



LCD TV
Service Manual

**MODEL:
LCT-37CH01ST**

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IMPORTANT SAFETY PRECAUTIONS

Electricity is used to perform many useful functions, but it can also cause personal injuries and property damage if improperly handled. This product has been engineered and manufactured with the highest priority on safety. However, improper use can result in electric shock and/or fire. In order to prevent potential danger, please observe the following instructions when installing, operating and cleaning the product. To ensure your safety and prolong the service life of your LCD colour TV product, please read the following precautions carefully before using the product.

1. Read instructions—All operating instructions must be read and understood before the product is operated.
2. Keep this manual in a safe place—These safety and operating instructions must be kept in a safe place for future reference.
3. Observe warnings—All warnings on the product and in the instructions must be observed closely.
4. Follow instructions—All operating instructions must be followed.
5. Attachments—Do not use attachments not recommended by the manufacturer. Use of inadequate attachments can result in accidents.
6. Power source—This product must operate on a power source specified on the specification label. If you are not sure of the type of power supply used in your home, consult your dealer or local power company.
7. AC cord protection—The AC cords must be routed properly to prevent people from stepping on them or objects from resting on them. Check the cords at the plugs and product.
8. Overloading—Do not overload AC outlets or extension cords. Overloading can cause fire or electric shock.
9. Entering of objects and liquids—Never insert an object into the product through vents or openings. High voltage flows in the product, and inserting an object can cause electric shock and/or short internal parts. For the same reason, do not spill water or liquid on the product.
10. Servicing—Do not attempt to service the product yourself. Removing covers can expose you to high voltage and other dangerous conditions. Request a qualified service person to perform servicing.
11. Repair—If any of the following conditions occurs, unplug the AC cord from the AC outlet, and request a qualified service person to perform repairs.
 - a. When the AC cord or plug is damaged.
 - b. When a liquid was spilled on the product or when objects have fallen into the product.
 - c. When the product has been exposed to rain or water.
 - d. When the product does not operate properly as described in the operating instructions.
Do not touch the controls other than those described in the operating instructions. Improper adjustment of controls not described in the instructions can cause damage, which often requires extensive adjustment work by a qualified technician.
 - e. When the product has been dropped or damaged.
 - f. When the product displays an abnormal condition. Any noticeable abnormality in the product indicates that the product needs servicing.
12. Replacement parts—In case the product needs replacement parts, make sure that the service person uses replacement parts specified by the manufacturer, or those with the same characteristics and performance as the original parts. Use of unauthorized parts can result in fire, electric shock and/or other danger.
13. Safety checks—Upon completion of service or repair work, request the service technician to perform safety checks to ensure that the product is in proper operating condition.
14. Wall or ceiling mounting—When mounting the product on a wall or ceiling, be sure to install the product according to the method recommended by the manufacturer.

- **Cleaning**—Unplug the AC cord from the AC outlet before cleaning the product. Use a damp cloth to clean the product. Do not use liquid cleaners or aerosol cleaners.



- **Water and moisture**—Do not use the product near water, such as bathtub, washbasin, kitchen sink, laundry tub, swimming pool and in a wet basement.



- Do not place vases or any other water-filled containers on this product. The water may spill onto the product causing fire or electric shock.



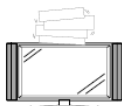
- **Stand**—Do not place the product on an unstable cart, stand, tripod or table. Doing so can cause the product to fall, resulting in serious personal injuries as well as damage to the product. Use only a cart, stand, tripod, bracket or table recommended by the manufacturer or sold with the product. When mounting the product on a wall, be sure to follow the manufacturer's instructions. Use only the mounting hardware recommended by the manufacturer.



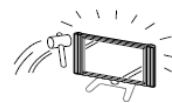
- When relocating the product placed on a cart, it must be moved with utmost care. Sudden stops, excessive force and uneven floor surface can cause the product to fall from the cart.



- **Ventilation**—The vents and other openings in the cabinet are designed for ventilation. Do not cover or block these vents and openings since insufficient ventilation can cause overheating and/or shorten the life of the product. Do not place the product on a bed, sofa, rug or other similar surface, since they can block ventilation openings. This product is not designed for built-in installation; do not place the product in an enclosed place such as a bookcase or rack, unless proper ventilation is provided or the manufacturer's instructions are followed.



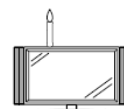
- The LCD panel used in this product is made of glass. Therefore, it can break when the product is dropped or impact applied. If the LCD panel is broken be careful not to be injured by broken glass.



- **Heat sources**—Keep the product away from heat sources such as radiators, heaters, stoves and other heat-generating products (including amplifiers).



- To prevent fire, never place any type of candle or naked flames on the top or near the TV set.



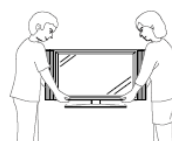
- To prevent fire or shock hazard, do not place the AC power cord under the TV set or other heavy items.



The LCD panel is a very high technology product with 3,147,264 thin film transistors, giving you fine picture details. Due to the very large number of pixels, occasionally a few non-active pixels may appear on the screen as a fixed point of blue, green or red. This is within product specifications and does not constitute a fault.

Precautions when transporting the TV

When transporting the TV, never carry it by holding onto the speakers. Be sure to always carry the TV by two people holding it with two hands—one hand on each side of the TV.



SPECIFICATION

Item	Specification
Color System	PAL, SECAM
Sound System	D/K, I, B/G, L/L'
VGA mode supported	VGA/SVGA/XGA/WXGA (60Hz)
COMPONENT mode supported	480i, 480p, 576i, 576p, 720p, 1080i
HDMI mode supported	Including VGA mode and signal with high definition, namely, VGA/SVGA/XGA/WXGA (60Hz), 480i, 480P, 576i, 576P, 720P, 1080i
Audio Output Consumption	2x5W
Headphone Output	1 line
SCART input	2 lines
AV input	1 line
SVIDEO	1 line (SVIDEO and AV can not be inputted at same time)
COMPONENT input	1 line
VGA input	1 line
HDMI input	1 line
Voltage Input	Please refer to the back label
Rated Power Consumption	
Standby Power Consumption	≤2W

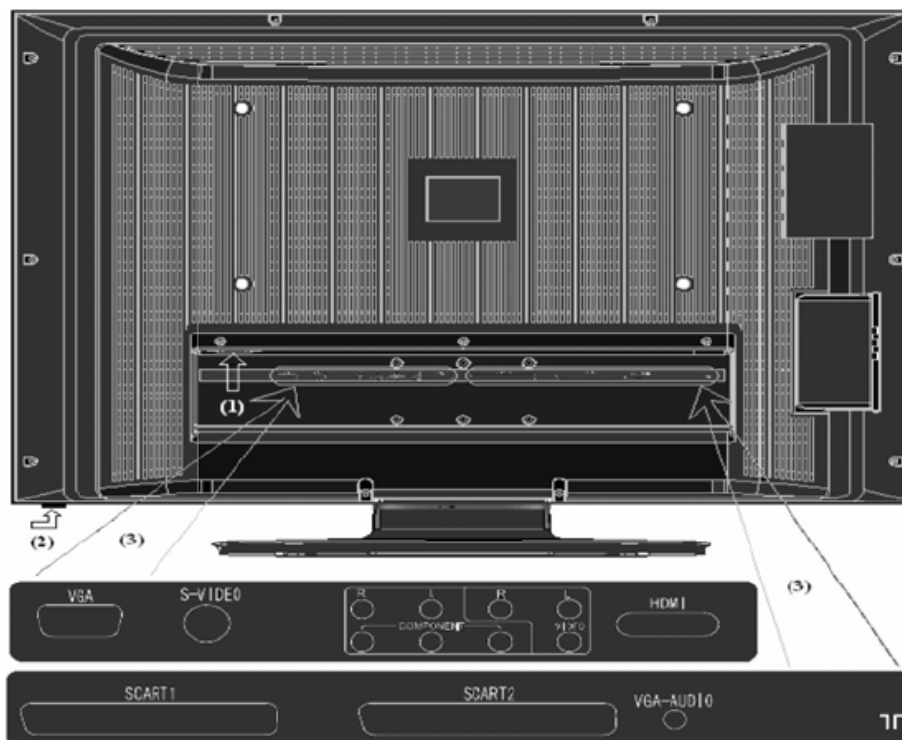
APPEARANCE & FUNCTION CONTROL



No.	NAME	DESCRIPTION
①	<MENU>	Open the menu switch among the menus
②	<TV / AV>	To switch among the signal source of TV, SCART1, SCART2, AV, S-VIDEO, COMPONENT, VGA and HDMI
③	<VOL+>	To increase the sound volume , Adjust functions in menu operation.
④	<VOL->	To decrease the sound volume, Adjust functions in menu operation.
⑤	<CH+>	1. In TV mode, increase channel number 2. To select functions in menu operation
⑥	<CH->	1. In TV mode, decrease channel number 2. To select functions in menu operation
⑦		Enter or leave the standby mode, same as on the remote control.
(1)	Headphone Output	Port for headphone audio output
(2)	Infrared Receiver Window	To receive the signal from remote control
(3)	Power Indicator	Red indicator lighting, this means the TV is in standby mode; Red indicator (lighting for 10 seconds) and yellow indicator (lighting for 5 seconds) by times, this means the TV is in standby mode and the time to turning on the TV is set; Green indicator lighting this means the TV is in normal working condition; Green indicator (lighting for 10 seconds) and Red indicator (lighting for 5 seconds) by turns, this means the TV is in normal mode with setting time to turning off or setting the sleeping TV off mode.

Notice: In this manual, the icon with "< >" means the button on the remote control, the icon with "[]" mean the button on the LCD TV.

REAR SIDE OF LCD



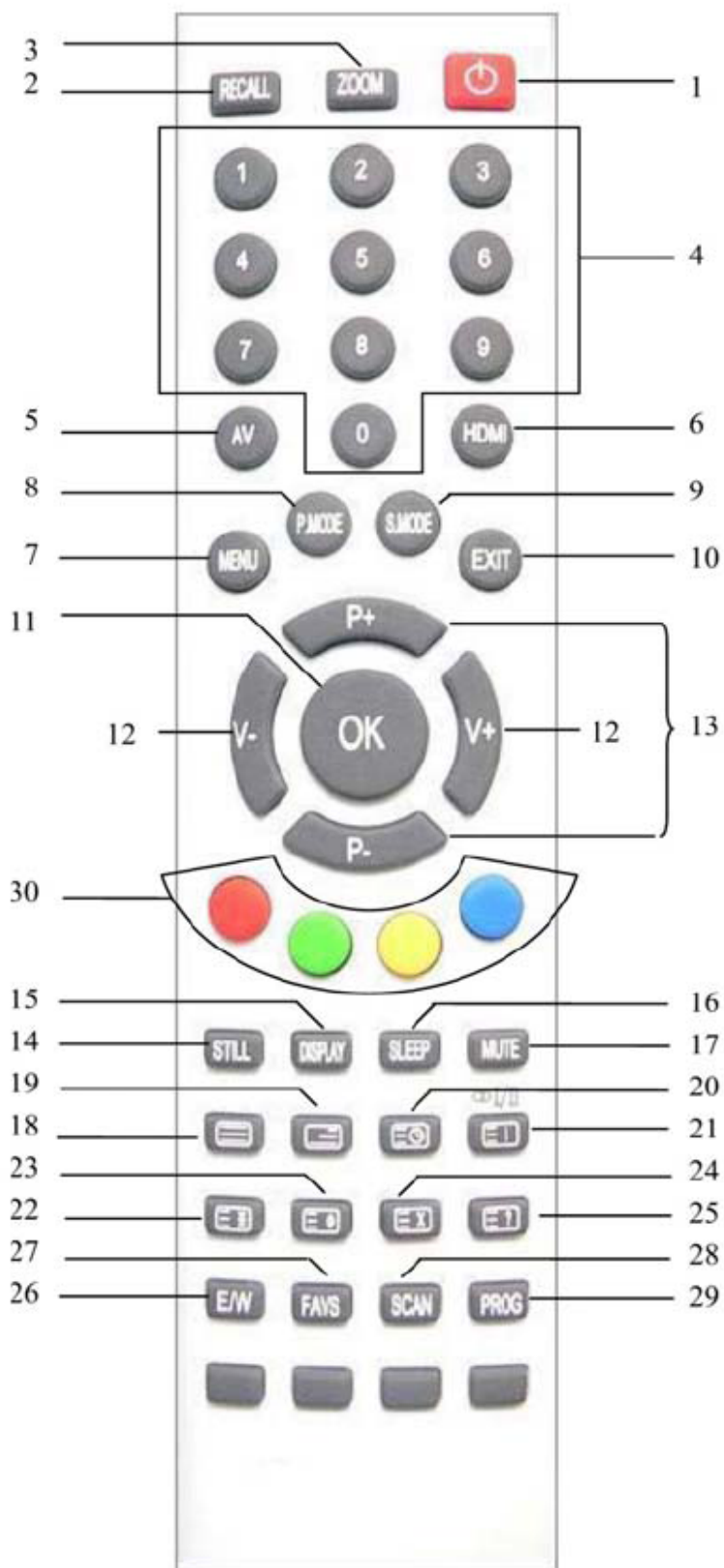
No.	Name	Function
(1)	Power Socket	AC power input for LCD TV
(2)	Switch of AC Power	Turn on & Off the AC power of TV
(3)	Signal Input / Output terminal	Including audio / video input of AV, S-Video, SCART1, SCART2, Component, VGA and HDMI.

Terminal Description:

No.	Name	Description
①	VGA	Connect the VGA signal of computer with this port VGA cable, connect audio signal with VGA's audio input port by audio cable.
②	S-VIDEO	Brightness and chroma signal input, Notice: S-Video and AV can not be used at same time for they share of one signal channel.
③	COMPONENT	Connect the TV COMPONENT signal port with video COMPONENT signal from DVD or other equipments.
④	AV	AV audio / video signal input terminal
⑤	HDMI	Port for digital audio & video signal input
⑥	SCART1	Video and RGB signal input, Video signal (RF VIDEO signal) output
⑦	SCART2	Video and Y/C signal input, Video signal (RF VIDEO signal) output
⑧	Headphone Output	Port for headphone audio output
⑨	TV Signal input	TV signal input port

REMOTE CONTROL

The buttons of the original remote control are as following:



Number	Button Name	Function Description
1	【⏻】	Enter or quit the standby mode.
2	【RECALL】	The former channel can be restored if the last operation is changing channel; this button also can be also used go back to the last signal source if the last operation is changing the signal source.
3	【ZOOM】	This button can be used for cycling among Original, 16: 9, 16: 9 Zoom, 14: 9 Zoom, 4:3 and panorama these five display mode.
4	Number buttons 【0-9】	In TV mode, these buttons are used for inputting the numbers of channels, also, by these buttons you can go back to TV mode when TV is in other modes.
5	【AV】	Switch among the signal sources of TV, SCART1, SCART2, AV, SVIDEO, COMPONENT, VGA and HDMI..
6	【HDMI】	Shortcut key for entering into HDMI.
7	【MENU】	By pressing this button continuously, the menu can be displayed or disappeared, also, switching among each menu can be realized. This button can be used to quit some operations too.
8	【P. MODE】	The button(s) can be used to select among four picture mode: User, Soft, Standard and Bright.
9	【S. MODE】	The button(s) can be used to select among four sound mode: Standard, Music, News and User.
10	【EXIT】	Key for quit the current operation interface.
11	【OK】	This is “enter button”.
12	【V+】 / 【V-】	In non-menu operation mode, the buttons are used to increase/decrease the volume; in menu operation mode, the buttons are used for function selection and operation; in mute mode, press button V+ to quit mute mode.
13	【P+】 / 【P-】	In TV mode, the buttons are used to increase/decrease the channel number for non-menu operation; for menu operation, the buttons are used to select the functions; in non-menu operation mode, the buttons can be used to restore to TV mode when the TV is in other mode.
14	【STILL】	The button(s) is (are) used to freeze or activate the current picture.
15	【DISPLAY】	This button is used to check the current mode which TV is working in.
16	【SLEEP】	These buttons are used to set the time to standby mode (namely, to set the time length from current time to standby mode).
17	【MUTE】	This button can be used to enter or quit mute mode.
18	【≡】	Text, this button is used to enter or quit the Picture/Text mode.
19	【⌂】	Mix, this button is used to lapping over the Picture/Text and picture.
20	【⌂】	Sub-code, sub-page of the Picture/Text.
21	∞I/I& 【⌂】	The button(s) can be used to switch among NICAM/IGR STEREO/MONO; Requests Index page when index link is valid.
22	【⌂】	Hold, holding the content of the Picture/Text.
23	【⌂】	Size, ZOOM mode for the Picture/Text .
24	【⌂】	Cancel, displays TV picture while maintaining TXT mode active.
25	【⌂】	Reveal, displaying the hidden information in the Picture/Text.
26	【E/W】	Switching character set.
27	【FAVS】	Scanning your favorite programs.
28	【SCAN】	Scanning with 9 pictures.
29	【PROG】	Clear settings of the “Program Preset” menu.
30	Colour Key	The keys with colors of red, green, yellow and blue in the picture.

OPERATION

Turning on/off the LCD TV

1. Turning on

1. Connect the power input port on TV with AC power cable, and then connect it with AV power supply, turn on the AC switch of the TV, the indicator turn to be red, TV enter into standby mode.

2. In standby mode, press the button $\llcorner \cup \rceil$ on TV or the button $\llcorner \cup \rceil$ on remote control to turn on the TV, the indicator flashes and turns to be red, green by turns when starting the TV, the LCD TV starts to work after the indicator turn to be green.

2. Turning off

1. When the temporary turning off is required, please press the button $\llcorner \cup \rceil$ on TV or the button $\llcorner \cup \rceil$ on remote control.

2. When a complete turning off is required, please turn off the AC switch on the TV and unplug the power cable from the power socket.

Notice:

If there is an accident power off, the TV will be in standby mode automatically after re-supply the power. To ensure the normal use of the TV, the frequent turning on and off is forbidden, when there is an accident power off, it is recommended to unplug the power cable from the power socket.

3. Automatic turning off for no TV signal input

When the TV working in RF receiving mode, the TV will enter standby mode automatically 5 minutes after there is no any signal (such as the programs are stopped by TV station)

Basic Function of the TV

Please adjust the display effect by using the screen menu operation, in the screen menu, different languages are adopted, the degree of menu transparency can be selected by user. The menu will be close after a proper time if there is no any operation in such time. The menu operation can be realized through the buttons on the TV or through the remote control. In this manual, mainly the operation by remote control is described. The display of the menu divided into several different mode such as TV, AV, SVIDEO, SCART1, SCART2, COMPONENT, VGA and HDMI.

In the following contents, the operation in different mode are described in details and the examples are given based on remote control, the difference is the button $\llcorner \text{CH+} \rceil$ and $\llcorner \text{CH-} \rceil$ are used to select the functions, the button $\llcorner \text{V+} \rceil$ and $\llcorner \text{V-} \rceil$ are used to set the selected functions. The highlight background means the current selection, press $\llcorner \text{MENU} \rceil$ or $\llcorner \text{EXIT} \rceil$ on the remote control to quit the setting menu.

1. Operation in the mode of TV, SCART1, SCART2, AV, SVIDEO, COMPONENT, VGA and HDMI.

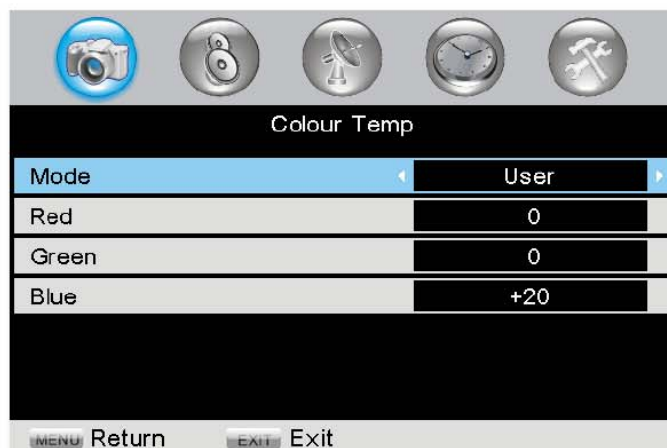
(1) Picture Setting Menu

Press button $\llcorner \text{MENU} \rceil$, the picture setting menu will be displayed on the screen and as following picture, the adjustable or selectable parameters for image are brightness, contrast, saturation, definition, color temperature, calibration of skin color, dynamic noise reduction and so on respectively. Press the button $\llcorner \text{P+} \rceil$ and $\llcorner \text{P-} \rceil$ to select the item, Press $\llcorner \text{V+} \rceil$ and $\llcorner \text{V-} \rceil$ to set the selected item or enter into sub-menu, after setting is done, press $\llcorner \text{OK} \rceil$ or $\llcorner \text{V+} \rceil$ to go back to the previous menu.



Item	Function Description
Contrast	To adjust the picture's contrast.
Brightness	To adjust the picture's brightness.
Saturation	To adjust the picture's saturation.
Sharpness	To adjust the picture's sharpness.
Colour temp	User, Normal, Warm and Cool, four modes of color temperature are provided.
DNR	Provide the picture with dynamic noise reduction treatment, checking the high frequency noise of the picture, there are Auto, Low, Mid and High, four modes of noise reduction. "Off" means to close the noise reduction function.
Advance	There are three build-in function for enhancing the quality of the picture, FLESH TONE , GREEN TONE , BLUE TONE and etc, and automatic Film Mode checking function.

Enter into the sub-menu of Colour temp, you can set s Normal, Warm, Cool and User respectively through **【V+】** and **【V-】** . When you select the "User", the display is as following:



Press **【P+】** and **【P-】** to select the item in cycle, and then press **【V+】** and **【V-】** to adjust the parameters of “Red”, “Green” and “Blue” these three basic colors.

Press **【V+】** and **【V-】** to enter into the sub-menu of Advance for picture control, the display is as following:



Item	Function Description
Flesh tone	Skin color emendation
Green tone	Green color emendation
Blue tone	Blue color emendation
Film mode	Movie Mode automatic checking

Press **【P+】** and **【P-】** to select the item in cycle, and then press **【V+】** and **【V-】** to set the selected item.

(2) Sound Setting Menu

Press button **【MENU】**, and select the sound setting menu described as the following picture, the selectable or adjustable sound parameters are balance, volume, automatic volume limitation, surrounding, EQ and so on. Press button **【P+】** and **【P-】** to select the item, Press **【V+】** and **【V-】** to set the selected item or enter into sub-menu, after setting is done, press **【OK】** or **【V+】** to go back to the previous menu.



Item	Function Description
Balance	To adjust the balance between right and left track.
Volume	To adjust the volume
AVL	automatic volume control, used to control the volume automatically
Surround	Sound surround
Equalizer	EQ with 5 bands

Enter Equalizer sub-menu, the following sound setting items will be displayed:



The frequency points in the following picture can be increased or decreased respectively.

(3) Channel Setting Menu

Enter into TV mode, press **【MENU】** and press **【V+】** and **【V-】** to select the items until you reach the channel setting menu as described in the following picture, the function of color mode, sound modes and automatic searching and so on can be realized. Press **【P+】** and **【P-】** to select the desired item. Press **【V+】** and **【V-】** to set the selected item or enter into sub-menu, after setting is done, press **【OK】** or **【V+】** to go back to the previous menu.





A. SETUP Setting Item in TV Mode

◆ Channel

Display the current channel number, you can switch between the channels through the button **【V+】** or **【V-】**.

◆ Colour System

Select this item, and then press **【V+】** or **【V-】** to select one of the color modes.

◆ Sound System

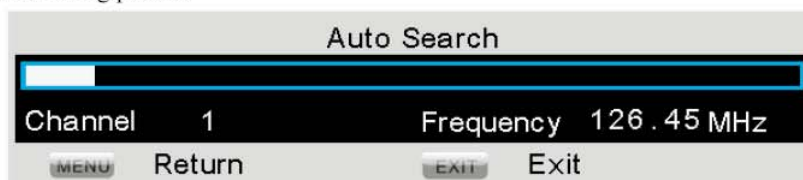
Select this item, and then press **【V+】** or **【V-】** to select one of the sound modes.

◆ Skip

When you are selecting the skipping item, press **【V-】** or **【V+】** to change the skipping condition and to realize the turning on/off of the current channel. When one channel is in “skip on” condition, this channel will be skipped over while you switching the channel by **【P+】** or **【P-】**; if you wish to switch to this channel again, please input the channel number directly through the number buttons on the remote control.

◆ Auto Search

In TV mode, select automatic selection, and then press **【V+】** to perform the automatic channel searching as described in the following picture.



During searching, press **【MENU】** to quit the automatic search and go back to the previous menu.

Automatic searching starts from channel 1, all the searched channels will be stored automatically. During searching, the modes of color and sound are automatically stored, thus to make sure the searched channel later can be played correctly.

After automatic search has been complete, or the capacity of storing 100 channels has been used up, or the **【MENU】** is pressed during searching, the system will quit from automatic searching mode and go back to the previous channel setting menu and switch to channel 1 automatically.

◆ Manual search

In TV mode, through **【V+】** or **【V-】** to search the signal upwards or downward, the system will stop after one channel is searched, the current channel can be stored through pressing **【OK】**. If you are still going to search, you can press **【V+】** and **【V-】**. During searching, the system will quit the manual searching and will be back to the settings before the searching. During searching, the modes of color and sound are automatically stored, thus to make sure the searched channel later can be played correctly. Also, you can watch

the program by directly inputting the corresponding frequency number through the number buttons, but you have to be sure the number input is within the range of the system, otherwise, the input will be invalid.

◆AFT

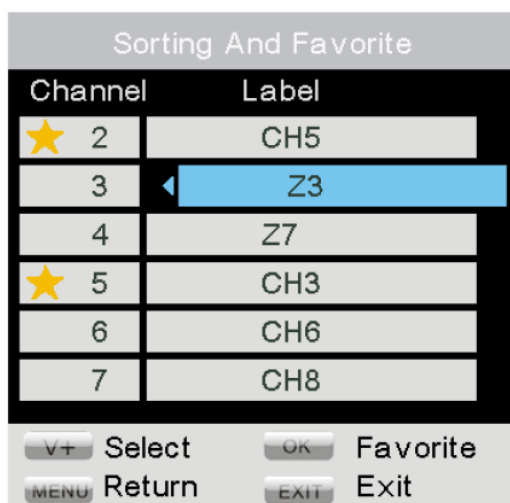
In TV mode, select Fine tuning, Press **【V+】** and **【V-】** to finely tune the frequency and to turn on/off the automatic frequency tracking, the searched program will be stored automatically after tuning.

◆Label

Select this item, press **【OK】** or **【V+】**, **【V-】** to enter submenu to edit the name of each channel, select the character by **【P+】** and **【P-】**, press **【V+】** and **【V-】** to edit the next character after the previous character edition is complete, operate by this way until the whole edition is complete. Press **【OK】** or **【MENU】** to save the settings and go back to the previous channel setting menu.

◆Program Edit

In TV mode, select the channel sorting item, press **【OK】** or **【V+】**, **【V-】** to enter into editing mode as described in the following picture:



Press **【P+】** and **【P-】** to highlight the channel you wish to edit, the operation sequence is to press **【V+】** to confirm, and then press **【P+】** and **【P-】** to select the position you wish to put the channel in, then press **【V-】** to finish the channel sequencing operation. If this channel is your favorite channel, you can add the mark “★” to the channel as your favorite channel by press **【OK】** or **【FAVS】**, for the function of button **【FAVS】**, please see “Operation for other functions”.

Notice: In SCART1, SCART2, AV, SVIDEO, COMPONENT, VGA and HDMI mode, there is no channel setting information.

B. Information of “SETUP” displayed in SCART1, SCART2, AV and SVIDEO mode.

◆Colour System

There are all together 6 types of VIDEO color mode can be selected: AUTO, PAL, NTSC, SECAM, PAL60 and NTSC443 (namely, NTSC4.43). You can select AUTO to allow the system to identify the color mode automatically or choose the color mode by yourself.

C. Information of “SETUP” displayed in COMPONENT and HDMI mode

◆H Position

Moving the picture horizontally through **【V-】** and **【V+】**.

◆V Position

Moving the picture vertically through **【V-】** and **【V+】**.

◆RESET

Resetting, resetting the H Position、V Position as original.

D. Information of “SETUP” displayed in VGA mode

◆H Position

Moving the picture horizontally through 【V-】 and 【V+】.

◆V Position

Moving the picture vertically through 【V-】 and 【V+】.

◆Auto Tracking

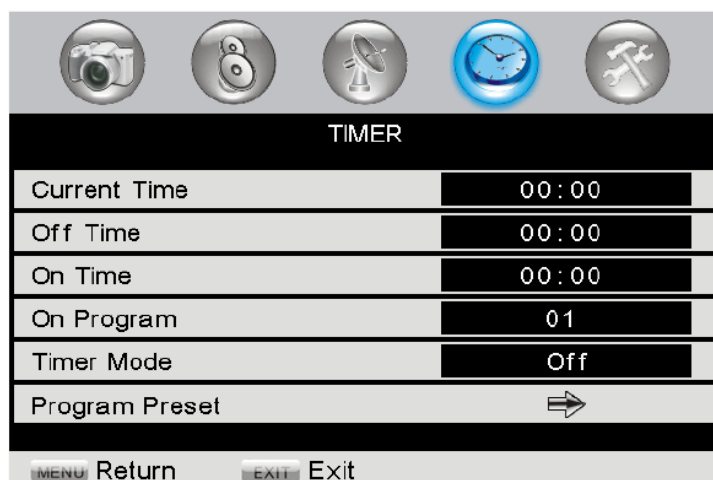
Automatic position & effect adjustment of the picture.

◆Phase

Phase adjustment of the picture: in VGA mode, this function can be worked when there is any abnormality of pictures.

(4) Clock Setting Menu

Press 【MENU】, by pressing 【V+】 and 【V-】 to select until the reach the clock setting menu as described in the following picture, the adjustable or selectable clock setting parameters are consisted of current time, turning off time, turning on time, turning on channel, clock mode, program booking and so on, select the item need to be adjusted by pressing 【P+】 and 【P-】, and then press 【V+】 and 【V-】 to set the selected item or enter into sub-menu, after setting is done, press 【OK】 or 【MENU】 to go back to the previous menu.



Item	Function Description
Current Time	Set the current time by pressing 【V+】 and 【V-】 to change the time parameter (hour: minute), or you can directly input the time through the number buttons.
Off Time	Set the time to turning off the TV by pressing 【V+】 and 【V-】 to change the time parameter (hour: minute), or we can directly input the time through the number buttons. We can also reset the time by 【PROG】.
On Time	Set the time to turning on the TV by pressing 【V+】 and 【V-】 to change the time parameter (hour: minute), or we can directly input the time through the number buttons. We can also reset the time by 【PROG】.
On Channel	Set the channel for turning on the TV through 【V+】、【V-】 to change the channel number (00~99), or directly input the channel number through the number buttons.
Timer Mode	Set the timer mode, there are modes of “Off”, “Once” and “every” for everyday.
Program Preset	Program booking function.

Press **【OK】** or **【V+】**, **【V-】** to enter into program booking menu “Program Preset”, as described in the following picture, and through **【P+】** and **【P-】** to select the items in cycle, and then press **【OK】** or **【V+】** and **【V-】** to enter into number setting framework.



You can select the position by pressing **【V+】** or **【V-】**, and by pressing **【P+】** or **【P-】** to adjust the selected number (time or the number of channel); Also, you can input directly the number to set the relevant time and corresponding channel; at the setting time, the system will make TV to skip to the setting channel automatically.

If the button **【PROG】** is pressed, the setting time and channel will be cancelled; there are tow mode for Preset Enable, set through **【V+】** or **【V-】**. “On” means the Preset is of effect, “Off” means the Preset is of no effect. Notice: if there is the picture information in the TV signal, the system will automatically read the clock information and refresh the selection content in “Current Time”.

(5) FUNCTION Setting Menu

Press **【MENU】**, and select item by pressing **【V+】** and **【V-】**, until you see the “FUNCTION” setting menu as described in the following picture, the operation of OSD language, nation, picture zooming mode, blue background on/off, power saving mode, power management mode, the TV button lock, transparency of menu, button locking ad so on can be realized. Press **【P+】** and **【P-】** to select the items need to be adjusted from above items, and then press **【V+】** and **【V-】** to set the selected item or enter into sub-menu, after setting is done, press **【OK】** or **【MENU】** to go back to the previous menu.



◆Language

OSD language selection, the TV has English, Russian, and other OSD languages.

◆Country

Country selection, please select the corresponding target country to allow the system to search the channels automatically and to set the default language. Notice, if the SECAM L is required, please select France.

◆Zoom

Picture zoom mode selection. When the TV is in TV, AV and SVIDEO mode, the “ZOOM” button on the remote control can switch the picture display mode among Original, 16: 9, 16: 9 Zoom, 14: 9 Zoom, 4:3 and Panorama mode, when TV is in SCART1 and SCART2 mode, the “ZOOM” button on the remote control can switch the picture display mode among Original, 16: 9 and 4:3 these three modes; when TV is in VGA, COMPONENT or HDMI mode, the “ZOOM” button on the remote control can switch the picture display mode among the modes of 16: 9 and 4:3.

◆Blue Screen

The on and off modes of blue Screen are as following:

	When there is no TV signal	When there is no other signals
On	Blue Screen	Blue Screen
Off	Picture is spotted with snowflake	Black Screen

◆Low-power Mode

Power saving mode, user can adjust the rightness of backlight, there are 3 options for backlight brightness—Off, Mode1、 Mode2.

◆Power Manage

Power Management Mode, you can select Off, 2 hours, 3 hours and 4hours by pressing 【V+】 or 【V-】, this operation means if there is no any operation to the TV in 2 (or 3 or 4) hours, the TV will enter into the standby mode automatically.

◆Panel Lock

Locking the buttons of the TV, when the “Panel Lock” is set as “ON”, all of the buttons are locked and lose their function (to release “Panel Lock”, please press any button for more than 5 seconds), when you select this item as “OFF”, the buttons of the TV are in normal mode.

◆Transparency

Menu transparency selection, you can select menu transparency according to the different background picture, there are four options for menu transparency (0, 1, 2, 3 and 4).

◆Reset

Select this item, and restore to the original setting by pressing 【OK】 or 【V+】, 【V-】, after this operation, all of the settings made by user will be replaced by original setting parameters.

2. Operation of Other Functions

(1) Standby

Press the button [⏻] on TV or the red button [⏻] on the remote control, the LCD TV will store the current settings and enter into standby mode, press the button [⏻] on TV or the red button [⏻] on the remote control again, the TV will be back to the normal working mode.

If the TV is restarted after the TV entering into the standby mode or after shutting off the power, the TV will work with the setting signal source mode which was set before turning off.

(2) Switching the Signal Source:

Press [TV/AV] on the TV or 【TV/AV】 on the remote control to enter the menu, ad then select the signal sources among TV, AV, SVIDEO SCART1, SCART2, COMPONENT, VGA and HDMI by pressing [CH+] and [CH+] on the TV or 【P+】 and 【P-】 on the remote control.

(3) Channel Selection

Press [CH+] and [CH-] on the TV or 【P+】 and 【P-】 on the remote control to increase or decrease the channel numbers, if the next channel is set as “Skip on”, the system will select the channel after this channel. Also, the channel can be selected by pressing the number buttons. The channel number of the selected channel will display on the screen as green for 6 seconds since it is selected, and then, it will be disappeared.

When you are inputting the channel number through number button, you can press **【OK】** to switch to the channel corresponding to the current number without finishing all these 2 numbers, if the input is not correct, please press **【MENU】** to cancel.

Additionally, when TV is in AV, SVIDEO SCART1, SCART2, COMPONENT, VGA or HDMI mode, the TV will work in TV mode and play the corresponding channel if any number button is pressed.

(4) Adjusting Volume

when there is no any menu displaying on the screen, the volume can be adjusted continuously by pressing **【VOL+】** and **【VOL-】** on the TV or by pressing **【V+】** and **【V-】** on the remote control, the range can be adjusted is 0-100, the volume indication band will be disappeared 2 seconds after adjusting the volume.



(5) Mute and Relevant Functions

By pressing **【MUTE】** on the remote control, the sound on/off mode can be selected. The MUTE mode indication information will remain on the lower left position as the following picture. The mute mode can be released if any of the following operation is made: pressing **【MUTE】**, adjusting the TV's volume, adjusting of any frequency point of "Equalizer" or adjusting the sound "Balance". Switching to stereo or bilingual, the mute mode can be quitted, but you can not quit the mute mode by reducing the volume.

The icon displayed on the lower left position is as the following picture:



The volume setting menu MUTE mode is as the following picture:



When TV is working in TV and HDMI mode, it will turn to MUTE mode automatically if there is no signal input, the TV will not turn to MUTE mode automatically if it is working in the modes other than TV modes.

(6) Picture Mode Selection

Press **【P.MODE】** on the remote control, there are four picture modes can be selected: User, Vivid, Standard and Soft. Among them, the parameters for Vivid, Standard, and soft mode are fixed and can not be changed. If there is any change of picture's the analog parameters in any mode, the system will store the change into User mode.

(7) Sound Mode Selection

Press **【S.MODE】** on the remote control, there are four sound modes can be selected: User, Theater, Music and News. Among them, the parameters for Theater, Music and News are fixed and can not be changed, If there is any change of sound's analog parameters in any mode, the system will store the change into User mode.

(8) Information Display Function

In TV mode, except for in searching process, if there is any menu displayed on the screen, the current characters displayed will be close if pressing **【DISPLAY】** on the remote control, and then, some information related with the program will be displayed in the upper right position on the screen as described in following picture:

★ xx
LABEL
AUTO/DK
MONO

Among it, "xx" is the number of current channel. if the color of channel number is red, it means this channel is skipped; if the color of channel number is yellow, it means the AFT status of this channel isn't on.

if there is a “★” in front of the channel number, this means you are selecting your favorite channel, “- - -” is the name of the channel (at most 7 letters), if the channel name is not changed, “----” will be displayed, “AUTO/DK” is the current TV color/sound mode, “DUAL” is the stereo type of current program..

In SCART1, SCART2, AV, SVIDEO, COMPONENT, VGA or HDMI mode, the signal source information can be directly displayed by pressing **【DISPLAY】**, press **【DISPLAY】** again, the display will be closed.

In AV mode, the information in the upper right position on the screen is as following picture:

AV
AUTO

Means the name of current signal and color mode; In SCART1, SCART2 or SVIDEO mode, the information displayed is as same as the above.

In COMPONENT mode, the resolution of the picture is displayed (NO SIGNAL will be displayed if there is no signal input), the color mode (also the sound mode) will no longer be displayed, when the input signal is 1024*768/60Hz, the information displayed is as following picture:

COMPONENT
1024*768/60Hz

In VGA or HDMI mode, the information displayed is as same as the above.

(9) Sleeping Function

Press **【SLEEP】** on the remote control, the following picture will be displayed on the screen:



Press **【SLEEP】** on the remote control repeatedly to change the time for turning off the TV, the following will be displayed in cycle: Off, 15, 30, 45, 60, 90 and 120, if the current display is “OFF”, this mean there is no timing operation for turning off the TV, any other value displayed (e.g. 15)means that after 15 minutes since the current time, the system will execute the turning off operation , meanwhile, the mode indicator lighting green/red in turns (10 seconds for green light, and then after green light extinguished the red light will be on for 5 second, green light and red light are on and off in turn)

After starting the Sleep timing function, press **【SLEEP】** on the remote control, the time remained will be displayed, if press this button again, the timing can be reset among Off, 15, 30, 45, 60, 90 and 120.

The following information will be displayed 30 seconds before the TV enter into SLEEP mode:

System will power down xx
Press OK to cancel

Notice: “xx” is the remained number which indicates you with how many seconds the TV will enter into SLEEP mode. The value will be deducted to 0 from 30. At this time, you can press **【OK】** on the remote control to quit the SLEEP mode.

(10) Standby Function When No Signal Input

When there is no any signal input, the LCD TV will turn to blue or black screen mode automatically (TV lower noise point), if there is no any operation to the LCD TV within 5 minutes, LCD TV will enter into standby mode automatically.

30 seconds before the TV entering into standby mode, the indication information will be displayed in the upper right position on the screen is as following:

System will power down xx
Press OK to cancel

Notice: “xx” is the remained number which indicates you with how many seconds the TV will enter into standby mode. The value will be deducted to 0 from 30. At this time, you can press any button on the remote control to quit the standby mode which the TV will carry out about.

(11) Backing Out Function

Press **【RECALL】** on the remote control, the TV will quickly go back to the previous channel if the last operation is selecting channel; if the last operation is switching the signal source, the TV can quickly go back to the previous signal source by pressing **【RECALL】** on the remote control.

(12) Scanning the Favorite Channel

In SETUP menu, when you select the “Program Edit” to edit the TV programs, you can sort out your favorite channel (press **【OK】** or **【FAVS】** to add mark “☆” to the selected channel), the system will store the channels into Favorite List1.

Favorite List2 is to save automatically any program, which has been watched for more than 20 minutes (maximum 10 channels), thus, establishing another Favorite List for you, namely, Favorite List2.

You can watch all the programs listed in the Favorite List1 or Favorite List2 through button **【FAVS】**. The channel will be only changed within the Favorite List if Favorite List has been selected.

(13) Time Display

In non-picture mode, press **【】** on the remote control to display the time in “Current Time”

(14) Multi-pictures Scanning

In TV mode, press **【SCAN】**, then you can enter into 9 pictures scanning mode, in this mode, you can watch the channels and compare them, also you can press **【V+】**, **【V-】**, **【P+】** and **【P-】** to select your favorite programs, then, press **【OK】** to watch the selected program with full screen.

(15) The Recommended Resolution in VGA Mode

The effective displaying pixels is 1366×768, therefore, if the TV is used as the display terminal, the output mode of computer 1280×768(60Hz) is recommended, thus allow you to have the best performance of the LCD TV.

Characteristic of Chassis

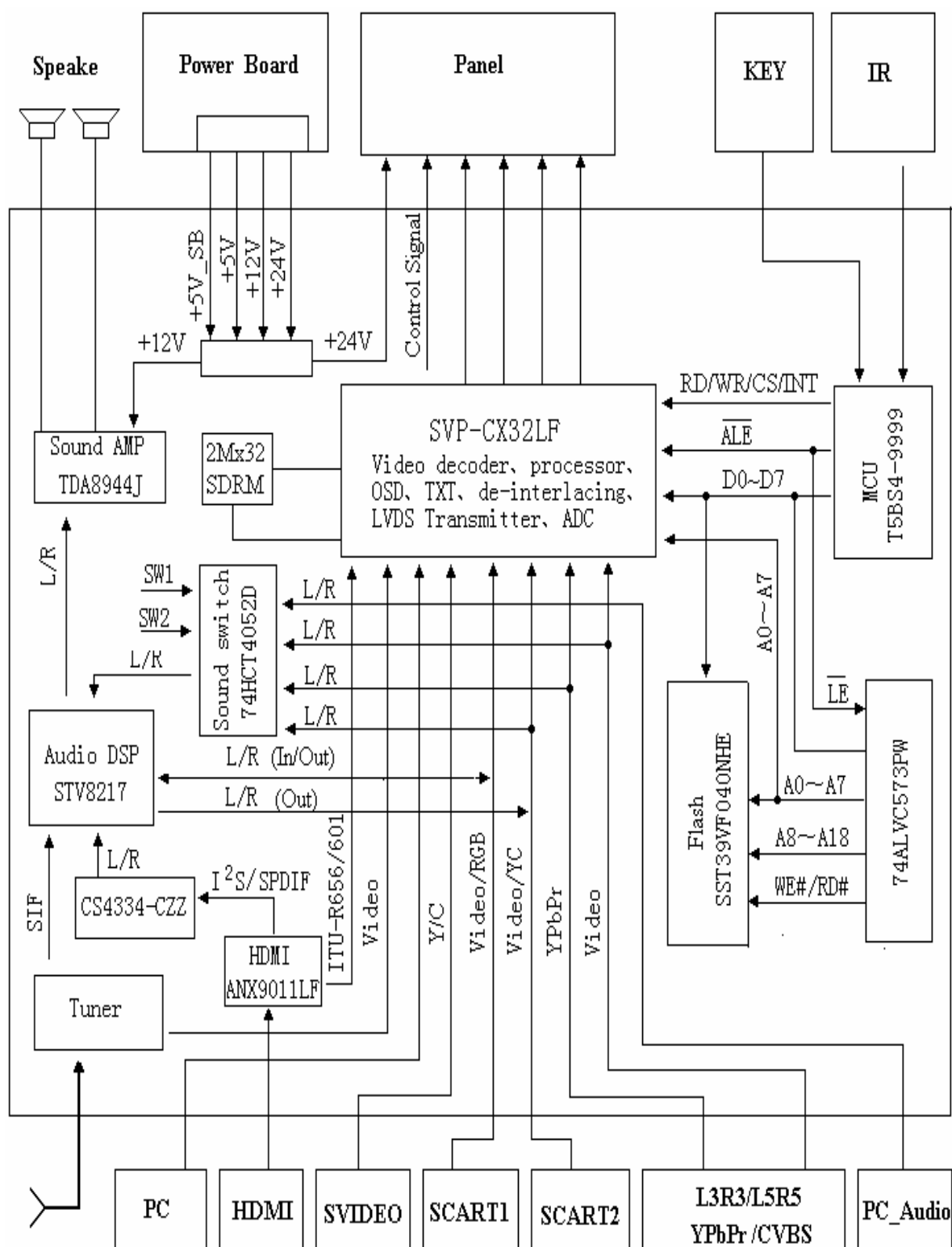
1. Specifications

Region		Europe	America	Other regions
RF signal	Color mode	PAL、SECAM	NTSC、PAL M、PAL N	PAL、NTSC、SECAM
	Sound mode	PAL—D/K、B/G、I SECAM— L/L'、D/K、B/G	NTSC-M/N、 PAL-M/N	PAL—D/K、B/G、I SECAM—D/K、B/G NTSC-M
Video(or Y/C)signal		PAL,NTSC, SECAM	PAL,NTSC, NTSC4.43,SECAM	PAL,NTSC,NTSC4.43, SECAM
Program presetting		100 sets (0-99)	68 sets (AIR: 2-69) 125sets CABLE: 1-125)	236 sets (0-235)
Sound Power (THD ≤7%)		5W+5W	5W+5W	5W+5W
Power voltage		100V~240V	100V~240V	100V~240V
Graphics and text		100 pages	X	100 pages
VCHIP、CCD		X	Yes	X
Sound		NICAM、IGR	BTSC	NICAM、IGR
SCART interface		Yes	X	X
VGA signal input		Yes	Yes	Yes
YpbPr HD signal input		Yes	Yes	Yes
HDMI digital signal input		Yes	Yes	Yes
Earphone		Yes	Yes	Yes
OSD language		Multinational languages (English, French, German, Italian, Portuguese etc)	English, French, Portuguese Spanish	English, French, German, Russian
Automatic shut down if no signal		Automatically enter into standby state after 5 minutes in TV no signal state		
Program reserve function		Capable of reserving 5 sets program jumping time, if time is up to the reserved time, automatically jump to the corresponding program		
Channel exchange and sorting		Customer could rearrange the channels according to personal habit		
Energy saving function		Customer could adjust LCD screen backlight brightness manually. Appropriately reducing the backlight brightness could save energy.		
Plug and Play		LCD TV could be used as computer screen, no need for the installation of software, which is Plug and Play in real sense		

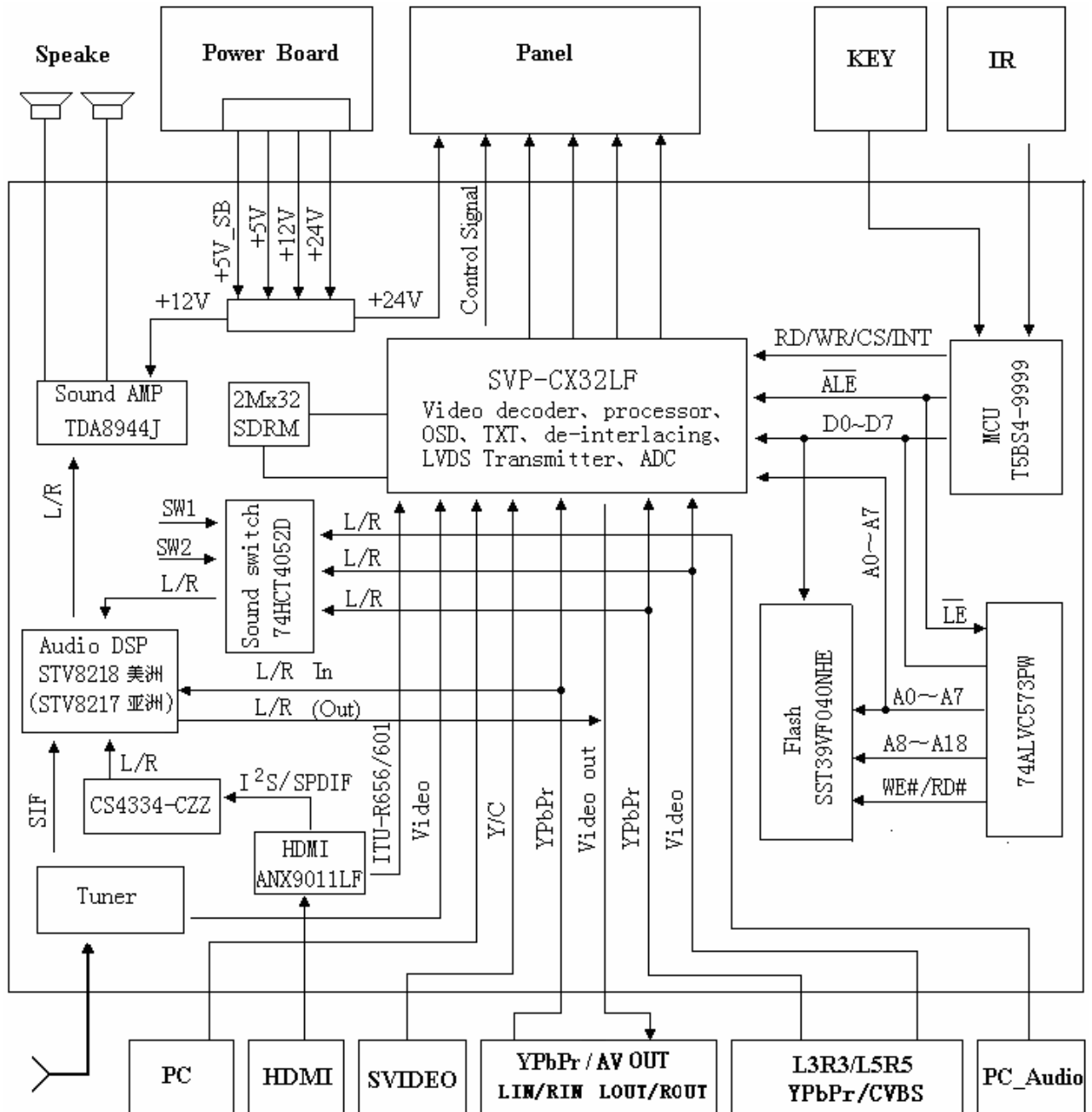
2. Circuit constitution

AKIRA LCD TV with LS01 chassis is made up of switch power, system control circuit, video processing circuit, audio processing circuit, sound power amplifier circuit, AV input circuit, LCD screen module. Block circuit diagram of the whole machine is shown as below:

1) European market:



2). American and Asian market:



3. Introduction of printed board module

AKIRA LCD TV with LS01 is made up of power board, side AV board, remote control reception board, key board, and mainboard. The table below is the introduction of the function of all printed board modules.

No.	Module Designation	Function Description
1	Main Board Module	Main Board module is the chassis part of LCD TV signal processing. Under the control of the system control circuit, It undertakes the task of converting the external input signal into the unified digital signal that the LCD screen could identify. Mainboard controls the whole machine through MCU bus, decode VIDEO signal, controls the image analog quantity (brightness, contrast, chroma, hue, definition etc), adjusts white balance, generates OSD, de-interlaces signal, converts signal frequency, and finishes signal A/D and D/A conversion, video enhancement, LVDS signal coding and output; it has Scart interface, "S" terminal, AV terminal, Ypbpr, HDMI and PC interface, Tuner input, sound demodulation, sound effect treatment, sound power amplifier, and online upgrade of program.
2	Remote Reception Board Module	The remote reception board module is constituted by an indicator-light and a remote reception-head. Customer could manipulate the LCD TV by using remote controller very conveniently. By the color of the indicator light, the operation mode of the LCD TV could be judged (red is standby, green is power on).
3	Built-in Power Board Module	Convert the 100V~240V AC into DC, output have +24v, +12V, +5V, and the +5V_stb in standby state.
4	Keyboard Module	Keyboard module has 7 function keys (program increase/decrease, volume increase/decrease, AV/TV switch, menu key, on/standby control), customer could use the key of the machine to manipulate the LCD TV.
5	LCD screen module	LCD screen has built-in inverter that convert DC into high voltage AC signal to ignite the backlight CCFL (Cold Cathode Fluorescent Light); the LCD screen process the video signal from signal board and reappear.
6	Side AV board	Side AV board is used for earphone output.

Function of main ICs

1. Main ICs and functional modules

No.	Item no.	Model	Main function
1	U15	JS-6H2/121	High frequency head, output sound and image video signal
2	U1	SVP-CX32LF	Video decode, image processor, A/D and D/A conversion
3	U2	IS42S32200C1-6TL	SDRAM with 2MX32bits, used for the access of image signal.
4	U3	AT24C64A-10PU-2.7	EEPROM
5	U4	T5BS4-9999	MCU, main control IC
6	U5	SST39VF040-70-4C-NHE	Flash, whole machine control program is in it
7	U6	74ALVC573PW	Address latch, to latch the address wires
8	U8	TCM809SENB713	Hardware reset IC of MCU
9	U9	74HCT4052D	Audio input switch of AV terminal
10	U35	STV-8217/STV-8218	Audio signal processor
11	U14	74LVC14AD	VGA line and field synchronizing signal waveform shaping
12	U16、U25	AT24C02BN-10SU-1.8	EEPROM
14	U18、U22	AZ1117H -1.8TRE1	3.3V to 1.8V DC level conversion
16	U19、U24	AZ1117H -3.3TRE1	5V to 3.3V DC level conversion
18	U20	AZ1084S -3.3TRE1	5V to 3.3V DC level conversion
19	U21	AZ1084S -1.8TRE1	5V to 1.8V DC level conversion
20	U23	AZ78L08ZTR-E1	12V to 8V DC level conversion
21	U26	CS4344-CZZ	HDMI digital audio decode, D/A conversion
22	U28、U29	Rclamp0514M.TBT	ESD protection device of HDMI input terminal
24	U30	ANX9011L	HDMI digital signal decode
25	U31	PI5C3306LE	Bus (SDA, SCL) switch used for program update
26	U33	TDA8944J	Sound power amplifier (BTL output)

2. Function introduction of ICs or functional module

1. High frequency head(JS-6H2/121)

Pin No.	Definition of Pin	Function Description
1	NC	No connection
2	BT	No connection
3	VCC	+5V power
4	SCL	IIC bus (clock)
5	SDA	IIC bus (data)
6	AS	Ground
7	AFS	Ground
8	NC	No connection
9	NC	No connection
10	NC	No connection
11	SIF/Out	AGC control (intermediate audio output)
12	Video/Out	CVBS signal output
13	VCC (+5V)	+5V power
14	Audio/Out	Audio signal output

2. Image processing IC SVP-CX32LF

SVP-CX32 is a high integrated video decoding, image processing chip and is widely used in such mainstream flat screen TVs as HDTV, PC, LCD TV, and Plasma TV etc. it inherited the technological advantage of its earlier stage scaler chip. It adopts the 6th generation Trident multi-zooming mode and non-interlaced scanning technology when processing image. Multi-color mode (PAL/SECAM/NTSC) decoding is built-in; 10bit A/D module, 8bit LVDS transmission interface, digital comb filter module, and 3D digital comb video decoding are available. Such functions as video enhancement, OSD and VBI/Closed Caption, and teletext (LEVEL 2.5) are available. The function of the chip makes it adapt to global market. The decoder could operate under PAL/SECAM/NTSC mode; there are such input interfaces as 5 channels CVBS, 2 channels chroma signal, 1 channel PC RGB, 2 channels YpbPr, and 8-bit Digital ITU-R656/601 (HDMI interface).

Its main features are:

- 6th generation image dynamic smooth filtering
- 10-bits A/D conversion
- PC automatic phase and mode recognition, white balance correction
- 8bits LVDS transmission interface
- 6th generation 4 zooming watch mode
- Advanced chroma processing and dynamic contrast function
- Chroma extension of green and blue color, skin strengthen
- 6th generation 3D digital comb video filter
- Support 60Hz~100Hz interlace scanning and 50Hz~75Hz non-interlace scanning
- PC and video frame format conversion
- 14D dynamic video enhancement
- Pulse width modulation
- Build-in A/D conversion function
- Teletext function / Multi-image browse mode
- Provide 16/32bits SDR memory interface

Pin function description:

Pin No.	Designation of Pin	Function of Pin
Analog signal input/output terminal		
169	CVBS1	CVBS1 input
180	Y_G1	Y input terminal
181	Y_G2	SCART1 green base color input terminal
182	Y_G3	S terminal brightness signal input terminal
183	PC_G	PC green base color input
188	PR_R1	DVD interface Pr signal input
189	PR_R2	SCART1 red base color input terminal
190	PR_R3	SCART2 brightness signal input terminal
191	PC_R	PC red base color input
192	C	S terminal brightness signal input terminal
196	PB_B1	DVD interface Pb signal input
197	PB_B2	SCART1 blue base color input terminal
198	PB_B3	SCART1 CVBS signal input terminal
199	PC_B	PC blue signal input
171	FS1	No connection
170	FS2	No connection
173	FB1	SCART1 RGB_ST signal input terminal
172	FB2	SCART2 chroma signal input terminal
174	VREFP_1	A/D conversion1differential positive voltage
175	VREFN_1	A/D conversion 1 differential negative voltage
184	VREFP_2	A/D conversion 2 differential positive voltage
185	VREFN_1	A/D conversion 2 differential negative voltage
Digital signal terminal		
37	DP0	Digital signal I/O（DP0~DP23）interface
⋮	⋮	
29	DP8	
26	DP9	
25	DP10	
24	DP11	
22	DP12	
21	DP13	
18	DP14	
⋮	⋮	
14	DP18	
11	DP19	
⋮	⋮	
7	DP23	
CPU control terminal		

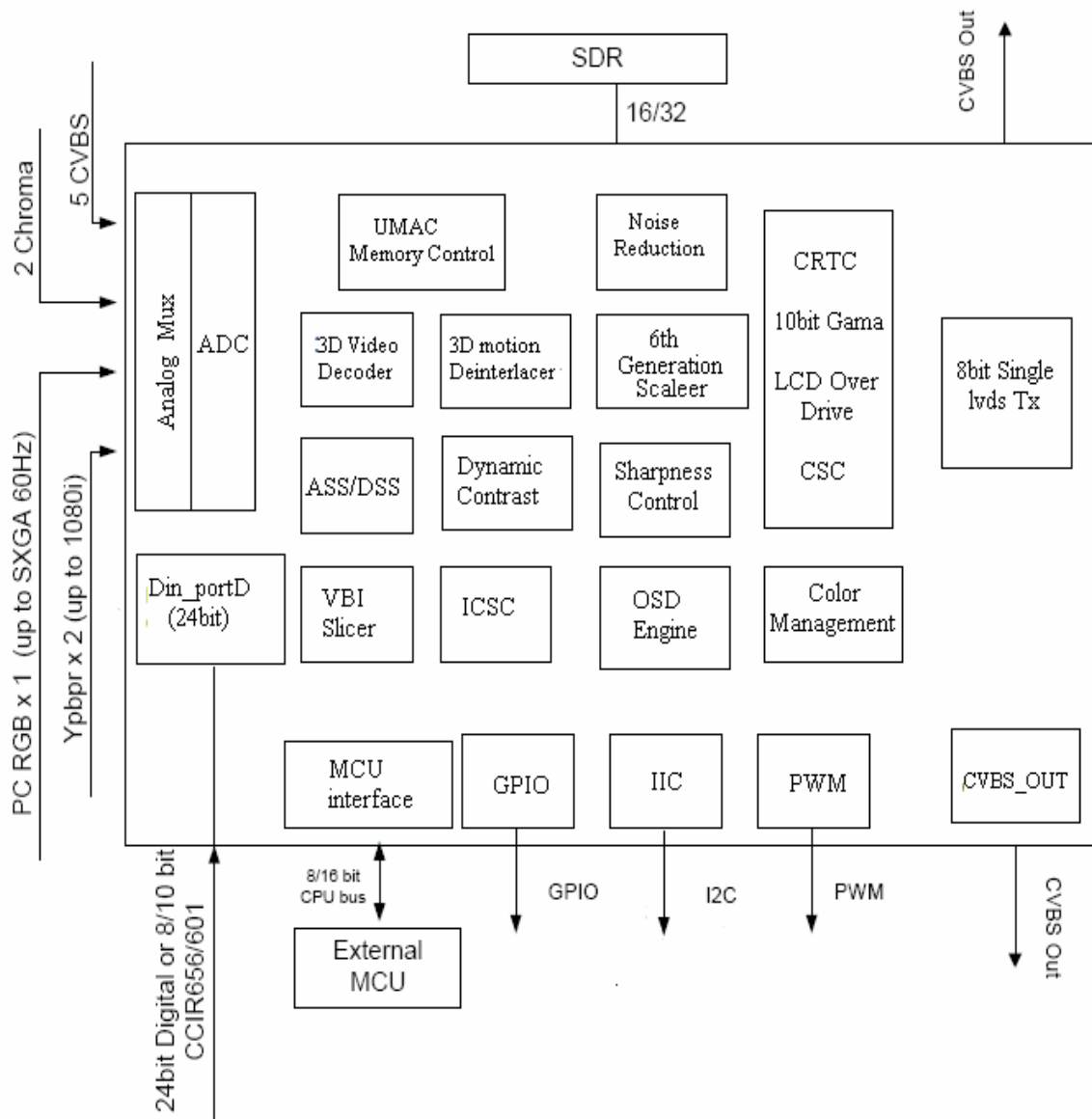
55	PWMO	Pulse width modulation input
57	SCL	IIC bus (clock)
58	SDA	IIC bus (data)
60	GPIO0	GPIO1 selection signal
59	GPIO1	GPIO2 selection signal
62	WR#	CPU write signal
63	RD#	CPU read signal
61	CS	CPU chip selection signal (low level effective)
56	INTN	Interrupt signal (low level effective)
84	ALE	Address latch signal
86	RESET	Reset signal (high level effective)
85	V5SF	SF Power (+5V)
4	DP_HS	Line synchronization signal
5	DP_VS	Field synchronization signal
23	DP_CLK	Clock signal
6	DP_DE_FLD	DE I/O terminal
64	ADDR0	CPU address (R0~R7) signal
⋮	⋮	
71	ADDR7	
83	A_D0	CPU address/data passage
⋮	⋮	
76	A_D7	
MISC port control signal		
162	CVBS_OUT2	SCART2 interface CVBS signal output
163	CVBS_OUT1	SCART1 interface CVBS signal output
157	TEST MODE	Test mode signal (grounding)
158	AIN_HS	Line synchronization signal
159	AIN_VS	Field synchronization signal
205	XTALI	Crystal oscillator interface
204	XTALO	
SDRM		
124	MA0	Memory address (A0~A11)
⋮	⋮	
121	MA3	
118	MA4	
⋮	⋮	
113	MA9	
125	MA10	
126	MA11	
156	DQM0	Memory read/write byte signal
133	DQM1	
109	DQM2	

87	DQM3	
128	BA0	Memory stack address selection
127	BA1	
130	RAS#	
131	CAS#	CAS signal
132	WE#	Memory write drive
112	CLKE	Memory clock signal drive
129	CS0#	Memory chip selection signal
111	MCK	Memory clock signal
155	MD0	Memory data interface
⋮	⋮	
148	MD7	
145	MD8	
⋮	⋮	
138	MD15	
107	MD16	
⋮	⋮	
100	MD23	
95	MD24	
⋮	⋮	
88	MD31	
LVDS port		
52	LVDS_VDDP	LVDS channel power
38	PLL_GND	PLL ground
39	PLL_VCC	PLL power
47	LVDSGND	LVDS ground
46	LVDSVCC	LVDS channel power
43	TCLK1M	High, low differential clock port
41	TCLK1P	
51	TA1 M	High, low differential data port
50	TA1P	
49	TB1M	
48	TB1P	
45	TC1M	
44	TC1P	
41	TD1M	
40	TD1P	
Clock and power		
146	VDDM	Memory port digital power
134	VDDM	
108	VDDM	
98	VDDM	

72	VDDH	3.3V power supply
19	VDDH	
160	VDDC	1.8V power supply
136	VDDC	
119	VDDC	
96	VDDC	
74	VDDC	
53	VDDC	
27	VDDC	
12	VDDC	
13	VSSC	Digital ground
28	VSSC	
54	VSSC	
75	VSSC	
97	VSSC	
120	VSSC	
137	VSSC	
161	VSSC	
20	VSSH	
73	VSSH	
99	VSSM	
110	VSSM	
135	VSSM	
147	VSSM	
195	AVDD3_ADC2	ADC module power (+3.3V)
168	AVDD3_ADC1	
2	PLF2	Video PLL clock low pass filtering
207	MLF1	Memory PLL clock low pass filtering
1	PAVSS2	PLL ground
3	PAVDD2	PLL power (+1.8V)
206	PAVSS1	PLL digital ground
208	PAVDD1	PLL digital ground power (+1.8V)
203	PAVSS	PLL Digital ground
202	PAVDD	PLL digital ground power(+1.8V)
201	PDVSS	PLL Digital ground
200	PDVDD	PLL digital ground power (+1.8V)
177	AVDD_ADC1	ADC analog power (+1.8V)
186	AVDD_ADC2	
193	AVDD_ADC3	
178	AVDD_ADC4	
176	AVSS_ADC1	ADC analog ground
187	AVSS_ADC2	

194	AVSS_ADC3	
179	AVSS_ADC4	
165	AVDD3_OUTBUF	+3.3V analog power
164	AVSS_OUTBUF	
166	AVDD3_BG_ASS	Analog ground
167	AVSS_BG_ASS	

SVP-CX32LF internal block diagram:



3. T5BS4-9999 brief introduction:

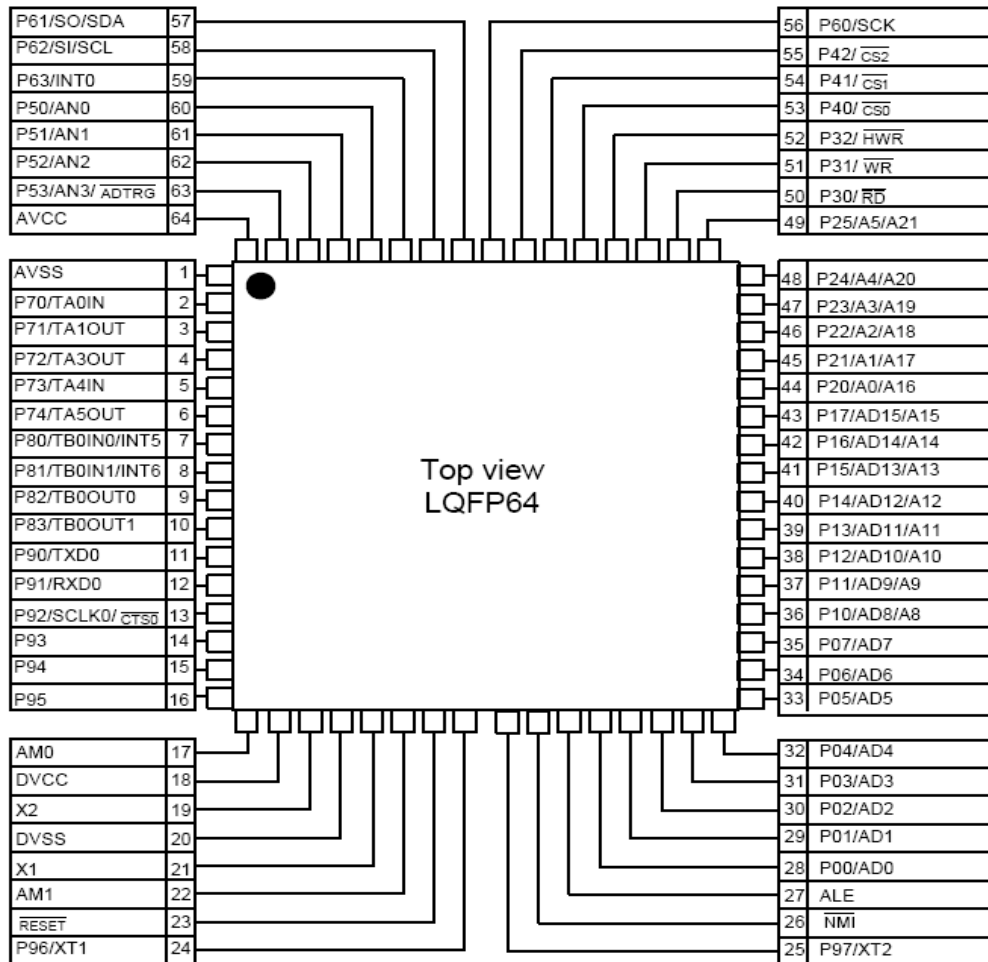
T5BS4-9999 is a 16-bit high-speed micro-controller that is used for the control of a variety of small to large devices. T5BS4-9999 could extend ROM and is an IC with 64 pins and is packaged in PLCCC. It is the main control IC of the TV and implements I²C bus control of the overall system.

Main features:

(900/L1 CPU) 16bit high speed CPU (900/L1 CPU)

- Minimum time of 148ns in accomplishing instruction fetch
- Build-in 10K RAM
- 16M external extended memory
- simultaneously support 8-/16-bit external data bus
- 8-bit cycle for channel, 16-bit cycle for 1-control
- 1-channel universal serial interface
- 1-channel IIC bus mode serial interface
- 4-way 10 bit A/D conversion interface
- Clock monitor
- Real time control clock
- 4 chips selection/wait controller
- 34 interrupt signals output
 - 9 CPU interrupt, 21 internal interrupt, 4 external interrupt
- 53 I/O pins
- Reserved wait function
- Clock control
 - fs=32.768KHz real-time time of time conversion function high frequency fc to fc/16
- Working voltage
 - When fc=27 MHZ, VCC=2.7~3.6V, when fc=10MHZ, VCC=1.8V to 3.6V
- 64 pin package (P-LQFP64-1010-0.50D standard)

Pin allocation description:

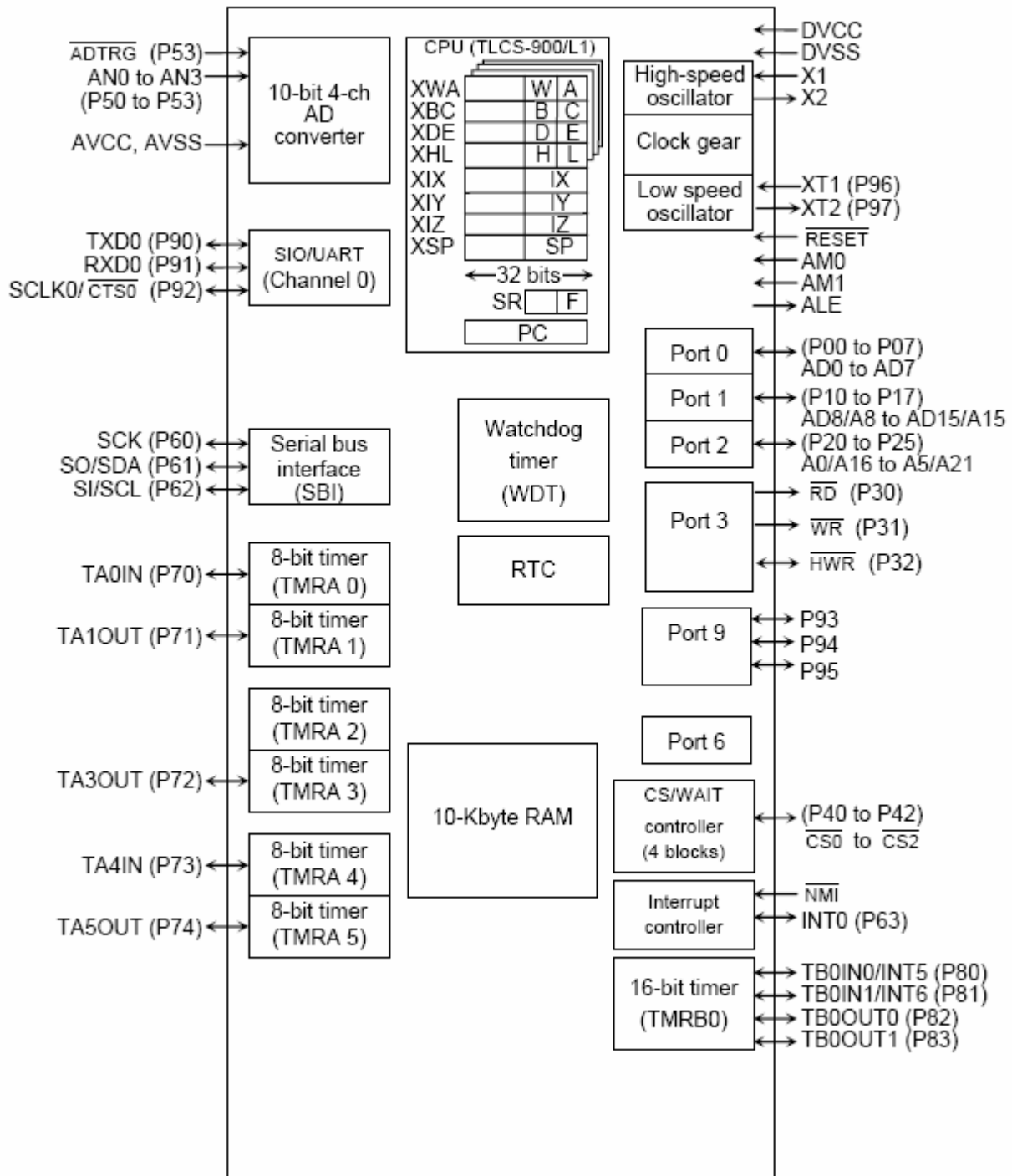


Pin introduction:

Pin	Designation	Function description
1	AVSS	Analog ground
2	P70/TA0IN	I ² C bus data input
3	P71/TA1OUT	I ² C bus clock output
4	P72/TA3OUT	PAGE signal output
5	P73/TA4IN	+5V power
6	P74/TA5OUT	Backlight on/off control
7	P80/TB0IN0/INT5	Remote control signal
8	P81/TB0IN1/INT6	+1.8V power supply
9	P82/TB0OUT0	Remote red control signal
10	P83/TB0OUT1	Remote green control signal
11	P90/TXD0	Digital ground
12	P91/RXD0	HDMI identity signal
13	P92/SCLK0/ $\overline{CTS0}$	No connection
14	P93	CON4(10 th pin)
15	P94	CON4(4 th pin)
16	P95	CON4(3 rd pin)
17	AM0	Bus byte selection
18	DVCC	+3.3V power
19	X2	Crystal oscillator interface
20	DVSS	Ground
21	X1	Crystal oscillator interface
22	AM1	Bus byte selection
23	$\overline{RESET}$	CPU reset control port
24	P96/XT1	Low frequency oscillation input interface
25	P97/XT2	Low frequency oscillation output interface
26	NMI	Interrupt request signal
27	ALE	Address latch level
28	P00/AD0	0~7 bit address/data channel
⋮	⋮	
35	P07/AD7	
36	P10/AD8/A8	8~15 bit address/data channel or 8~15 bit address channel
⋮	⋮	
43	P17/AD15/A15	
44	P20/A0/A16	8~5 bit address channel or 8~21 bit address channel
⋮	⋮	
49	P25/A5/A21	
50	P30/ $\overline{RD}$	External memory read control terminal
51	P31/ $\overline{WR}$	External memory write control terminal (AD0~AD7)
52	P32/ $\overline{HWR}$	Data write control terminal (AD8~AD15)

53	P40/ $\overline{CS0}$	Internal address selection signal
54	P41/ $\overline{CS1}$	
55	P42/ $\overline{CS2}$	
56	P60/SCK	(no connection)
57	P61/SO/SDA	I ² C bus data
58	P62/SI/SCL	I ² C bus clock
59	P63/INT0	Interrupt request signal
60	P50/AN0	KEY control terminal
61	P51/AN1	
62	P52/AN2	SCART1 interface FS signal
63	P53/AN3/ $\overline{ADTRG}$	SCART2 interface FS signal
64	AVCC	Analog power (+3.3V)

T5BS4-9999 internal functional block diagram:



4. STV-8217/STV-8218 brief introduction

STV-8217/STV-8218 is capable of following functions:

■ Full-Automatic Multi-Standard Demodulation

- B / G / I / L / M / N / D / K Standards
- Mono AM and FM
- FM 2-Carrier and NICAM/BTSC

■ Sound Processing: Loudspeaker

- ST royalty-free processing: ST WideSurround, ST

OmniSurround (Virtual Dolby Surround and Virtual Dolby Digital compliant) and ST Dynamic Bass

- Independent Volume / Balance
- Smart Volume Control (SVC), 5-band equalizer and Loudness

■ Analog Audio Matrix

- 4 stereo inputs
- 3 stereo outputs
- THRU mode
- 2 VRMS capability

Pin introduction:

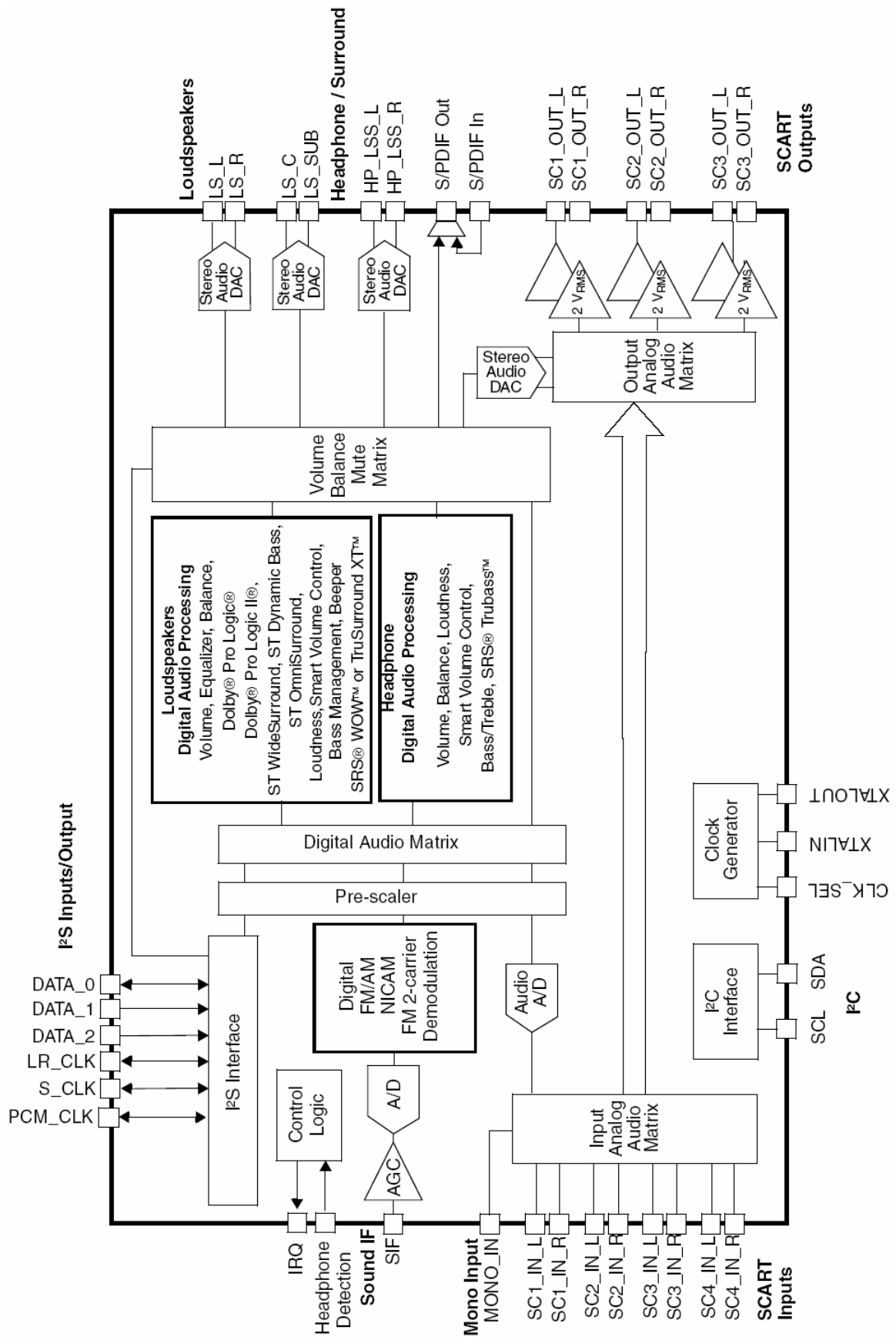
Pin	Designation	Function Description
1	SC1_OUT_L	SCART1 left audio output
2	SC1_OUT_R	SCART1 right audio output
3	VCC_H	+8V power
4	GND_H	ground
5	SC3_OUT_L	SCART3 left audio output
6	SC3_OUT_R	SCART3 right audio output

Pin	Designation	Function Description
7	VCC33_SC	+3.3V power
8	GND33_SC	Ground
9	SC1_IN_L	SCART1 left audio output
10	SC1_IN_R	SCART1 right audio output
11	VREFA	Sound bypass voltage decoupling interface
12	GND_SA	Ground
13	VBG	Sound sideband voltage decoupling interface
14	SC2_IN_L	SCART2 left audio input
15	SC2_IN_R	SCART2 right audio input
16	VCC33_LS	DACs power(+3.3V)
17	GND33_LS	DACs ground
18	SC2_OUT_L	SCART2 left audio output
19	SC2_OUT_R	SCART2 right audio output
20	VCC_NISO	NISO polarization voltage (+3.3V)
	GND_SA	DACS ground
21	VSS33_CONV	DAC ground
22	VDD33_CONV	DAC power (+3.3V)
23	SC3_IN_L	SCART3 left audio input
24	SC3_IN_R	SCART3 right audio input
25	SCL_FLT	SCART left channel filtering
26	SCR_FLT	SCART right channel filtering
27	LS_C	No connection
28	LS_L	Loudspeaker left channel output
29	LS_R	Loudspeaker right channel output
30	LS_SUB	No connection
31	HP_LSS_L	No connection
32	HP_LSS_R	No connection
33	VSS18_CONV	DAC/ADC ground
34	VDD18_CONV	DAC/ADC power (8V)
35	/HP_DET	Earphone connection test terminal
36	ADR_SEL	Chip address selection signal
37	VSS18	Digital ground
38	VDD18	+1.8V power
39	SCL	I ² C bus clock

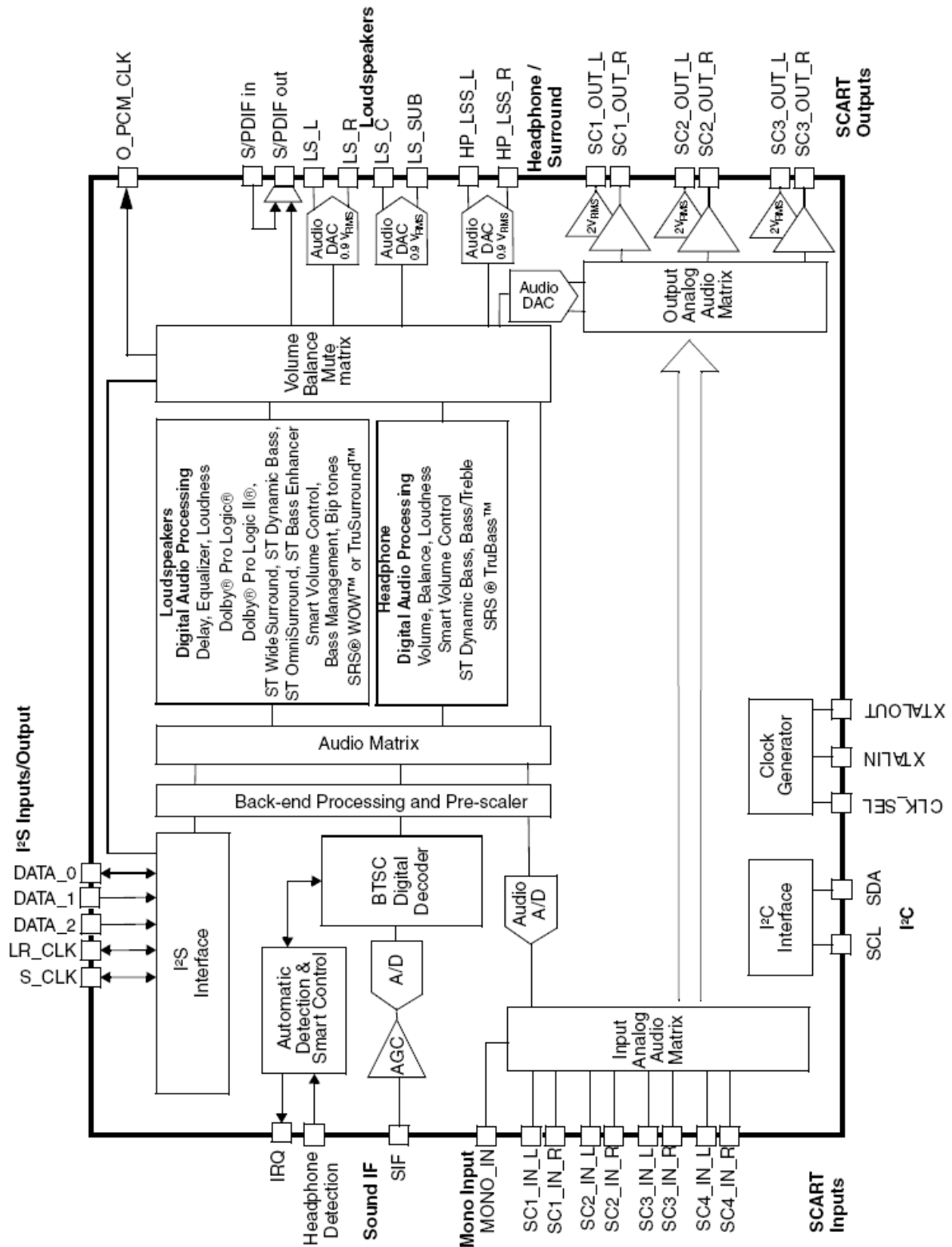
Pin	Designation	Function Description
40	SDA	I ² C bus
41	VSS18	Digital ground
42	VDD18	+1.8V power
43	/RST	Reset signal input/output terminal
44	S/PDIF_IN	No connection
45	S/PDIF_OUT	No connection
46	VDD33_IO1	+3.3V power
47	VSS33_IO1	Digital ground
48	CK_TST_CTRL	Digital ground
49	VSS18	Digital ground
50	VDD18	+1.8V Power
51	CLK_SEL	Clock input format selection
52	XTALIN_CLKXTP	Oscillator interface
53	XTALOUT_CLKXTM	
54	VCC18_CLK1	5V regulated output
55	GND18_CLK1	Ground
56	GND18_CLK2	Ground
57	VCC18_CLK2	+1.8V Power
58	VSS33_IO2	Digital ground
59	VDD33_IO2	+3.3V Power
60	I2S_PCM_CLK	No connection
61	I2S_SCLK	I ² S clock I/O channel1,2,3
62	I2S_LR_CLK	I ² S selection signal input/output
63	I2S_DATA0	I ² S bus data input/output stereo channel 1
64	I2S_DATA1	I ² S bus data input stereo channel 2
65	I2S_DATA2	I ² S bus data input stereo channel 3
66	VDD18	+1.8V Power
67	VSS18	Ground
68	BUS_EXP	Bus extension selection
69	IRQ	No connection
70	GND_PSUB	Ground
71	VDD18_ADC	+1.8V Power
72	VSS18_ADC	Ground
73	SIF_P	Intermediate audio input (positive terminal)

Pin	Designation	Function Description
74	SIF_N	Intermediate audio input (negative terminal)
75	GNDPW_IF	Ground
76	VCC18_IF	+1.8V Power
77	GND18_IF	Ground
78	MONO_IN	High frequency head audio input
79	SC4_IN_L	SCART4 left audio input
80	SC4_IN_R	SCART4 right audio input

STV-8217 internal block diagram:



STV-8218 internal block diagram:



5. TDA8944J brief introduction:

TDA8944J is a dual channel sound power amplifier, with each channel has 7W power output (the resistance of the loudspeaker is 8Ω) to drive the loudspeaker; When music is played, its high efficiency could reduce external heat dispersion and the requirement of the power supply equipment.

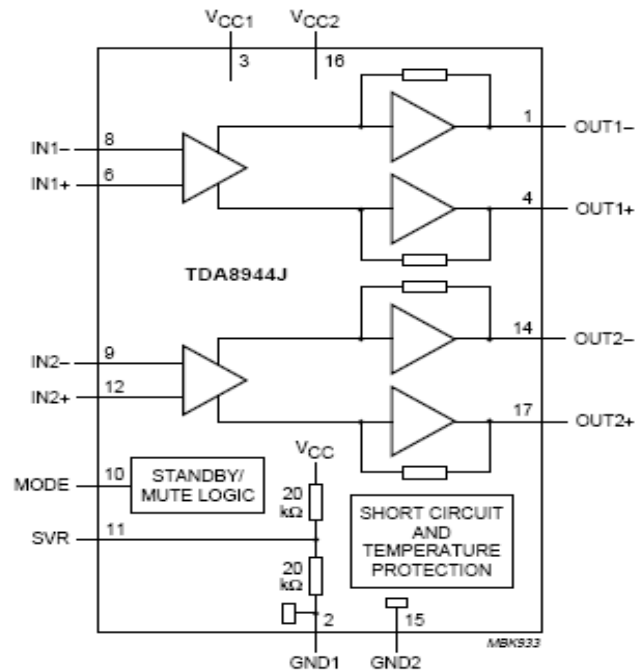
Its main features:

- High integration
- Standby and mute mode
- No switch switching noise
- 12V Power filtering
- Low working current
- Output current short-circuit grounding protection
- Overheat protection
- Linear output to drive external earphone, PC and portable audio equipment

Pin introduction:

Pin	Designation	Function Description
1	OUT $\bar{1}$	Loudspeaker negative pole output terminal 1
2	GND1	Ground
3	VCC1	+12V Power
4	OUT $\dot{1}$	Loudspeaker positive output terminal 1
5	N.C.	No connection
6	IN $\dot{1}$	Positive pole input terminal 1
7	N.C.	No connection
8	IN $\bar{1}$	Negative pole input 1
9	IN $\bar{2}$	Negative pole input 2
10	MODE	Operation mode selection (standby, mute, work)
11	SVR	Voltage decoupling filtering (grounding)
12	IN $\dot{2}$	Positive pole input terminal 2
13	N.C.	No connection
14	OUT $\bar{2}$	Loudspeaker negative output terminal 2
15	GND2	Ground
16	VCC2	+12V Power
17	OUT2+	Loudspeaker positive output terminal 2

TDA8944J internal block diagram:



6. ANX9011L brief introduction:

ANX9011L is a processor used for HDMI (high definition multimedia interface) signal reception processing, and is used in digital TV, platform screen TV, and projection equipment. It receives the HDMI input data series and decodes them into digital audio and digital video signal. ANX9011L could input and output 8 channels digital audio channel of 192kHz sampling frequency, it has 128 pins with LQFP packaging and has a build-in HDCP, which could greatly reduce design complexity and system cost.

Its main features are:

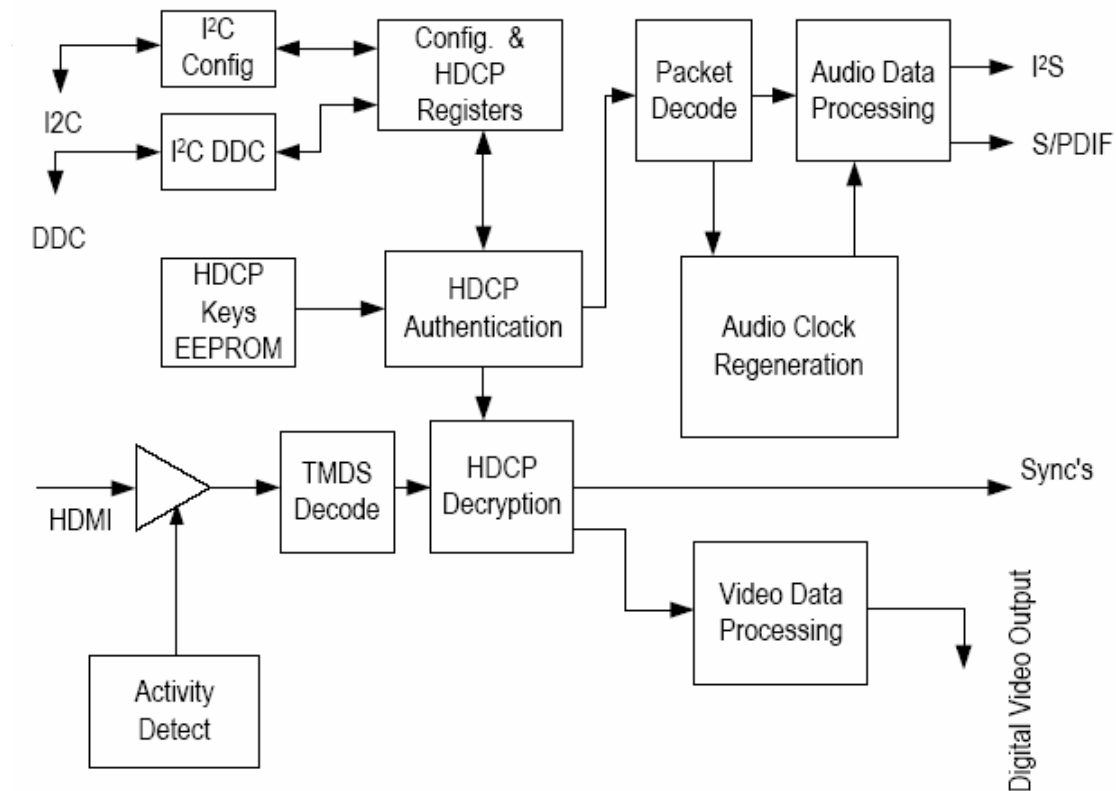
- Support up to 165MHz HDMI data rate
- Suitable for HDMI 1.1, HDCP 1.1 and DVI 1.0 format
- Support 20m connection cable
- Support multi-format video processing
 - 24 bit RGB / YCbCr 4:4:4
 - 16/20/24 bit YCbCr 4:2:2
 - 8/10/12 bit YCbCr 4:2:2 (ITU BT-656)
 - 12bit two data rate interface
 - 24/48 bit single data rate interface
- RGB and YcbCr color format conversion of each other
- Auto configure video mode
- Digital audio interface
 - 32-192kHz audio sampling rate
 - Provide 4-channel IIS interface for 8 audio channels
 - Mute software configuration
- HDCP decryption technology
- PRBS-31 link auto-test technology
- Controllable Power protection management system
- 128 pin LQFP packaging

Pin function

Pin	Designation	Function Description
<i>Digital image output terminal</i>		
92	VDE23	24bit (DP0~DP23) digital video output data bus
⋮	⋮	
96	VDE19	
99	VDE18	
⋮	⋮	
101	VDE16	
⋮	⋮	
105	VDE12	
108	VDE11	
⋮	⋮	
117	VDE4	
121	VDE3	
⋮	⋮	
124	VDE0	
2	VDO23	24bit (QO0~QO23) no connection
⋮	⋮	
5	VDO20	
8	VDO19	
⋮	⋮	
11	VDO16	
14	VDO15	
⋮	⋮	
17	VDO12	
20	VDO11	
⋮	⋮	
23	VDO8	
26	VDO7	
⋮	⋮	
29	VDO4	
32	VDO3	
⋮	⋮	
35	VDO0	
119	VD_CLK	Video output data clock
127	DE	Video output data effective level signal
128	HSYNC	Line synchronizing signal
1	VSNC	Field synchronizing signal
<i>Digital audio output terminal</i>		
85	XTAL_IN	Crystal oscillator interface
84	XTAL_OUT	

79	MCLKOUT	Audio main control clock output
76	IIS_SCK	IIS bus clock
75	IIS_WS	IIS signal selection
74	IIS_SD0	IIS bus data
⋮	⋮	IIS channel selection (no connection)
71	IIS_SD3	
70	SPDIF	(no connection)
67	MUTEOUT	Mute control signal (no connection)
Control signal port		
91	INT	Interrupt request output
89	RESETN	Reset signal input
42	DDC_SCL	DDC Clock signal
41	DDC_SDA	DDC address/data signal
40	CFG_SCL	I ² C bus clock
39	CFG_SDA	I ² C address/data
90	HDMI_DET	Synchronization detection
38	DEVAD	I ² C connection detection signal
44	HDMI_5V	Cable insert detection terminal
88	RESDL	Ground
43	NC	No connection
45	NC	
HDMI signal input terminal		
51	HDMI_CLKP	Differential clock input
50	HDMI_CLKN	
55	HDMI_D0P	Differential data input1
54	HDMI_D0N	
59	HDMI_D1P	Differential data input 2
58	HDMI_D1N	
63	HDMI_D2P	Differential data input 3
62	HDMI_D2N	
Power and ground		
DVDD18	12, 24, 36, 51, 66, 81, 82, 112, 125	+1.8V digital Power
DVDD33	7, 19, 31, 68, 77, 98, 107, 120	+3.3V digital Power
AVDD33	47, 49, 53, 57, 61, 86, 87	+3.3V analog Power
DVSS	6, 13, 18, 25, 30, 37, 65, 69, 78, 80, 97, 106, 113, 118, 126	Digital ground
AVSS	46, 52, 56, 60, 64, 83	Analog ground

ANX9011L internal block diagram:



7. 74HCT4052D brief introduction:

74HCT4052D is a 4-channel bi-directional analog multiplexer and multi-channel output selector. Each multi-channel output selector has 4 independent input/output terminals and 1 common input/output terminal. It is often used in analog and digital multiplexing, and multi-channel output selecting circuit and signal control system.

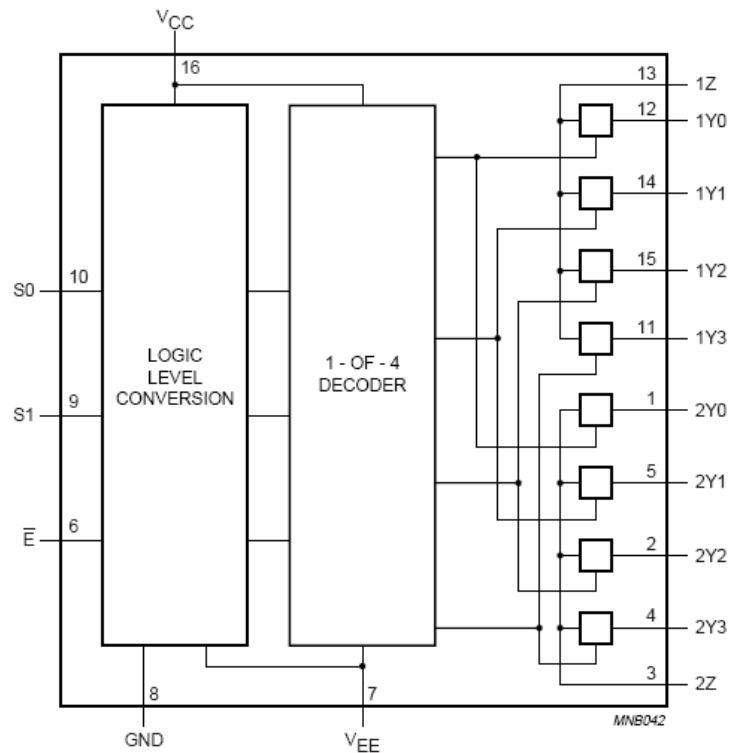
Its main features are:

- -5V to +5V widely range Power input
- Low on-resistance
- Logical level alternating
- Build-in interrupt before running
- In line with JEDEC no.7A standard
- Automatic protection function

Pin introduction:

Pin	Designation	Function Description
1	2Y0	PC left audio input
2	2Y2	HD terminal left audio input
3	2Z	Left audio input
4	2Y3	SCART2 left audio input
5	2Y1	AV left audio input
6	E	Ground
7	VEE	Ground
8	GND	Ground
9	S1	Select level input (+3.3V Power)
10	S0	
11	1Y3	SCART2 right audio input
12	1Y0	PC right audio input
13	1Z	Right audio output
14	1Y1	AV right audio input
15	1Y2	HD terminal right audio input
16	VCC	+5V Power

74HCT4052D internal block diagram:



Signal Processing Analysis and Measured Data

This chapter Mainly introduces the receiving and processing of image signal and sound signal, whole machine system control process, and whole machine power supply system (Model of LT32GJ01E is taken as an example, other models is similar and will not be explained here for each. There are minor differences in power supply among different models of liquid crystal screen; the details are shown in Specifications).

1. Image signal flow

RF signal is demodulated by tuner, then the obtained video signal and signals inputted from COMPONENT terminal, AV terminal, S terminal, 2-way Scart interface and VGA interface are all sent into video-processing IC SVP-CX32LF to be processed. Input signals with different format are changed into uniform LVDS differential signals, and are sent to liquid crystal screen. In addition, TV video signal is processed by SVP-CX32LF to generate 2-way CVBS signal, which is used in 2-way Scart video output.

Signal inputted from HDMI interface is decoded into digital video signal, which is sent into video decoding IC SVP-CX32LF to be processed. After procession, the obtained uniform LVDS differential signal is sent to liquid crystal screen through LVDS interface to screen.

2.Sound flow

RF signal is demodulated by tuner, and then the obtained SIF signal (SIF-2 signal) and audio signal inputted from Scart1 interface are directly processed by STV-8217. The output audio signal of STV-8217 is sent into power amplifier TDA8944J, and the amplified signal is finally sent to speaker or earphone output.

Signals from HDTV terminal, AV terminal, Scart2 interface and PC Audio are first sent into 74HCT4052D for choosing passages, and then sent into STV-8217 for demodulation and sound effect processing. The output audio signal of STV-8217 is sent into power amplifier TDA8944J, and finally the amplified signals are sent to speaker or earphone output.

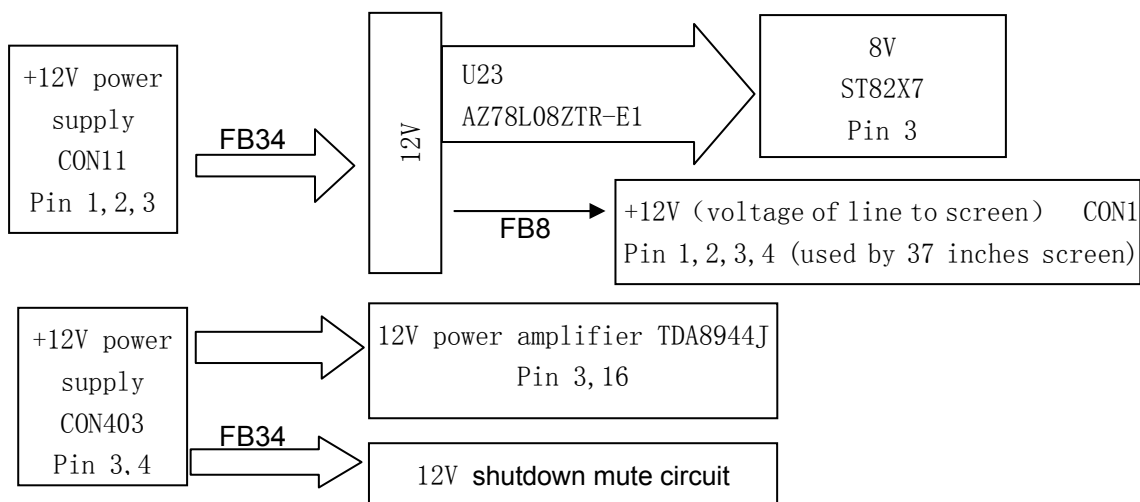
After the demodulation and sound effect processing of STV-8217, there is an audio output which is used for sound output of Scart1 terminal.

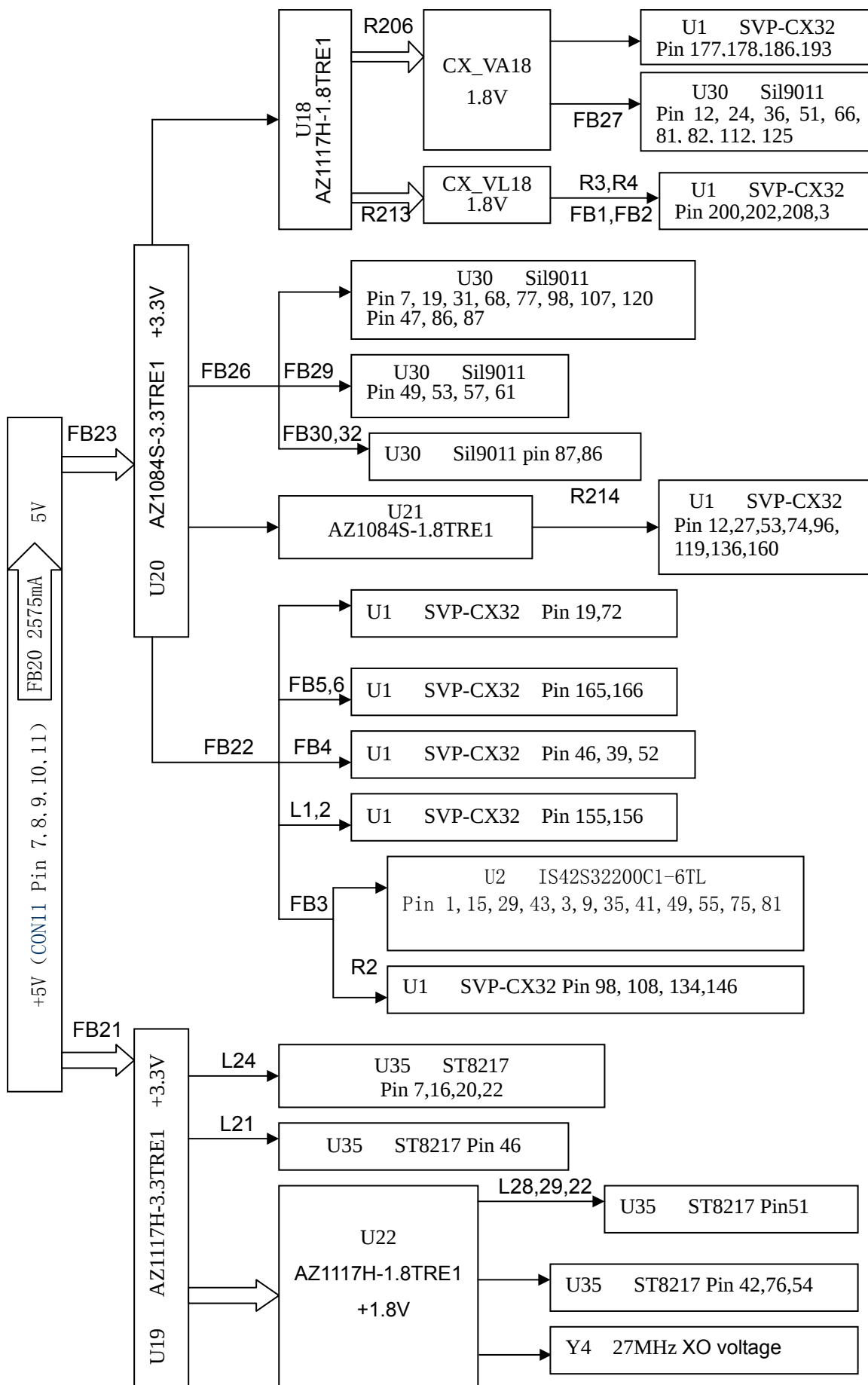
3. Whole machine power supply system

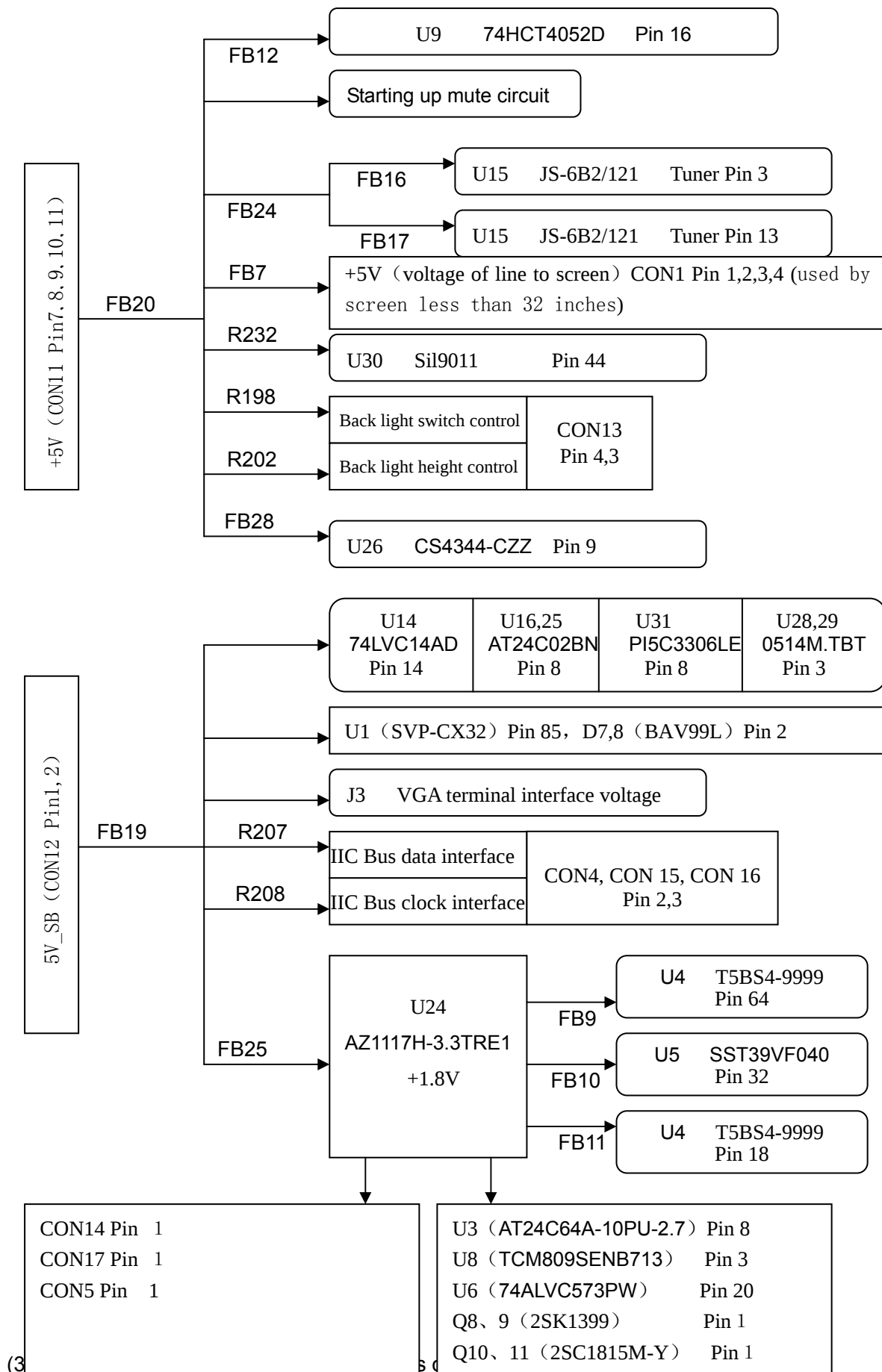
There are 4 ways of voltage output in the power panel: +24V (6A)、+12V (2A)、+5V (2A) and +5VS (1A) . +24V output is used by LCD screen; +12V output is used by power amplifier TDA8944J, and is also changed into +8V output by AZ78L08ZTR-E1 to satisfy the need of STV-8217 IC; +5V output is changed into 1.8V output and 3.3V output by DO (such as AZ1117H-1.8TRE1 and AZ1117H-3.3TRE1) to satisfy the needs ICs. +24V, +12V and +5V outputs will be cut off in standby state. While +5VS output is the power supply of MCU, infrared receiver and EEPROM etc, and will be cut off when the AC is turn off.

5V output will be divided into two ways: one way is changed into +3.3V and +1.8V analogue power supplies through DC/DC converter for STV-8217 IC, ANX9011LF IC etc and peripheral circuits; other way is changed into +3.3V and +1.8V digital power supplies through DC/DC converter for SVP-CX32 IC etc and peripheral circuits, and this way of 5V voltage will be cut off in standby state, while the other way of 5V voltage supply power especially for MCU, infrared receiver and EEPROM etc, and will not be cut off in standby state.

(1) Constitution and distribution of whole machine power supply





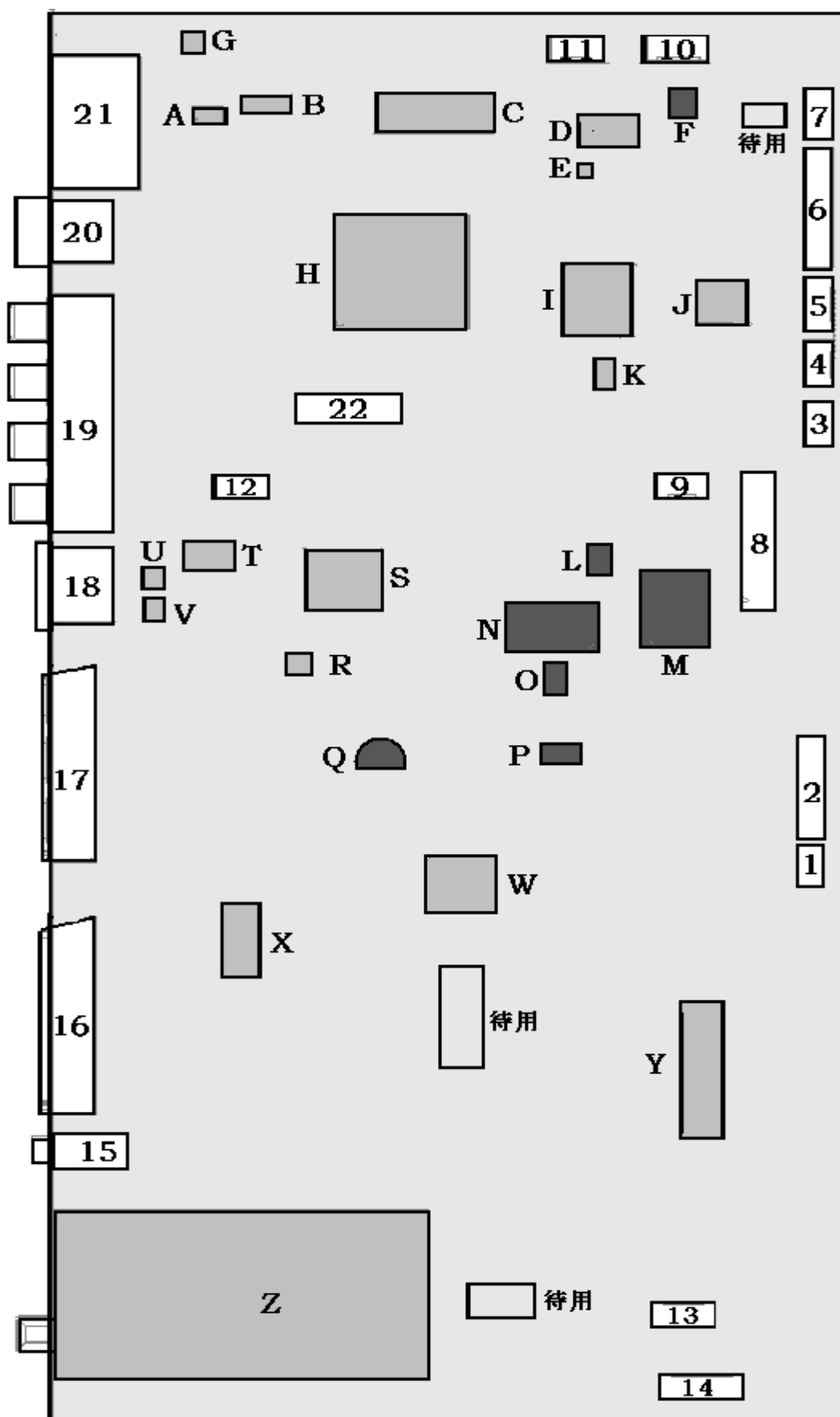


Position number	Component model	Pin 1(V)	Pin 2(V)	Pin 3(V)
U18、U22	AZ1117H-1.8TRE1	GND	1.8V	3.3V
U19、U24	AZ1117H-3.3TRE1	GND	3.3V	5V
U20	AZ1084S-3.3TRE1	GND	3.3V	5V
U21	AZ1084S-1.8TRE1	GND	1.8V	3.3V
U23	AZ78L08ZTR-E1	12V	GND	8V

(4) Pin sequence of power cord of power panel

Position number	Pin	Pin Definition	Pin Function Description
CON1	1	ON/OFF	L: OFF ; H: ON
	2,3	GND	GND
	4,5	5V	+5V/4A
	6	5Vstb	+5V/1A
	7,8	GND	GND
	9,10	12V	+12V/1A
CON2	1,2	12VA	+12V/2A
	3,4,5,6	GND	GND
	7,8	24Vio	+24V/1A
CON3	1,2,3	GND	GND
	4,5,6	24VI	+24V/4A

4. Position and definition of the main components and sockets on mainboard



(1) Socket definition

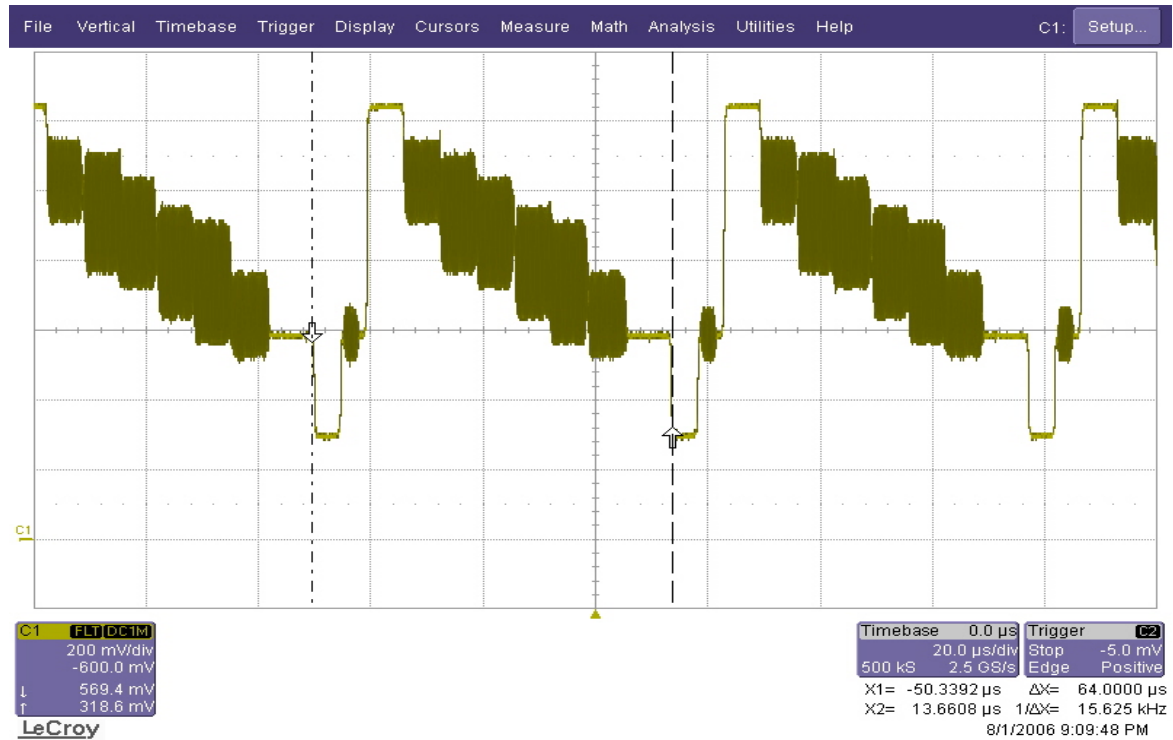
S/no.	Position Number	Connecting Object	Function Description
1	CON403	Power panel	GND, GND, +12V, +12V
2	CON11	Power panel	+12V, +12V, +12V, GND, GND, GND, +5V, +5V, +5V, +5V, +5V
3	CON13	Back light control line	GND, GND, back light switch control, back light brightness control
4	CON14	Keyboard	+3.3V、GND、KEY1、KEY2
5	CON17	Remote control receiving board	+3.3V、REMOTE、GND、indicator1、indicator1
6	CON4	Standby	
7	CON5	Standby	
8	CON1	LVDS interface of line to screen	
9	CON15	I ² C	
10	CON12	Power panel	+5V_SB , +5V_SB , GND , GND , Power supply control
11	CON13	Standby	
12	CON8	Standby	
13	CON9	Speaker	L+,L-,R+,R-
14	CON10	Side AV board	
15	J9	VGA audio signal input	
16	J8	SCART2 input	
17	J5	SCART1 input	
18	J4	HDMI input	
19	J2	HD, audio, video signal input	
20	J6	S terminal input	
21	J3	VGA input	
22	CON2	Standby	

(2) Main components descriptions

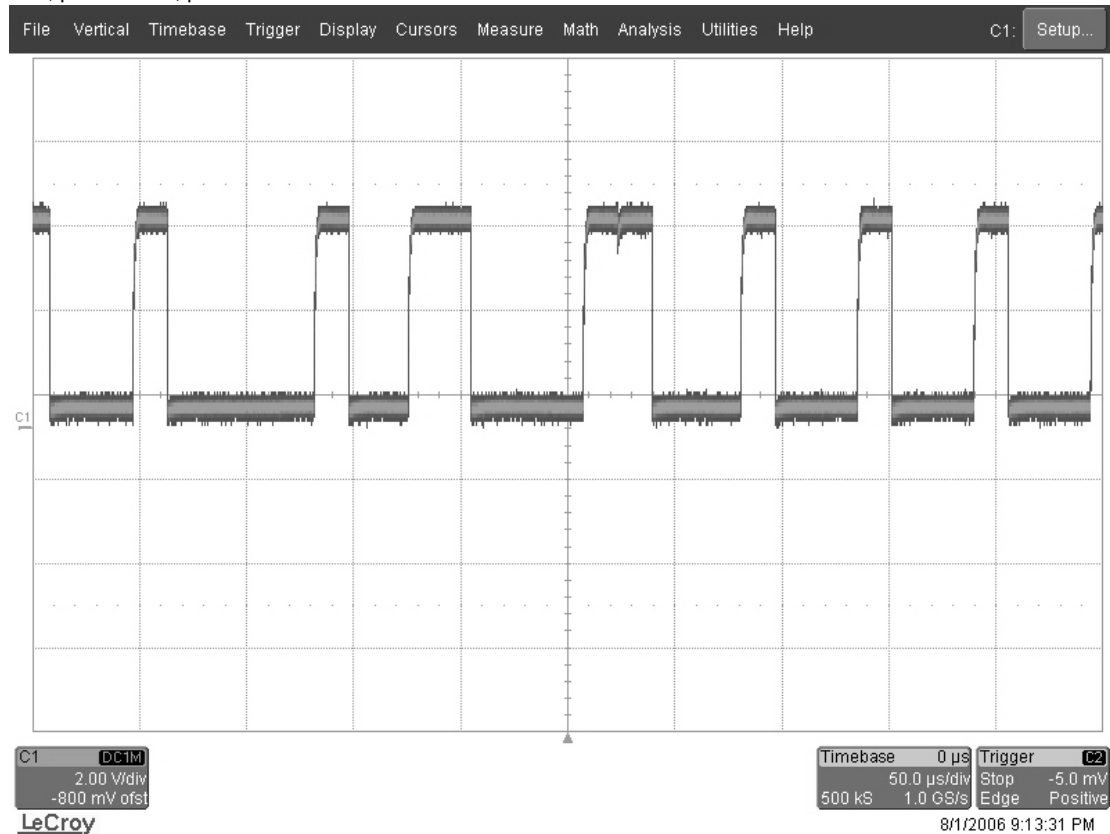
S/no.	Position number	Component	Function Description
A	U16	AT24C02BN-10SU-1.8	EEPROM
B	U14	74LVC14AD	VGA line and field synchronizing signal shaping
C	U2	IS42S32200C1-6TL	2MX32bits SDRAM, used for video signal access
D	U3	AT24C64A-10PU-2.7	EEPROM
E	U8	TCM809SENB713	MCU reset IC
F	U31	PI5C3306LE	I ² C bus switcher for program upgrading
G	U1	SVP-CX32LF	Video decoding, image processor, A/D and D/A conversion
H	U5	SST39VF040-70-4C-NHE	Flash MEMORY , storing whole machine control program
I	U4	T5BS4-9999	MCU, mainly control IC
J	U6	74ALVC573PW	Address latch, for latching and extending the address line
K	U18、U21、U22	AZ1117H-1.8TRE1	3.3V to 1.8V DC-DC Converter
L	U20	AZ1084S-3.3TRE1	5V to 3.3V DC-DC Converter
M	U19 、U24	AZ1117H-3.3TRE1	5V to 3.3V DC-DC Converter
N	U23	AZ78L08ZTR-E1	12V to 8V DC-DC Converter
O	U26	CS4344-CZZ	HDMI digital audio decoding and D/A conversion
P	U30	ANX9011L	HDMI decoding, HDTV video/audio reproduction
Q	U25	AT24C02BN-10SU-1.8	EEPROM
R	U28、U29	Rclamp0514M.TBT	HDMI signal ESD protective device
S	U35	STV-8217	Sound Processor
T	U9	74HCT4052D	AV input sound passage switcher
U	U33	TDA8944J	2X7W Sound Amplifier (BTL Output)
V	U15	JS-6H2/121	Tuner

5. Waveforms at key points

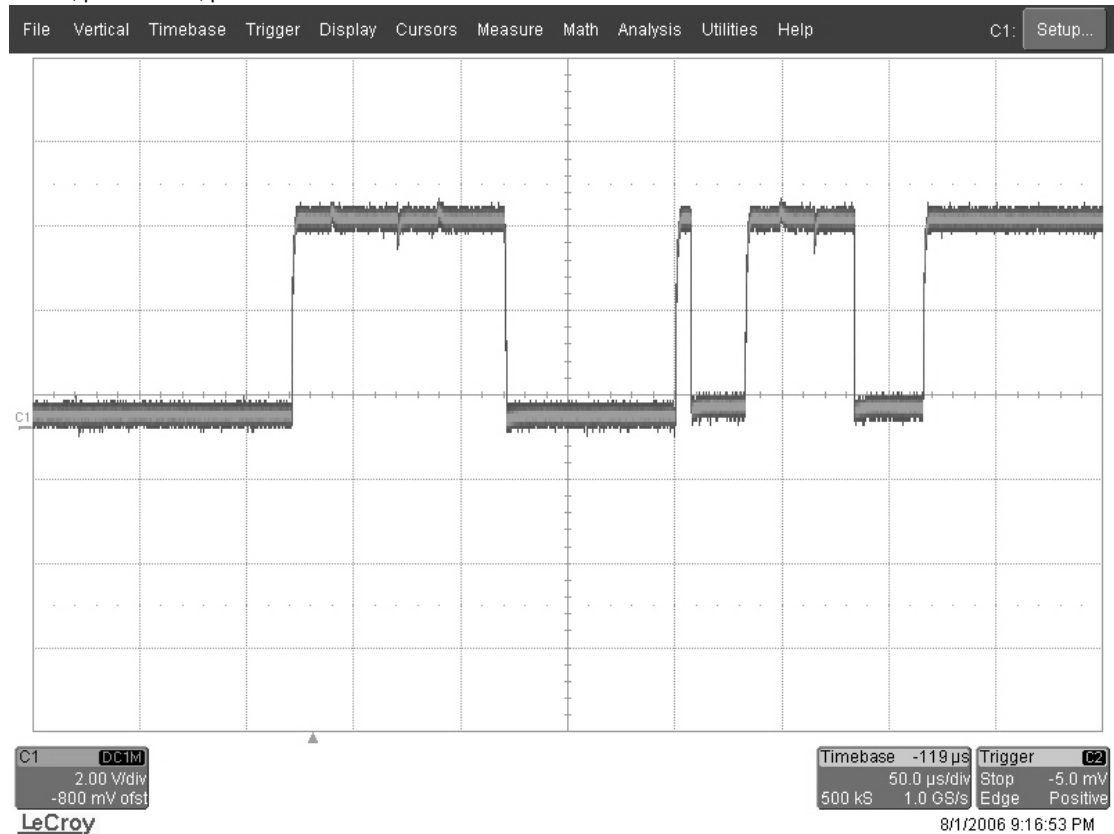
(1) RF inputting color bar signal, Composite Video Signal waveform at pin 14 of tuner U15, the waveform at pin 169 of U1 (SVP-CX32LF) is alike:



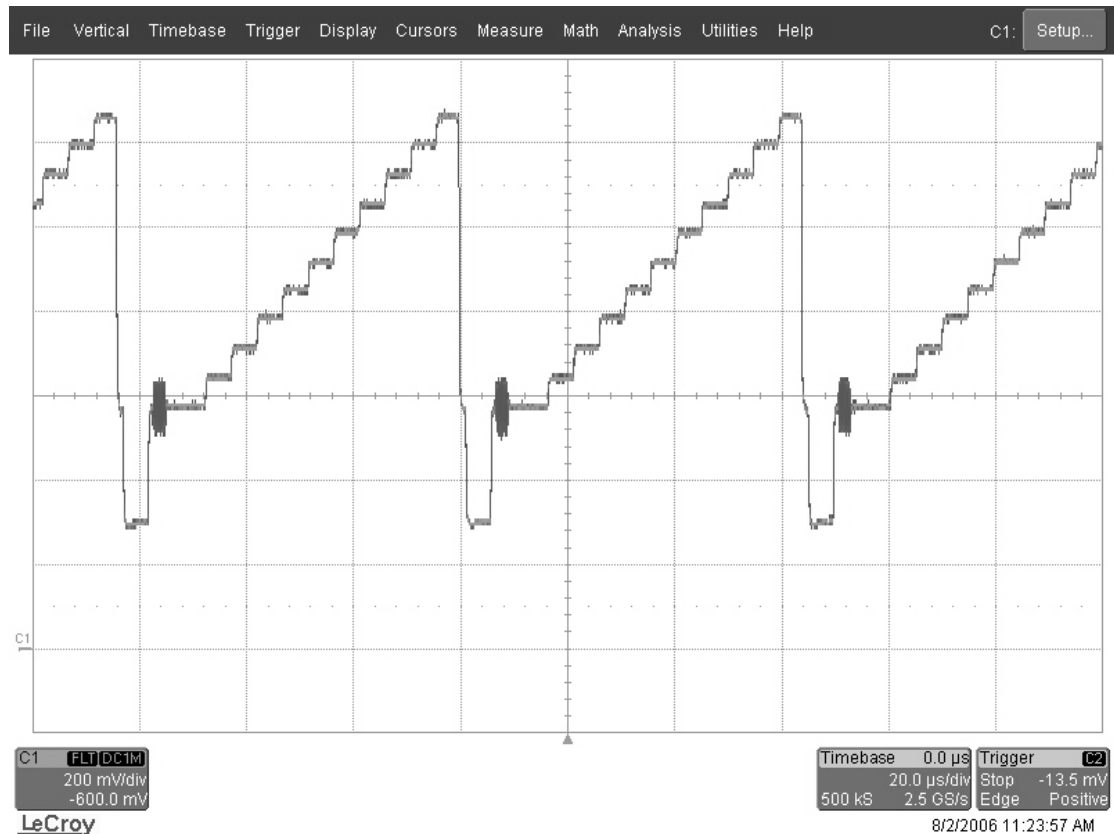
(2) RF inputting color bar signal, I²C bus clock signal SDA, pin 5, 6 of U31, pin 6 of U16, pin 39 of U35, pin 58 of U4, pin 40 of U30, pin 57 of U1, pin 4 of tuner U15:



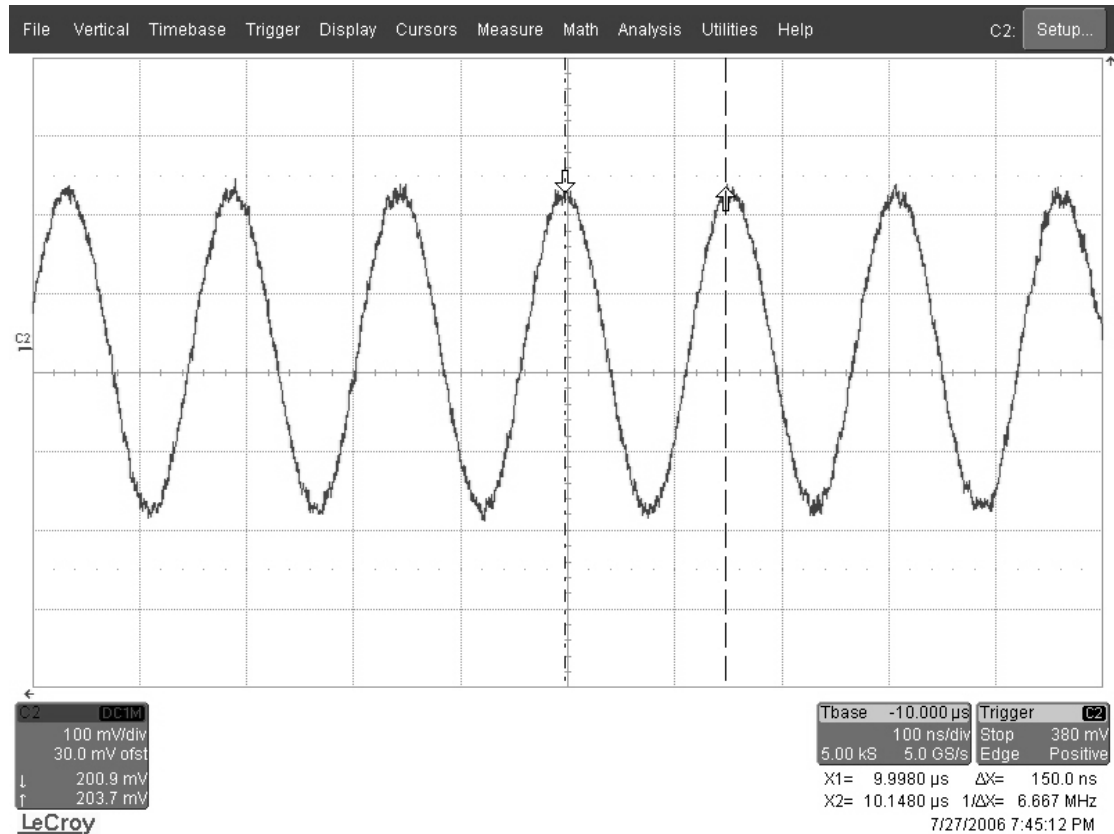
(3) RF inputting color bar signal, I²C bus clock signal SDA, pin 2, 3 of U31, pin 5 of U16, pin 40 of U35, pin 57 of U4, pin 39 of U30, pin 58 of U1, pin 5 of tuner U15:



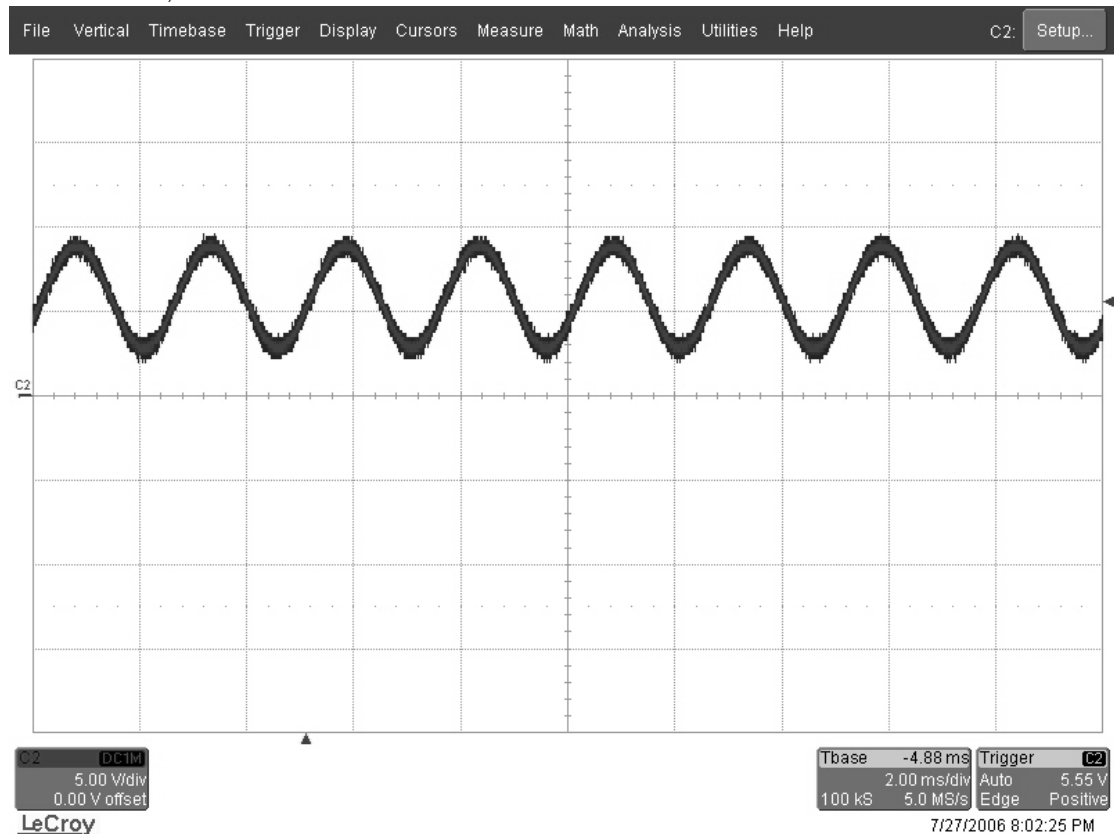
(4) RF inputting grey signal, Composite Video Signal waveform at pin 14 of tuner U15, the waveform at pin 169 of U1 (SVP-CX32LF) is alike:



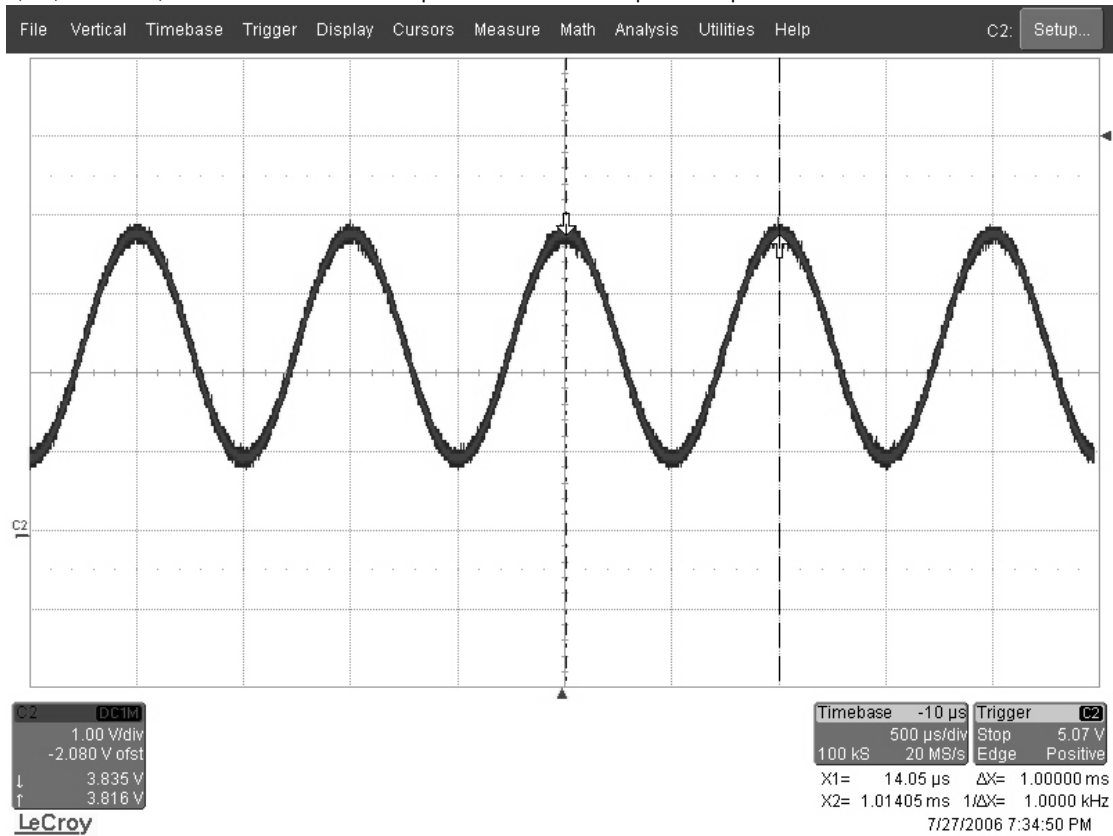
(5) RF inputting white signal, SIF Signal waveform at pin 11 of tuner U15, and waveform at pin 73 of sound effect processing IC Stv-8217:



(6) RF inputting white signal, and inputting sound signal with 1KHz frequency, inductance waveforms at pin 28, 29 of U35, and waveform of L26, L27:



(7) Inputting sound signal with 1KHz frequency, with the processing of U33 and power amplifier TDA8944J, waveform at pin 1, 4, 14, 17 of U33, and waveform at CON13 speaker and CON14 earphone output interfaces:



TROUBLE SHOOTING

1. Failure phenomenon: The picture is normal, but OSD has line in it.
The reason and the processing: Check the pin of U2 and pin 80-160 of U1 for pseudo soldering, and have pseudo soldering touched up.

2. Failure phenomenon: There is sound but no picture; there is no OSD when start up; and the back light is bright.
The reason and the processing: Check the connecting line to screen, and have it connected well.

3. Failure phenomenon: There are no picture, no sound, and no snow flower dot in TV mode, but AV is normal.
The reason and the processing: Check the tuner and its peripheral circuits (including bus and power supply). If the peripheral circuits work well but there is no output from tuner, then the tuner must be failure.

4. Failure phenomenon: LCD television cannot be controlled(including no starting up with red light on, remote control and local key having no effect, etc).
The reason and the processing: LCD television has crash phenomenon, restart after power off.

5. Failure phenomenon: +5V_SB voltage has output, but there are no picture, no sound, and back light and indicating light are not on.
The reason and the processing: Check other groups of voltage; if they have no outputs, then check Flash to find if it is installed well or damaged; if Flash is OK, find out that if the power supply and output voltage of U4 works well.

Listing of Repair and Easily Damaged Parts

This listing of maintenance and repair parts are presented for reference only, modification of parameters will not be informed. For accurate models or specifications, please consult the newest data of our company. (32 inches series is taking as example)

Number	Name	Part code	Part number	Print plate number	Proportion of easy damage (%)
1.	Panel frame		JUG6.116.623		0.1
2.	Back cover		JUG6.116.624		0.1
3.	Mount part		JUJ7.356.005		0.1
4.	Mainboard part		JUG6.690.106	Print plate JUG7.820.015	1
5.	Remote receiving board part		JUG6.695.028	Print plate JUG7.820.016	0.5
6.	Keyboard part		JUG6.694.029	Print plate JUG7.820.017	0.5
7.	Inner power module		FSP205-5E01	Inner power module	5
8.	LCD screen		V320B1-L04	LCD screen	0.1
9.	Electronic tuner		JS-6H2/121	Electronic tuner	1
10.	Electronic tuner		CDT-6GPL22-00	Electronic tuner	1
11.	Dynamic speaker		YDT613-A9-10W-8 Ω	Dynamic speaker	2
12.	Dynamic speaker		YDG52-A3-10W-8 Ω	Dynamic speaker	2
13.	Remote control emitter		GK23J2	Remote control emitter	1

Factory Mode Setting

1. Enter factory menu

Power on TV set, and make LCD at working state:

- ① Press **【MUTE】** key on remote control;
- ② Press **“MENU”** key on remote control, and switch to **“SOUND”** option with **【V+】**, **【V-】** key;
- ③ Move cursor to **“Balance”** option with **【P+】**, **【P-】** key to enter setting status;
- ④ Press number key **“3”**、**“1”**、**“3”**、**“8”** on remote control to enter password.

Entering factory mode is then finished. Press **【Display】** key to quit factory mode.

(1) Factory menu display is presented like bellow:

chassis: Ls01

Jul 29 2006 23:25:16

Version: LsE01-M32-V1.05WL

I²C off

Clear E²PROM

Panel Control

Factory Setting

System Control

Min/Max CONTROL

White Balance

Hotel Option

E²PROM Edit

Register Edit

Notes: “chassis: LS01” is the model number of local module, “Jul 29 2006 23:25:16” is the latest upgrading time for software, and “Version: LSE01-M32-V1.05WL” is the version number of current software.

(2)The detailed setting items are given bellow:

Contents of first page:

Setting Item	Setting Content	Setting Method	Remark
IIC Off	Stop I ² C bus communication	“OK” or “V+” , “V-” key	Used for updating program
Clear EEPROM	E ² PROM initialization	Press “OK” key first, then press “V-” key	Only done in first setting station
Panel Control	Screen back light brightness control	Press “V+”, “V-”keys to enter submenu	
Factory Setting	Factory Setting	Press “V+”, “V-”keys to enter submenu	
System Control	System Control	Press “V+” key to enter submenu	
Min/Max Control	Analog setting of picture and sound	Press “V+” key to enter submenu	Only set sub brightness Bri Mid
White Balance	White balance setting	Press “V+” key to enter submenu	
Hotel Option	Hotel mode	Press “V+” key to enter submenu	Used for hotel TV
E ² PROM Edit	E ² PROM data editing	No setting	
Register Edit	Register	No setting	

Use **【P+】** and **【P-】** keys on remote control to make up or down option, and use **【V+】** and **【V-】** keys to set.

Contents of sub pages:

Panel Control

Setting Item	Setting Value	Remark
LVDS Mapping	0x09	Polarity of LVDS signal
Backlight	100	Back light brightness value 1
SavePower1	50	Back light brightness value 2
SavePower2	30	Back light brightness value 3
BL-invisible	Off	Show SavePower mode in menu or not (ON: not show; OFF: show)

Factory Setting

Setting Item	Setting Value	Remark
Balance	-50_0_50	Fast check of the balance characteristic of L/R sound channel
Volume	0_10_20..._100	Fast setting of volume, each step is 10
IIS	On/Off	Preset sound decoding IC of HDMI
Def Country	Other	Default country
RTC En	On/Off	Show real time clock or not
CANAL-Visual	On/Off	Open Canal+ function to user or not

System Control

Setting Item	Setting Value	Remark	Setting Item	Setting Value
Default Lang	English	Default OSD language	SSC	
L/L' AGC	5	L/L' sound AGC	Delta	0
OverModulation	On/Off	OverModulation switch	Positive	6
PreScI SCART	8	SCART L/R input amplitude preamplifying	Negative	6
PreScI AM	12	AM_MONO IF preamplifying	Write	
PreScI FM	12	FM_MONO IF preamplifying		
PreScI NICAM	19	NICAM sound IF preamplifying		
EQ-invisible	Off	Equalizer switch , Off is 5 section equalization, On is high/low pitch setting		
ATS	Off	Program auto sequencing switch		
Logo	Off	Starting blue background LOGO switch		
Logo Edit	AKIRA	LOGO display contents , “V+ ”、 “V- ” for choosing setting position, “P+ ”、 “P- ” for choosing letter, including 52 English big/small letters together		
Logo Color	Logo Color	Modified according to user's require		

Min/Max Control

Setting Item	Setting Value	Setting Item	Setting Value
Con Min	30H	Vol Min	00H
Con Mid	70H	Vol Mid 1	01H
Con Max	A2H	Vol Mid 2	14H
Bri Min	00H	Vol Mid 3	28H
Bri Mid	8DH	Vol Mid 4	4BH
Bri Max	A0H	Vol Max	64H
Col Min	00H	Tre Min	00H
Col Mid	40H	Tre Mid	30H
Col Max	70H	Tre Max	60H
Tnt Min	20H	Bas Min	00H
Tnt Mid	80H	Bas Mid	30H
Tnt Max	E0H	Bas Max	60H
Shp Min	00H		
Shp Mid	60H		
Shp Max	A0H		

White Balance

Normal		Warm	
R Gain	7DH	R Gain	7DH
G Gain	80H	G Gain	80H
B Gain	9AH	B Gain	9AH
R Offset	80H	R Offset	84H
G Offset	80H	G Offset	80H
B Offset	74H	B Offset	74H
Cool			
R Gain	7DH		
G Gain	80H		
B Gain	9AH		
R Offset	80H		
G Offset	80H		
B Offset	90H		

Hotel Option

Setting Item	Setting Value	Remark
Hotel Mode Enable	No	Hotel mode presetting (Yes for Hotel Mode, No for normal TV mode)
Force Pos	1	Forced program number
Force Video	ext1	Forced AV input terminal
Disable Keypad	No	Open local key function or not
Disable Remote	No	Open remote receiving function or not
Disable Setup Menu	No	Open "setting" in OSD menu or not

Notes:

- A. In “Min/Max CONTROL” setting item, “Bri Mid” item is used to set sub brightness of picture;
- B. White balance needs to be set in “Normal” mode;
- C. Set CLEAR E² PROM will clear the memory data, So do not set it unless it is needed; other setting items do not need setting.

2. Setting method of factory menu

(1) Choose setting item

Operators can choose setting item orderly with【P+】and【P-】key, font having background display represents the item has been chosen. Press 【V+】 key to enter sub directory. Use 【P+】 and 【P-】 keys on remote control to make up or down option, and use 【V+】 and 【V-】 keys to set.

(2) All the menu functions are opened in factory mode, item checking and effect testing can be done by using menu if it is needed.

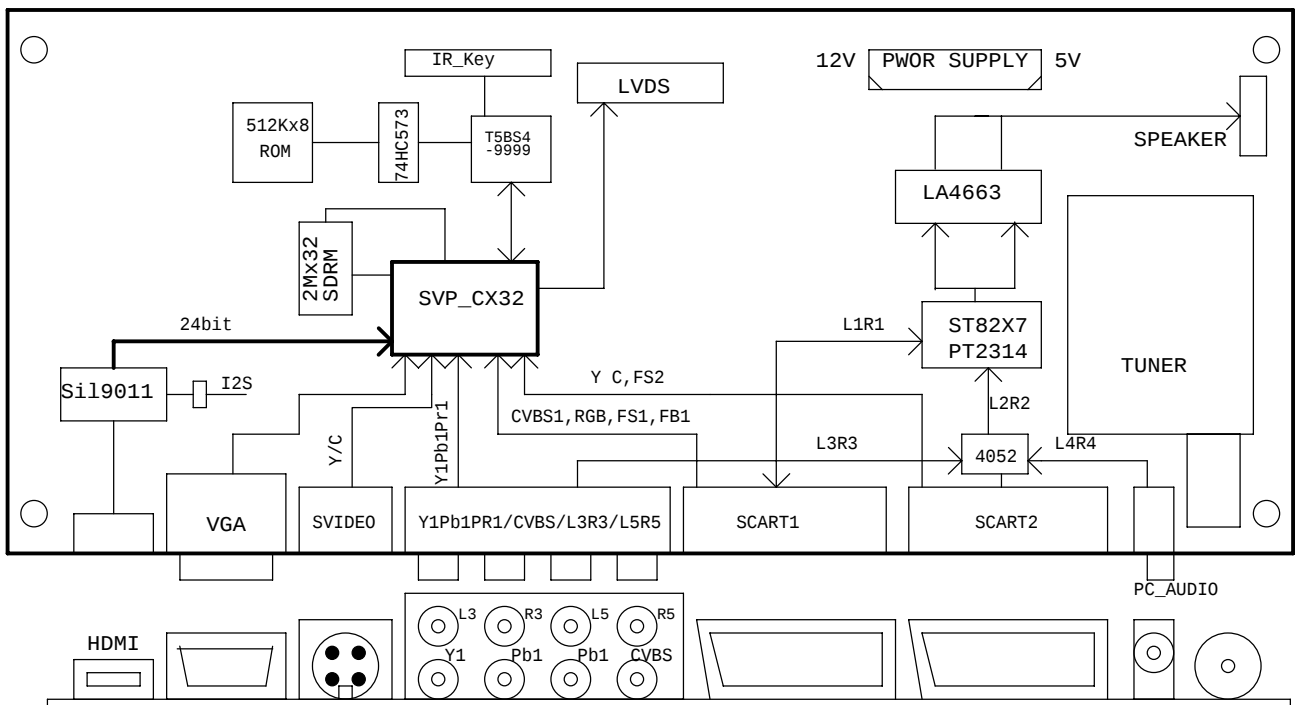
(3) Switching TV program number in factory mode can be done by directly pressing the number key. Press 【MENU】 key to back to the parent of working directory, press 【DISPLAY】 key to quit factory mode.

APPENDIX

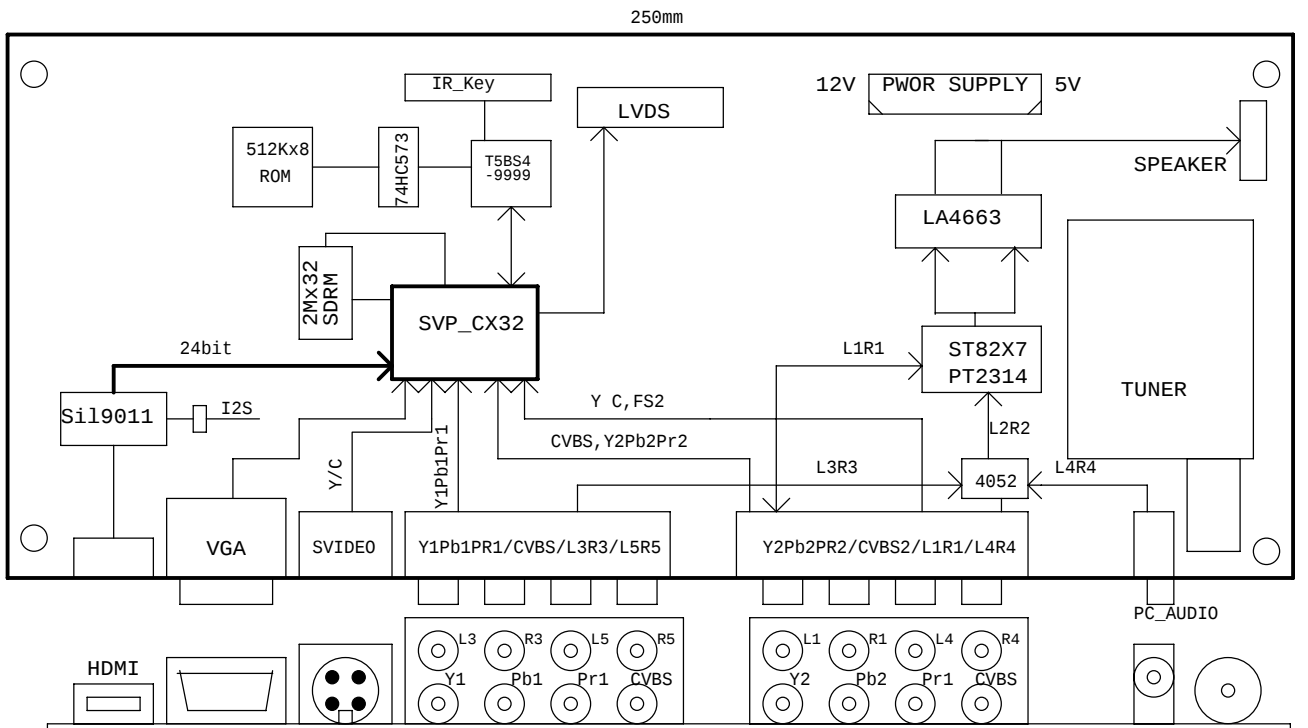
LS01 module Schematic Diagram

(Sample Model: LCT-32CH01ST)

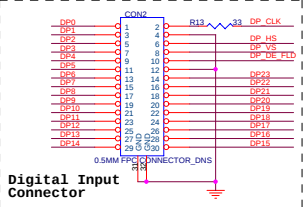
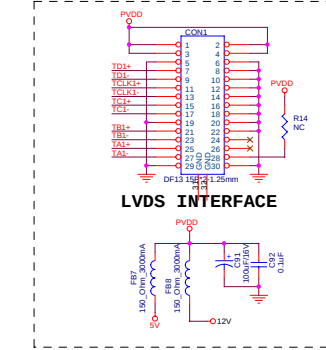
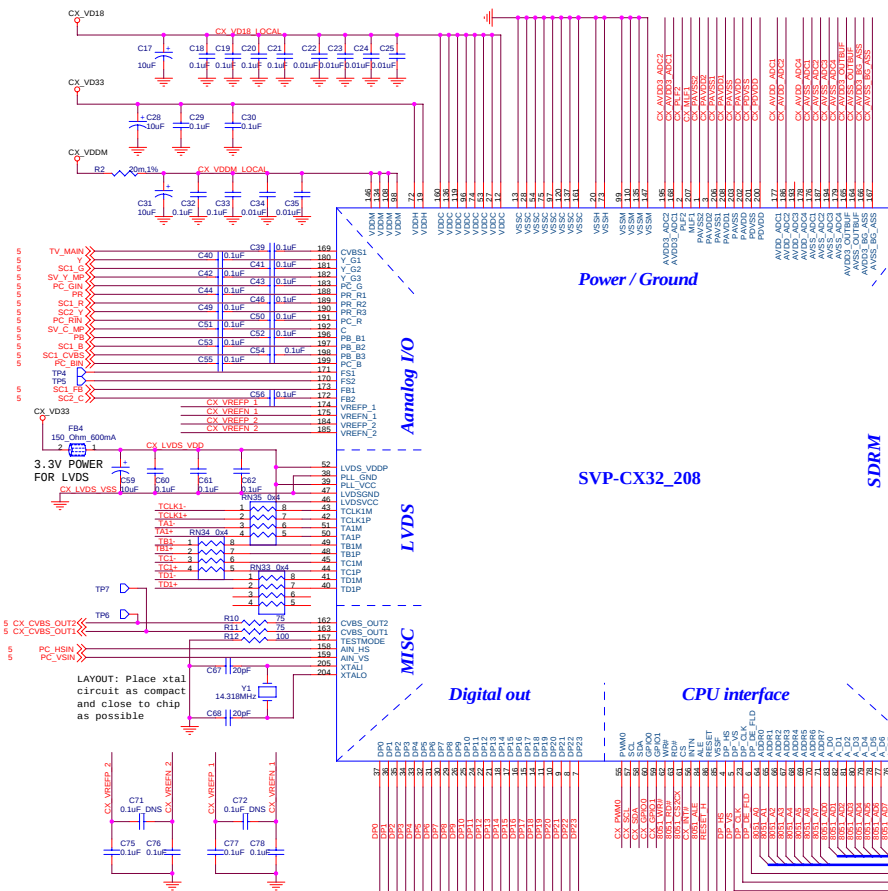
For Europe Market



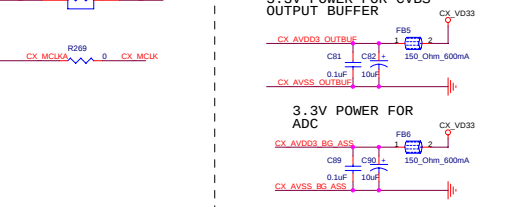
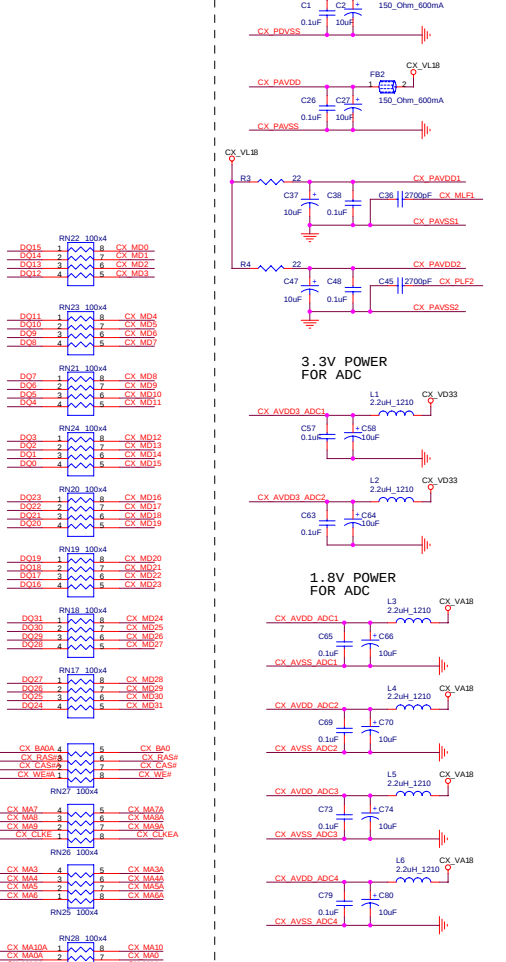
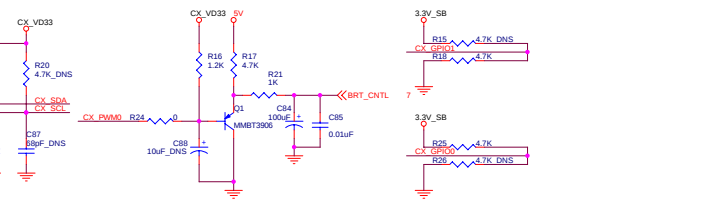
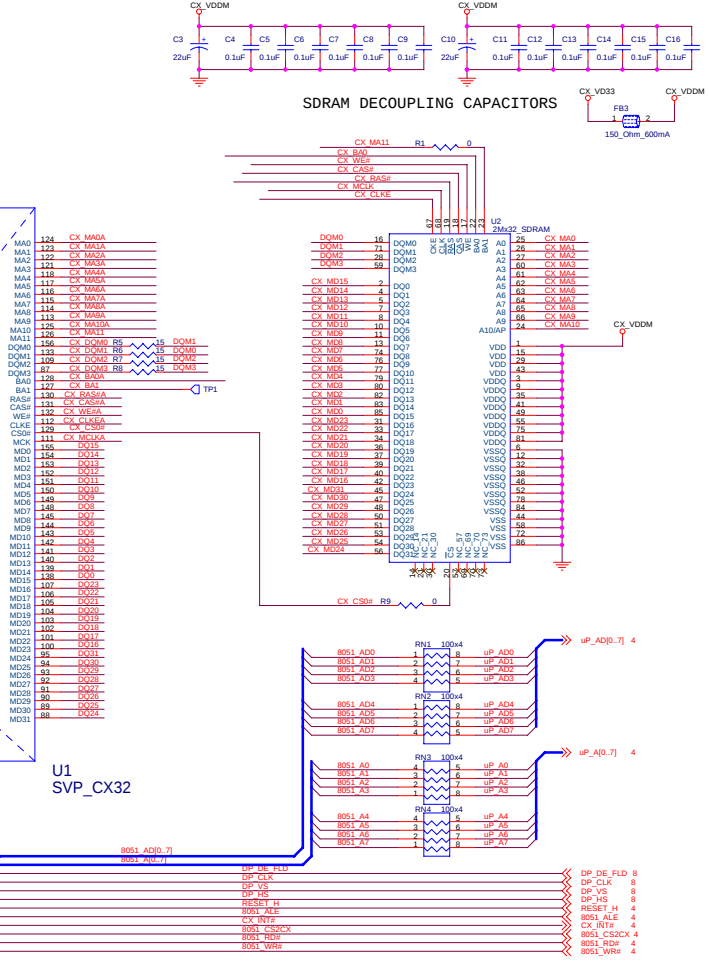
For Asia & USA Market

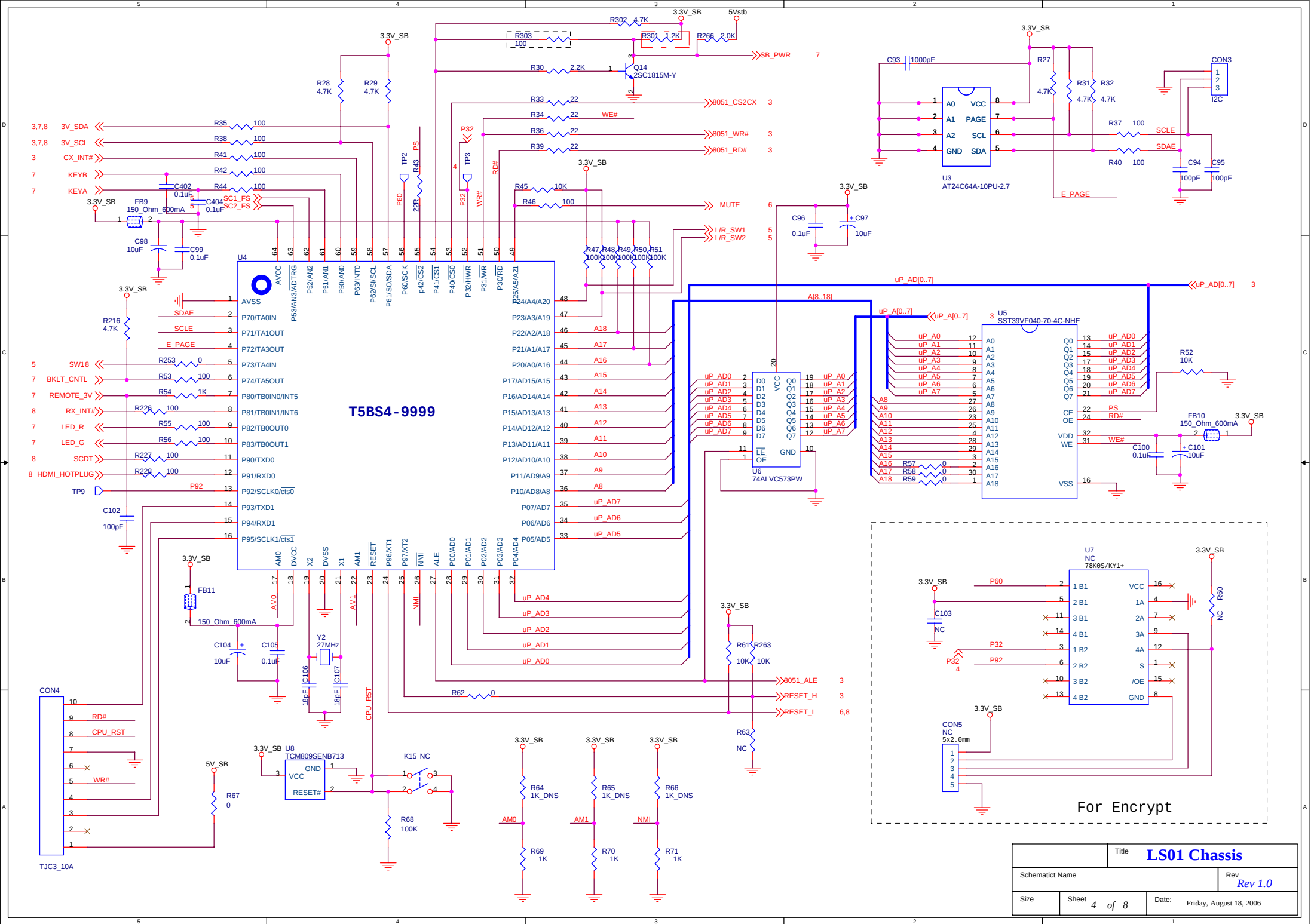


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Schematic Name		Rev 1.0	
Size	A3	Sheet	2 of 8
Date:	Friday, August 18, 2006		

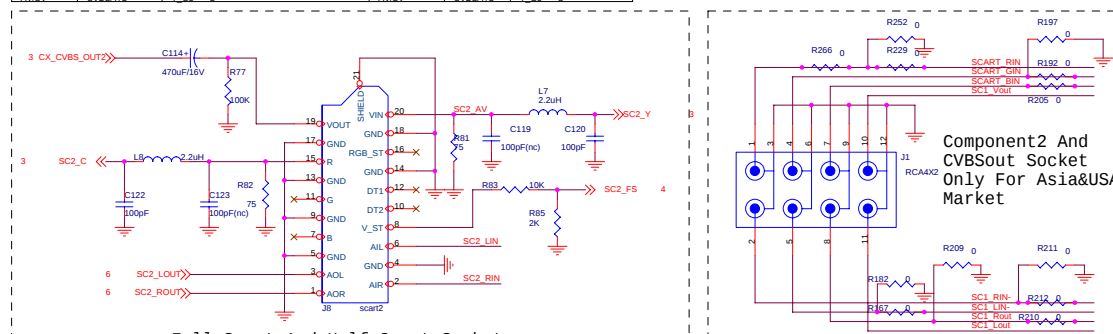


Pin Name	Pin No.	1 (HIGH)	0 (LOW)
GPIO0		MPU in A/D Multiplex Mode	MPU in A/D Separate Mode
GPIO1		Use Rising Edge of WR# to latch data	Use Falling Edge of WR# to latch data

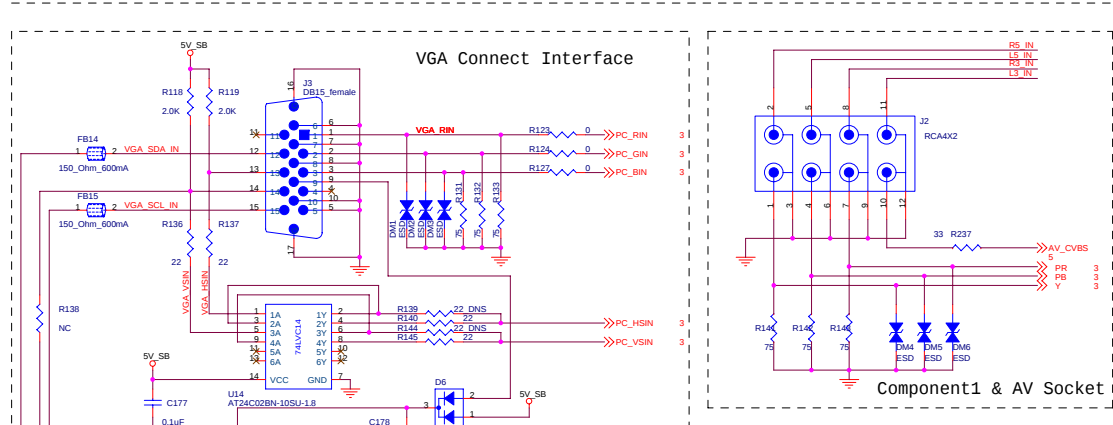
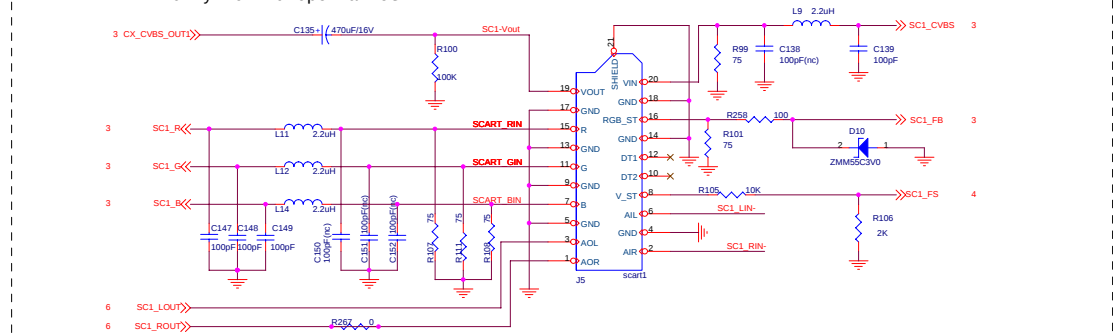




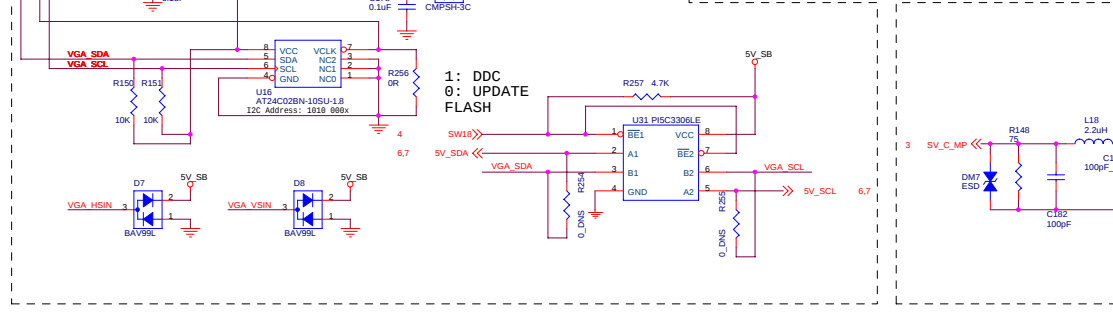
Definition in CX32 Solution(Europe Market)					Definition in CX32 Solution(Asia/USA Market)					Definition in CX32 Solution(Europe Market)					Definition in CX32 Solution(Asia/USA Market)				
Name		Definition Video Signal			Name		Definition Video Signal			Name		Definition Video Signal			Name		Definition Video Signal		
		Defn: Input Cx32 Pin					Defn: Input Cx32 Pin					Defn: Input Cx32 Pin					Defn: Input Cx32 Pin		
MAIN TUNER	CYBS1/INPUT	CYBS1			MAIN TUNER	CYBS1/INPUT	CYBS1			MAIN TUNER	CYBS1/INPUT	CYBS1			MAIN TUNER	CYBS1/INPUT	CYBS1		
PC VGA	RGB/INPUT	PC_G	PC_R	PC_B	PC VGA	RGB/INPUT	PC_G	PC_R	PC_B	PC VGA	RGB/INPUT	PC_G	PC_R	PC_B	PC VGA	RGB/INPUT	PC_G	PC_R	PC_B
COMPONENT	RGB/INPUT	COMPONENT1			COMPONENT	RGB/INPUT	COMPONENT1			COMPONENT	RGB/INPUT	COMPONENT1			COMPONENT	RGB/INPUT	COMPONENT1		
SCART1	CYBS1/RGB/EFES	PR_B3	Y_G2	PR_R2	PR_R2	PR_B1	FS1			SCART2	SC2P	RIN	SC2P	Y_G1	SCART1	SC2P	RIN	SC2P	Y_G1
SCART2	CYBS1/RGB/EFES	PR_R3	FB2	FS2	COMPONENT2	VDR/INPUT	Y_G2	PR_R2	PR_R2	SCART2	SC2P	RIN	SC2P	Y_G1	SCART1	SC2P	RIN	SC2P	Y_G1
CYBS1/CV		CV			CYBS1/CV		CV			AV/VS	VS				AV/VS	VS			



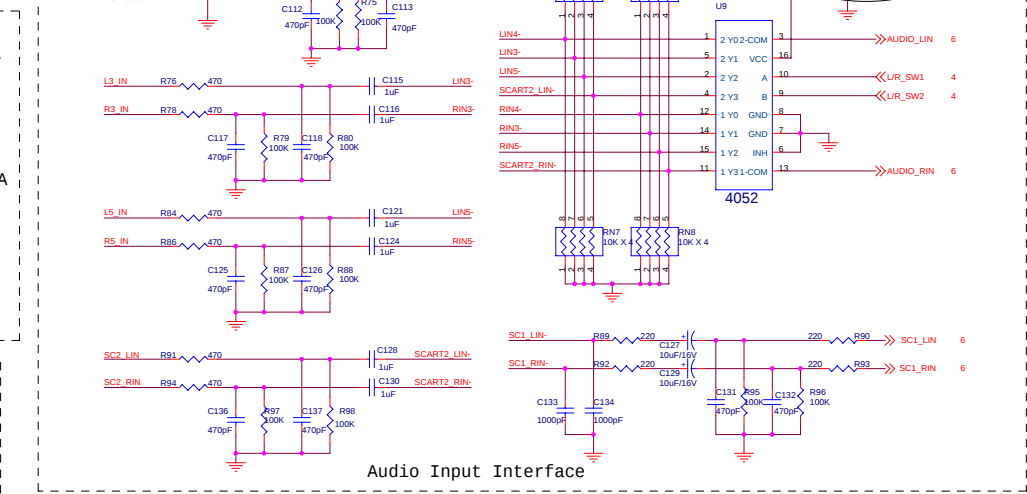
Full Scart And Half Scart Socket
Only For Europe Market



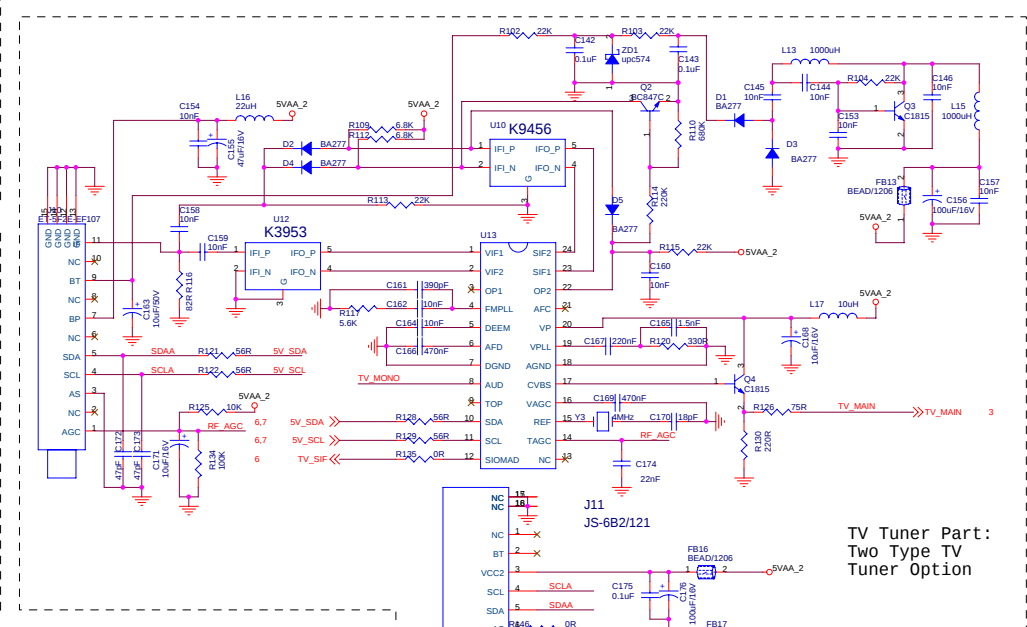
VGA Connect Interface



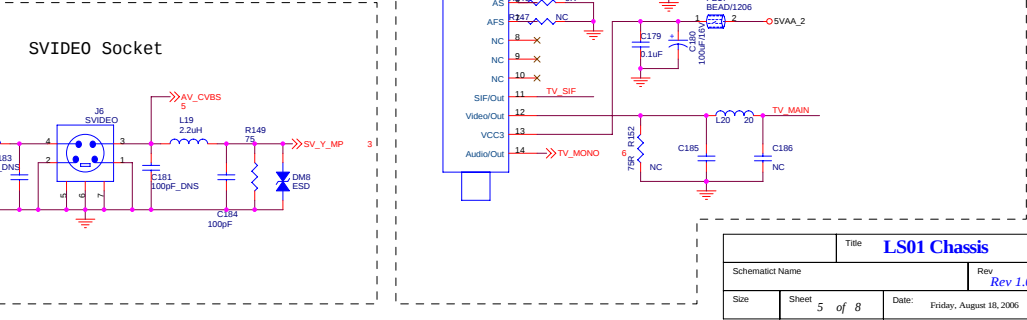
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1: DDC
0: UPDATE
FLASH
```



Audio Input Interface

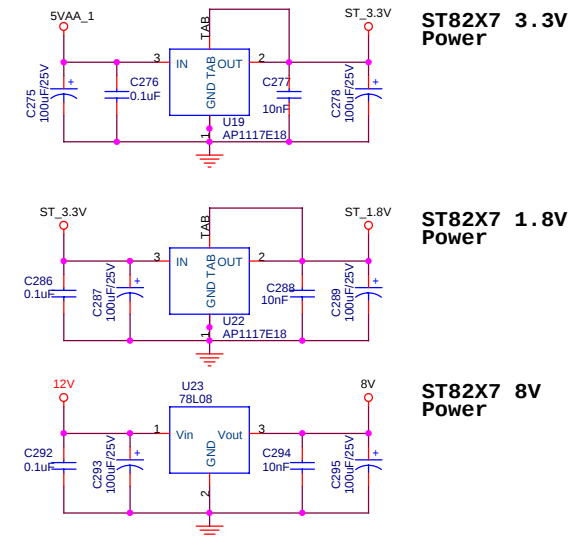
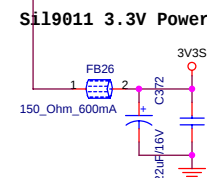
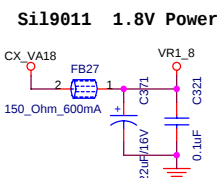
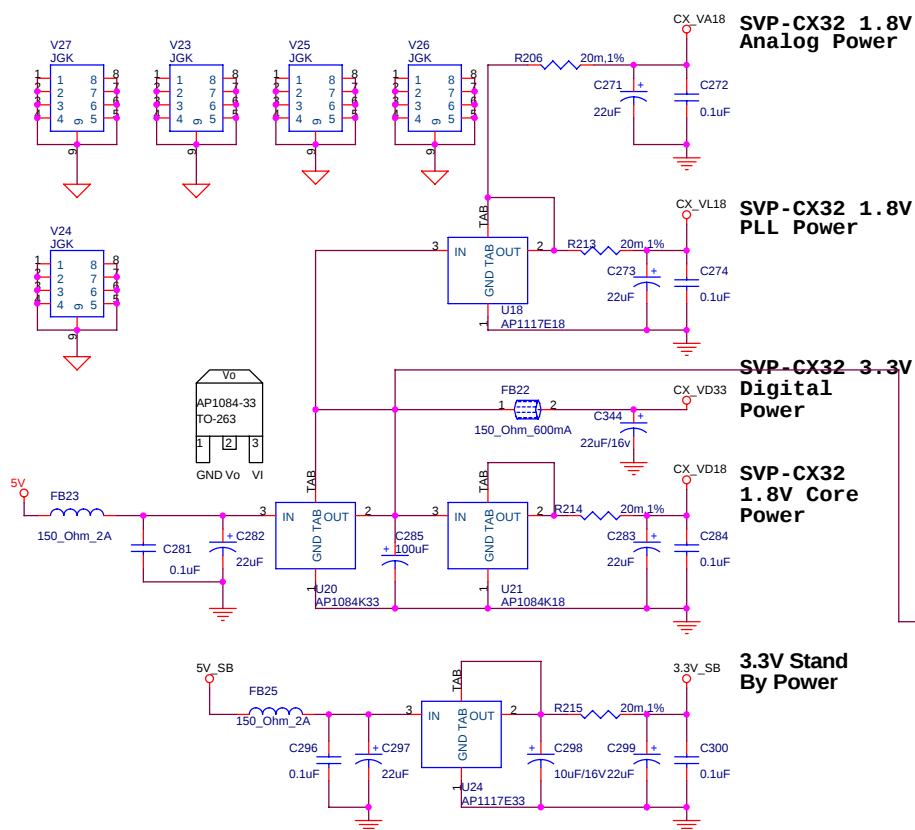
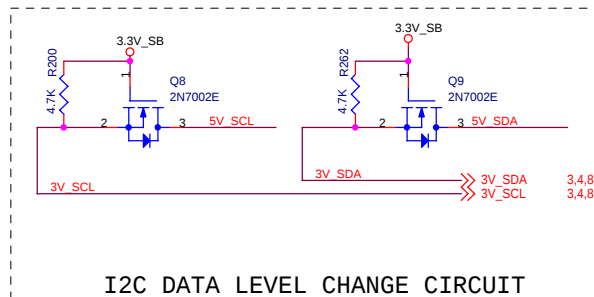
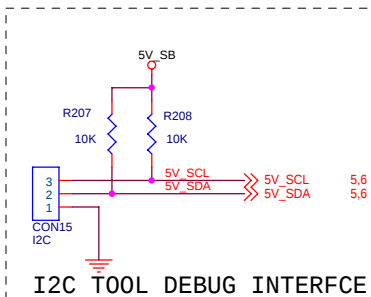
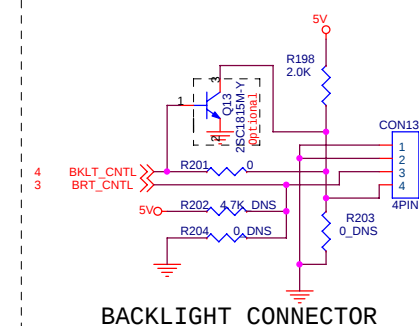
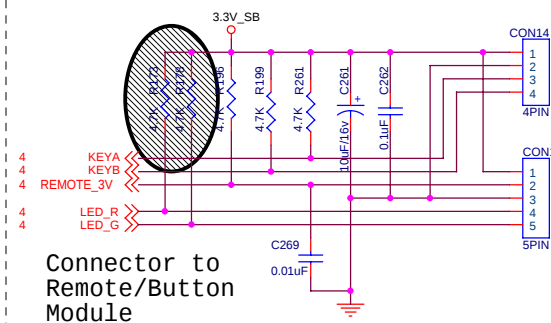
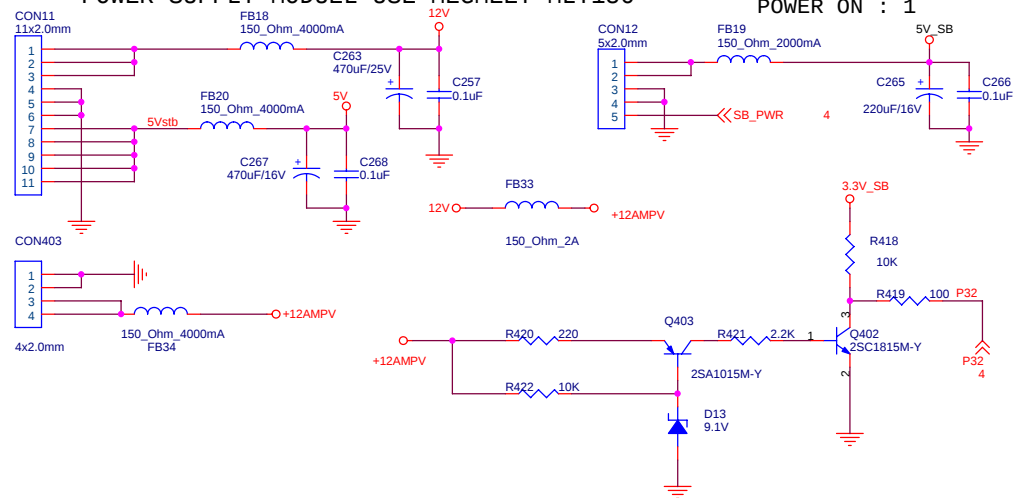


TV Tuner Part:
Two Type TV
Tuner Option



SVIDEO Socket


```
STANDBY : 0
POWER ON : 1
```



		Title	LS01 Chassis
Schematic Name			Rev <i>Rev 1.0</i>
Size	Sheet <i>7 of 8</i>	Date:	Friday, August 18, 2006

