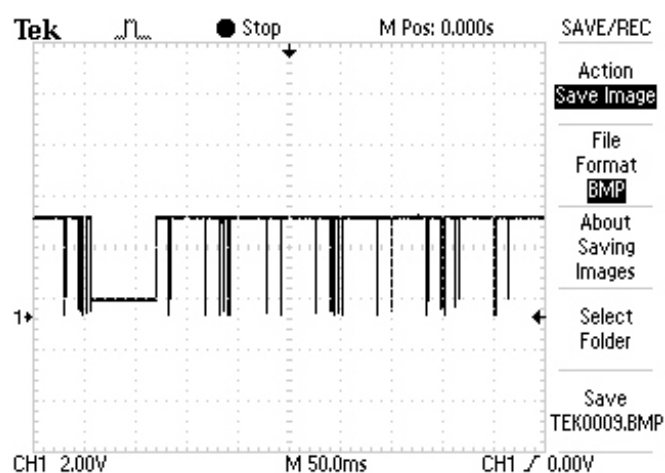
7. Q1_C:video signal waveform diagram for pin when machine is receiving Q1_C standard signal source in TV mode.



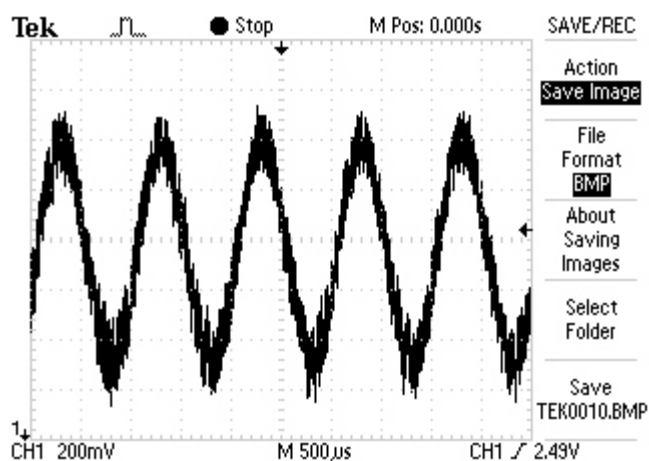
8. U103_6: waveform diagram of SCL in IIC bus.



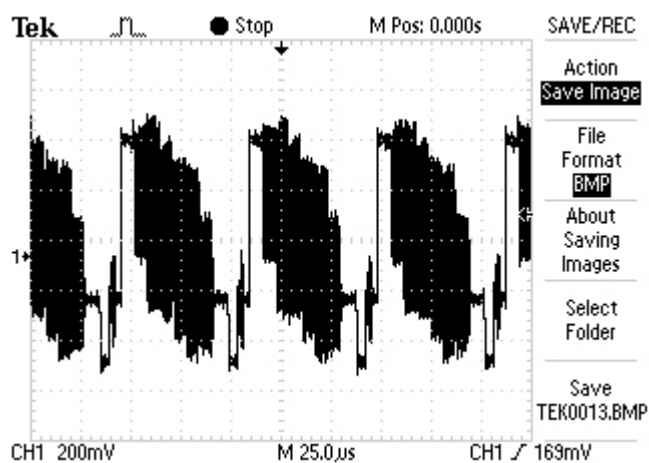
9. U103_5: waveform diagram of SDA in IIC bus.



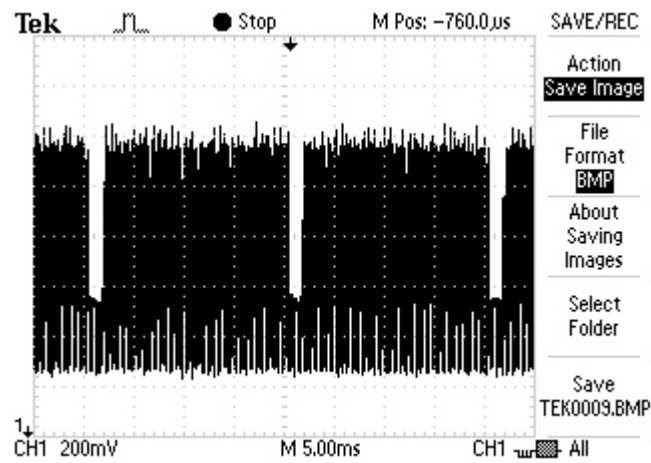
10. TV audio signal waveform diagram: waveform diagram for audio signals outputted by U114_14 pin when machine is receiving standard signal source in TV mode.



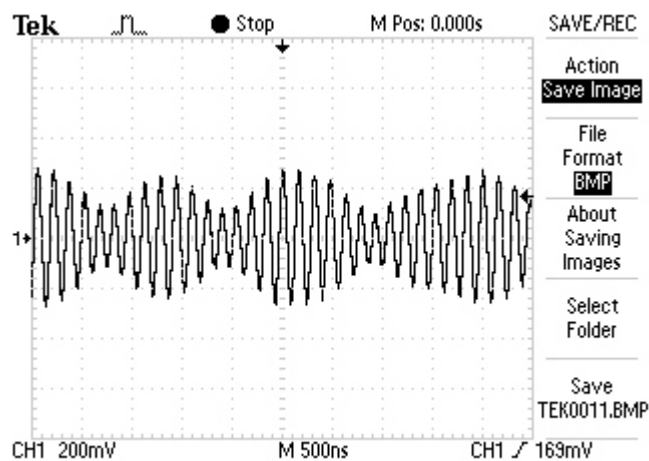
11. TV video signal waveform diagram: waveform diagram for video signals outputted by U114_12 pin when machine is receiving standard signal source in TV mode.



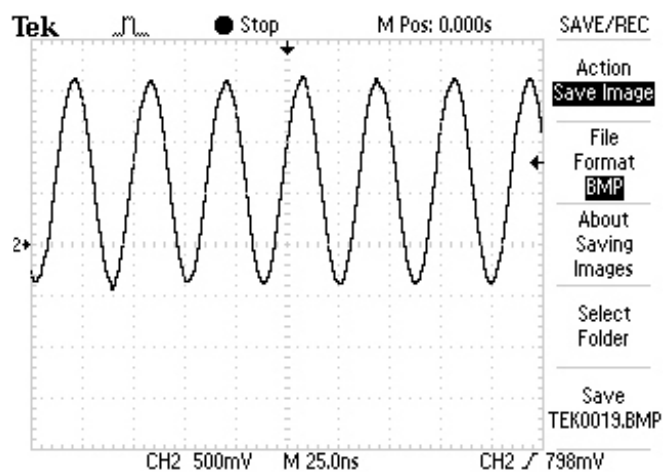
12. U114_12: waveform diagram for video signals outputted by pin 12 of tuner when machine is receiving TV signal in TV mode.



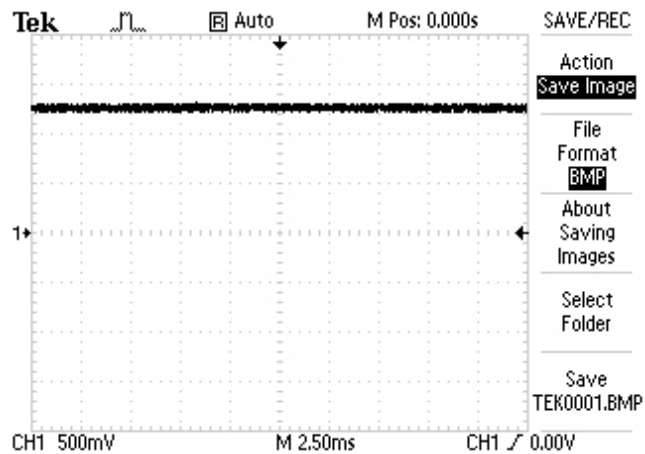
13. U114_11: output waveform diagram of NICAM output pin.



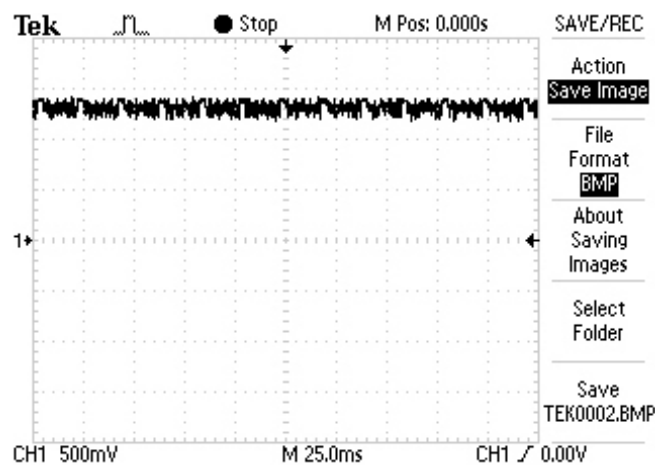
14. NICAM processing circuit clock signal waveform diagram: waveform diagram when :X301 is working (frequency 27MHZ).



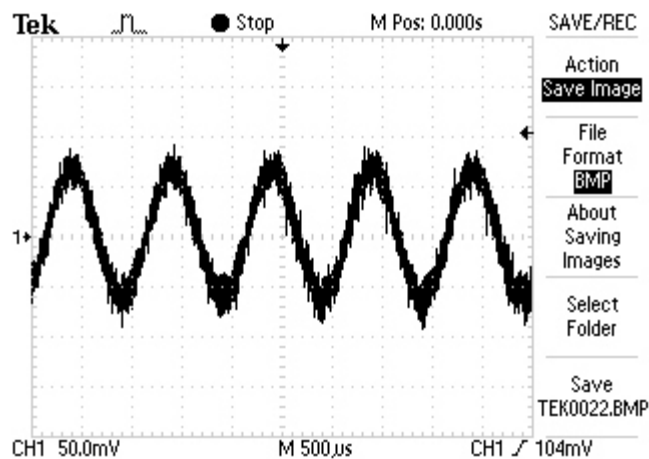
15. Waveform of clock signal outputted by MST718 in LVDS output mode. (MST718_101).



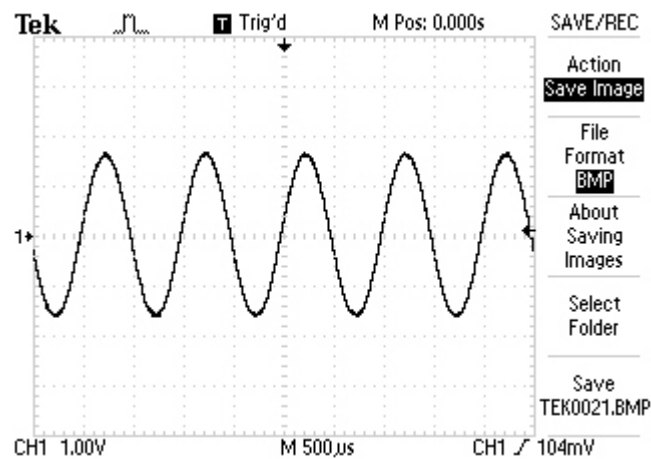
16. Waveform of digital signal outputted by MST718 IN LVDS output mode. (MST718_99).



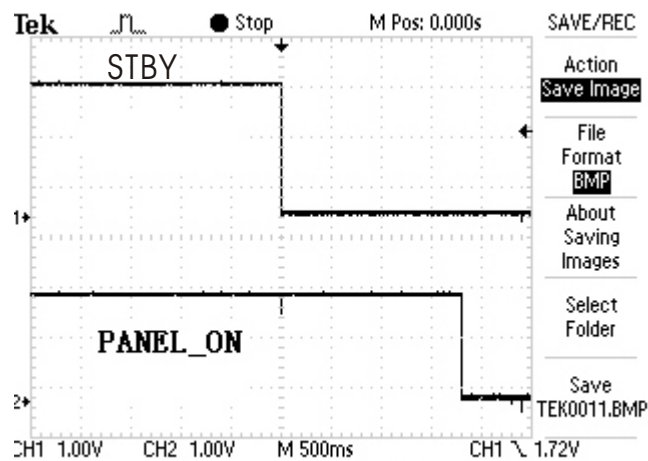
17. 8317_34: waveform diagram after the audio signals from tuner are processed by STV8317 and then output from pin 34/36 when machine is receiving standard signal source in TV mode.



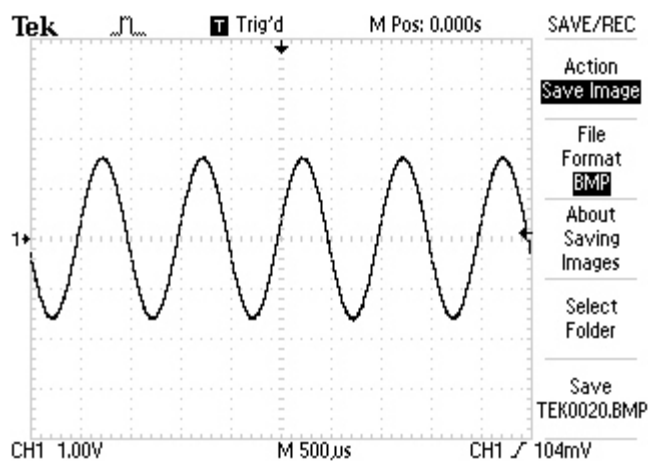
18. 8317_28: when machine is in DVB state, audio signals outputted by Mt1389 output from pin 18/19 after being processed by STV8317.



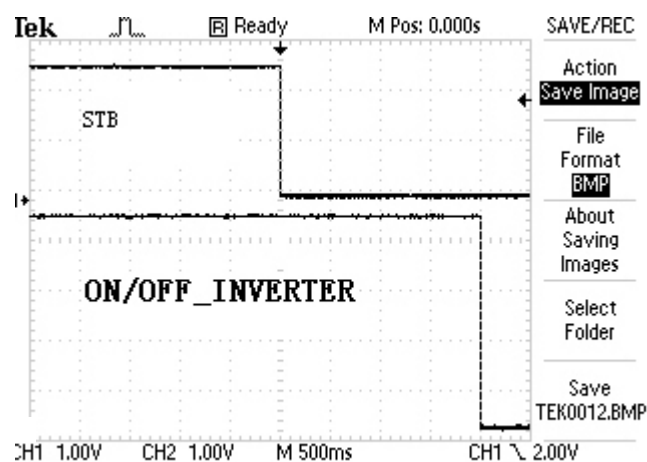
19. PANEL_ON: waveform comparison diagram for STBY and PANEL_ON signal when machine enters from standby to power-on.



20. 8317_17: output waveform of standard signal source in TV mode.



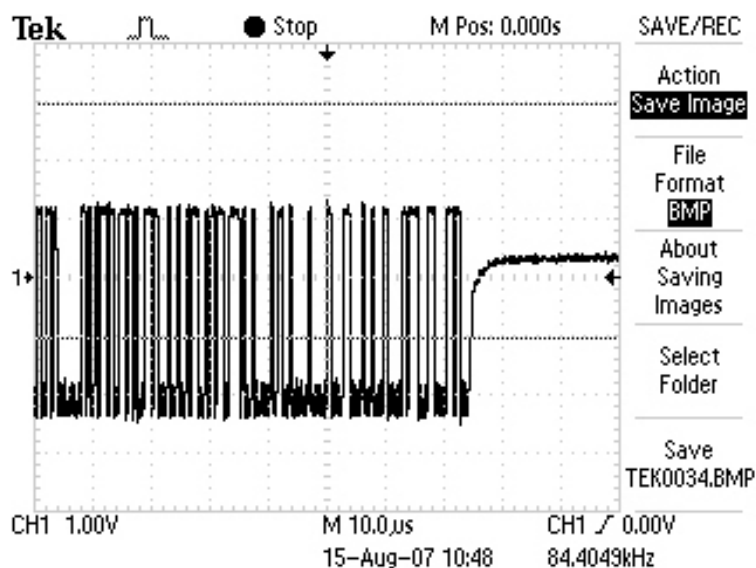
21. INVERTER: waveform comparison diagram for STBY and ON/OFF_INVERTER signal when machine enters from standby to power-on.



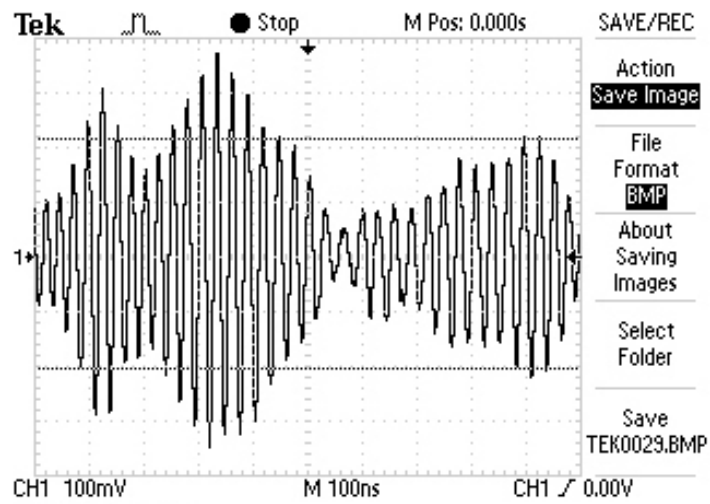
22. Waveform diagram outputted by U116 test point RP111



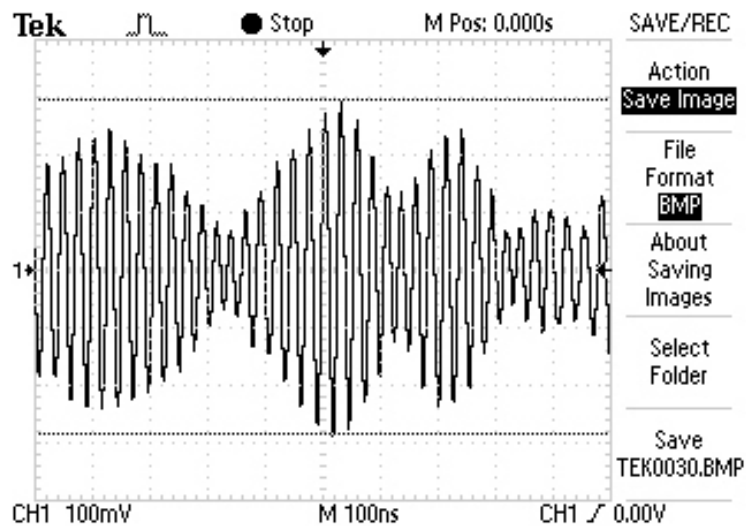
23. Waveform diagram outputted by U116 test point RP110



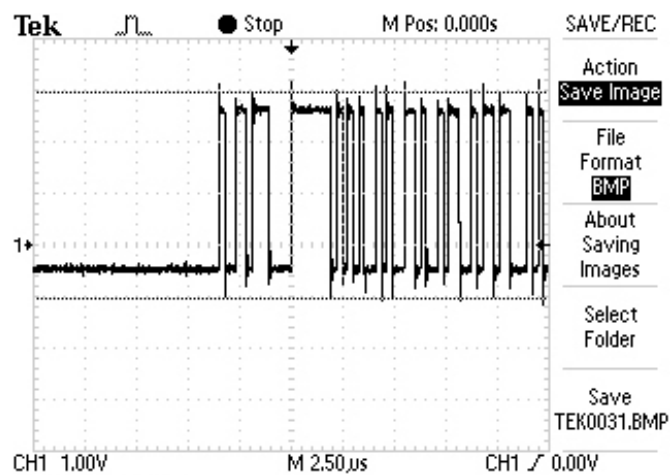
24. U114_7 waveform diagram VP-P=0.7 F=33MHZ



25. U114_8 waveform diagram VP-P=0.7 F=33MHZ

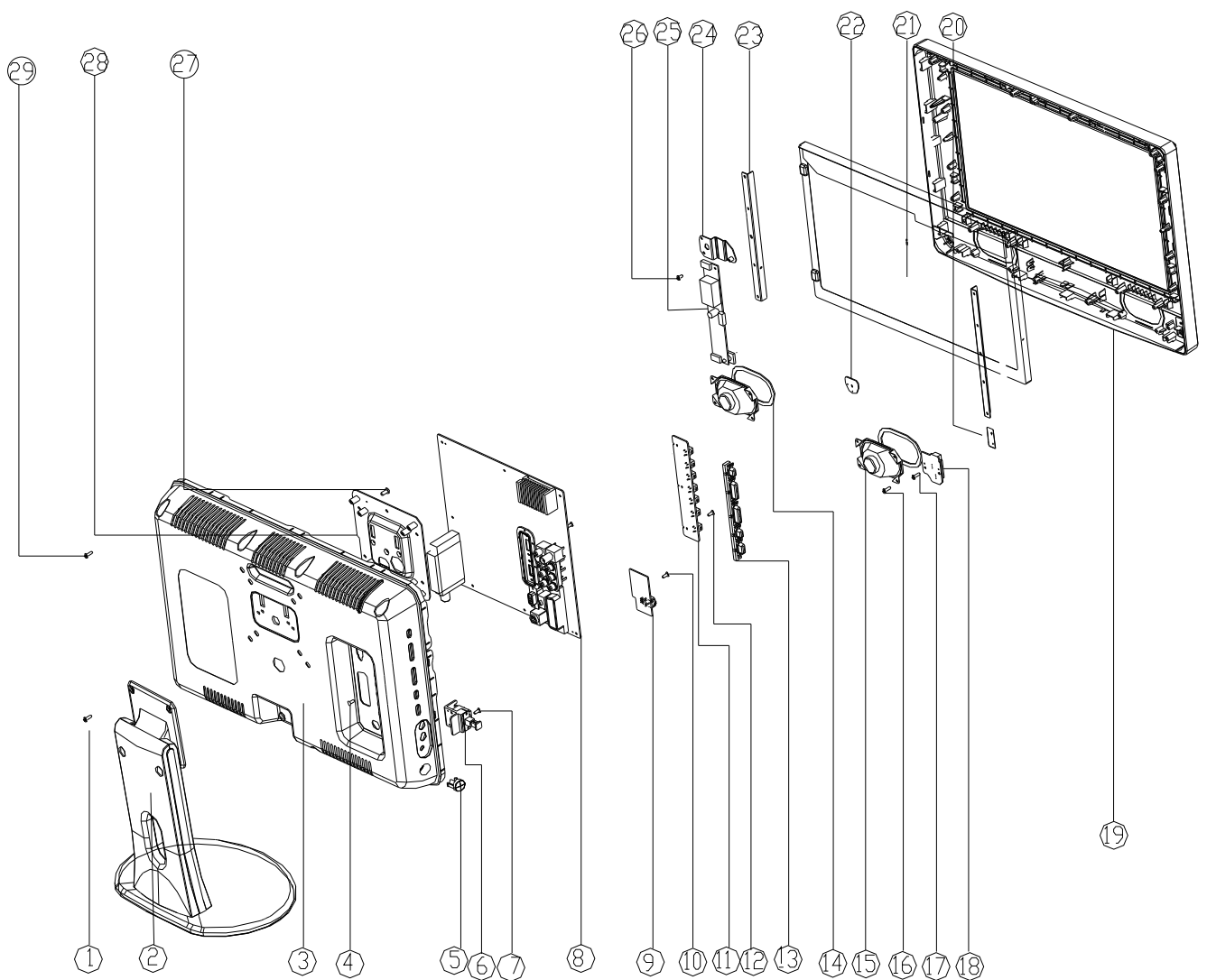


26. Data signal waveform diagram (RP601) outputted by U119 in DVB state



Chapter Four Block

Diagram of Play Disassembly and Explosion



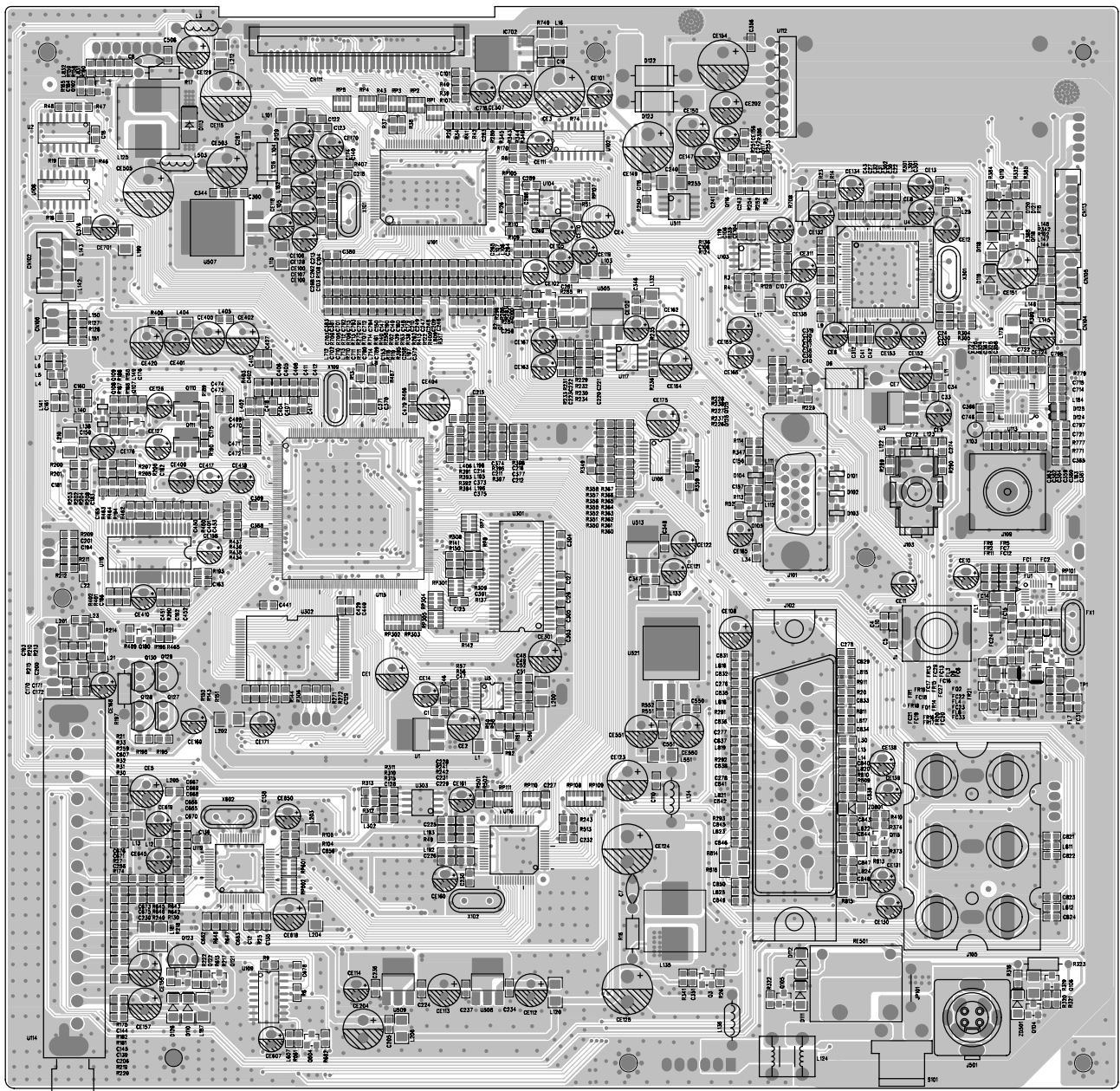
Serial number	Part number	Material name	Specification model	Quantity
1	3872910	support block of pedestal	LD1916DK(RU)	1
2	3076585	pedestal	LD1916DK(RU) black	1
3	3013304	rear case	LT1516D(RU) black	1
4	4000686	self-tapping screw	TB 3×8H black nickel(trigonodont)	2
5	3076722	power button	LD1916DK(RU) silvery gray	1
6	3074495	power switch bracket	LT1903 2#	1
7	4000686	self-tapping screw	TB 3×8H black nickel(trigonodont)	2
8	4942100	PCB main board	21901-4 LT1516D(RU)	1
9	4941497	headphone board	H1506-1 W153D(ICE)	1
10	4000686	self-tapping screw	TB 3×8H black nickel(trigonodont)	1
11	5449438	TV button board	41903-0 LT1900S(RU)	1
12	4000686	self-tapping screw	TB 3×8H black nickel(trigonodont)	1
13	3076721	function button	LD1916DK(RU) silvery gray	1
14	5236204	glue pad of loudspeaker	LD1906SI without glue on rear side	2
15	1100650	loudspeaker	3W 8Ω internal magnetism 71×41×25 LT1509-3	2
16	4000686	self-tapping screw	TB 3×8H black nickel(trigonodont)	8
17	4000686	self-tapping screw	TB 3×8H black nickel(trigonodont)	2
18	4942009	PCB semi-manufactured product	B1903-2 LD1916DK(RU)	1
19	3005945	front case	LT1516D(RU) black with cover board	1
20	3073597	remote control lens	LT1903 transparent	1
21	1210554	display screen component	M156B1-L01 15 inches TFT	1
22	3872296	screen block	LT1500S(RU)	1
23	3872947	display screen bracket	LD1516DK(RU)	2
24	3872411	light board bracket	LT1500S(RU) 2#	1
25	4942069	PCB semi-manufactured product	5INV1516-0 LD1516DK(RU)	1
26	4210165	machine-tapping screw	BM 3×5H white nickel	1
27	4000635	self-tapping screw	TB 4×10H white nickel	4
28	3872419	support board	LT1903 3#	1
29	4000096	self-tapping screw	BB 3×10 black	8

Chapter Cinque

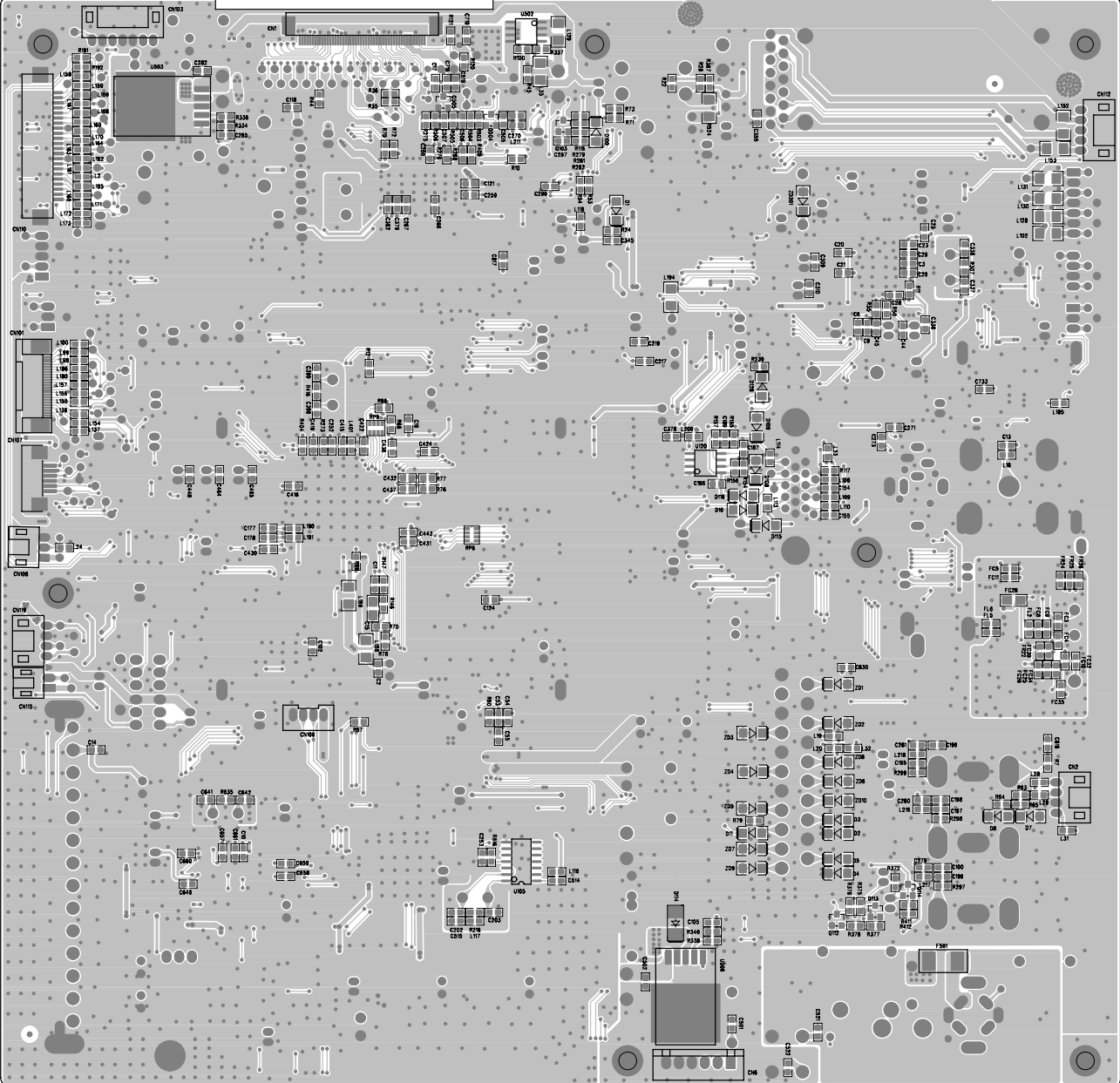
PCB Board&Circuit Diagram

Section One PCB Board

5.1.1 TOP layer of Main Board(21901-4)4942100

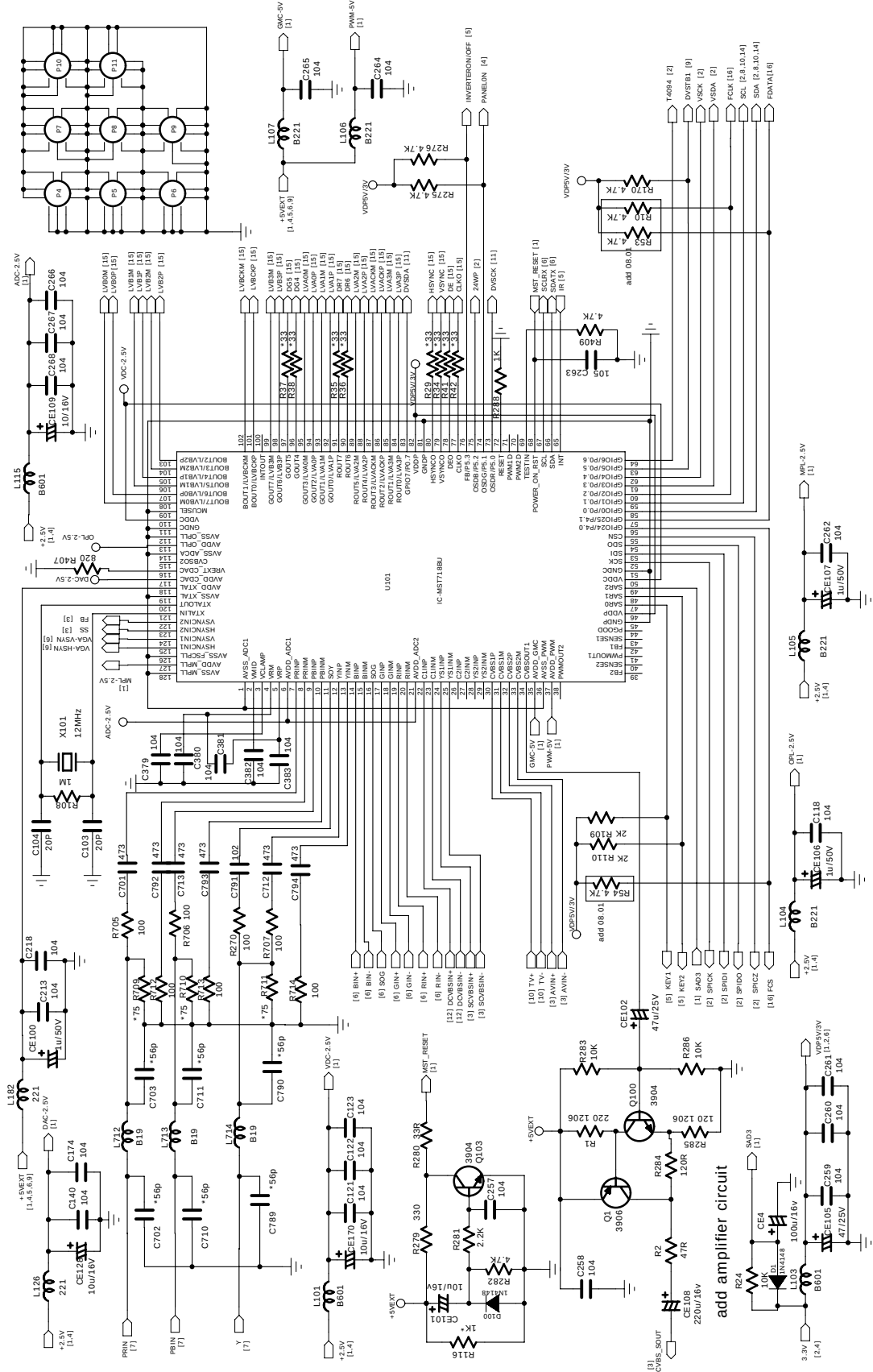


5.1.2 Bottom layer of Main Board(21901-4)4942100

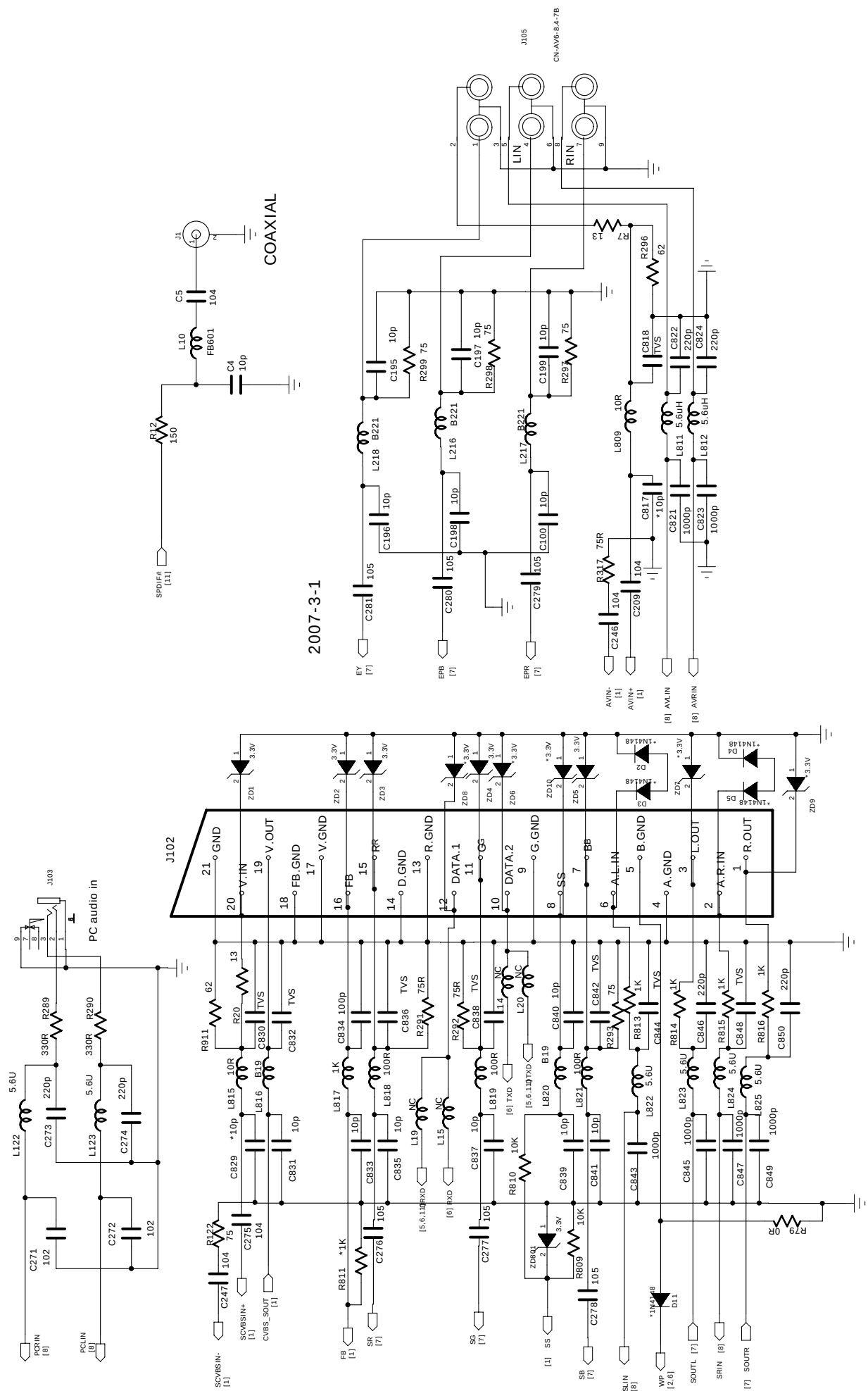


Section Two Circuit Diagram

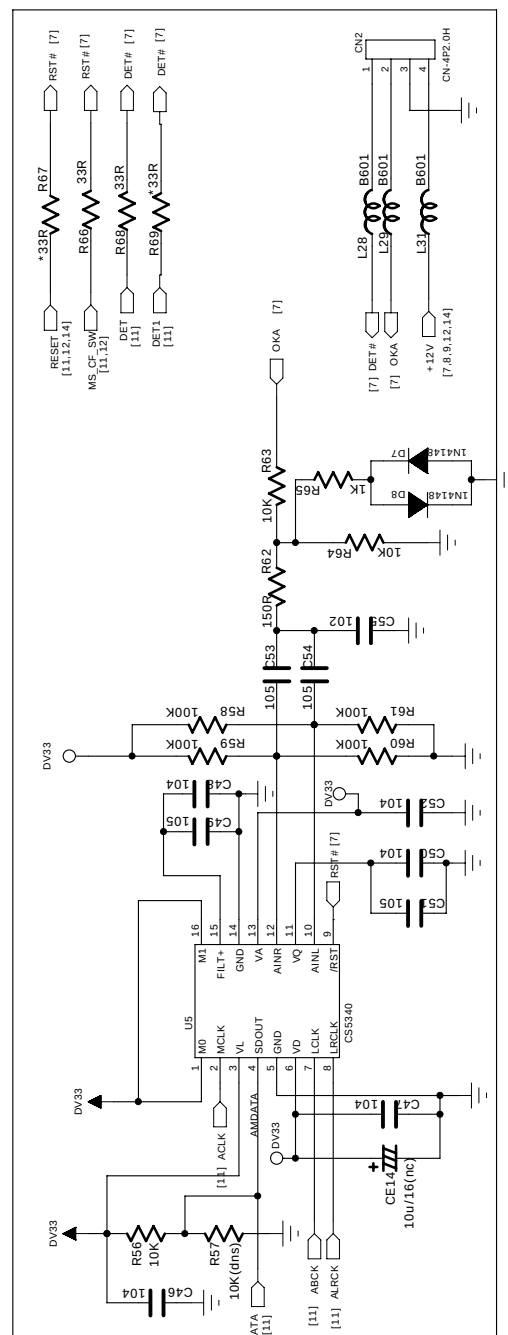
5.2.1 Main Board.





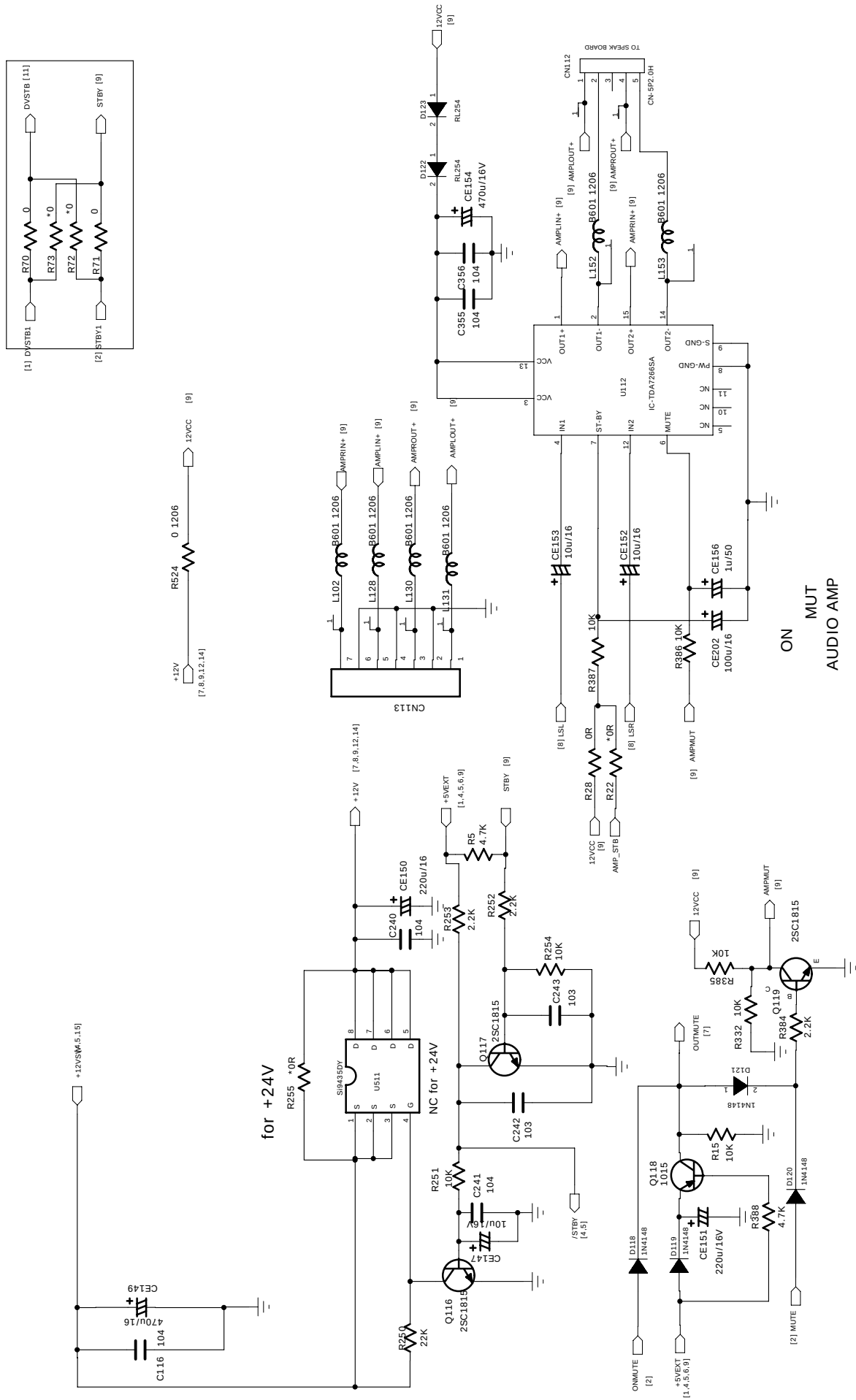


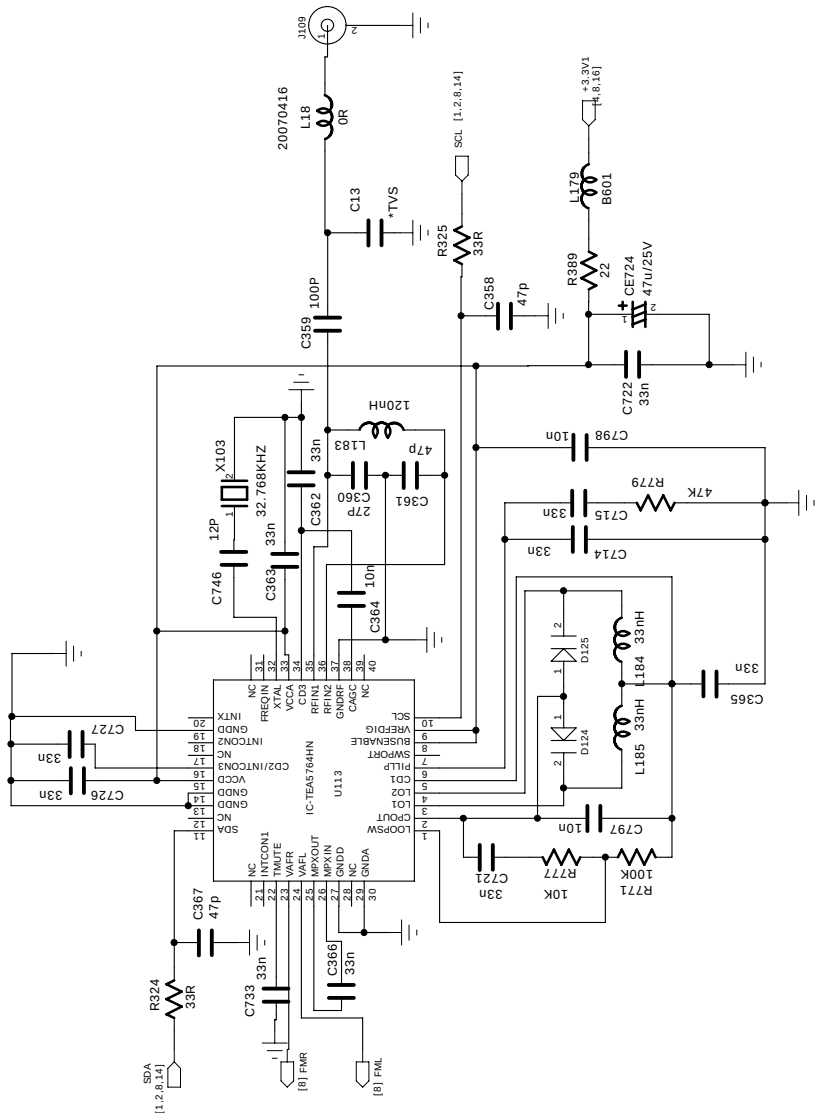
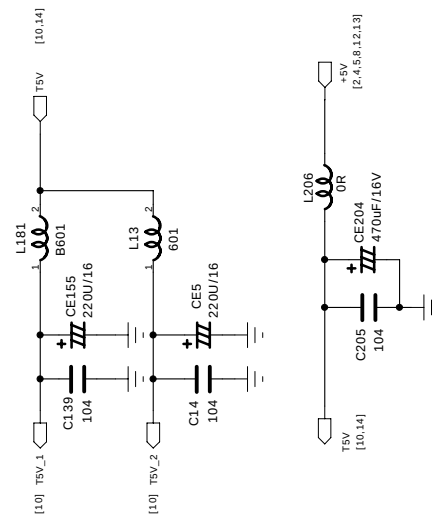




VS1	VS2	FUNCTION
0	0	NC&FMAUDIO
0	1	EYPBPR&VAUDIO
1	0	DYPBPR&DAUDIO
1	1	SRGB&SAUDIO

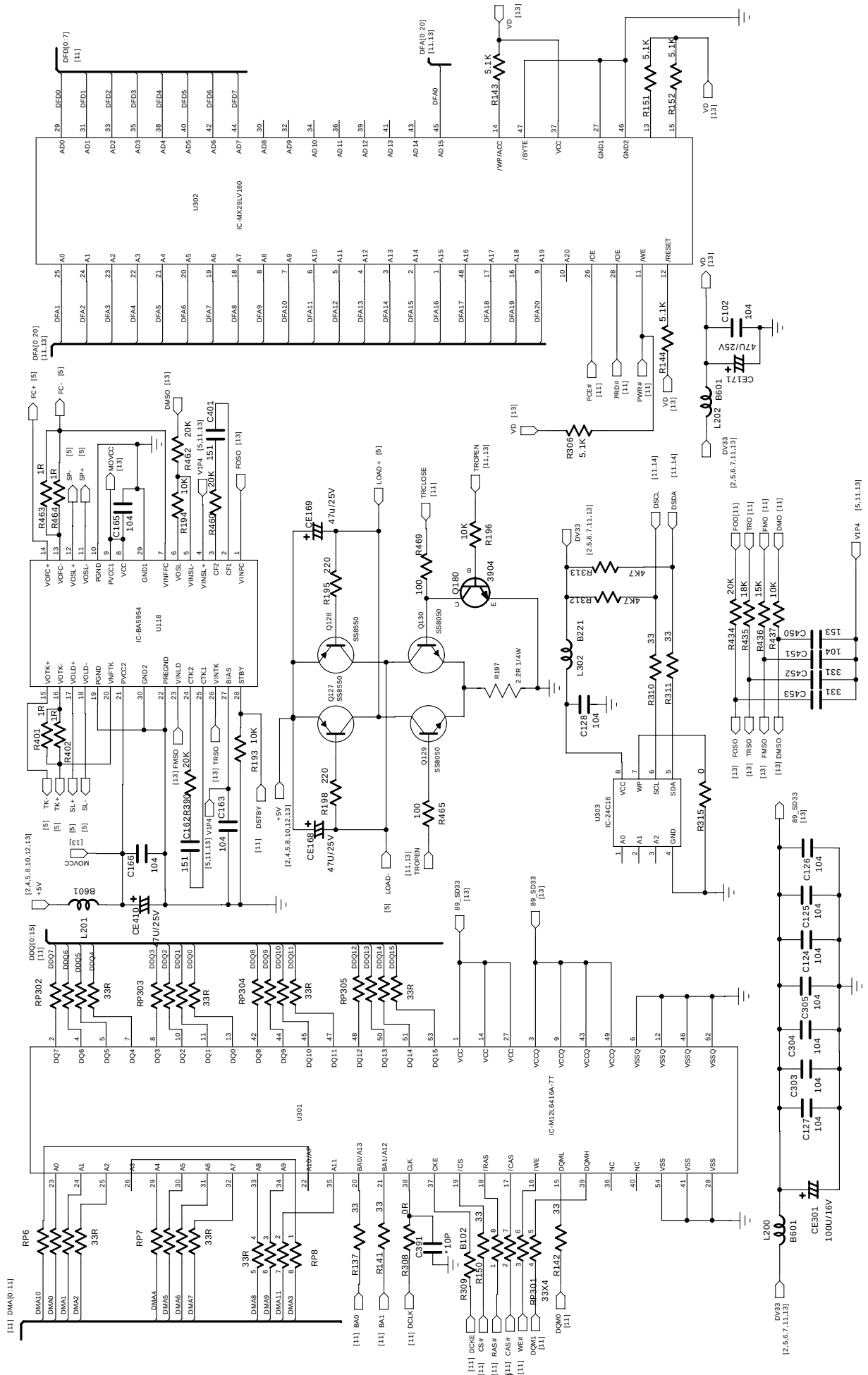


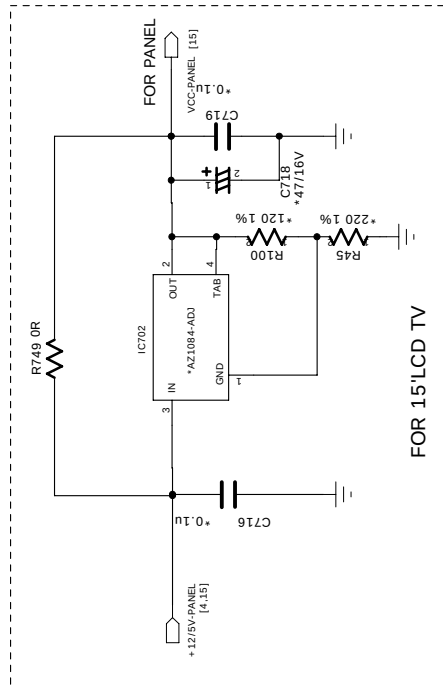
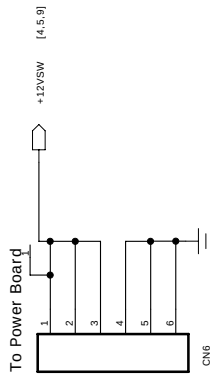












need swap with software

MST718 LVDS odd port and even port



Chapter Six BOM List

LT1516D(RU)SILVER

REMOTE CONTROL 5472265

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0090147	SMD RESISTOR	1/10W 1Ω±5% 0805	R801
0310048	SMD CAPACITOR	50V 151±5% NPO 0603	C802,C803
0630010	EMISSION PIPE	LTE-4206	LED801
0700001	SMD DIODE	LS4148	D801~D803
0780085	SMD TRIODE	8050D	Q801
0880220	IC	P2222 SOP	U801
0970003	CERAMIC RESONATOR	455E	X801
1631960	PCB	81703SRU-0	
3031118	SURFACE CASING OF REMOTE CONTROL	019-01 GREY	
3040813	REMOTE CONTROL BOTTOM CASING	019-01 GREY	
3050701	BATTERY CASE DOOR OF REMOTE CONTROL	019-01 GREY	
3850063	ANODE SPRING	019-01 3#	
3850064	CATHODE SPRING	019-01 3#	
3850065	ANODECATHODE SPRING	019-01 3#	
4631336	CONDUCT GLUE OF REMOTE CONTROL	1516D(RU)	
5070558	PLASTIC BAG	210×70×0.05 PE	PACK REMOTE CONTROL
5158288	SURFACE STICKER OF REMOTE CONTROL	1516D(RU)	

LT1516D(RU)SILVER

POWER ADAPTER 5471938

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
3031926	UPPER COVER OF POWER ADAPTER	@ 083 GREY UL	
3041430	LOWER COVER OF POWER ADAPTER	@083 GREY UL	
5449509	PCB SEMI-FINISHED PRODUCT	50833-0 083-3	

LT1516D(RU)SILVER

POWER BOARD @5AK0833-10 5471902

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0000390	CARBON FILM RESISTOR	1/6W270Ω±5%	R9
0020005	THREAD COIL NAUGHT INDUCTOR RESISTOR	3W0.39Ω±5%	R6
0090046	SMD RESISTOR	1/10W 470Ω±5% 0805	R16
0090050	SMD RESISTOR	1/10W 1K±5% 0805	R13,R18
0090057	SMD RESISTOR	1/10W 4.7K±5% 0805	R7
0090072	SMD RESISTOR	1/10W 39K±5% 0805	R4
0090171	SMD RESISTOR	1/8W 1K±5% 1206	R11
0090311	SMD RESISTOR	1/810Ω±5% 1206	R19
0090521	SMD RESISTOR	1/8W 510K±5% 1206	RA,RB
0090658	SMD RESISTOR	1/4W 10K±5% 1206	R21
0090661	SMD RESISTOR	1/4W 4.7Ω±5% 1206	R2,R3
0090718	PRECISION SMD RESISTOR	1/10W 4.32K±1% 0805	R17
0090719	PRECISION SMD RESISTOR	1/10W 12K±1% 0805	R10
0090720	PRECISION SMD RESISTOR	1/10W 4.75K±1% 0805	R15
0200205	PORCELAIN CAPACITOR	1000V 102±20% 5mm	C6
0200299	PORCELAIN CAPACITOR	1000V 471 +80%-20% SHAPED 7.5mm	C17
0200373	CERAMIC CAPACITOR	@CT7 250VAC 102 M 10 B420	C1,C2,C13
0210211	ANTI-JAMMING CAPACITOR	@MPX 2 275VAC 33415 VDE	C3
0260672	CD	CD288H 50V47U±20%6.3×11 2.5	TC05
0260727	CD	151 400V150U±20%18×35.5 7.5	TC1
0260769	CD	25V1000U±20% 10×20 5	TC2,TC3,TC4
0310101	SMD CAPACITOR	50V 101±5% NPO 0805	C11
0310144	SMD CAPACITOR	50V 104±10% 7R 0805	C16,C10,C8,C12
0310781	SMD CAPACITOR	100V 102±10% 7R 1206	C7
0390044	SMD INDUCTOR	10UH±10% 2012	R5
0410160	COMMON MODE CHOKE	VERTICAL 90UH 5A Φ9×Φ5×4	L3
0410211	COMMON MODE CHOKE	VERTICAL 22mH2AΦ18×Φ10×8 10	L2
0460648	SWITCH POWER TRANSFORMER	@PQ32-082 SJ	T01

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
05700149	DIODE	HER107 BELT	VD3,VD2,VD7
0570085	TVS DIODE	P6KE200A	R20
0620004	LIGHT-EMITTING DIODE	Φ3 GREEN	LED1
0670011	SILICON BRIDGE	GBU805 Y336	B1
0680089	SCHOTTKY DIODE	MBR20100CTON TO-220	VD4
0700123	SMD VOLTAGE REGULATOR DIODE	15V±5% 1/2W	VD6
0780197	SMD TRIODE	C1815	V1
0790051	SMD FIELD EFFECT TRANSISTOR	SP1180C3 PLASTIC SEALED TO-220	Q1
08824629	IC	AZ431AZ-A TO-92 BELT	U3
0883304	IC	NCP1377 SOP	U1
1050010	HEAT SENSITIVITY RESISTOR	NTC 3Ω(5A)±20% 10D 5	RT1
1080037	PHOTOELECTRIC COUPLER	@HS817 CQC	U2
1570246	PCB	@5 0833-10 CEM1 D1.6 SX C043	
1870069	POWER SOCKET	@2111-2-P7S GREY VDE	XS1
2100003	CONNENTION CORDS	Φ0.6 SHAPED 7.5mm	JP3
2100004	CONNENTION CORDS	Φ0.6 SHAPED 10mm	JP2
2100051	CONNENTION CORDS	Φ0.6 SHAPED 17.5mm	JP1
2140444	POWER CONNECTING WIRE	2P 1.2m 4P S TERMINAL,MAGNETISM RING,GREY	
2300071	FUSE	@3.15AL 250V WITH CANNULA,CQC	F1
3029748	LED BRACKET	H=15mm SPACE BETWEEN L=2.5mm BLACK	
3580252	HEAT RADIATION PIECE 1	083-3 2#	
3580253	HEAT RADIATION PIECE 2	083-3 2#	
4210151	MACHINE-TAPPING SCREW	B3×6H WHITE NICKEL	VD4,Q1
5120014	SILICONE GREASE HEAT CONDUCT OIL	LYCAL304	
5120635	WHITE GLUE	607	
5120642	GREY GLUE	608G	
5120749	GREEN GLUE	LOCTITE638	
5141757	VERSION LABEL	2.02 SQUARE WHITE	

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
5231003	SOFT SPONGE SPACER	10×10×8.5 DOUBLE-FACED,HARD	UNDER PCB BOARD
5232540	INSULATED PAD	19×13.2×0.3 HOLE ϕ 3.2	VD4
5232541	INSULATED SPACER SET	HOLE ϕ 3 WHITE 080	VD4
5237134	TEFLON CASING	ϕ 1.3	JP1

LT1516D(RU)SILVER

EARPHONE BOARD H1506-1 4941497

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0090135	SMD RESISTOR	1/8W 100 Ω ±5% 1206	R701,R702
0260200	CD	CD11C 16V47U±20%5×7 2	C705,C706
0310066	SMD CAPACITOR	50V 102±10% 7R 0603	C703,C704
0310195	SMD CAPACITOR	50V 221±10% 7R 0603	C701,C702
0390301	SMD MAGNETIC BEADS	600 Ω /100MHZ±25% 3216	L701,L702
1565204	PCB	H1506-1 HB D1.6 PX	
1940023	SOCKET	7P 2.0mm	CN701
1980061	EARPHONE SOCKET	C3.5-01K	J701
5141755	VERSION LABEL	2.00SQUARENESS WHITE	

LT1516D(RU)SILVER

RECEIVING BOARD OF REMOTE CONTROL B1903-3 4942009

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0090009	SMD RESISTOR	1/16W 330 Ω ±5% 0603	R801
0090013	SMD RESISTOR	1/16W 680 Ω ±5% 0603	R802,R803
0090014	SMD RESISTOR	1/16W 1K±5% 0603	R805
0090019	SMD RESISTOR	1/16W 4.7K±5% 0603	R804
0260515	CD	CD11K 16V10U±20%5×11 2	CE801
0620007	DUAL COLOR LIGHT-EMITTING DIODE	3RG 9HC-A COMMON CATHODE,RED GREEN	D801
0780197	SMD TRIODE	C1815	Q801,Q802
1565334	PCB	B1903-3 HB D1.6 SX	
1940141	SOCKET	4P 2.0mm STRAIGHT FLEX	CN801

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
2360002	IR SENSOR	HS0038B	S801
5141826	VERSION LABEL	3.01 SQUARE WHITE	
5236304	SOFT SPONGE SPACER	Φ8×Φ5×7 SINGLE-FACED,HARD	DUAL COLOR LIGHT EMITTING DIODE
5238189	SOFT SPONGE SPACER	6×6×2.5 DOUBLE-FACED SOFT	

LT1516D(RU)SILVER

MAIN BOARD 21901-4 4942100

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0000276	CARBON FILM RESISTOR	1/4W100Ω±5% SHAPED 10	R708
0090001	SMD RESISTOR	1/16W 0Ω±5% 0603	R80,R81,R84,R85,L8,R70,R71,R315,R347,R551,R135,R44,R28,R308,R27,R222,R39,R40,R107
0090003	SMD RESISTOR	1/16W 10Ω±5% 0603	L815,L809,R259,R516
0090005	SMD RESISTOR	1/16W 33Ω±5% 0603	R137,R141,R142,R150,R191,R192,R280,R309~R311,R104~R105
0090006	SMD RESISTOR	1/16W 75Ω±5% 0603	R117~R119,R122,R291~R293,R297~R299,R317,R391~R398,R400
0090008	SMD RESISTOR	1/16W 220Ω±5% 0603	R342,R345,R346,R51
0090009	SMD RESISTOR	1/16W 330Ω±5% 0603	R279,R289,R290
0090011	SMD RESISTOR	1/16W 470Ω±5% 0603	R375,R376
0090012	SMD RESISTOR	1/16W 560Ω±5% 0603	R466,R301
0090014	SMD RESISTOR	1/16W 1K±5% 0603	R811,L817,R226,R227,R237,R238,R288,R336,R338,R467,R130,R217,R220
0090017	SMD RESISTOR	1/16W 2.2K±5% 0603	R147,R252,R253,R281,R372,R373,R377,R378,R384,R504,R505,R22
0090018	SMD RESISTOR	1/16W 3.3K±5% 0603	R340,R249
0090019	SMD RESISTOR	1/16W 4.7K±5% 0603	R3,R4,R5,R6,R11,R26,R102,R156,R157,R170,R174,R232,R234,R275,R282,R312,R313,R343,R344,R388,R409,R136,R276,R25,R662,R647~R648
0090020	SMD RESISTOR	1/16W 5.1K±5% 0603	R143,R144,R151,R152,R306
0090023	SMD RESISTOR	1/16W 10K±5% 0603	R14,R15,R23,R24,R158,R160,R165,R231,R233,R239,R251,R254,R283,R286,R332,R385~R387,R503,R506,R809,R810,R146,R49,R241,R243,R502,R513,R661,R13,R613
0090024	SMD RESISTOR	1/16W 15K±5% 0603	R341,R403
0090026	SMD RESISTOR	1/16W 22K±5% 0603	R235,R236,R250,R337,R410,R412

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0090028	SMD RESISTOR	1/16W 33K±5% 0603	R374,R411,R219
0090034	SMD RESISTOR	1/16W 100K±5% 0603	R225,R228,R404,R416,R216
0090106	SMD RESISTOR	1/16W 4.7Ω±5% 0603	R406
0090109	SMD RESISTOR	1/16W 1MΩ±5% 0603	R108,R307
0090114	SMD RESISTOR	1/8W 0Ω±5% 1206	R524,L206,R749
0090125	SMD RESISTOR	1/8W 22Ω±5% 1206	R218
0090171	SMD RESISTOR	1/8W 1K±5% 1206	R813~R816
0090181	SMD RESISTOR	1/16W 100Ω±5% 0603	L818,L819,L821,R50,R55,R113,R114,R124,R125,R138~R140,R154,R155,R161~R163,R181,R182,R258,R262,R270,R304,R305,R413,R705~R707,R712~R714
0090183	SMD RESISTOR	1/16W 3K±5% 0603	R334
0090189	SMD RESISTOR	1/16W 30K±5% 0603	R229,R230
0090201	SMD RESISTOR	1/16W 220K±5% 0603	R348~R352,R355~R367
0090220	SMD RESISTOR	1/16W 51Ω±5% 0603	R645,R646
0090221	SMD RESISTOR	1/16W 120Ω±5% 0603	R284
0090223	SMD RESISTOR	1/16W 2K±5%	R109,R110
0090230	SMD RESISTOR	1/16W 47Ω±5% 0603	R2
0090232	SMD RESISTOR	1/16W 150Ω±5% 0603	R12
0090235	SMD RESISTOR	1/16W 820Ω±5% 0603	R407
0090249	SMD RESISTOR	1/16W 510Ω±5% 0603	R642,R643
0090286	SMD RESISTOR	1/16W 62Ω±5% 0603	R296,R911,R33
0090297	SMD RESISTOR	1/16W 12Ω±5% 0603	R7,R20,R21
0090319	PRECISION SMD RESISTOR	1/16W 750K±1% 0603	R273
0090538	SMD RESISTOR	1/4W 120Ω±5% 1206	R285
0090628	SMD RESISTOR	1/8W 220Ω±5% 1206	R1
0090745	PRECISION SMD RESISTOR	1/16W 220Ω±1% 0603	R10
0100005	SMD RESISTANCE NETWORK	1/16W4.7K±5% 0603×4 PROTRUDING	RP107
0100019	SMD RESISTOR NETWORKS	1/16W33Ω±5% 0603×4 PROTRUDING	RP1~RP3,RP301~RP305,RP6~RP8,RP601~RP602
0100020	SMD RESISTOR NETWORK	1/16W100Ω±5% 0603×4 CONCAVE	RP105

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0100034	SMD RESISTOR NETWORKS	1/16W 0Ω±5% 0603×4 8P	RP108~RP111
02605579	CD	C11T 16V100U±20%6×12 2.5 BELT	CE120,CE185,CE1,CE2,CE4,CE162,CE164,CE175,CE202,CE301,CE402,CE404,CE405,CE420,CE618,CE112~CE113,CE157
02605589	CD	C11T 25V470U±20%10×16 5 BELT	CE204,CE115,CE124,CE125,CE149,CE154,CE505,CE507
02605839	CD	C11T 16V220U±20%6×12 2.5 BELT	CE7,CE5,CE108,CE129,CE150,CE155,CE550,CE551,CE503
02606869	CD	C11T 25V220U±20%8×12 C5 BELT	CE123,CE151
02607869	CD	C11C 16V22U±20%4×7 C2.5 BELT	CE147,CE160,CE161
02608259	CD	CD11T 25V10U±10%5×11 C2.5 BELT	CE8,CE101,CE109,CE128,CE130,CE131,CE135,CE138,CE139,CE152,CE153,CE156,CE163,CE165~CE167,CE170,CE311,CE401,CE645,CE650,CE100,CE106,CE107,CE134,CE15
02608269	CD	C11T 16V47U±20%5×11 C2.5 BELT	CE6,CE9,CE12,CE13,CE102,CE104,CE105,CE110,CE111,CE118,CE119,CE121,CE122,CE132,CE158,CE171,CE409,CE417,CE418,CE607,CE619,CE114
0310045	SMD CAPACITOR	50V 47P±5% NPO 0603	C641
0310047	SMD CAPACITOR	50V 101±5% NPO 0603	C187,C189,C220,C221,C301,C834
0310049	SMD CAPACITOR	50V 221±5% NPO 0603	C273,C274,C846,C850
0310052	SMD CAPACITOR	50V 391±5% NPO 0603	C252
0310055	SMD CAPACITOR	16V 333±10% 7R 0603	C6,C9,C44,C45,C406
0310056	SMD CAPACITOR	16V 473±10% 7R 0603	C147~C150,C179,C180,C190,C411,C412,C701,C712,C713,C792~C794
0310066	SMD CAPACITOR	50V 102±10% 7R 0603	C105,C222,C223,C271,C272,C285,C407,C791,C821,C823,C843,C845,C847,C849,C665~C666
0310068	SMD CAPACITOR	50V 222±10% 7R 0603	C418
0310072	SMD CAPACITOR	50V 103±10% 7R 0603	C242,C243,C302,C506,C507
0310085	SMD CAPACITOR	50V 20P±5% NPO 0603	C103,C104,C330,C331,C337,C338,C408
0310188	SMD CAPACITOR	50V 10P±5% NPO 0603	C4,C100,C153~C157,C195~C199,C831,C833,C835,C837,C839,C840,C841,C673,C675
0310190	SMD CAPACITOR	50V 27P±5% NPO 0603	C398,C399,C202~C203
0310191	SMD CAPACITOR	50V 30P±5% NPO 0603	C642

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0310201	SMD CAPACITOR	50V 153±10% 7R 0603	C417
0310234	SMD CAPACITOR	16V 105 +80%-20% Y5V 0603	C35~C42,C210,C212,C216,C249,C263,C276~C281,C377,C416,C206
0310326	SMD CAPACITOR	50V 121±5% NPO 0603	C208,C211,C214,C215,C372~C375
0310362	SMD CAPACITOR	16V474 +80%-20% Y5V 0603	C413,C667
0310389	SMD CAPACITOR	10V 106 +80%-20% Y5V 0805	C370,C371,C15
0310594	SMD CAPACITOR	25V 104±10% 0603	C1,C2,C3,C5,C14,C20~C26,C28~C30,C32~C34,C51,C101,C102,C106,C110,C116,C118,C121~C128,C139,C140,C174,C177,C178,C184,C186,C205,C209,C213,C217~C219,C240,C241,C246,C247,C248,C257~C262,C264~C270,C275,C282,C287,C300,C303~C305,C309,C310,C312,C319,C336,C344~C348,C355,C356,C368,C369,C378~C383,C402,C404,C405,C415,C419,C422,C424,C427,C429~C432,C436,C437,C440,C441,C443,C448,C464,C465,C479,C501,C502,C505,C508,C519,C521,C522,C550~C551,C607,C10,C12,C135~C136,C138,C225~C232,C239,C646,C656~C663,C668~C671,C676,C678,C224,C234,C236~C237,C514 ①
0310543	SMD CAPACITOR	50V 104±10% 7R 0603	C1,C2,C3,C5,C14,C20~C26,C28~C30,C32~C34,C51,C101,C102,C106,C110,C116,C118,C121~C128,C139,C140,C174,C177,C178,C184,C186,C205,C209,C213,C217~C219,C240,C241,C246,C247,C248,C257~C262,C264~C270,C275,C282,C287,C300,C303~C305,C309,C310,C312,C319,C336,C344~C348,C355,C356,C368,C369,C378~C383,C402,C404,C405,C415,C419,C422,C424,C427,C429~C432,C436,C437,C440,C441,C443,C448,C464,C465,C479,C501,C502,C505,C508,C519,C521,C522,C550~C551,C607,C10,C12,C135~C136,C138,C225~C232,C239,C646,C656~C663,C668~C671,C676,C678,C224,C234,C236~C237,C514 ①
0310723	SMD CAPACITOR	16V 224±10% 7R 0603	C31
0390052	MAGNETIC BEADS INDUCTOR	FB	L3,L134,L136,L503
0390095	SMD MAGNETIC BEADS	FC160822105	L9,L11,L25~L27,L104~L107,L118,L119,L126,L145~L148,L37,L38,L182,L190,L209,L211,L216~L218,L302,L401,L402,L406,L831,L832,L12,L192~L193,L205,L607,L116
0390096	SMD INDUCTOR	1.8UH±10% 1608	L195~L198
0390170	SMD INDUCTOR	10UH±10% 1608	L301

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0390286	SMD INDUCTOR	5.6uH±10% 1608	L122,L123,L811~L812,L822~L825
0390287	SMD MAGNETIC BEADS	19Ω/100mHZ±25% 1608	L108~L110,L712~L714,L816,L820
0390300	SMD MAGNETIC BEADS	600Ω/100MHZ±25% 1608	L14,L15,L10,L111~L114,L191
0390301	SMD MAGNETIC BEADS	600Ω/100MHZ±25% 3216	L1,L101,L103,L115,L132,L133,L144,L188,L189,L194,L200,L202,L17,L203~L204
0390355	SMD INDUCTOR	4.7UH±10% 1608	L405
0390385	SMD INDUCTOR	22uH±10% 2012	L404
0390446	SMD MAGNETIC BEADS	600Ω/100MHZ±25% 1A 3216	L40,L13,L35,L129,L551,L181,L142,L102,L120,L128,L130,L131,L152,L153,L212,L187
0390529	SMD CORES INDUCTOR	47uH ±20% CDH129	L125,L135
0410160	COMMON MODE CHOKE	VERTICAL 90UH 5A Φ9×Φ5×4	L124
0570019	DIODE	0000254	D6,D122,D123,D129
0680028	SMD SCHOTTKY DIODE	MBRS340	D113,D114
0700001	SMD DIODE	LS4148	D11,D1,D10,D100,D108,D109,D115,D116,D118~D121,D128,D110,D126,D2~D5,D12~D15
0700064	SMD TRIODE	B991 SO23	D101~D105,D37
0700147	SMD VOLTAGE REGULATOR DIODE	8.2V±5% 1/2W	ZD301
0700148	SMD VOLTAGE REGULATOR DIODE	3.3V±5% 1/2W	ZD1~ZD5,ZD801
0780040	SMD TRIODE	3904(100-300) SO23	Q100,Q103,Q114,Q115
0780041	SMD TRIODE	3906(100-300) SO23	Q1
07800499	TRIODE	S8550D BELT	Q123
0780197	SMD TRIODE	C1815	Q3,Q102,Q112,Q113,Q116,Q117,Q119,Q125,Q126,Q504~Q505,Q604,Q121
0780198	SMD TRIODE	2S1015	Q118,Q122
0790097	FIELD EFFECT TRANSISTOR	AO4419 SO8	U511,U502
0880165	IC	74HCU04D SOP	U105
0880504	IC	24C32N SOP	U103
0880768	IC	C4558 SOP	U117
0881388	IC	24C16 SOP	U303
0881992	IC	HC4053M SOIC	U109

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0882655	IC	74HC4053D SOP	
0882472	IC	AZ1084S-3.3 TO-263	U521
0882485	IC	AZ11173.3 SO223	U505,U513,U508
0882644	IC	MT1389FE/HD(HD EDITION) QFP	U115
0882756	IC	HE4094BT SOP	U102
0882883	IC	FS433 TSSOP	U106
0883069	IC	AZ11171.8 SO223	U1,U3,U509
0883122	IC	PN2020AT QFP	U119
0883166	IC	8606 LQFP	U116
0883189	IC	MS718BE PQFP	U101
0883191	IC	7266SA ZIP	U112
0883323	IC	AP1506Adj TO263-5L	U503,U506
0883480	IC	AZ1084S-2.5Z TO-263	U507
0883532	IC	HY57V641620FTP-7 SOP	U301
0883808	IC	STV8317F TQFP	U4
0900524	SOFTWARE PROGRAM EPROM	ROM1516DRU-0B(2M)	U104
0900525	SOFTWARE PROGRAM EPROM	ROM1516DK-0C(128B)	U120
0912160	PROGRAM FLASH	ROM1516DRU-0A(16M)	U302
0960019	CRYSTAL OSCILLATOR	12.00MHz 49-S	X101
0960020	CRYSTAL OSCILLATOR	27.00MHz 49-S	X109,X301,X102
0960277	CRYSTAL OSCILLATOR	20.48MHz±30PPM 49-S 20P	X602
1020097	TUNER	DTTX-5A1/L125	U114
1030027	SMD PRESS SENSITIVITY RESISTOR	SFI0603ML080C	C822,C824
1030036	SMD PRESS SENSITIVITY RESISTOR	S1608E180C600NPT 0603	C836,C838,C842,C830,C832,C844,C848,C818
1635193	PCB	21901-4 FR4 D1.6 PX	
1860054	VGA SOCKER	15P VERTICAL,WITH BOLT	J101
1860060	SCART SOCKET	102 STRAIGHT INSERT	J102
1910163	TERMINAL SOCKET	S TERMINAL D34 STRAIGHT INSERT	J501

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
1910269	TERMINAL SOCKET	1-8.4-7 BLACK	J1
1910277	TERMINAL SOCKET	AV6-8.3-03PB2 STRINGHT INSERT WITH SHIELD	J105
1940142	SOCKET	2P 8.0mm STRAIGHT FLEX	S101
1940160	SOCKET	5P 2.0mm STRAIGHT FLEX	CN112
1940209	SOCKET	7P 2.0mm RIGHANGLE	CN103
1940210	SOCKET	30P 1.25mm SMD	CN111
1980114	EARPHONE SOCKET	ST-417NB-060-100STRINGHT INSERT ,WITH CUPRUM COVER	J103
2100003	CONNETION CORDS	Φ0.6 SHAPED 7.5mm	JP101
2122610	FLAT CABLE	3P70 2.0 2 PIN, WITH L NEEDLE, THE SAME DIRECTION	DECODE BOARD: CN104, TV BUTTON BOARD: CN401
2122661	FLAT CABLE	4P440 2.0 2 PIN, WITH NEEDLE, REVERSE	DECODE BAORD: CN105, RECEIVING BOARD OF REMOTE CONTROL: CN801
2122846	FLAT CABLE	7P205 2.0 T2 WITH NEEDLE, REVERSE	DECODE BOARD: CN113, MIC BOARD: CN701
2300031	SMD FUSE	F7A 125V	F501
3580257	HEAT RADIATION PIECE	13×13×10 2#	8317,718 HEAT RADIATION SHEET
3580264	HEAT RADIATION PIECE	1903 WHITE	IC7266 HEAT RADIATION SHEET
3871722	IC PRESSING PIECE	168	IC7266 PREFORM
4210185	MACHINE-TAPPING SCREW	BM 3×8H BLACK	IC7266 PREFORM SCREW
5120803	SOLIDIFY SILICON RUBBER	GO-1715-1	8317,718 HEAT RADIATION SHEET
5143212	VERSION LABEL	E.01 SQUARENESS,WHITE	

LT1516D(RU)SILVER

TV BUTTON BOARD 41903-0 5449438

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
00001609	CARBON FILM RESISTOR	1/4W0Ω±5%BELT	R401,R405
00001859	CARBON FILM RESISTOR	1/4330Ω±5% BELT	R402,R406
00001889	CARBON FILM RESISTOR	1/4470Ω±5% BELT	R403,R407
00001959	CARBON FILM RESISTOR	1/41K±5% BELT	R408
1340064	LIGHT TOUCH RESTORE SWITCH	KFC-06-2WB L3.8	SW401~SW407
1564583	PCB	41903-0	
1940026	SOCKET	3P 2.0mm	CN401

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
5140257	VERSION LABEL	2.0 SQUARE	

LT1516D(RU)SILVER

INVERTER COMPONENTS @5INV1516-0 4942069

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0090003	SMD RESISTOR	1/16W 10Ω±5% 0603	R23,R24
0090014	SMD RESISTOR	1/16W 1K±5% 0603	R37,R38
0090023	SMD RESISTOR	1/16W 10K±5% 0603	R17,R18,R11,R14
0090025	SMD RESISTOR	1/16W 20K±5% 0603	R1,R2,R5,R25,R21,R27,R33,R34
0090027	SMD RESISTOR	1/16W 27K±5% 0603	R8,R16,R19
0090033	SMD RESISTOR	1/16W 91K±5% 0603	R9
0090034	SMD RESISTOR	1/16W 100K±5% 0603	R22
0090050	SMD RESISTOR	1/10W 1K±5% 0805	R28,R29
0090192	SMD RESISTOR	1/16W 51K±5% 0603	R13,R4
0090193	SMD RESISTOR	1/16W 82K±5% 0603	R20
0090197	SMD RESISTOR	1/16W 150K±5% 0603	R12,R3
0090201	SMD RESISTOR	1/16W 220K±5% 0603	R10
0090211	SMD RESISTOR	1/16W 680K±5% 0603	R15
0090258	SMD RESISTOR	1/16W 560K±5% 0603	R6
0200394	PORCELAIN CAPACITOR	3000V 10P±0.5P 7.5mm	C19,C21
0260696	CD	CD288 25V 220U±20% 8×12 C5	C1
0310037	SMD CAPACITOR	50V 104±20% 0805	C2
0310072	SMD CAPACITOR	50V 103±10% 7R 0603	C9,C12
0310196	SMD CAPACITOR	50V 471±10% 0603	C10
0310207	SMD CAPACITOR	50V 104 ±20% 7R 0603	C4 ②
0310543	SMD CAPACITOR	50V 104±10% 7R 0603	C4 ②
0310256	SMD CAPACITOR	50V 683±20% 7R 0603	C8
0310483	SMD CAPACITOR	10V 105±10% 5R 0603	C3
0310658	SMD CAPACITOR	25V 105±10% 7R 0805	C11,C14,C13

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0310756	SMD CAPACITOR	16V 106 +80%-20% Y5V 0805	C6
0310839	SMD CAPACITOR	16V 106±10% 5R 1206	C15,C16
0310937	SMD CAPACITOR	100V 392 K 7R 0603	C7,C20,C22
0460631	INVERSION TRANSFORMER	@EEL19-203 SJ	T1
0700167	SMD DUAL DIODE	B56 SO23	D1,D2,D4
0700168	SMD DUAL DIODE	B70 SO23	D3
0780040	SMD TRIODE	3904(100-300) SO23	Q3
0780041	SMD TRIODE	3906(100-300) SO23	Q1
0790044	SMD FIELD EFFECT TRANSISTOR	27002E SO23	Q2
0790106	SMD FIELD EFFECT TRANSISTOR	AO4822 SO8	Q4
0883192	IC	1008 TSSOP	U1
1635194	PCB	@5 1516-0 FR4 D1.6 PX C039	
1940209	SOCKET	7P 2.0mm RIGHANGLE	CN1
1940364	SOCKET	2P 3.5mm SMD	CN2,CN3
2300070	SMD FUSE	@5A 32V 1206 UL	F1
3540206	LIGHT BOARD SCREEN-SHIELDED MANTLE	1506SI	
5120635	WHITE GLUE	607	OUTPUT HIGH VOLTAGE TERMINAL CN2、CN3 AND PCB PLACES, OUTPUT HIGH VOLTAGE CAPACITOR C19, C21, INVERTING TRANSFORMER OUTPUT TERMINAL
5141757	VERSION LABEL	2.02 SQUARE WHITE	

LT1516D(RU)SILVER

SOFTWARE PROGRAM EPROM 0900525

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0882153	IC	LC21A SOIC	

PROGRAM FLASH 0912160

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0882923	IC	EN29LV160AB-70TCP TSOP	U302 ③
08828378	IC	KH29LV160CBTC-70 TSOP\$	U302 ③

SOFTWARE PROGRAM EPROM 0900524

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	LOCATION
0883190	IC	PM25LV020 SOP	U104