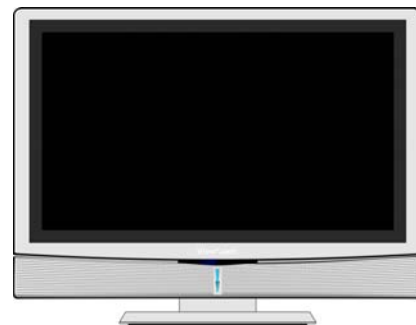


Service
Service
Service



Service Manual

Horizontal Frequency
31.5- 61 KHz

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SAFETY NOTICE

ANY PERSON ATTEMPTING TO SERVICE THIS CHASSIS MUST FAMILIARIZE HIMSELF WITH THE CHASSIS AND BE AWARE OF THE NECESSARY SAFETY PRECAUTIONS TO BE USED WHEN SERVICING ELECTRONIC EQUIPMENT CONTAINING HIGH VOLTAGES.

CAUTION: USE A SEPARATE ISOLATION TRANSFORMER FOR THIS UNIT WHEN SERVICING

Revision List

[illegible]

Important Safety Notice

Proper service and repair is important to the safe, reliable operation of all AOC Company Equipment. The service procedures recommended by AOC and described in this service manual are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It is also important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. AOC could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, AOC has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by AOC must first satisfy himself thoroughly that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

Hereafter throughout this manual, AOC Company will be referred to as AOC.

WARNING

Use of substitute replacement parts, which do not have the same, specified safety characteristics may create shock, fire, or other hazards.

Under no circumstances should the original design be modified or altered without written permission from AOC. AOC assumes no liability, express or implied, arising out of any unauthorized modification of design. Servicer assumes all liability.

FOR PRODUCTS CONTAINING LASER:

DANGER-Invisible laser radiation when open AVOID DIRECT EXPOSURE TO BEAM.

CAUTION-Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

CAUTION -The use of optical instruments with this product will increase eye hazard.

TO ENSURE THE CONTINUED RELIABILITY OF THIS PRODUCT, USE ONLY ORIGINAL MANUFACTURER'S REPLACEMENT PARTS, WHICH ARE LISTED WITH THEIR PART NUMBERS IN THE PARTS LIST SECTION OF THIS SERVICE MANUAL.

Take care during handling the LCD module with backlight unit

- Must mount the module using mounting holes arranged in four corners.
- Do not press on the panel, edge of the frame strongly or electric shock as this will result in damage to the screen.
- Do not scratch or press on the panel with any sharp objects, such as pencil or pen as this may result in damage to the panel.
- Protect the module from the ESD as it may damage the electronic circuit (C-MOS).
- Make certain that treatment person's body is grounded through wristband.
- Do not leave the module in high temperature and in areas of high humidity for a long time.
- Avoid contact with water as it may a short circuit within the module.
- If the surface of panel becomes dirty, please wipe it off with a soft material. (Cleaning with a dirty or rough cloth may damage the panel.)

1. General Specifications

Feature	20" Wide screen Wide Viewing Angle (176° H / 176° V)
----------------	--

Items		Specification	
LCD Panel	Screen Size	20" TFT-LCD Panel	
	Aspect Ratio	16:9	
	Resolution	1366 x 768 (WXGA)	
TV Function	TV Tuning System	PAL B/G,D/K,I and SECAM L/L'(Multi-Europe)	
	Sound System	Nicam/a2	
Video Inputs	SCART	(RGB+CVBS) x1, CVBS x1	
	RCA	RCA(Composite) x 1	Audio L/R x 1 (Share)
	S-Video	S-Video x 1	
	Component	YPbPr x 1	Audio L/R x 1
	HDMI		
PC mode	Analog	D-sub(15pin)	
Audio Output	Audio Output: L / R	Speaker (built-in): 3W+3W speakers	
		Headphone Mini-jack for stereo (3.5ø)	
		Line Output (RCA L/R)	

OSD language	English, French, German, Italian, Dutch, Spanish, Swedish, Russia	
Table Stand	Included	
Wall Mount dimension	VESA 100 x 100 mm	
Power	Power Supply	AC100V~240V, 50/60Hz
	Power Consumption	<70W
Dimension	W x H x D (with stand)	522 x 424 x 185mm
Weight (net)	Lb/Kg (w/o Accessories)	7Kg
Regulations	CE, SASO, GOST	
Accessories	Remote Controller, Batteries (x2), AC Power Cord, User's Manual, quick start guide, VGA cable, PC audio cable.	

2. Operations Instructions

2.1 The Use Of Remote Control

POWER:

Press to turn on/off the TV. The TV is never completely powered off unless it is physically unplugged.

CH

Press **▲** or **▼** (or **MENU ▲** or **▼** button) buttons to scroll through the channels.

VOL

Press **+** or **-** (or **MENU ◀** or **▶** button) to increase or decrease the volume.

OK

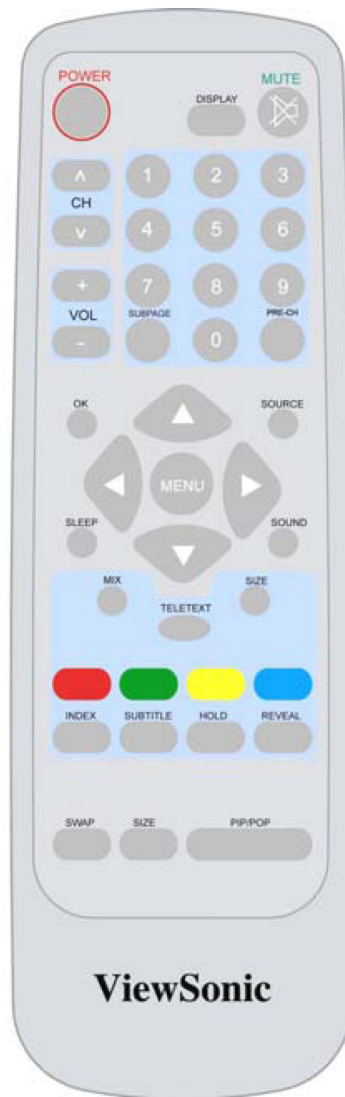
Press this KEY to validate your selection.

SLEEP

With this key you can set a time period after which the TV should switch itself to standby. Press the key repeatedly to select the number of minutes. The counter runs from Off 15 30 45 60 90 120 minutes. The timer begins to count down from the number of minutes selected after the display has disappeared.

SWAP

Press to swap the two screens when PIP/POP works.



MENU

Press this key to display main menu.

SIZE

Press this key repeatedly to select desired picture format.

DISPLAY

Press this key to display:

- (1) the channel number when watching a TV programme.
- (2) the input source when watching an AV programme.

MUTE

Temporarily interrupt the sound or restore it.

SUBPAGE

Teletext Sub-page function.

0~9 DIGIT BUTTONS

To select a TV channel.

PRE-CH

To display the previously selected TV channel.

Source

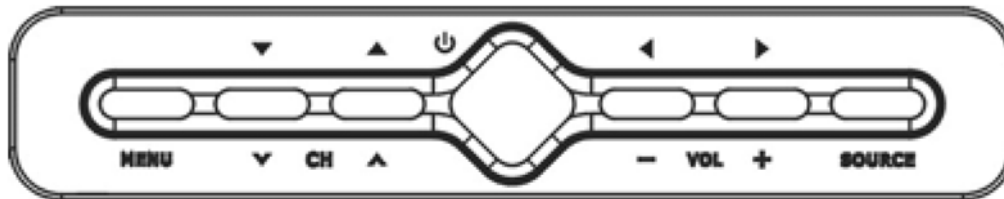
Select your input source: press repeatedly to select **TV**, **PC**, **SCART**, **S-VIDEO**, **HDTV** or **HDMI** mode, according to where you connected your external source.

SOUND

To select Mono/ Stereo /Dual from TV RF input.

PIP/POP

Press this key to display PIP/POP screen



Power Key : Press to turn on or off the TV.

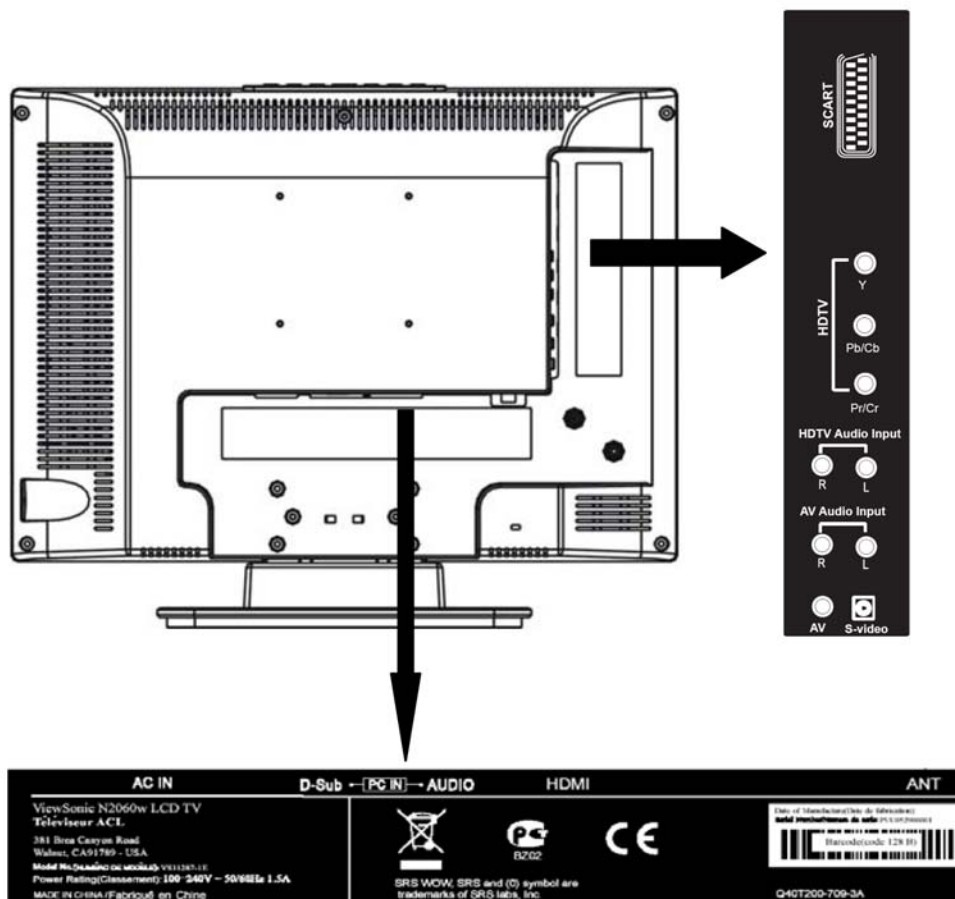
MENU Key : Press to show the OSD menu and exit OSD menu at the TV.

Down / Up Key: Press to select function and channel.

- / + Key: Press to confirm your function selection and adjustment.

Source Key : Press to select your input source.

Rear View of the Product



There is a wide range of video and audio equipment that can be connected to your TV. The following connection diagrams show you how to connect them.

2.3 OSD Operations

Audio Adjustments



Display the Main menu by pressing MENU button.

Select the **Sound** menu using the ∇ button. Press the OK button to confirm.

Use the \blacktriangle / \blacktriangledown buttons to select each option.

Balance : adjust the balance between left/right channels as required using the \blacktriangleleft / \blacktriangleright buttons.

Bass : adjust the bass level as required using the \blacktriangleleft / \blacktriangleright buttons.

Treble: adjust the treble level as required using the \blacktriangleleft / \blacktriangleright buttons.

SRS : Using \blacktriangleleft / \blacktriangleright , activate (On) or deactivate (Off) SRS function.
SRS is an audio technology which improve the sound quality.

Press the MENU button to exit the Audio menu.

Note : this menu is removed automatically after a few seconds without using the remote control.



When you adjust a menu option (Balance for example), the menu is replaced by a sub-menu as illustrated. Press the OK button to return to the **Sound** menu

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PIP/POP adjustments



Press the MENU button to display the Main menu

Select the **PIP/POP** menu using the ∇ button.

Press the OK button to confirm.

Use the \blacktriangle / \blacktriangledown buttons to select each option.

Dual mode : Using \blacktriangleleft / \blacktriangleright buttons activate (PIP/POP) or deactivate (Off) the PIP/POP function.

Following options are available if you have selected PIP or POP at the PIP line.

Position : use the \blacktriangleleft / \blacktriangleright buttons to change the position of the PIP frame on the screen.

Source : to select video source of the PIP/POP, use the \blacktriangleleft / \blacktriangleright buttons to select video source of the picture in the PIP/POP frame (TV or AV).

You can insert a TV picture while you are viewing an AV programme or insert an AV picture while you are viewing a TV programme.

Video source can also be selected without the menu, using AV button on the remote control.

Audio select : to select audio source: MAIN (Main picture) or SUB (PIP/POP picture), use the \blacktriangleleft / \blacktriangleright buttons to select audio source.

Press the MENU button to exit the **PIP/POP** menu.

Note : this menu is removed automatically after a few seconds without using the remote control.

Channels search

Channels search involves selecting all the settings required to be able to search for and store all the channels you can receive.

Make sure that the television is switched on and follow all the steps in turn specified on this page.



Display the Main menu by pressing MENU button.

Select the **TV set up** menu using the ▼ button.

Press the OK button to confirm.

Use the ▲ / ▼ buttons to select each option.

Auto Search



Select **Auto Search** using the ▼ button.

Press the OK button to display the **Auto Search** menu.

Use the ▲ / ▼ buttons to select each option.

Country: Select the relevant country using the ◀ / ▶ buttons.

This is the country you are in, or the country whose channels you want to receive if you live near its borders. If you do not find your country, select Auto.

Start: Press OK button to start channels searching

Manual set-up



Select **Manual search** using the ▼ button.

Press the OK button to display the **Manual search** menu.

Use the ▲ / ▼ buttons to select each option.

Prog. number: Allows to select the programme on which you want save a new channel or a programme you want to modify.

Using the ◀ / ▶ buttons, select the programme.

Frequency : Allows to enter a specific frequency for tuning.

Using the ▼ button, select the **Frequency** option and press the OK button.

Using the 0~9 digit and ◀ / ▶ buttons, enter desire frequency and press the OK button.

Name : Allows to edit the channel name.

Using the ▼ button, select the **Name** option.

Using the ▶ button select the first letter field.

By pressing the 0~9 digit repeatedly and using the following table select the first character.

Repeat the procedure for each letter field.

BUTTON	AVAILABLE CHARACTERS			
1	1	Space	—	• !
2	2	a	b	
	c	@		
3	3	d	e	
	f	#		
4	4	g	h	
	i	\$		
5	5	j	k	
	l	%		
6	6	m	n	
	o	^		
7	7	p	q	
	r	&		
8	8	s	t	
	u	v		
9	9	w	x	
	y	z		
0	0	*	#	
	()		

Store prog.: Allows to **Save** a channel on a new programme **No.** or to **Insert** a channel on an already existing programme **No.** (the channel previously saved on this programme **No.** will be shifted to the upper programme **n.**).

- Once a channel has been found and named, use the **▼** button to select the **Store prog.** option.
- Using the **◀ / ▶** buttons, select **Save** or **Insert** and press the **OK** button to confirm.

System: Allows to change the audio norm.

- Using the **▼** button, select the **System** option.
- Using the **◀ / ▶** buttons, select the norm.

The audio norm change will also change broadcasting system. Not suggest to change the audio norm if you are not sure the audio system.

Skip : Allows to skip a channel.

- Using the **▼** button, select the **Skip** option.
- Using the **◀ / ▶** buttons, select **On**, the channel will be skip.

Repeat this procedure to skip other channels.

Fine tuning : If the picture is not clear, you can adjust the setting.

- Using the **▼** button, select the **Fine Tuning** option.
- Use the **◀ / ▶** buttons to find the good tuning point.

Manual search : Allows to launch a manual search.

- Using the **▼** button, select the **Manual search** option.
- Using the **◀ / ▶** buttons, start the search in decreasing or increasing order.

The menu is replaced by a sub-menu showing the progression of the search.

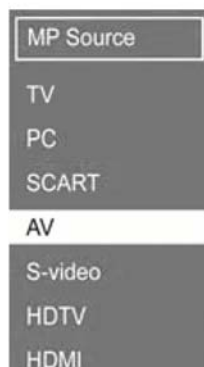
- The search will stop at the first channel found, **Manual search** menu is displayed again (within 3 seconds).
- If you wish to memorise the channel, select Store programme option using **▲** button and proceed as indicated in previous page. Otherwise, continue the search using **◀ / ▶** buttons.

*If you have modified **System**, **Skip**, **Fine tuning** options or if you have launch a **Manual Search**, select **Store Prog.** option using **▲ / ▼** buttons and proceed as indicated above to save your modification.*

Press the **MENU** button to exit the **PIP** menu.

INPUT SELECTION

To select AV source:

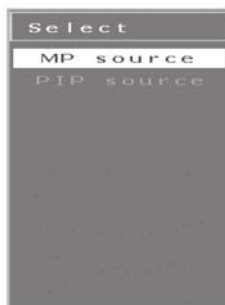


To select desired input source, press the **AV** button to display the selection menu.

Use the **▲** / **▼** buttons to select each input sources.

Press the **OK** button to display the desired input source.

To select input source in PIP/POP mode



To select desired input source in PIP/POP mode, press the **AV** button to display the selection menu.

Use the **▲** / **▼** buttons to select either **MP source** (to modify Main picture source) or **PIP source** (to modify PIP source).

Press the **OK** button to display the selection menu in PIP mode.



Use the **▲** / **▼** buttons to select the input source.

Press the **OK** button to display the desired input source.

SETUP

This menu allows to select the language for the menus as well as the colour of the screen when there is no video input. It allows also to set an automatic shut-off time.



Display the Main menu by pressing **MENU** button.

Select the **Set up** menu using the ∇ button.

Press the **OK** button to confirm

Use the \blacktriangle / \blacktriangledown buttons to select each option.

OSD language : To select the language for the menus.

OSD timeout : To set an automatic shut-off time for Menu. Using \blacktriangleleft / \blacktriangleright buttons select 5 > 10 > 20 > 30 > 40 > 50 seconds.

OSD background : Select Opaque or Transparent type.

Sleep Timer : To set an automatic shut-off time. Using \blacktriangleleft / \blacktriangleright buttons select Off > 15 > 30 > 45 > 60 > 90 > 120 minutes.

Once the time is ended, TV set automatically switch on standby mode .

If you turn the TV on standby mode after setting the sleep timer, setting will be erased. Set it again.

Blue Screen : To have a blue screen when there is no video input or when the RF signal is very bad.

Using the \blacktriangleleft / \blacktriangleright buttons select **On**.

Select **Off** if you do not want the blue screen.

Teletext language: Using \blacktriangleleft / \blacktriangleright buttons, select the character set that will be used for Teletext on this channel.

The following character sets are available: **West Europe**, **East Europe**, **Cyrillic** (Russia), **Greek**, **Arabic**, **Persian**,.

The character set determines how characters are displayed on Teletext screen.

Press the **MENU** button to exit the **SETUP** menu.

Note : this menu is removed automatically after a few seconds without using the remote control.

Note : You can display the remaining time before the automatic shut-off. To do that, press the sleep button.

To cancel the automatic shut-off, press several times the sleep button to display **Sleep timer Off** .

PC MODE

In PC mode, main menu is different from the one in TV mode.
Please select PC as main input.

PC SETTINGS

Display the Main menu by pressing **MENU** button.

Select the **PC** menu using the **▼** button.

Press the **OK** button to confirm.

Use the **▲** / **▼** buttons to select each option.

H. position : use the **◀** / **▶** buttons to move the picture horizontally on the screen.

V. position : use the **◀** / **▶** buttons to move the picture vertically on the screen.

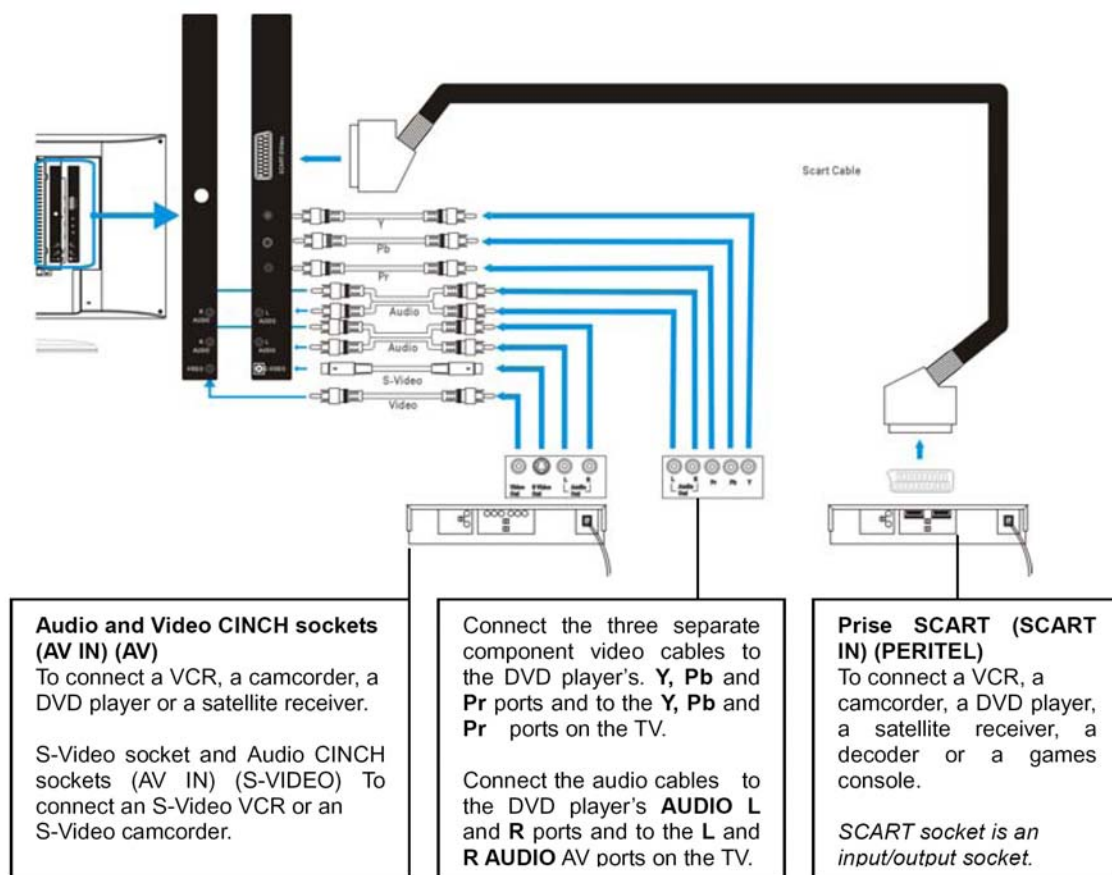
Focus : Adjust as required to improve the picture quality.

Auto adjust: this function is used to automatically adjust the VGA input. Press the **◀** / **▶** buttons to start the adjustment process.

Tone: to adjust the colour temperature at your convenience.

Reset : Return to default settings. Press **OK** button to return to default settings.

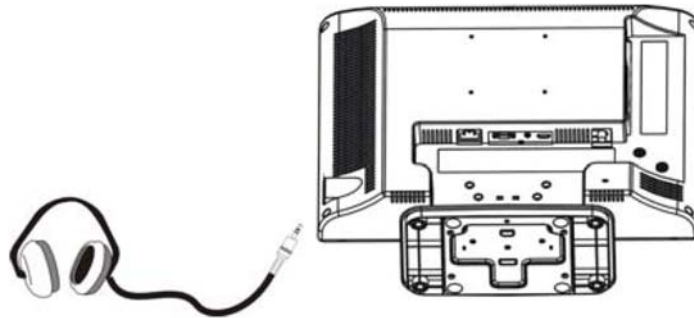
HOW TO CONNECT SCART connector




Notes:

1. Additional equipment and cables shown are not supplied with this TV set.
2. The 21pin SCART socket can also be used as an output to Audio/Video equipment.
3. Select the desired VIDEO source input position by pushing the TV/VIDEO button on remote controller.
4. In TV mode, when you switch on the VIDEO source which is connected to SCART socket, the TV should automatically display the video signal. If it does not, press the TV/VIDEO button on remote controller in order to select the appropriate source.
5. The AUDIO OUT (SCART) terminal provides a fixed level output only. (The menu settings and remote control volume controls have no effect.)

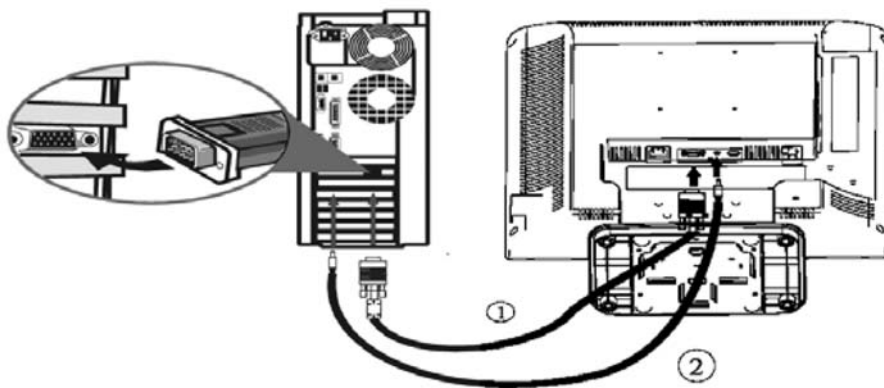
HEADPHONE



1. When headphones are connected, the sound of TV set will be cut. The **VOL** keys are used to adjust the volume level.
2. Press the  key on the remote control to switch off the sound from the headphone.

Note: When a TV channel or external AV source is blocked because of a rating set via the Parental control menu, also the headphone is muted.

PC connection



How to connect PC input

- ①. Connect a D-sub cable to D-sub port which is located at bottom of TV as Graph.
- ②. Connect an audio cable to PC audio port which is located at bottom of TV as Graph.

HDMI SOCKET (High-Definition Multimedia Interface)

(LOCATED AT THE BACK OF THE TV SET, NEAR THE POWER INPUT SOCKET)



This socket allows the connection to all appliances fitted with an HDMI socket.

The standard HDMI allows a digital transmission of video and audio data using only one connector.

It gives you the possibility to obtain very high quality images. In this case it is necessary to use an HDMI connecting cable. Make sure the appliance output is set to be HDMI output.

To display images from the connected appliance, select the input source (**HDMI**) by pressing the **AV** button on the remote control.

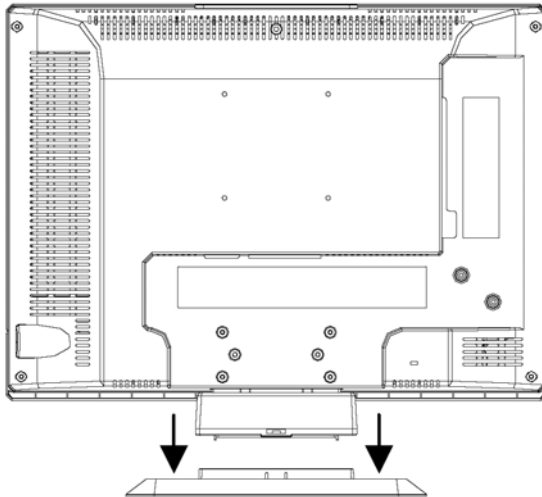
HDMI, the HDMI logo and "High-Definition Multimedia Interface" are trademarks or registered trademarks of HDMI Licensing LLC".

PREPARATION

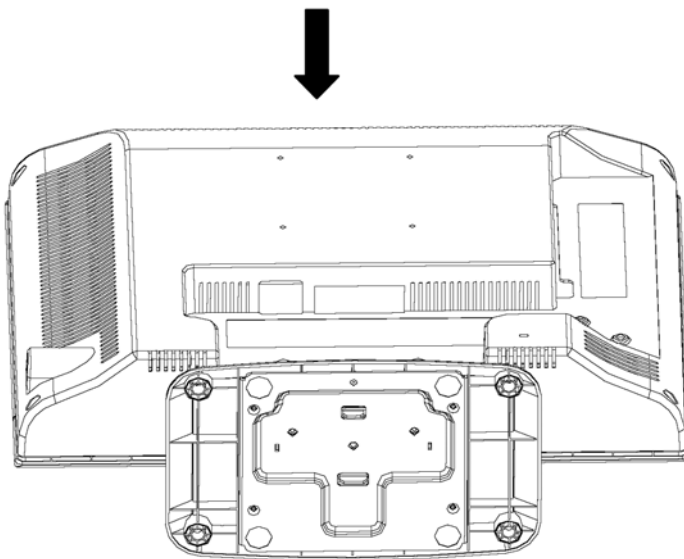
Assembly

Lay the LCD TV with the screen down on a table, as it will be easier to connect your peripheral equipment. Please take your precautions not to damage the screen.

Take out TV and base from carton, assembled by three pieces screws, which you could find from the accessory box. Shown in the figures below:



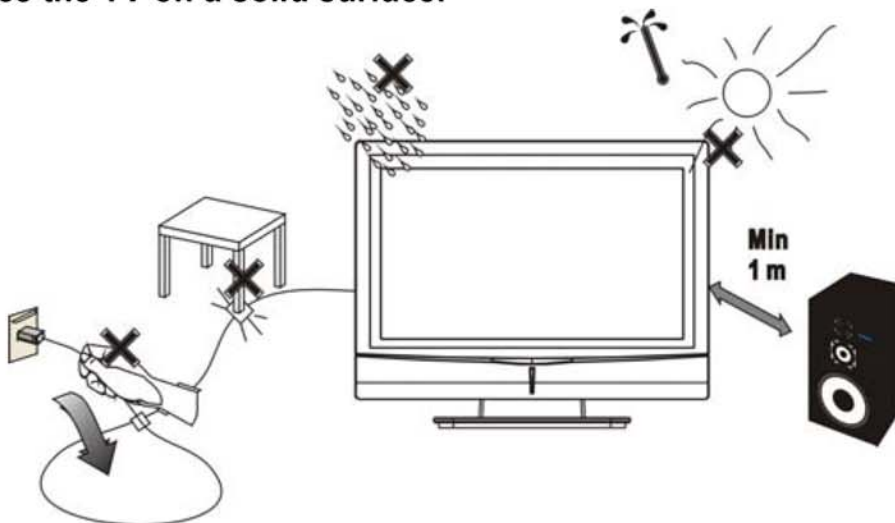
Place the base on a solid surface



Note: Lock the screw middle first, then the others, to avoid holes aiming incorrectly

Preparation of beginning to watch TV

1. Place the TV on a solid surface.

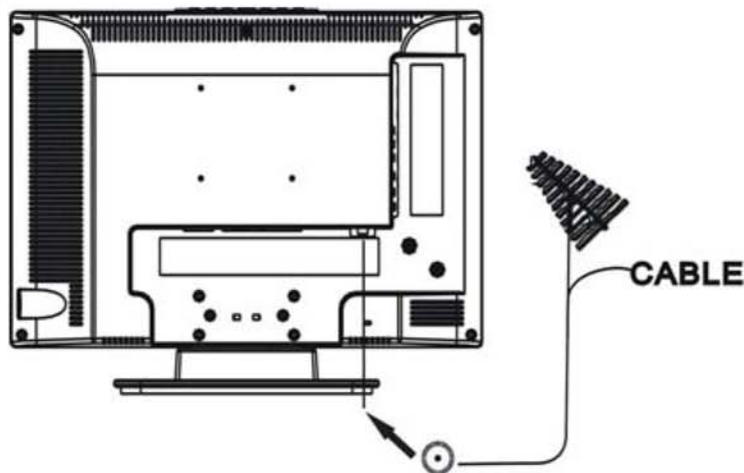


Ensure that the TV is placed in a position to allow free flow of air. Do not cover the ventilation openings on the back cover.

To prevent any unsafe situations, no naked flame sources, such as lighted candles, should be placed on or in the vicinity.

Avoid heat, direct sunlight and exposure to rain or water. The equipment shall not be exposed to dripping or splashing.

2. Insert the aerial plug firmly into the aerial socket **ANT IN 75Ω** at the back of the TV.



3.Power:

Insert the power cord in the wall socket having an AC power supply .

4.Turn the TV on:

Press the power button of the TV to turn it on. When the TV is ON, the indicator turns Blue.

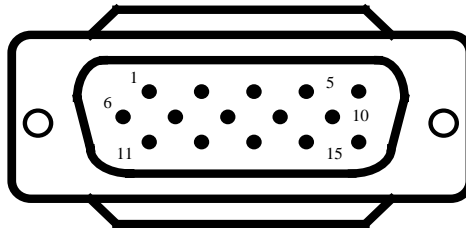
3. Input/Output Specification

3.1 Input Signal connector

This procedure gives you instructions for installing and using the LCD TV display.

Lay the display on the desired operation and plug the power cord into a convenient AC outlet. Three-wire power cord must be shielded and is provided as a safety precaution as it connects the chassis and cabinet to the electrical conduct ground. If the AC outlet in your location does not have provisions for the grounded type plug, the installer should attach the proper adapter to ensure a safe ground potential.

Connect the 15-pin D-SUB color display shielded signal cable to your signal system device and lock both screws on the connector to ensure firm grounding. The connector information is as follow:



15 - Pin Color Display Signal Cable

Pin No.	Description
1	Red Video
2	Green Video
3	Blue Video
4	GROUND
5	GROUND
6	Red Video Ground
7	Green Video Ground
8	Blue Video Ground
9	Mandatory +5V Supply for PC Bypass
10	Sync. Ground
11	GROUND
12	Bi-directional Data (SDA) for PC Bypass
13	Horizontal Sync.
14	Vertical Sync.
15	Data Clock (SCL) for PC Bypass

Apply power to the display by turning the power switch to the "ON" position and allow about ten seconds for Panel warm-up. The Power-On indicator lights "BRUE" when the display is on.

With proper signals feed to the display, a pattern or data should appear on the screen, adjust the brightness and contrast to the most pleasing display, or press auto-adjust to get the best picture-quality.

This TV (with PC function) has power saving function following the VESA DPMS. Be sure to connect the signal cable to the PC.

If your TV requires service, it must be returned with the power cord.

3.2 Factory Preset Display Modes:

Mode		Compatible Inputs						
Standard	Resolution	FS* Full-Screen	1:1	Comp	SVHS	YPbPr	YCbCr	RGB
	720 x400@ 70Hz	1366 x 768	N/A	No	No	No	No	Yes
	640x480 @ 60Hz	1366 x 768	N/A	No	No	No	No	Yes
	640x480 @ 72Hz	1366 x 768	N/A	No	No	No	No	Yes
	640x480 @ 75Hz	1366 x 768	N/A	No	No	No	No	Yes
VESA	800x600 @ 60Hz	1366 x 768	N/A	No	No	No	No	Yes
VESA	800x600 @ 72Hz	1366 x 768	N/A	No	No	No	No	Yes
VESA	800x600 @ 75Hz	1366 x 768	N/A	No	No	No	No	Yes
VESA	1024x768 @ 60Hz	1366 x 768	N/A	No	No	No	No	Yes

Support Timing Table (D-Sub/HDMI)

For VGA	CEA Timing (HDMI)
720x400@70hz(VGA,IBM)	480p/60Hz 4:3
640x480@60hz(VGA,IBM)	480p/60Hz 16:9
640X480@67hz(MAC II)	720p/60Hz 16:9
640x480@72hz(VESA)	1080i/60Hz 16:9
640x480@75hz(VESA)	480i/60Hz 4:3
800x600@60hz(VESA)	480i/60Hz 16:9
800x600@72hz(VESA)	579p/50Hz 4:3
800x600@75hz(VESA)	579p/50Hz 16:9
832x624@75hz(MAC II)	720p/50Hz 16:9
1024x768@60hz(VESA)	1080i/50Hz 16:9
1024x768@70hz(VESA)	576i/50Hz 4:3
1024x768@75hz(VESA)	576i/50Hz 16:9
1152x864@ 75HZ	
For HDMI-DVI	
720x400@70hz(VGA,IBM)	
640x480@60hz(VGA,IBM)	
640X480@67hz(MAC II ,Apple)	
640x480@72hz(VESA)	
640x480@75hz(VESA)	
800x600@60hz(VESA)	
800x600@72hz(VESA)	
800x600@75hz(VESA)	
832x624@75hz(MAC II ,Apple)	
1024x768@60hz(VESA)	
1024x768@70hz(VESA)	
1024x768@75hz(VESA)	
1152x864@75hz(VESA)	

4. Circuit Description

4.1 Description of Main Chips

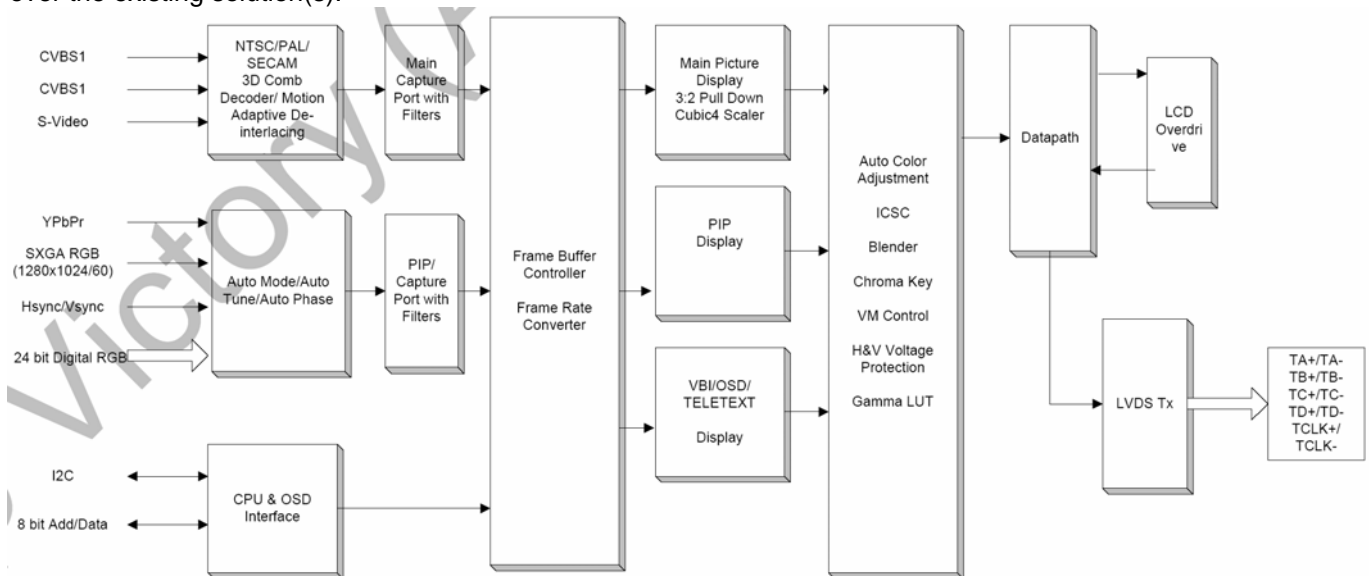
U401 SVPTMEX52-LF

Overview

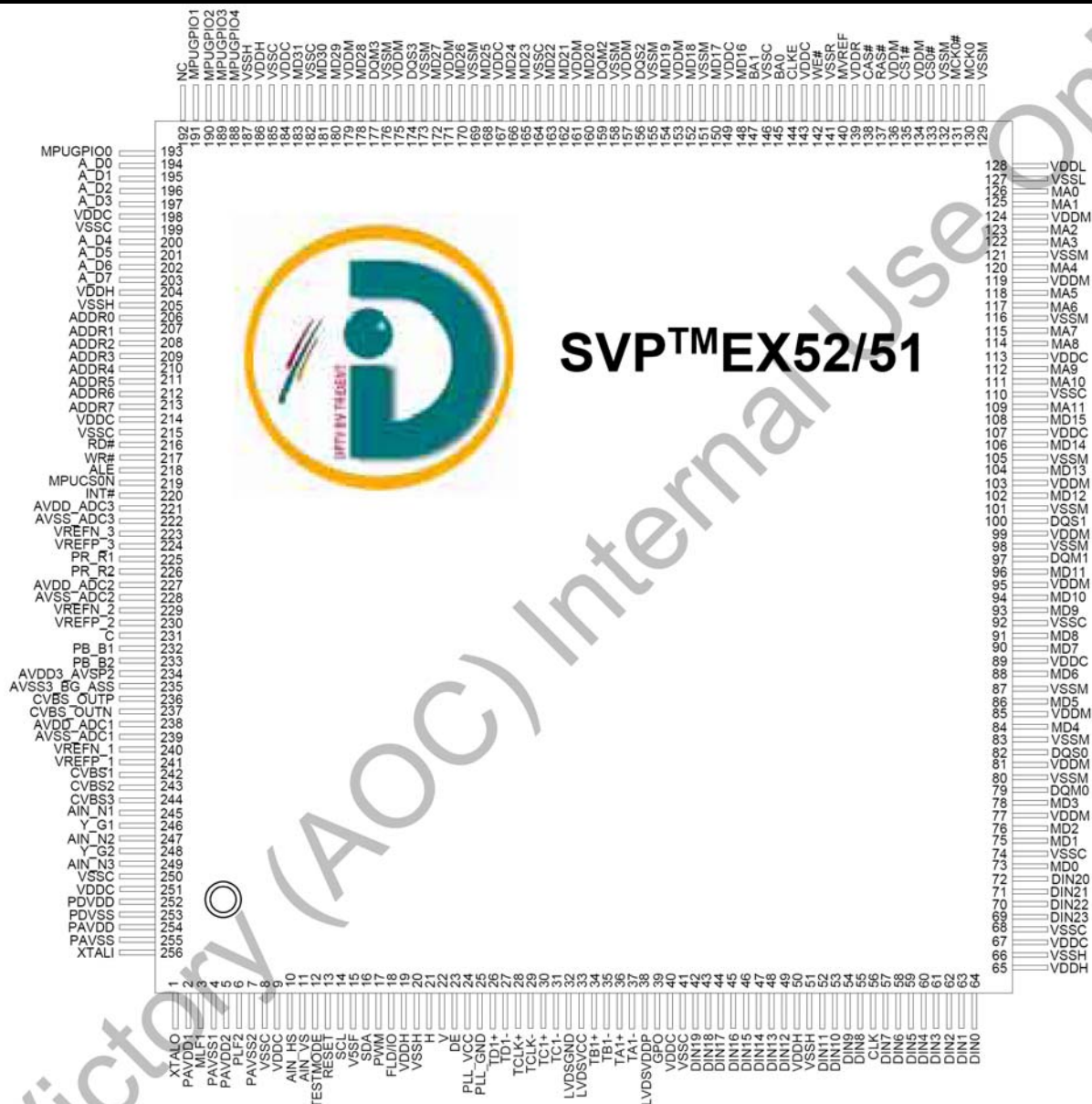
The SVPTMEX video processor family consists of highly integrated system-on-a-chip devices, targeting the converging HDTV-ready and PC-ready digital CRT TVs, LCD TVs, PDP TVs, and DLP TVs applications where high precision processing of video and data are desired. The SVPTMEX product series contains high precision 10-bit ADCs up to 108 MHz for video and PC RGB inputs conversion. For analog video processing, the SVPTMEX series integrates a high-performance 5th generation multi-format 3D digital-comb video decoder that supports NTSC, PAL and SECAM*, an HDTV sync separator, motion adaptive de-interlacing engine, and the video format conversion engine, supporting many output modes, picture-in-picture (PIP), multi-window and picture-on-picture display modes. From the video signals inputs to the processed video outputs, the SVPTMEX series carries out the video signal processing in 10-bit mode to ensure the maxima video signal fidelity, thus avoiding the color-banding artifacts. Depending on the applications and different product mix, the SVPTMEX series for LCD/PDP TV applications embed one LVDS transmitter for the interface with the LCD and PDP TV applications. For digital CRT TV applications, the SVPTMEX series is equipped with built-in high precision 10-bit DAC drive to the backend deflection units and scan-velocity-modulation (SVM) control for optimized CRT picture images.

Trident's DCReTM – Digital Cinema Reality engine, is integrated inside the SVPTMEX family to provide the most natural cinema-realistic images. The DCReTM technology integrates advanced 3D-comb video decoding, advance motion adaptive de-interlacing, object-based digital noise reduction, cubic4 image scaling, film mode support, average picture level (APL), edge smoothing and dynamic sharpness enhancement. Trident's patented Unified Memory Architecture (UMA) that allows frame rate conversion, 3D comb video decoding, and video enhancement processing to share the same memory buffer to achieve high-speed and cost-effective applications. All these advance digital processing techniques combined with a true 10-bit video data processing for the most optimal video fidelity to provide the most natural and cinema quality video images.

For achieving the maximum system design flexibility, SVPTMEX product line integrates all video interfaces to support converging digital video, analog video, and PC data applications. The users of Trident's single chip SVPTMEX series video processor(s) will benefit from many features while maintaining a price competitive advantage over the existing solution(s).



Functional Block Diagram

**Pin Function:**

Pin No.	Pin Name	Type	I/O Power	Short Description
1	XTALO	O	PAVDD1	Used in conjunction XTAL for 14.318MHz crystal
2	PAVDD1	PWR	PAVDD1	1.8V power for PLL 1
3	MLF1	AI	PAVDD1	Low pass filter node for memory clock PLL
4	PAVSS1	GND	PAVDD1	1.8V GND for PLL 1
5	PAVDD2	PWR	PAVDD2	1.8V Power for PLL2
6	PLF2	AI	PAVDD2	Low pass filter node for video clock PLL
7	PAVSS2	GND	PAVDD2	1.8V GND for PLL2
8	VSSC	GND	VDDC	1.8V Core GND
9	VDDC	PWR	VDDC	1.8V Core voltage
10	AIN_HS	I	VDDH & V5SF	Hsync Input (analog port)
11	AIN_VS	I	VDDH & V5SF	Vsync Input (analog port)
12	TESTMODE	I	VDDH	4.7K pull High to enter Test mode
13	RESET	I	VDDH	Active High Reset
14	SCL	I	VDDH & V5SF	I2C Clock
15	V5SF	I	VDDH	5V Reference Tolerance Voltage
16	SDA	I/O	VDDH & V5SF	I2C Data
17	PWM	O	VDDH & V5SF	PWM (open drain)
18	FLD/IO	I/O	VDDH & V5SF	Field Input or Output
19	VDDH	PWR	VDDH	3.3V Core voltage
20	VSSH	GND	VDDH	3.3V Core GND

21	H	I	VDDH	Hsync Input (digital port)
22	V	I	VDDH	Vsync Input (digital port)
23	DE	I	VDDH	DE Input
24	PLL_VCC	PWR	PLL_VCC	Power for LVDS PLL
25	PLL_GND	GND	PLL_VCC	GND for LVDS PLL
26	TD1+	O	LVDSVCC	Positive LVDS Differential Data Output
27	TD1-	O	LVDSVCC	Negative LVDS Differential Data Output
28	TCLK+	O	LVDSVCC	Positive LVDS Differential Clock Output
29	TCLK-	O	LVDSVCC	Negative LVDS Differential Clock Output
30	TC1+	O	LVDSVCC	Positive LVDS Differential Data Output
31	TC1-	O	LVDSVCC	Negative LVDS Differential Data Output
32	LVDSGND	GND	LVDSVCC	GND for LVDS
33	LVDSVCC	PWR	LVDSVCC	Power for LVDS
34	TB1+	O	LVDSVCC	Positive LVDS Differential Data Output
35	TB1-	O	LVDSVCC	Negative LVDS Differential Data Output
36	TA1+	O	LVDSVCC	Positive LVDS Differential Data Output

37	TA1-	O	LVDSVCC	Negative LVDS Differential Data Output
38	LVDSVDDP	PWR	LVDSVDD	Power for LVDS
39	GPO	IO	VDDH	General Purpose Output
40	VDDC	PWR	VDDC	Digital Power
41	VSSC	GND	VDDC	Digital Ground
42	DIN19	I	VDDH	R3 Digital Input
43	DIN18	I	VDDH	R2 Digital Input
44	DIN17	I	VDDH	R1 Digital Input
45	DIN16	I	VDDH	R0 Digital Input
46	DIN15	I	VDDH	B7 Digital Input
47	DIN14	I	VDDH	B6 Digital Input

48	DIN13	I	VDDH	B5 Digital Input
49	DIN12	I	VDDH	B4 Digital Input
50	VDDH	PWR	VDDH	Digital Power
51	VSSH	GND	VDDH	Digital Ground
52	DIN11	I	VDDH	Digital B3 Input
53	DIN10	I	VDDH	Digital B2 Input
54	DIN9	I	VDDH	B1 Digital Input port video
55	DIN8	I	VDDH	B0 Digital Input
56	CLK	I	VDDH	Digital Clock Input for Memory Block
57	DIN7	I	VDDH	G7 Digital Input
58	DIN6	I	VDDH	G6 Digital Input
59	DIN5	I	VDDH	G5 Digital Input
60	DIN4	I	VDDH	G4 Digital Input
61	DIN3	I	VDDH	G3 Digital Input

62	DIN2	I	VDDH	G2 Digital Input
63	DIN1	I	VDDH	G1 Digital Input
64	DIN0	I	VDDH	G0 Digital Input
65	VDDH	PWR	VDDH	Digital Power 3.3V Core Voltage
66	VSSH	GND	VDDH	Digital Ground 3.3V Core GND
67	VDDC	PWR	VDDC/VD DH	Digital Power 1.8V Core Voltage
68	VSSC	GND	VDDC	Digital Ground 1.8V Core GND
69	DIN23	I	VDDH	R7 Digital Input
70	DIN22	I	VDDH	R6 Digital Input
71	DIN21	I	VDDH	R5 Digital Input
72	DIN20	I	VDDH	R4 Digital Input
73	MD0	IO	VDDM	Memory Data
74	VSSC	GND	VDDC	Digital ground 1.8V Core GND
75	MD1	IO	VDDM	Memory Data
76	MD2	IO	VDDM	Memory Data
77	VDDM	PWR	VDDM	Digital Power for Memory Block

78	MD3	IO	VDDM	Memory Data
79	DQM0	O	VDDM	Memory Read/Write Bytes Enable
80	VSSM	GND	VDDM	Digital Ground for Memory Block
81	VDDM	PWR	VDDM	Digital Power for Memory Block
82	DQS0	IO	VDDM	Memory Data Strobe

83	VSSM	GND	VDDM	Digital Ground for Memory
84	MD4	IO	VDDM	Memory Data
85	VDDM	PWR	VDDM	Digital Power for Memory Block
86	MD5	IO	VDDM	Memory Data
87	VSSM	GND	VDDM	Digital Ground for Memory Block
88	MD6	IO	VDDM	Memory Data
89	VDDC	PWR	VDDC	Digital Power 1.8V Core Voltage
90	MD7	IO	VDDM	Memory Data
91	MD8	IO	VDDM	Memory Data
92	VSSC	GND	VDDC	Digital Ground 1.8V Core GND
93	MD9	IO	VDDM	Memory Data
94	MD10	IO	VDDM	Memory Data
95	VDDM	PWR	VDDM	Digital Power for Memory
96	MD11	IO	VDDM	Memory Data
97	DQM1	O	VDDM	Read/Write Bytes Enable
98	VSSM	GND	VDDM	Digital Ground for Memory
99	VDDM	PWR	VDDM	Digital Power for Memory
100	DQS1	IO	VDDM	Memory Data Strobe
101	VSSM	GND	VDDM	Digital Ground for Memory
102	MD12	IO	VDDM	Memory Data
103	VDDM	PWR	VDDM	Digital Power for Memory
104	MD13	IO	VDDM	Memory Data
105	VSSM	GND	VDDM	Digital Ground for Memory
106	MD14	IO	VDDM	Memory Data
107	VDDC	PWR	VDDC	Digital Power

108	MD15	IO	VDDM	Memory Data
109	MA11	O	VDDM	Memory Address
110	VSSC	GND	VDDC	Digital Ground
111	MA10	O	VDDM	Memory Address
112	MA9	O	VDDM	Memory Address
113	VDDC	PWR	VDDC	Digital Power
114	MA8	O	VDDM	Memory Address
115	MA7	O	VDDM	Memory Address
116	VSSM	GND	VDDM	Digital Ground
117	MA6	O	VDDM	Memory Address
118	MA5	O	VDDM	Memory Address
119	VDDM	PWR	VDDM	Digital Power for Memory
120	MA4	O	VDDM	Memory Address
121	VSSM	GND	VDDM	Digital Ground for Memory
122	MA3	O	VDDM	Memory Address
123	MA2	O	VDDM	Memory Address
124	VDDM	PWR	VDDM	Digital Power for Memory
125	MA1	O	VDDM	Memory Address
126	MA0	O	VDDM	Memory Address
127	VSSL	GND	VDDL	Digital Ground
128	VDDL	PWR	VDDL	Analog DLL power for memory I/O
129	VSSM	GND	VDDM	Digital Ground for Memory
130	MCK0	O	VDDM	Memory Clock +

131	MCK0#	O	VDDM	Memory Clock -
132	VSSM	GND	VDDM	Digital Ground
133	CS0#	O	VDDM	Memory Chip Select 0
134	VDDM	PWR	VDDM	Digital Power for Memory
135	CS1#	PWR	VDDM	Memory Chip Select 1
136	VDDM	PWR	VDDM	Digital Power

137	RAS#	O	VDDM	RAS#
138	CAS#	O	VDDM	CAS#
139	VDDR	PWR	VDDR	Digital Power for Memory
140	MVREF	PWR	VDDR	DDR Voltage Reference
141	VSSR	GND	VDDR	Digital Ground
142	WE#	O	VDDM	Write Enable
143	VDDC	PWR	VDDC	Digital Power
144	CLKE	O	VDDM	Clock Enable
145	BA0	O	VDDM	Bank Address Select
146	VSSC	GND	VDDC	Digital Ground
147	BA1	O	VDDM	Bank Address Select
148	MD16	IO	VDDM	Memory Data
149	VDDC	PWR	VDDC	Digital Power
150	MD17	IO	VDDM	Memory Data
151	VSSM	GND	VDDM	Digital Ground for Memory
152	MD18	IO	VDDM	Memory Data
153	VDDM	PWR	VDDM	Digital Power for Memory

154	MD19	IO	VDDM	Memory Data
155	VSSM	GND	VDDM	Digital Ground
156	DQS2	IO	VDDM	Memory Data Strobe
157	VDDM	PWR	VDDM	Digital Power
158	VSSM	GND	VDDM	Digital Ground for Memory
159	DQM2	O	VDDM	Read/Write Bytes Enable
160	MD20	IO	VDDM	Memory Data
161	VDDM	PWR	VDDM	Digital Power to Memory
162	MD21	IO	VDDM	Memory Data
163	MD22	IO	VDDM	Memory Data
164	VSSC	GND	VDDC	Digital Ground 1.8V
165	MD23	IO	VDDM	Memory Data
166	MD24	IO	VDDM	Memory Data
167	VDDC	PWR	VDDC	Digital Power 1.8V
168	MD25	IO	VDDM	Memory Data
169	VSSM	GND	VDDM	Digital Ground for Memory
170	MD26	IO	VDDM	Memory Data

171	VDDM	PWR	VDDM	Digital Power
172	MD27	IO	VDDM	Memory Data
173	VSSM	GND	VDDM	Digital Ground
174	DQS3	IO	VDDM	CPU Memory Data Strobe
175	VDDM	PWR	VDDM	Digital Power for Memory
176	VSSM	GND	VDDM	Digital Ground for Memory
177	DQM3	O	VDDM	Read/Write Bytes Enable
178	MD28	IO	VDDM	Memory Data
179	VDDM	PWR	VDDM	Digital Power
180	MD29	IO	VDDM	Memory Data
181	MD30	IO	VDDM	Memory Data
182	VSSC	GND	VDDC	Digital Ground
183	MD31	IO	VDDM	Memory Data
184	VDDC	PWR	VDDC	Digital Power
185	VSSC	GND	VDDC	Digital Ground
186	VDDH	PWR	VDDH	3.3V Standby Power

187	VSSH	GND	VDDH	Digital Ground 3.3V
188	MPUGPIO4	O	VDDH & V5SF	Multipurpose GPO
189	MPUGPIO3	O	VDDH & V5SF	Multipurpose GPO
190	MPUGPIO2	O	VDDH & V5SF	Multipurpose GPO
191	MPUGPIO1	I	VDDH & V5SF	Multipurpose GPI
192	NC			No Connection

193	MPUGPIO0	I	VDDH & V5SF	Multipurpose GPI
194	A_D0	IO	VDDH & V5SF	Multiplexed address and data for CPU
195	A_D1	IO	VDDH & V5SF	Multiplexed address and data for CPU
196	A_D2	IO	VDDH & V5SF	Multiplexed address and data for CPU
197	A_D3	IO	VDDH & V5SF	Multiplexed address and data for CPU
198	VDDC	PWR	VDDC	Digital Power
199	VSSC	GND	VDDC	Digital Ground

200	A_D4	IO	VDDH & V5SF	Multiplexed address and data for CPU
201	A_D5	IO	VDDH & V5SF	Multiplexed address and data for CPU
202	A_D6	IO	VDDH & V5SF	Multiplexed address and data for CPU
203	A_D7	IO	VDDH & V5SF	Multiplexed address and data for CPU
204	VDDH	PWR	VDDH	3.3V Standby Power
205	VSSH	GND	VDDH	Digital Ground 3.3V Core GND
206	ADDR0	I	VDDH & V5SF	CPU Address 0
207	ADDR1	I	VDDH & V5SF	CPU Address 1
208	ADDR2	I	VDDH & V5SF	CPU Address 2
209	ADDR3	I	VDDH & V5SF	CPU Address 3
210	ADDR4	I	VDDH & V5SF	CPU Address 4
211	ADDR5	I	VDDH & V5SF	CPU Address 5
212	ADDR6	I	VDDH & V5SF	CPU Address 6
213	ADDR7	I	VDDH & V5SF	CPU Address 7
214	VDDC	PWR	VDDC	Digital Power
215	VSSC	GND	VDDC	Digital Ground
216	RD#	I	VDDH & V5SF	CPU Read
217	WR#	I	VDDH & V5SF	CPU Write
218	ALE	I	VDDH & V5SF	Address Latch Enable

219	MPUCS0N	I/O	VDDH & V5SF	Choose I2C address when PWR on Reset. After Reset it turns to GPIO.
220	INT#	IO	VDDH & V5SF	Interrupt signal (active low)
221	AVDD_ADC 3	PWR	AVDD_AD C3	Analog Power
222	AVSS_ADC 3	GND	AVDD_AD C3	Analog Ground
223	VREFN_3		AVDD_AD C3	ADC3 voltage reference -
224	VREFP_3		AVDD_AD C3	ADC3 voltage reference +
225	PR_R1	I	AVDD3_A VSP2	R Input Port 1
226	PR_R2	I	AVDD3_A VSP2	R Input Port 2
227	AVDD_ADC 2	PWR	AVDD_AD C2	Analog Power
228	AVSS_ADC 2	GND	AVDD_AD C2	Analog Ground
229	VREFN_2		AVDD_AD C2	ADC2 voltage reference -
230	VREFP_2		AVDD_AD C2	ADC2 voltage reference +
231	C	I	AVDD3_A VSP2	Chroma Input

232	PB_B1	I	AVDD3_A VSP2	B Input Port 1
233	PB_B2	I	AVDD3_A VSP2	B Input Port 1
234	AVDD3_AV SP2	PWR	AVDD3_A VSP2	ADC Power
235	AVSS3_BG_ ASS	PWR	AVDD3_A VSP2	ADC Ground
236	CVBS_OUT P	O	AVDD3_A VSP2	CVBS Output +
237	CVBS_OUT N	O	AVDD3_A VSP2	CVBS Output -
238	AVDD_ADC 1	PWR	AVDD_AD C1	Analog Power
239	AVSS_ADC 1	GND	AVDD_AD C1	Analog Ground
240	VREFN_1		AVDD_AD C1	ADC1 voltage reference -
241	VREFP_1		AVDD_AD C1	ADC1 voltage reference +

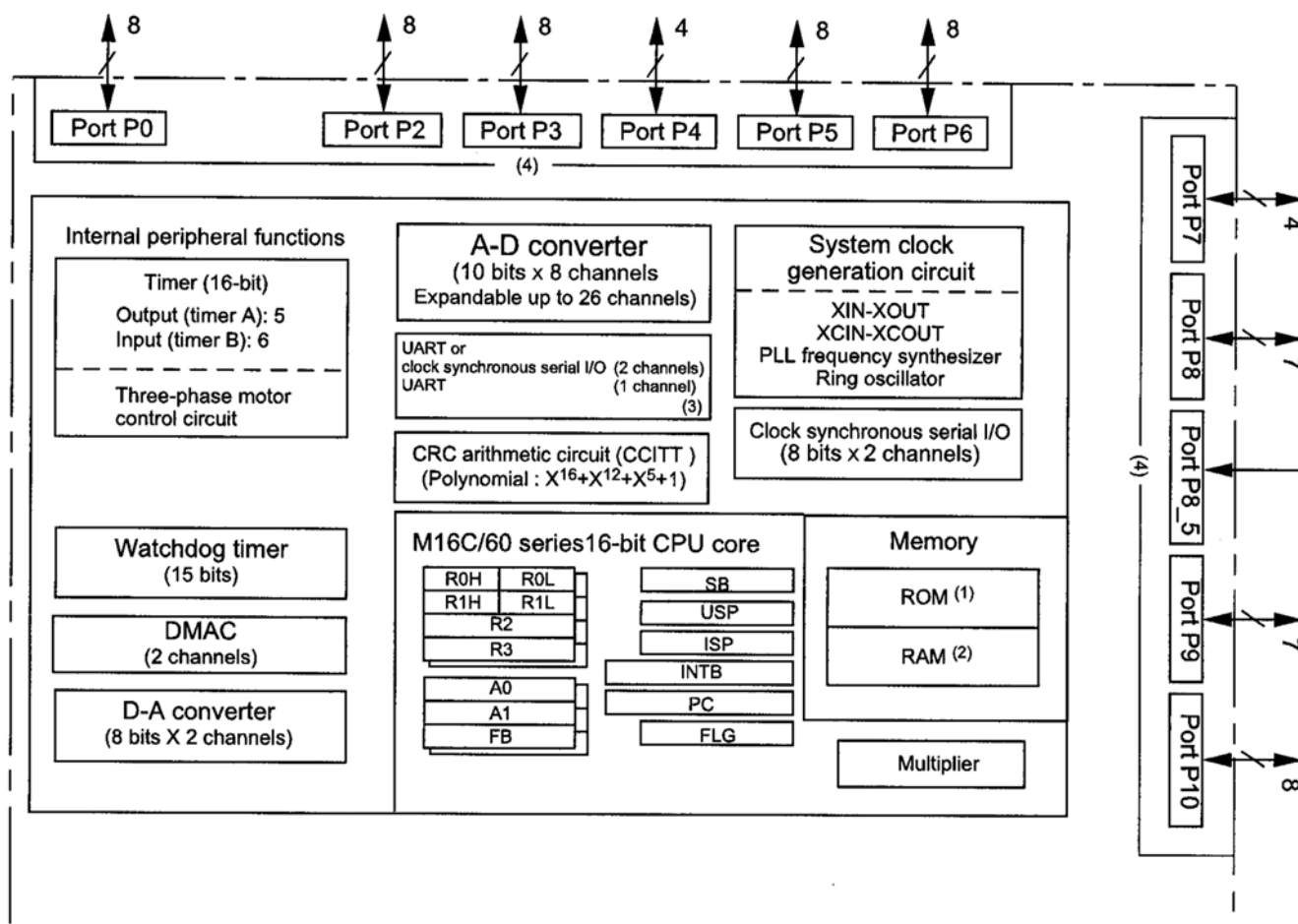
242	CVBS1	I	AVDD3_A VSP2	CVBS Input 1
243	CVBS2	I	AVDD3_A VSP2	CVBS Input 2
244	CVBS3	I	AVDD3_A VSP2	CVBS Input 3
245	AIN_N1		AVDD3_A VSP2	Ground return for CVBS/CHROMA input
246	Y_G1	I	AVDD3_A VSP2	Y or G Input Port 1
247	AIN_N2		AVDD3_A VSP2	Ground return for component input port 1
248	Y_G2	I	AVDD3_A VSP2	Y or G input port 2
249	AIN_N3		AVDD3_A VSP2	Ground return for component input port 2
250	VSSC	GND	VDDC	Digital Ground
251	VDDC	PWR	VDDC	Digital Power
252	PDVDD	PWR	PDVDD	PLL Power
253	PDVSS	GND	PDVDD	PLL Ground
254	PAVDD	PWR	PAVDD	PLL Power
255	PAVSS	GND	PAVDD	PLL Ground
256	XTALI	I	PAVDD1	Input for clock synthesizer. Support for 14.318MHz crystal or oscillator

MCU

U402 M30620SPGP LQFP-100PIN

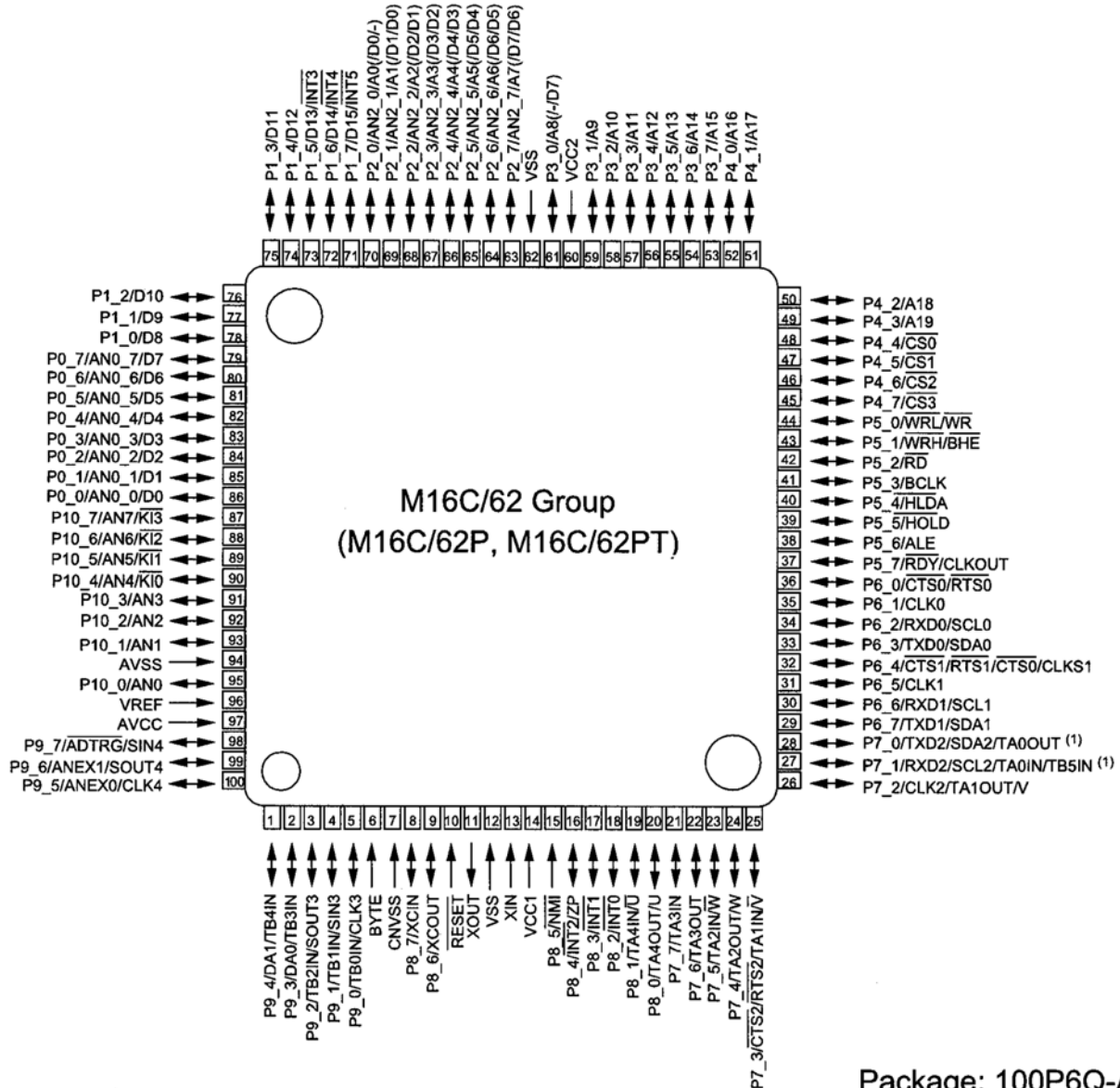
Overview

The M16C/62 group (M16C/62P, M16C/62PT) of single-chip microcomputers are built using the high-performance silicon gate CMOS process using a M16C/60 Series CPU core and are packaged in a 80-pin, 100-pin and 128-pin plastic molded QFP. These single-chip microcomputers operate using sophisticated instructions featuring a high level of instruction efficiency. With 1M bytes of address space, they are capable of executing instructions at high speed. In addition, this microcomputer contains a multiplier and DMAC which combined with fast instruction processing capability, makes it suitable for control of various OA, communication, and industrial equipment which requires high-speed arithmetic/logic operations.



NOTES:

1. ROM size depends on microcomputer type.
2. RAM size depends on microcomputer type.
3. To use a UART2, set the CRD bit in the U2C0 register to "1" (CTS/RTS function disabled).
4. There is no external connections for port P1, P4_4 to P4_7, P7_2 to P7_5 and P9_1 in 80-pin version. Set the direction bits in these ports to "1" (output mode), and set the output data to "0" ("L") using the program.



NOTES:

1. P7_0 and P7_1 are N channel open-drain output pins.

Package: 100P6Q-A

Pin Description:

Signal name	Pin name	I/O type	Power supply	Description
Power supply input	VCC1, VCC2 VSS	I	—	Apply 2.7 to 5.5 V to the VCC1 and VCC2 pins and 0 V to the Vss pin. The VCC apply condition is that $VCC1 \geq VCC2$. ⁽²⁾
Analog power supply input	AVCC AVSS	I	VCC1	Applies the power supply for the A-D converter. Connect the AVCC pin to VCC1. Connect the AVSS pin to VSS.
Reset input	RESET	I	VCC1	The microcomputer is in a reset state when applying "L" to the this pin.
CNVSS	CNVSS	I	VCC1	Switches processor mode. Connect this pin to VSS to when after a reset to start up in single-chip mode. Connect this pin to VCC1 to start up in microprocessor mode.
External data bus width select input	BYTE	I	VCC1	Switches the data bus in external memory space. The data bus is 16 bits long when the this pin is held "L" and 8 bits long when the this pin is held "H". Set it to either one. Connect this pin to Vss when an single-chip mode.
Bus control pins ⁽⁴⁾	D0 to D7	I/O	VCC2	Inputs and outputs data (D0 to D7) when these pins are set as the separate bus.
	D8 to D15	I/O	VCC2	Inputs and outputs data (D8 to D15) when external 16-bit data bus is set as the separate bus.
	A0 to A19	O	VCC2	Output address bits (A0 to A19).
	A0/D0 to A7/D7	I/O	VCC2	Input and output data (D0 to D7) and output address bits (A0 to A7) by time-sharing when external 8-bit data bus are set as the multiplexed bus.
	A1/D0 to A8/D7	I/O	VCC2	Input and output data (D0 to D7) and output address bits (A8 to A15) by time-sharing when external 16-bit data bus are set as the multiplexed bus.
	CS0 to CS3	O	VCC2	Output CS0 to CS3 signals. CS0 to CS3 are chip-select signals to specify an external space.
	WRL/WR WRH/BHE RD	O	VCC2	Output WRL, WRH, (WR, BHE), RD signals. WRL and WRH or BHE and WR can be switched by program. • WRL, WRH and RD are selected The WRL signal becomes "L" by writing data to an even address in an external memory space. The WRH signal becomes "L" by writing data to an odd address in an external memory space. The RD pin signal becomes "L" by reading data in an external memory space. • WR, BHE and RD are selected The WR signal becomes "L" by writing data in an external memory space. The RD signal becomes "L" by reading data in an external memory space. The BHE signal becomes "L" by accessing an odd address. Select WR, BHE and RD for an external 8-bit data bus.
	ALE	O	VCC2	ALE is a signal to latch the address.
	HOLD	I	VCC2	While the HOLD pin is held "L", the microcomputer is placed in a hold state.
	HLDA	O	VCC2	In a hold state, HLDA outputs a "L" signal.
	RDY	I	VCC2	While applying a "L" signal to the RDY pin, the microcomputer is placed in a wait state.

I : Input O : Output I/O : Input and output

Power supply : Power supplies which relate to the external bus pins are separated as VCC2, thus they can be interfaced using the different voltage as VCC1.

NOTES:

1. In this manual, hereafter, VCC refers to VCC1 unless otherwise noted.
2. In M16C/62PT, apply 2.7 to 5.5 V to the VCC1 and VCC2 pins. Also the apply condition is that $VCC1 \geq VCC2$.
3. When use $VCC1 \geq VCC2$, contacts due to some points or restrictions to be checked.
4. This pin function is not in M16C/62PT.

Signal name	Pin name	I/O type	Power supply	Description
Main clock input	XIN	I	VCC1	I/O pins for the main clock generation circuit. Connect a ceramic resonator or crystal oscillator between XIN and XOUT ⁽³⁾ . To use the external clock, input the clock from XIN and leave XOUT open.
Main clock output	XOUT	O	VCC1	
Sub clock input	XCIN	I	VCC1	I/O pins for a sub clock oscillation circuit. Connect a crystal oscillator between XCIN and XCOUT ⁽³⁾ . To use the external clock, input the clock from XCIN and leave XCOUT open.
Sub clock output	XCOUT	O	VCC1	
BCLK output ⁽²⁾	BCLK	O	VCC2	Outputs the BCLK signal.
Clock output	CLKOUT	O	VCC2	The clock of the same cycle as fC, f8, or f32 is outputted.
INT interrupt input	INT0 to INT5	I	VCC1	Input pins for the INT interrupt
NMI interrupt input	NMI	I	VCC1	Input pin for the NMI interrupt. Pin states can be read by the P8_5 bit in the P8 register.
Key input interrupt input	KI0 to KI3	I	VCC1	Input pins for the key input interrupt
Timer A	TA0OUT to TA4OUT	I/O	VCC1	These are timer A0 to timer A4 I/O pins. (except the output of TAOUT for the N-channel open drain output.)
	TA0IN to TA4IN	I	VCC1	These are timer A0 to timer A4 input pins.
	ZP	I	VCC1	Input pin for the Z-phase.
Timer B	TB0IN to TB5IN	I	VCC1	These are timer B0 to timer B5 input pins.
Three-phase motor control output	U, \bar{U} , V, \bar{V} , W, \bar{W}	O	VCC1	These are Three-phase motor control output pins.
Serial I/O	CTS0 to CTS2	I	VCC1	These are send control input pins.
	RTS0 to RTS2	O	VCC1	These are receive control output pins.
	CLK0 to CLK4	I/O	VCC1	These are transfer clock I/O pins.
	RXD0 to RXD2	I	VCC1	These are serial data input pins.
	SIN3, SIN4	I	VCC1	These are serial data input pins.
	TXD0 to TXD2	O	VCC1	These are serial data output pins. (except TXD2 for the N-channel open drain output.)
	SOUT3, SOUT4	O	VCC1	These are serial data output pins.
	CLKS1	O	VCC1	This is output pin for transfer clock output from multiple pins function.
I ² C mode	SDA0 to SDA2	I/O	VCC1	These are serial data I/O pins. (except SDA2 for the N-channel open drain output.)
	SCL0 to SCL2	I/O	VCC1	These are transfer clock I/O pins. (except SCL2 for the N-channel open drain output.)

I : Input O : Output I/O : Input and output

NOTES:

1. When use VCC1 \geq VCC2, contacts due to some points or restrictions to be checked.
2. This pin function is not in M16C/62PT.
3. Ask the oscillator maker the oscillation characteristic.

Signal name	Pin name	I/O type	Power supply	Description
Reference voltage input	VREF	I	VCC1	Applies the reference voltage for the A-D converter and D-A converter.
A-D converter	AN0 to AN7, AN0_0 to AN0_7, AN2_0 to AN2_7	I	VCC1	Analog input pins for the A-D converter
	ADTRG	I	VCC1	This is an A-D trigger input pin.
	ANEX0	I/O	VCC1	This is the extended analog input pin for the A-D converter, and is the output in external op-amp connection mode.
	ANEX1	I	VCC1	This is the extended analog input pin for the A-D converter.
D-A converter	DA0, DA1	O	VCC1	This is the Input pin for the D-A converter.
I/O port	P0_0 to P0_7, P1_0 to P1_7, P2_0 to P2_7, P3_0 to P3_7, P4_0 to P4_7, P5_0 to P5_7, P12_0 to P12_7 (2), P13_0 to P13_7 (2)	I/O	VCC2	8-bit I/O ports in CMOS, having a direction register to select an input or output. Each pin is set as an input port or output port. An input port can be set for a pull-up or for no pull-up in 4-bit unit by program.
	P6_0 to P6_7, P7_0 to P7_7, P9_0 to P9_7, P10_0 to P10_7, P11_0 to P11_7 (2)	I/O	VCC1	8-bit I/O ports having equivalent functions to P0. (except P7_0 and P7_1 for the N-channel open drain output.)
	P8_0 to P8_4, P8_6, P8_7, P14_0, P14_1(2)	I/O	VCC1	I/O ports having equivalent functions to P0.
Input port	P8_5	I	VCC1	Input pin for the $\overline{\text{NMI}}$ interrupt. Pin states can be read by the P8_5 bit in the P8 register.

I : Input O : Output I/O : Input and output

NOTES:

1. When use $VCC1 \geq VCC2$, contacts due to some points or restrictions to be checked.
2. Ports P11 to P14 are provided in the 128-pin version only.

Signal name	Pin name	I/O type	Power supply	Description
Power supply input	VCC1, VSS	I	—	Apply 2.7 to 5.5 V to the VCC1 pin and 0 V to the VSS pin. ⁽²⁾
Analog power supply input	AVCC, AVSS	I	VCC1	Applies the power supply for the A-D converter. Connect the AVCC pin to VCC1. Connect the AVSS pin to VSS.
Reset input	RESET	I	VCC1	The microcomputer is in a reset state when applying "L" to the this pin.
CNVSS	CNVSS (BYTE)	I	VCC1	Switches processor mode. Connect this pin to Vss to when after a reset to start up in single-chip mode. Connect this pin to Vcc1 to start up in microprocessor mode. As for the BYTE pin of the 80-pin versions, pull-up processing is performed within the microcomputer.
Main clock input	XIN	I	VCC1	I/O pins for the main clock generation circuit. Connect a ceramic resonator or crystal oscillator between XIN and XOUT ⁽³⁾ . To use the external clock, input the clock from XIN and leave XOUT open.
Main clock output	XOUT	O	VCC1	
Sub clock input	XCIN	I	VCC1	I/O pins for a sub clock oscillation circuit. Connect a crystal oscillator between XCIN and XCOUT ⁽³⁾ . To use the external clock, input the clock from XCIN and leave XCOUT open.
Sub clock output	XCOUT	O	VCC1	
Clock output	CLKOUT	O	VCC2	The clock of the same cycle as fC, f8, or f32 is outputted.
INT interrupt input	INT0 to INT2	I	VCC1	Input pins for the INT interrupt
NMI interrupt input	NMI	I	VCC1	Input pin for the NMI interrupt.
Key input interrupt input	KI0 to KI3	I	VCC1	Input pins for the key input interrupt
Timer A	TA0OUT, TA3OUT, TA4OUT	I/O	VCC1	These are timer A0, timer A3 and Timer A4 I/O pins. (except the output of TAOUT for the N-channel open drain output.)
	TA0IN, TA3IN, TA4IN	I	VCC1	These are timer A0, timer A3 and Timer A4 input pins.
	ZP	I	VCC1	Input pin for the Z-phase.
Timer B	TB0IN, TB2IN to TB5IN	I	VCC1	These are timer B0, timer B2 to timer B5 input pins.
Serial I/O	CTS0, CTS2	I	VCC1	These are send control input pins.
	RTS0, RTS2	O	VCC1	These are receive control output pins.
	CLK0, CLK1, CLK3, CLK4	I/O	VCC1	These are transfer clock I/O pins.
	RXD0 to RXD2	I	VCC1	These are serial data input pins.
	SIN4	I	VCC1	These are serial data input pins.
	TXD0 to TXD4	O	VCC1	These are serial data output pins. (except TXD2 for the N-channel open drain output.)
	SOUT3, SOUT4	O	VCC1	These are serial data output pins.
	CLKS1	O	VCC1	This is output pin for transfer clock output from multiple pins function.
I ² C mode	SDA0 to SDA2	I/O	VCC1	These are serial data I/O pins. (except SDA2 for the N-channel open drain output.)
	SCL0 to SCL2	I/O	VCC1	These are transfer clock I/O pins. (except SCL2 for the N-channel open drain output.)

I : Input O : Output I/O : Input and output

NOTES:

1. In this manual, hereafter, VCC refers to VCC1 unless otherwise noted.
2. In M16C/62PT, apply 4.0 to 5.5 V to the VCC1 pin.
3. Ask the oscillator maker the oscillation characteristic.

Signal name	Pin name	I/O type	Power supply	Description
Reference voltage input	VREF	I	VCC1	Applies the reference voltage for the A-D converter and D-A converter.
A-D converter	AN0 to AN7, AN0_0 to AN0_7, AN2_0 to AN2_7	I	VCC1	Analog input pins for the A-D converter
	ADTRG	I	VCC1	This is an A-D trigger input pin.
	ANEX0	I/O	VCC1	This is the extended analog input pin for the A-D converter, and is the output in external op-amp connection mode.
	ANEX1	I	VCC1	This is the extended analog input pin for the A-D converter.
D-A converter	DA0, DA1	O	VCC1	This is the Input pin for the D-A converter
I/O port	P0_0 to P0_7, P2_0 to P2_7, P3_0 to P3_7, P5_0 to P5_7, P6_0 to P6_7, P10_0 to P10_7	I/O	VCC1	8-bit I/O ports in CMOS, having a direction register to select an input or output. Each pin is set as an input port or output port. An input port can be set for a pull-up or for no pull-up in 4-bit unit by program.
	P8_0 to P8_4, P8_6, P8_7, P9_0, P9_2 to P9_7	I/O	VCC1	I/O ports having equivalent functions to P0.
	P4_0 to P4_3, P7_0, P7_1, P7_6, P7_7	I/O	VCC1	I/O ports having equivalent functions to P0. (except P7_0 and P7_1 for the N-channel open drain output.)
Input port	P8_5	I	VCC1	Input pin for the NMI interrupt. Pin states can be read by the P8_5 bit in the P8 register.

I : Input O : Output I/O : Input and output

NOTES:

1. There is no external connections for port P1, P4_4 to P4_7, P7_2 to P7_5 and P9_1 in 80-pin version.
Set the direction bits in these ports to "1" (input mode), and set the output data to "0" ("L") using the program.

Tuner**TU101 FQ1216ME/IH-5 (SV22)****Features**

- Multi-Standard TV Systems Broadcast reception
- Especially developed for LCD-TV/ PDP application
- New input configuration (* patent pending) results in Best- in- Class Noise Figure : typically 5.5 dB in UHF
- True 5 V device (lower power consumption compared to Mk3)
- Full frequency range from 48.25 MHz to 863.25 MHz
- PLL controlled tuning
- True-synchronous vision IF demodulator (PLL)
- Ultra linear FM PLL demodulator
- Demodulated video output, AF sound output, second IF sound output.
- I2C-bus control of tuning, address selection, AFC status information
- User-settable 2nd IF address for PIP application
- Complies with European regulations on radiation, signal handling and immunity ("CENELEC 55020, 55013")
- Complies to CISPR13 (4th Edition) including amendment 1(1992) and amendment
- Low profile horizontally mounted metal 70 mm housing
- Environmentally friendly lead-free process used
- Suitable for lead-free wave soldering

Description

The FQ1216ME family belongs to the new MK5 family of small size frontends, especially developed for LCDTV application where a low Noise Figure and best-in-class performance is desired. The FQ1216ME combines the functions of an all-band TV tuner, and a multi-standard TV IF demodulation unit for both positive and negative modulated TV systems. The FQ1216ME is intended for CCIR L/L' (France), B/G, I and D/K systems. The frontends have a built-in digital (I2C) PLL tuning system. A DC-DC converter circuit is built-in in the FQ1216ME to synthesize the tuning voltage required, thus making the frontend a true 5V device. For PIP/Double Window application, a second module address can be set for both the tuner and IF part. The footprint is identical to the Mk3, but the overall thickness is lower.

Intermediate Frequencies

System	L	L'	B/G	D/K	I
Picture carrier	38.90	33.95	38.90	38.90	38.90
Colour	34.47	38.38	34.47	34.47	34.47
Sound 1	32.40	40.40	33.40	32.40	32.90
Sound 2	-	-	33.16	-	-
NICAM	33.05	39.80	33.05	33.05	32.348

Channel Coverage

Band	Frequency (Mhz)
Low band	48.25 to 158.00 MHz +
Mid band	160.00 to 442.00 MHz
High band	442.00 to 863.25 MHz

Pin Description

Symbol	Pin	Description
N.C.	1	(AGC Monitor) Do Not Connect *
N.C.	2	(Tuning Voltage Monitor) Do Not Connect *
+5V	3	Supply Voltage Vb, Tuner section
SCL	4	I ² C-Serial Clock
SDA	5	I ² C-Serial Data
AS_TU	6	I ² C-Address Select_Tuner part (see Pg 20)

-	x	Not Connected
-	x	Not Connected
NC	9	Not Connected
AS_IF	10	I ² C-Address Select_IF part
2 nd IF sound	11	Second IF sound output
CVBS	12	Composite Video Baseband Signal
+5V, IF	13	Supply Voltage, IF section
AF O/P	14	AF sound output
GROUND		Mounting Tags (TH1,TH2,TH3,TH4)

Overall Performance**Conditional data**

Unless otherwise specified, all electrical values for "Overall performance" apply at the following conditions.

Symbol	Parameter	Value	Unit
T _{AMB}	Ambient temperature	25 ±5	°C
RH	Relative humidity	60 ±15	%
V _S	Supply voltage (tuner and IF section)	5 ±0.125	V
Z _{S(AE)}	Aerial source impedance (unbalanced)	75	Ω
Z _{IF}	Second IF sound output load	0.5	kΩ
	Video output load	75	Ω
V _{ST}	AF1 sound output load	100	kΩ

Tuner Characteristics

Equipment	Parameter	Value	Unit
DC Voltmeter	Input impedance	10	MΩ
Oscilloscope	Input impedance Resistance Capacitance	1 15	MΩ pF
Spectrum analyzer	Input impedance	50	Ω
FET probe	Input impedance Resistance Capacitance	10 3.5	MΩ pF

U501 SII9011CLU**General Description**

The SiI 9011 is a third generation PanelLink Cinema receiver, compatible with the HDMI 1.1 (High Definition Multimedia Interface) specification. The SiI 9011 has been cost-optimized for plasma displays, LCD TVs and projectors. Backwards compatibility with DVI 1.0 allows HDMI systems to connect to existing DVI 1.0 hosts (DVD players, HD set top boxes, D-VHS players and receivers, PC) over a single cable.

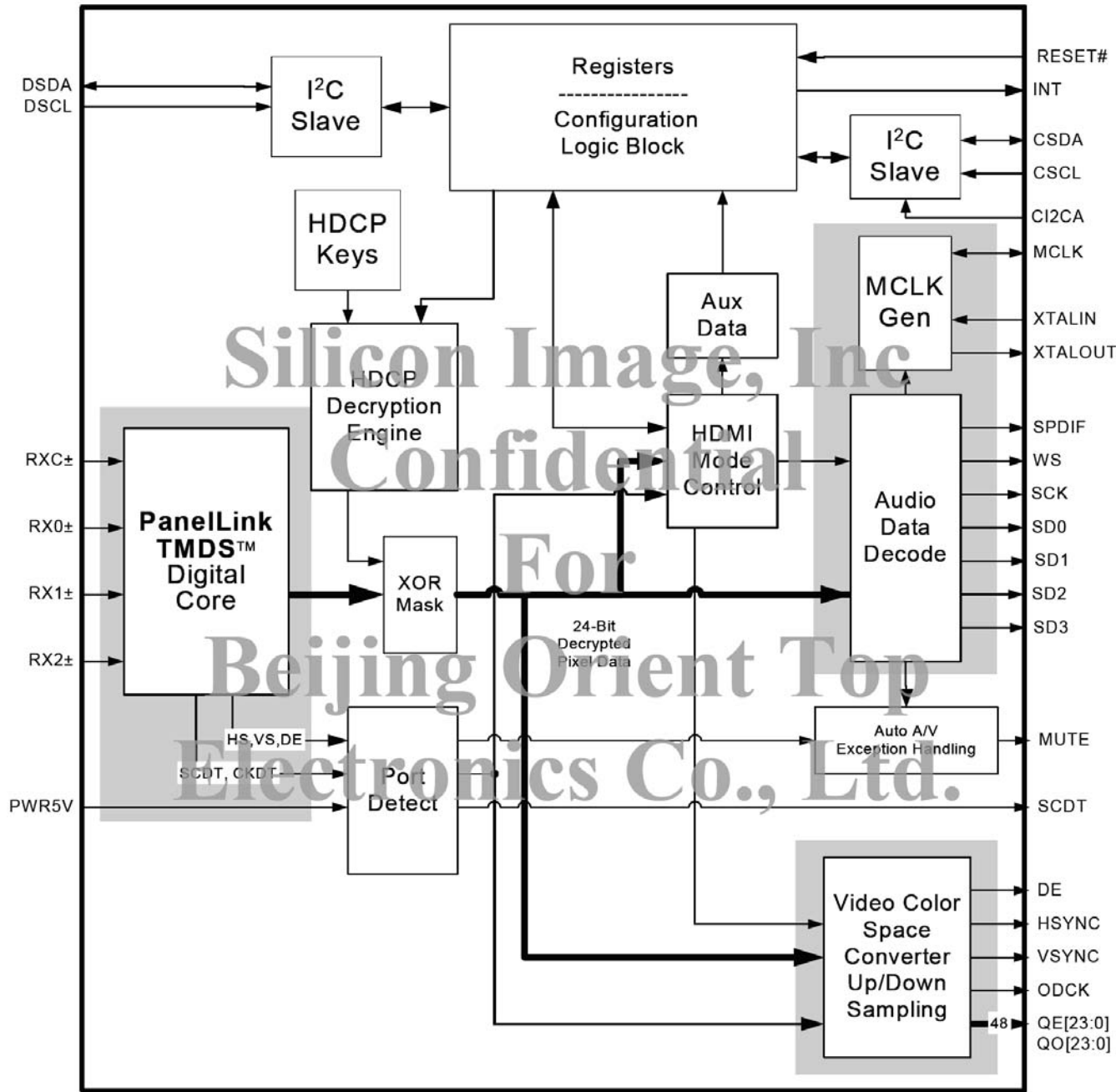
The SiI 9011 is capable of receiving and outputting 2 to 8 channel digital audio up to 192KHz. An industrystandard I2S port allows direct connection to low-cost audio DACs. An S/PDIF port supports up to 96KHz audio.

The SiI 9011 comes pre-programmed with HDCP keys, greatly simplifying the manufacturing process, lowering costs, while providing the highest level of HDCP key security.

Silicon Image's PanelLink Cinema receivers use the latest generation of PanelLink TMDS core technology. These PanelLink cores pass all HDMI compliancy tests.

Features

- HDMI 1.1, HDCP 1.1 and DVI 1.0 compliant receiver
- Integrated PanelLink core supports:
 - DTV resolutions (480i/576i/480p/576p/720p/1080i/1080p)
 - PC resolutions (VGA, SVGA, XGA, SXGA, UXGA) up to 165 MHz
- Digital video interface supports video processors:
 - 24-bit and 48-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)
 - 12-bit DMO (Digital Multimedia Output) RGB/YCbCr 4:4:4 (clocked with rising & falling edges)
 - Color Space Conversion for both RGB-to-YCbCr and YCbCr-to-RGB (both 601 and 709)
 - Auto video mode detection simplifies system firmware design
- Digital audio interface supports high-end audio systems:
 - Four programmable I2S outputs for connection to low-cost audio DACs
 - Sample rates up to 192KHz
 - S/PDIF output supports PCM, Dolby Digital, DTS digital audio transmission (32-96kHz Fs) using IEC 60958 and IEC 61937
 - Auto audio error detection with programmable soft mute
- Integrated HDCP decryption engine for receiving protected audio and video content
 - Built-In HDCP Self-Test
- Pre-programmed HDCP keys provide highest level of key security, simplifies manufacturing
- Software compatible with SiI 9993, SiI 9031 and SiI 9021
- 128-pin LQFP package
 - Pb-free package supports standard and Pb-free reflow assembly



Functional Block Diagram

Pin Descriptions

Digital Video Output Pins

Pin Name	Pin #	Description
QE0	124	24-Bit Even Pixel
QE1	123	
QE2	122	
QE3	121	
QE4	117	
QE5	116	
QE6	115	
QE7	114	
QE8	111	
QE9	110	
QE10	109	
QE11	108	
QE12	105	
QE13	104	
QE14	103	
QE15	102	
QE16	101	
QE17	100	
QE18	99	
QE19	96	
QE20	95	
QE21	94	
QE22	93	
QE23	92	

Pin Name	Pin #	Description
QO0	35	24-Bit Odd Pixel
QO1	34	
QO2	33	
QO3	32	
QO4	29	
QO5	28	
QO6	27	
QO7	26	
QO8	23	
QO9	22	
QO10	21	
QO11	20	
QO12	17	
QO13	16	
QO14	15	
QO15	14	
QO16	11	
QO17	10	
QO18	9	
QO19	8	
QO20	5	
QO21	4	
QO22	3	
QO23	2	
DE	127	Data enable.
HSYNC	128	Horizontal Sync.
VSNC	1	Vertical Sync.
ODCK	119	Output Data Clock.

Notes:

1. QE[23:0], QO[23:0], DE, HSYNC and VSYNC are 8mA LVTTTL outputs.
2. ODCK is a 12mA LVTTTL output.
3. HSYNC and VSYNC outputs carry sync signals for both embedded and explicit sync configurations.
4. When transporting video data which uses fewer than 24 bits, the unused bits on the Q[] bus may still carry switching pixel data signals. Unused Q[] bus pins should be unconnected, masked or ignored by downstream devices. For example, carrying YCbCr 4:2:2 data with 16-bit width (see page 40), the bits QE[0] through QE[7] will output switching signals.
5. The output data bus, QE[] and QO[], may be wire-ORed to another device such that one device is always tri-stated. However, the QE[] and QO[] pins do not have bus hold internal pull-ups or pulldowns and cannot pull the bus when all connected devices are tri-stated.

Differential Signal Data Pins

Pin Name	Pin #	Type	Description
RXC+	51	Analog	TMDS input clock pair.
RXC-	50	Analog	
RX0+	55	Analog	TMDS input data pair.
RX0-	54	Analog	
RX1+	59	Analog	TMDS input data pair.
RX1-	58	Analog	
RX2+	63	Analog	TMDS input data pair.
RX2-	62	Analog	

Pin Name	Pin #	Strength	Type	Dir	Description
XTALIN	85	—	LVTTL	In	Crystal Clock Input.
XTALOUT	84	—	LVTTL	Out	Crystal Clock Output.
MCLK	79	—		Bi-Di	Audio Master Clock Input Reference.
SCK	76	4 mA	LVTTL	Out	I2S Serial Clock Output.
WS	75	4 mA	LVTTL	Out	I2S Word Select Output.
SD0	74	4 mA	LVTTL	Out	I2S Serial Data Output.
SD1	73	4 mA	LVTTL	Out	I2S Serial Data Output.
SD2	72	4 mA	LVTTL	Out	I2S Serial Data Output.
SD3	71	4 mA	LVTTL	Out	I2S Serial Data Output.
SPDIF	70	4 mA	LVTTL	Out	S/PDIF Audio Output.
MUTE	67	4 mA	LVTTL	Out	Mute Audio Output.1

Notes:

1. The MUTE pin is asserted when there is no active incoming video. This pin is controlled by the internal AUDM register bit. Refer to the Sil 9011 Programmer's Reference (Sil-PR-0006).

Configuration/Programming Pins

Pin Name	Pin #	Strength	Type	Dir	Description
INT	91	4 mA	LVTTL1	Out	Interrupt Output
RESET#	89	—	Schmitt	In	Reset Pin. Active LOW.
DSCL	42	—	Schmitt	In	DDC I2C Clock for DDC.
DSDA	41	4 mA	Schmitt	Bi-Di	DDC I2C Data for DDC.
CSCL	40	—	Schmitt	In	Configuration I2C Clock.
CSDA	39	4 mA	Schmitt	Bi-Di	Configuration I2C Data.
SCDT	90	12 mA		Out	Indicates active video at HDMI input port.
CI2CA	38		LVTTL	In	I2C Device Address Select.
PWR5V	44	—	Schmitt	In	TMDS Port Transmitter Detect
RSVDL	88	—		In	Reserved, must be tied LOW.
RSVD	48				Reserved Pin, leave unconnected.
NC	43		—	—	No connect.

Notes:

1. The INT pin is programmable as either a push-pull LVTTL output, or as an open-drain output.

Power and Ground Pins

Pin Name	Pin #	Type	Description	Supply
CVCC18	12,24,36,45,81,112,125	Power	Digital Logic VCC	1.8V
CGND	13,25,37,80,113,126	Ground	Digital Logic GND	
IOVCC	7,19,31,68,77,98,107,120	Power	Input/Output Pin VCC	3.3V
IOGND	6,18,30,69,78,97,106,118	Ground	Input/Output Pin GND	
AVCC	49,53,57,61	Power	TMDS Analog VCC	3.3V
AGND	52,56,60,64	Ground	TMDS Analog GND	
PVCC	47	Power	TMDS PLL VCC	3.3V
PGND	46	Ground	TMDS PLL GND	
AUDPVCC18	82	Power	ACR PLL VCC	1.8V
AUDPGND	83	Ground	ACR PLL GND	
DVCC18	66	Power		1.8V
DGND	65	Ground		
XTALVCC	86	Power	ACR PLL Crystal Input VCC	3.3V
REGVCC	87	Power	ACR PLL Regulator VCC	3.3V

U201 SAA7117AE/V2/G BGA-156

- Multi-standard video decoder PAL/SECAM/NTSC and their sub-standards
- Automatic detection of any supported color standard
- Detection of copy protected input signals according to the Macrovision[®] standard(1), indicating level of protection, including progressive signals 480p and 576p
- High performance super-adaptive 2/4-line comb filter for 2-dimensional chrominance/luminance separation
- Versatile VBI-data decoder, slicer, clock regeneration and byte synchronization
 - I2C read-back of most decoded data types (Closed Caption, Gemstar[®] 1x/2x(2), WSS625, WSS525 (CGMS), XDS, V-Chip)
 - Optionally, raw data with dedicated gain and offset adjustment is available for software decoding
- Versatile Brightness-Contrast-Saturation (BCS) adjustment
- Luminance sharpness control
- Color Transient Improvement (CTI)
- On-chip line-locked clock generation according to ITU601(standard definition)
- Frame locked audio clock generation
- CMOS 3.3 V (input/output) and 1.8 V (core) device; digital inputs and I/O ports are not 5 V tolerant
- Programming via serial I2C-bus, full read-back ability by an external controller, bit rate up to 400 kbit/, auto increment is supported
- Software controlled power saving stand-by modes
- Boundary Scan Test circuit complies to the "IEEE Std. 1149.b1 -1994"
- Two package options: BGA156 and QFP160
- The result of the automatic color standard detection can be read via I2C
- I2C read back of digital AGC gain factor
- Blue screen output in case of absent input signals
- RMS Noise level estimation possible
- Lead-free BGA156 package available

General Description

The SAA7117(A)E/H is a consequent derivate of SAA7118 X-VIP multistandard video decoder. In addition to its predecessor, it provides 10 bit A/D- conversion, enhanced PAL/NTSC comb filtering, more versatile VBI data processing, support of High Definition component video(1), picture improvement processing, and more robustness with VCR-type signals.

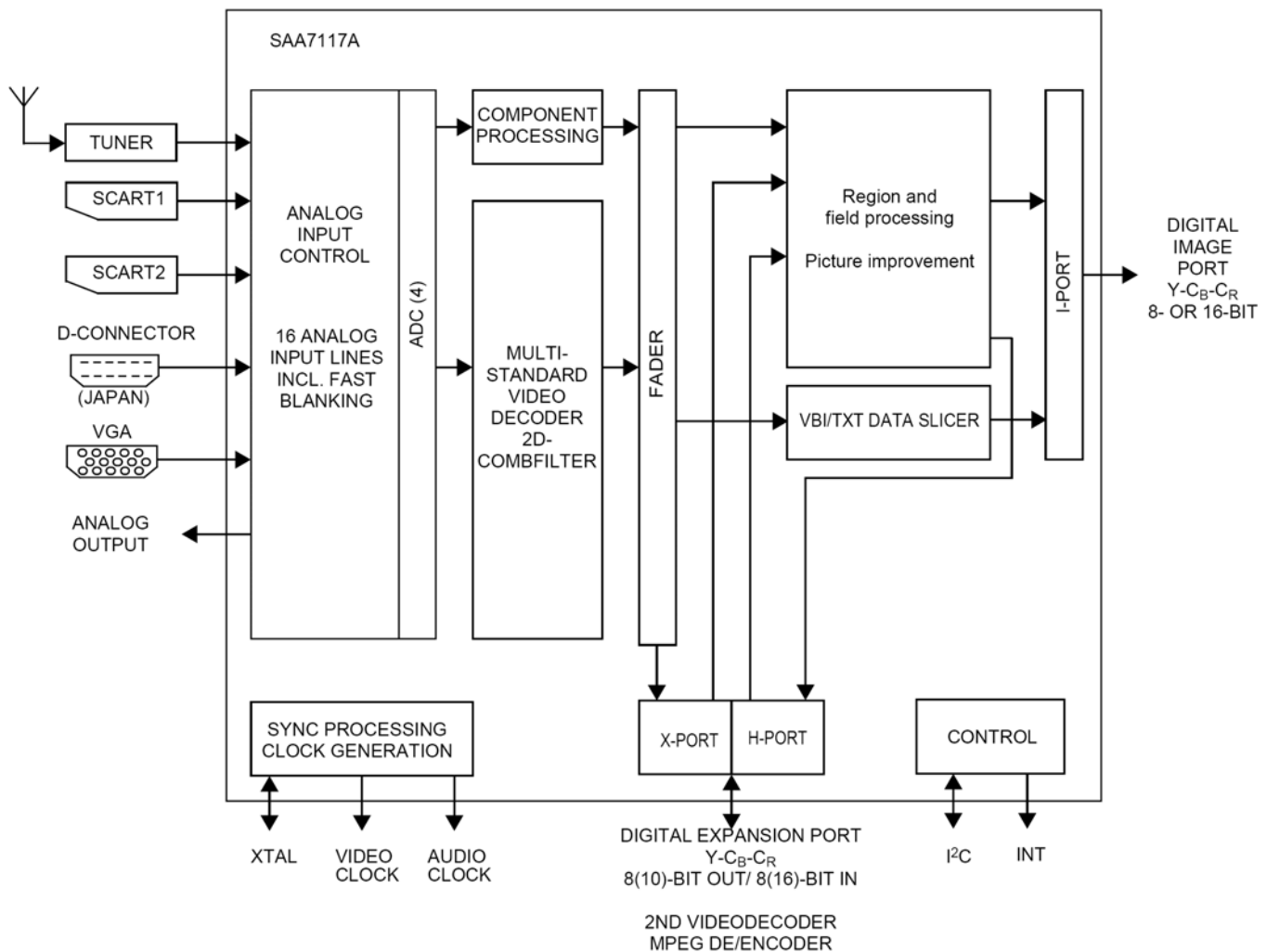
SAA7117(A)E/H due to its high degree of pin compatibility can replace SAA7118 in many cases.

Important changes:

- CMOS 3.3 V (input/output) and 1.8 V (core) device; digital inputs and I/O ports are not 5 V tolerant
- I2C slave transmitter increased to two slave addresses

It targets a variety of performance-conscious applications like e.g. Personal Video Recording, Set Top Boxes, LCD projectors and DVD- recordable players.

PAL/NTSC/SECAM signals are decoded to baseband component video by a video decoder including a super-adaptive 2-dimensional luminance/ chrominance separation; in addition, input signals can be directly of component type (RGB or Y-PB-RR, interlaced or progressive(1)). The decoded video (the digitized component video, respectively) can either be output on a 8-bit or 10-bit wide "ITU-656" port (X-port), or fed to a the region and field processing. The X-port alternatively can be used as input of digitized video. This function can be controlled pixelwise via a dedicated Source Select pin. In input mode, either 8-bit or 16-bit (only if 8-bit output configuration is selected) data lines are available; limitation for input clock rate is 27 MHz, thus it is possible to acquire progressive digital Y-CB-CR data in 16-bit mode.



System Block Diagram

Note: The SAA7117 does not support component processing and analog output

U602 MSP3410G

The MSP 34x0G family of single-chip Multistandard Sound Processors covers the sound processing of all analog TV-Standards worldwide, as well as the NICAM digital sound standards. The full TV sound processing, starting with analog sound IF signal-in, down to processed analog AF-out, is performed on a single chip. Figure 1-1 shows a simplified functional block diagram of the MSP 34x0G. These TV sound processing ICs now include versions for processing the multichannel television sound (MTS) signal conforming to the standard recommended by the Broadcast Television Systems Committee (BTSC). The DBX noise reduction, or alternatively, Micronas Noise Reduction (MNR) is performed alignment free. Other processed standards are the Japanese FM-FM multiplex standard (EIA-J) and the FM Stereo Radio standard.

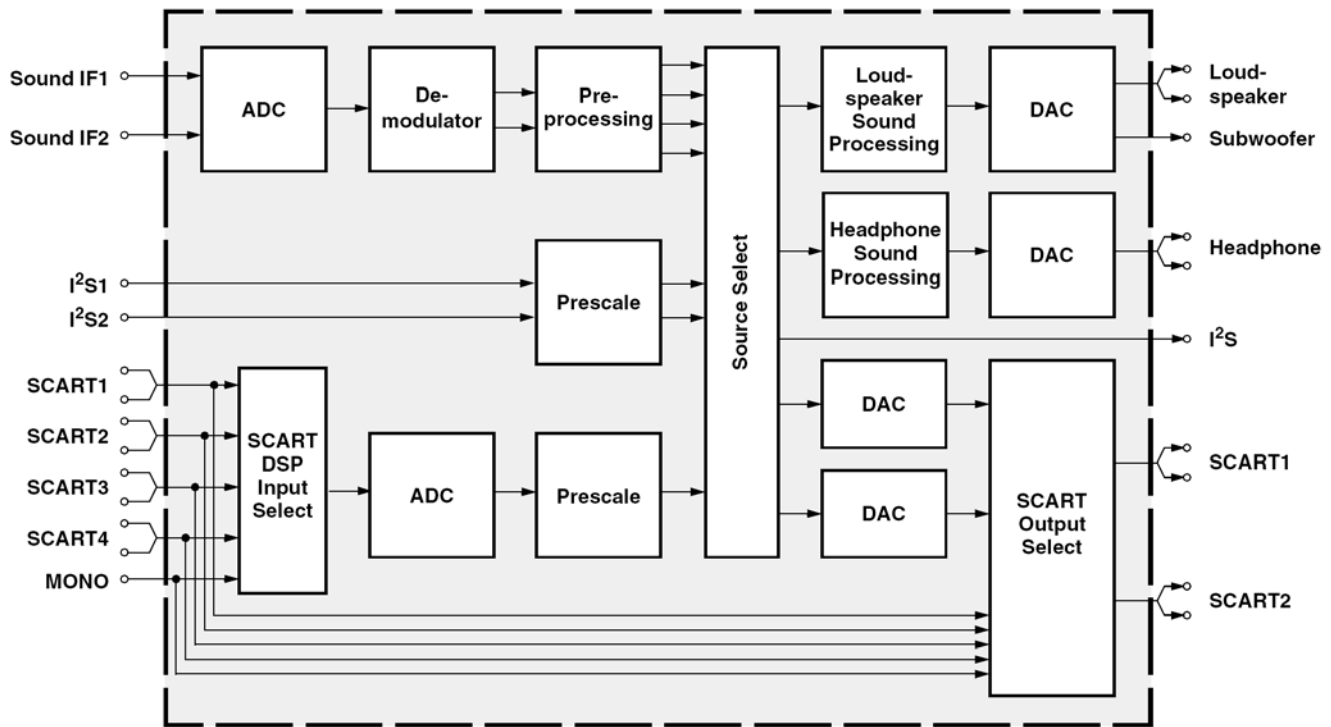
Current ICs have to perform adjustment procedures in order to achieve good stereo separation for BTSC and EIA-J. The MSP 34x0G has optimum stereo performance without any adjustments.

All MSP 34xxG versions are pin compatible to the MSP 34xxD. Only minor modifications are necessary to adapt a MSP 34xxD controlling software to the MSP 34xxG. The MSP 34x0G further simplifies controlling software. Standard selection requires a single I²C transmission only.

The MSP 34x0G has built-in automatic functions: The IC is able to detect the actual sound standard automatically (Automatic Standard Detection). Furthermore, pilot levels and identification signals can be evaluated internally with subsequent switching between mono/ stereo/bilingual; no I²C interaction is necessary (Automatic Sound Selection).

The MSP 34x0G can handle very high FM deviations even in conjunction with NICAM processing. This is especially important for the introduction of NICAM in China.

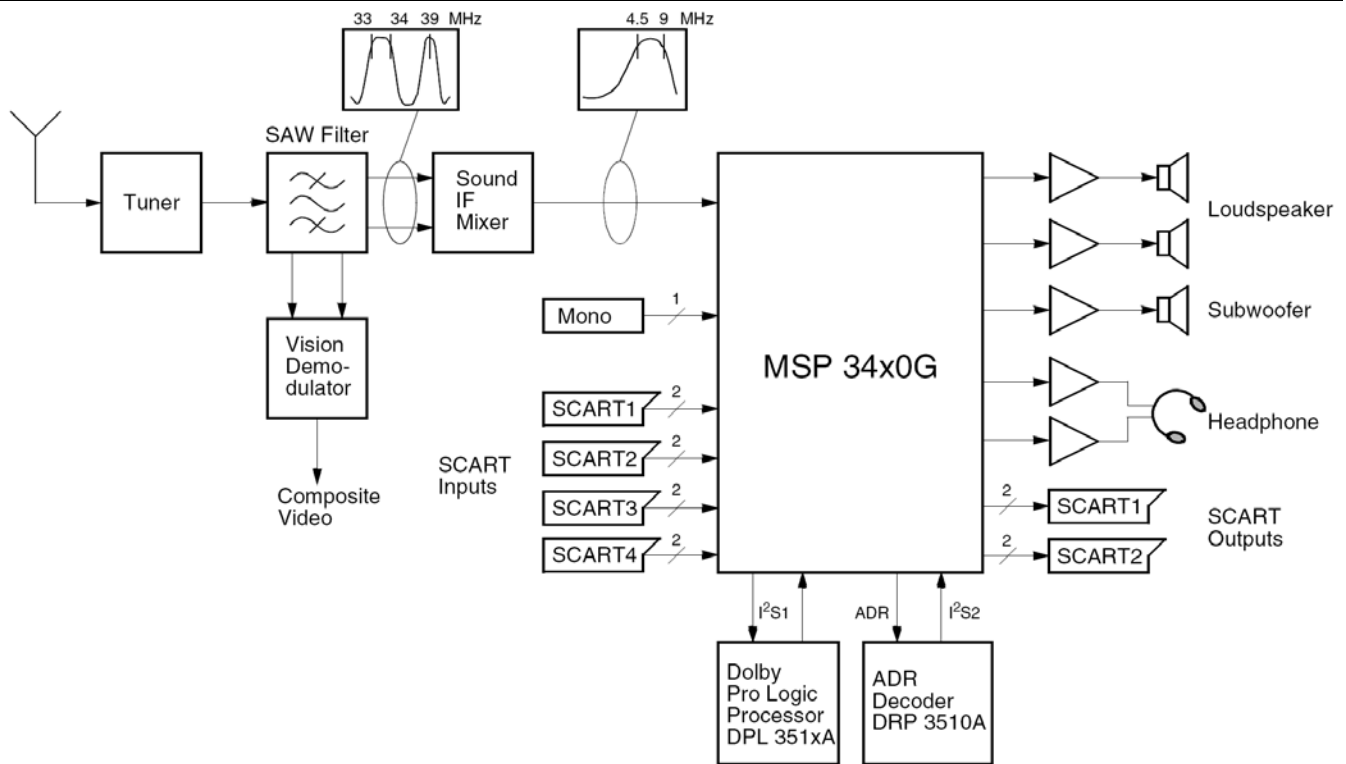
The ICs are produced in submicron CMOS technology. The MSP 34x0G is available in the following packages: PSDIP64-1, PSDIP52-1/-2, PMQFP80-11, and PMQFP64-2.



Simplified functional block diagram

Feature:

Standard Selection with single I2C transmission
 Automatic Standard Detection of terrestrial TV standards/Automatic Carrier Mute function
 Automatic Sound Selection (mono/stereo/bilingual), new registers MODUS, STATUS
 Two selectable sound IF (SIF) inputs
 Automatic Carrier Mute function
 Interrupt output programmable (indicating status change)
 Loudspeaker / Headphone channel with volume, balance, bass, treble, loudness
 AVC: Automatic Volume Correction
 Subwoofer output with programmable low-pass and complementary high-pass filter
 Micronas BASS (MB) and 5-band graphic equalizer for loudspeaker channel
 Spatial effect for loudspeaker channel
 Four Stereo SCART (line) inputs, one Mono input; two Stereo SCART outputs
 Complete SCART in/out switching matrix
 Two I2S inputs; one I2S output
 All analog Mono sound carriers including AM-SECAM L
 Korean FM-Stereo A2 standard
 All analog FM-Stereo A2 and satellite standards
 Simultaneous demodulation of (very) high-deviation FM-Mono and NICAM
 Adaptive deemphasis for satellite (Wegener-Panda, acc. to ASTRA specification)
 ASTRA Digital Radio (ADR) together with DRP 3510A
 All NICAM standards



Typical MSP 34x0G application

U604 CS4344-CZZ**Features:**

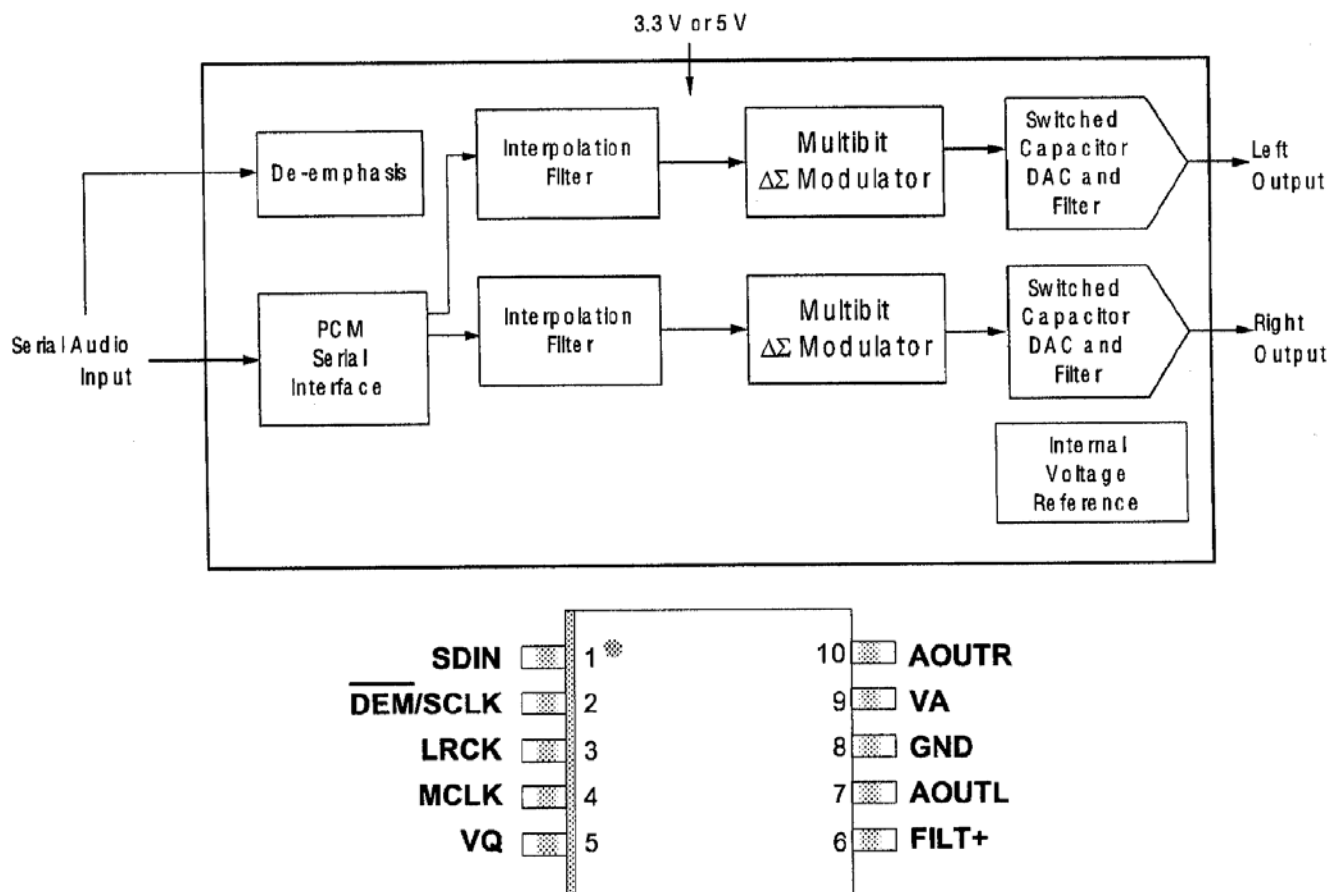
- Multi-bit Delta-Sigma Modulator
- 24-Bit Conversion
- Automatically Detects Sample Rates up to 192 kHz
- 105DB Dynamic Range
- 95db THD+N
- Low Clock Jitter Sensitivity
- Single +3.3V or + 5V power supply
- Filtered Line Level Outputs
- On-chip digital de-emphasis
- Popguard™ technology
- Small 10-pin TSSOP Package

Description

The cs4344 family members are complete, stereo digital-to-analog output systems including interpolation, multi-bit d/a conversion and output analog filtering in a 10-pin package. The cs4344/5/6/8 support all major audio data interface formats, and the individual devices differ only in the supported interface format.

The cs4344 family is based on a fourth order multi-bit delta-sigma modulator with a linear analog low-pass filter. This family also includes auto-speed mode detection using both sample rate and master clock ratio as a method of auto-selecting sampling rates between 2 kHz and 200 kHz.

The cs4344 family contains on-chip digital de-emphasis, operates from a single +3.3V or +5V power supply, and requires minimal support circuitry. These features are ideal for DVD players & recorders. Digital televisions, home theater and set top box products, and automotive audio systems.



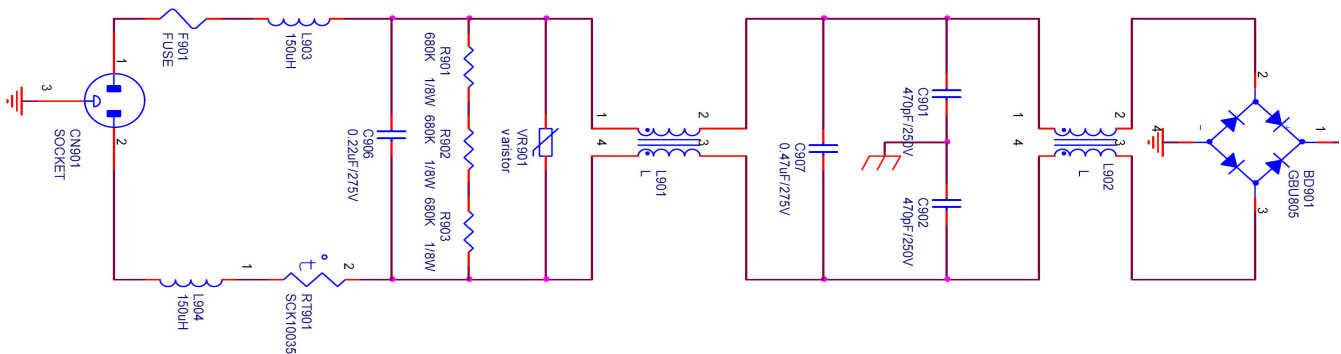
Pin Descriptions:

Pin Name	#	Pin Description
SDIN	1	Serial Audio Data Input (Input) - Input for two's complement serial audio data.
DEM/SCLK	2	De-Emphasis/External Serial Clock Input (Input) - used for de-emphasis filter control or external serial clock input.
LRCK	3	Left Right Clock (Input) - Determines which channel, Left or Right, is currently active on the serial audio data line.
MCLK	4	Master Clock (Input) - Clock source for the delta-sigma modulator and digital filters.
VQ	5	Quiescent Voltage (Output) - Filter connection for internal quiescent voltage.
FILT+	6	Positive Voltage Reference (Output) - Positive reference voltage for the internal sampling circuits.
AOUTL	7	Left Channel Analog Output (Output) - The full scale analog output level is specified in the Analog Characteristics specification table.
GND	8	Ground (Input) - ground reference.
VA	9	Analog Power (Input) - Positive power for the analog and digital sections.
AOUTR	10	Right Channel Analog Output (Output) - The full scale analog output level is specified in the Analog Characteristics specification table.

Adapter

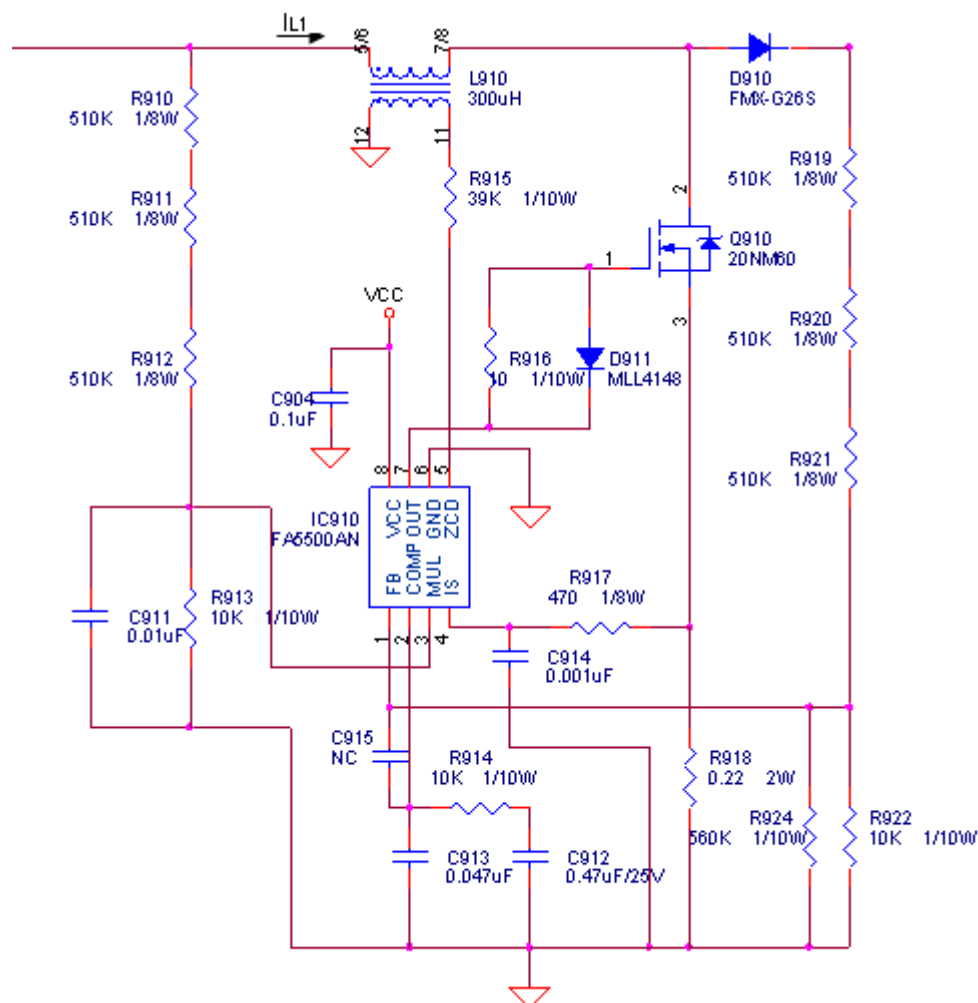
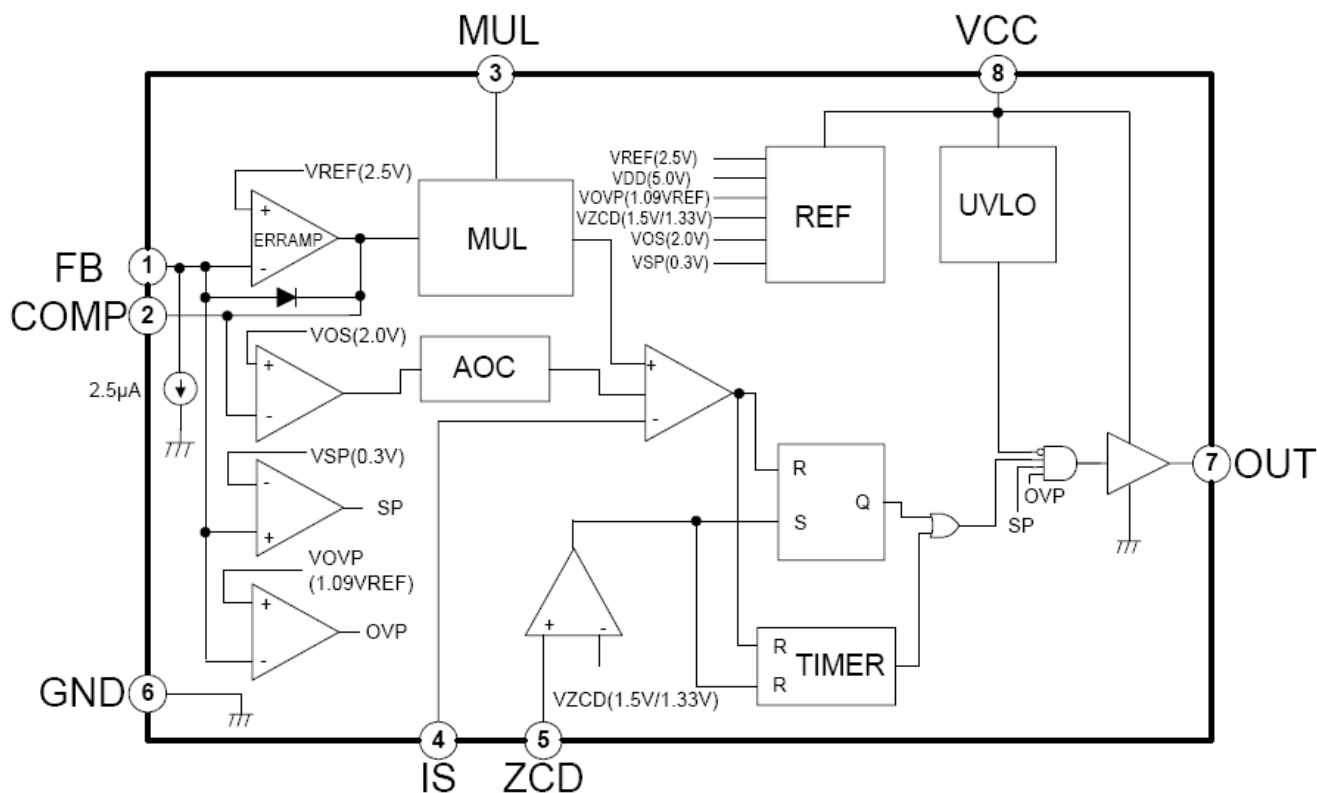
EMI filter circuit: It is common used to get rid of the disturbance existing in the electric net or coming from outside. L901, L902 is used to reduce the symmetry disturbance and filter the high frequency noise; C901, C902, C906 can restrain the symmetry and filter the low frequency noise; R901, R902, R903 is used for discharging the capacitance when cut off the power. RT901 is used to prevent the impulse of surge current when start the machine, which possesses minus temperature modulus.

Rectifier circuit: The AC input is changed to a high DC voltage those magnitude is the product of 1.414 to AC after it is commuted by bridge rectifier (BD901).

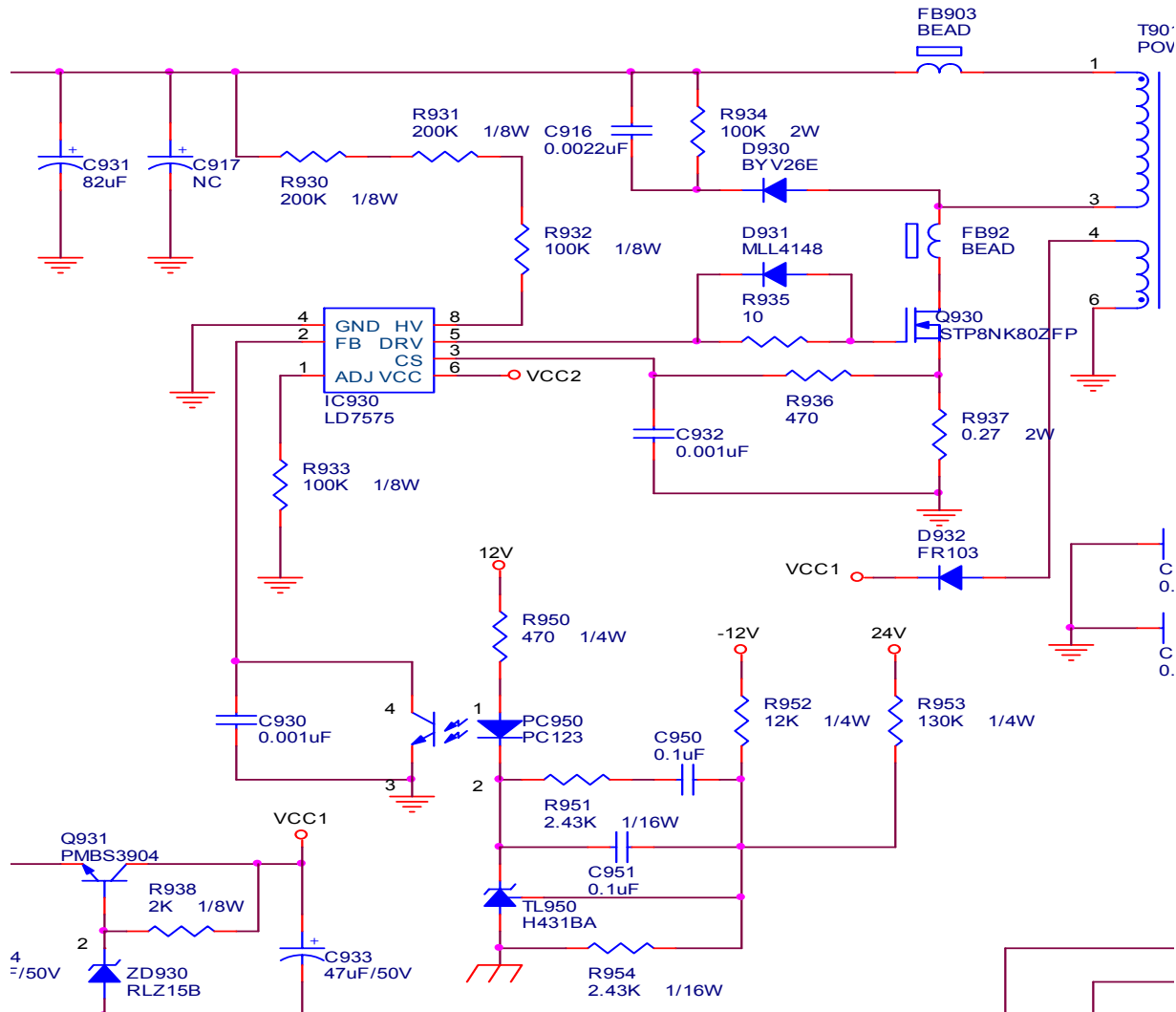


FA5500AN: Low current consumption by CMOS process: Start-up : 20μA(max.), Operating : 1mA(typ.). The circuit unit has functions such as compensated current sense comparator, open/short protection at FB pin, over-voltage protection, under voltage lockout and etc. The function of each pin and the inside circuit diagram are as follows:

Pin No.	Pin symbol	Function	Description
1	FB	Voltage Feedback Input	Input for monitoring PFC output voltage
2	COMP	Compensation	Output of error amplifier
3	MUL	Multiplier Input	Input of multiplier for monitoring sinusoidal waveform
4	IS	Current Sense Input	Input for sensing MOSFET current signal
5	ZCD	Zero Current Detect Input	Input for detecting that the inductor current reaches zero
6	GND	Ground	Ground
7	OUT	Output	Output for direct driving a power MOSFET
8	VCC	Power Supply	Power supply for IC

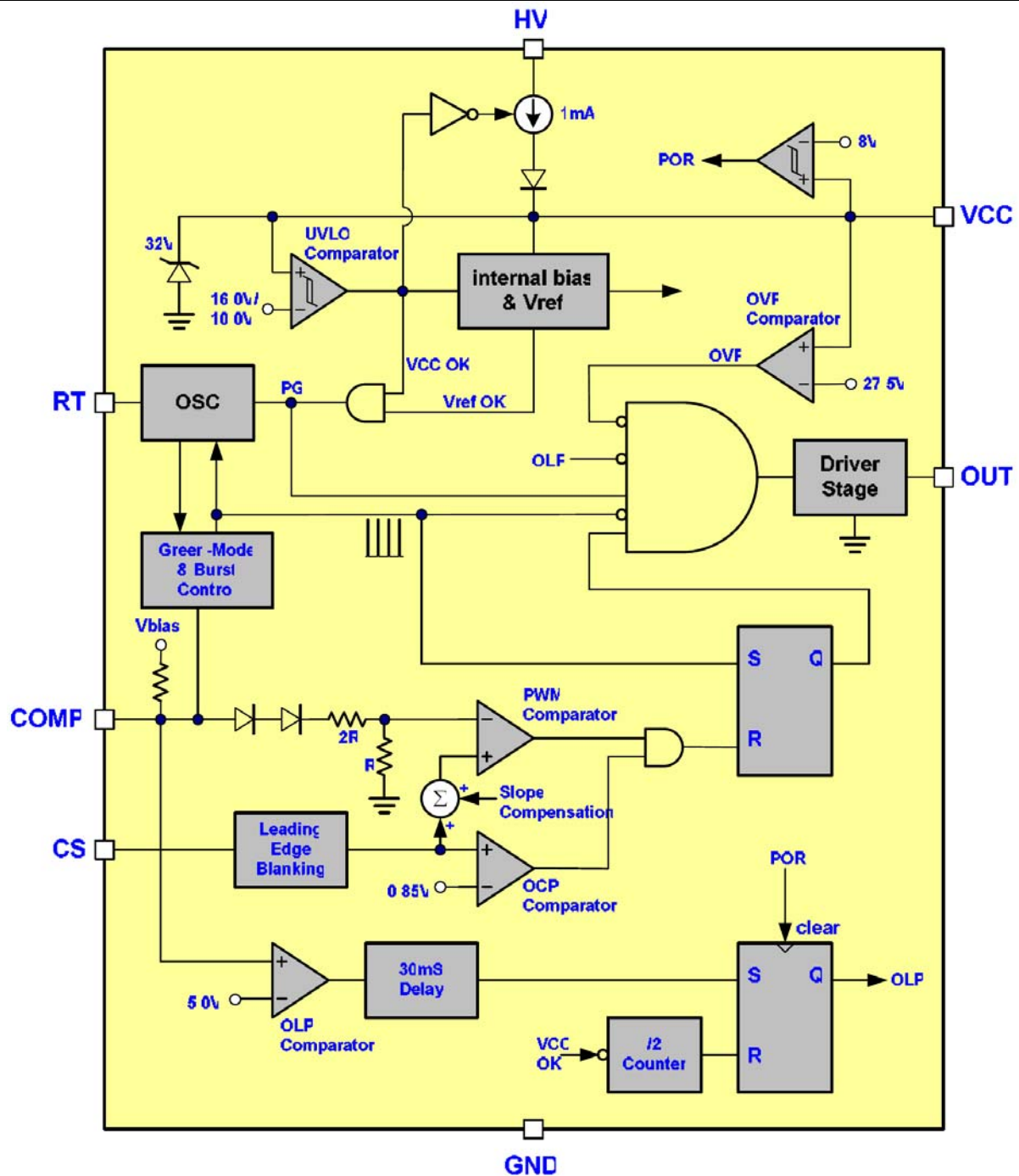


Start-up circuit: After being filtered by C931, the high DC voltage falls down through R930, R938, R939 because they are distributed a proportion of the voltage. The start-up carries out when the lowered voltage is supplied to IC930 (LD7575) with current of 30uA. The output pulse makes the switch-power pipe work. The voltage produced at the two terminals of T901 is offered to PIN3 of IC930 after being commuted by D931 and filtered by C933, then the whole start-up process is end.

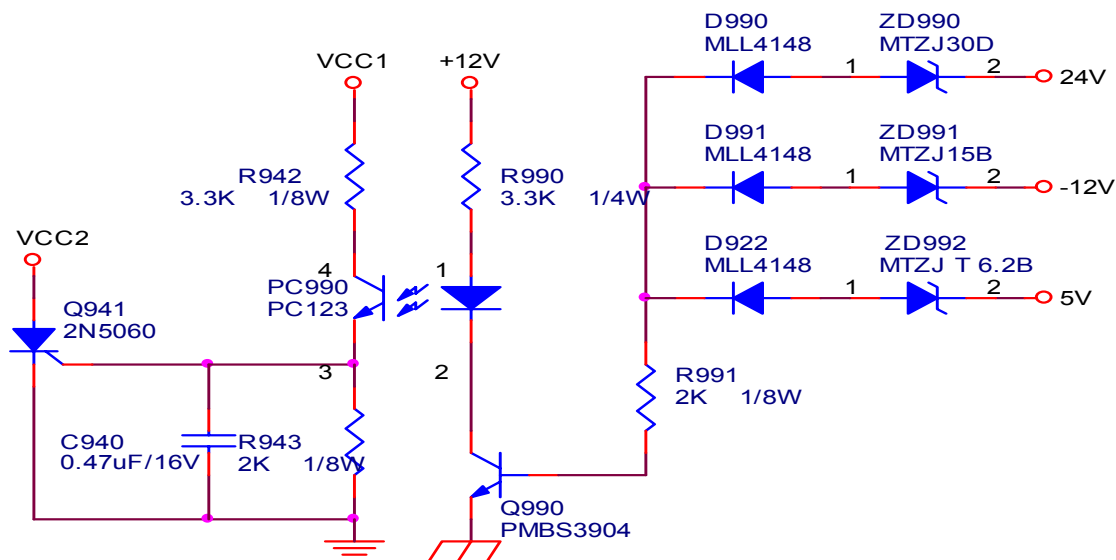


LD7575: PWM, low start-up current (30uA) and low working current (3mA). The circuit unit has functions such as low-voltage protection, over-current protection, over-voltage protection, Temperature protection and etc. The function of each pin and the inside circuit diagram are as follows:

Pin	Name	Function	Pin	Name	Function
1	RT	This pin is to program the switching frequency.	5	OUT	PWM drive output
2	COMP	Voltage feedback pin	6	VCC	Supply voltage pin
3	CS	Current test pin	7	NCC	Unconnected Pin
4	GND	Ground	8	HV	High Voltage startup

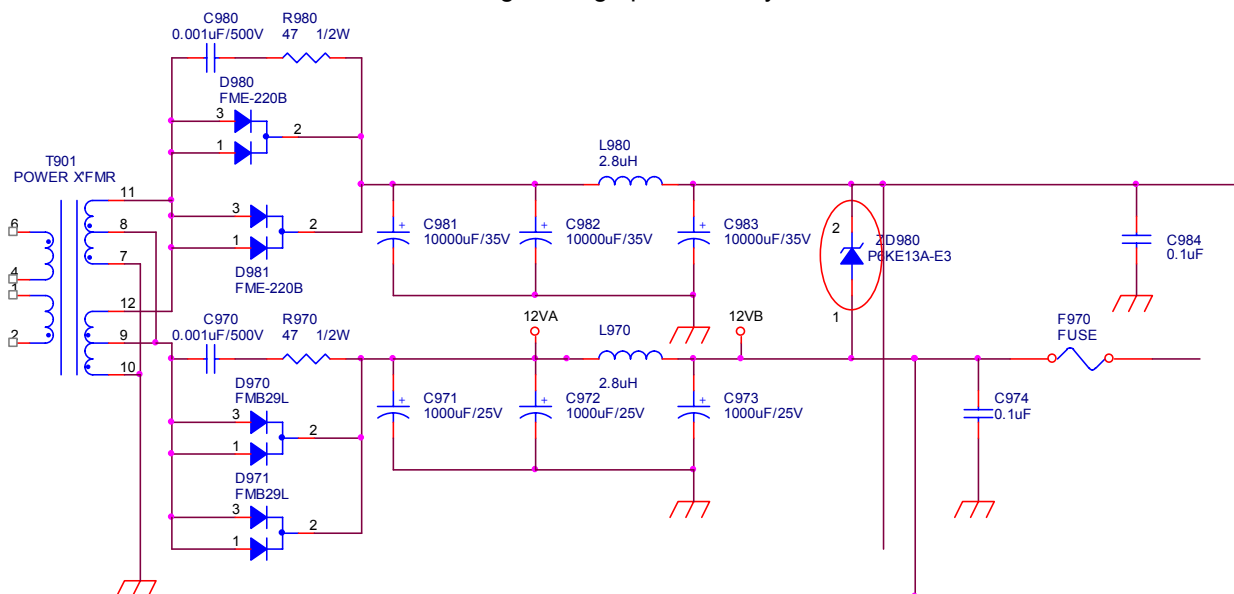


Protection circuit: over-voltage protection: 1, ZD990, ZD991, ZD992 can be broken down when 24V, -12V, 5V DC voltage increases, which leads to the light inside the photo electricity coupling component gets brighter abnormally, and PIN2 connects to grounding through photosensitive transistor, then it cuts off the pulse output. That is also effective way for over-voltage protection.

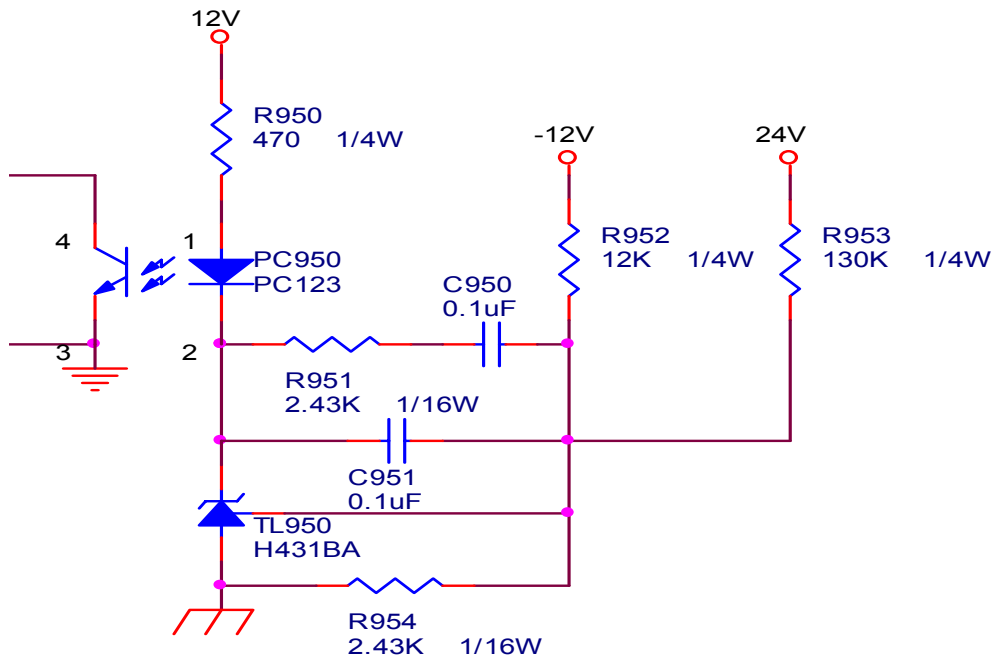


Over-voltage protection circuit 1

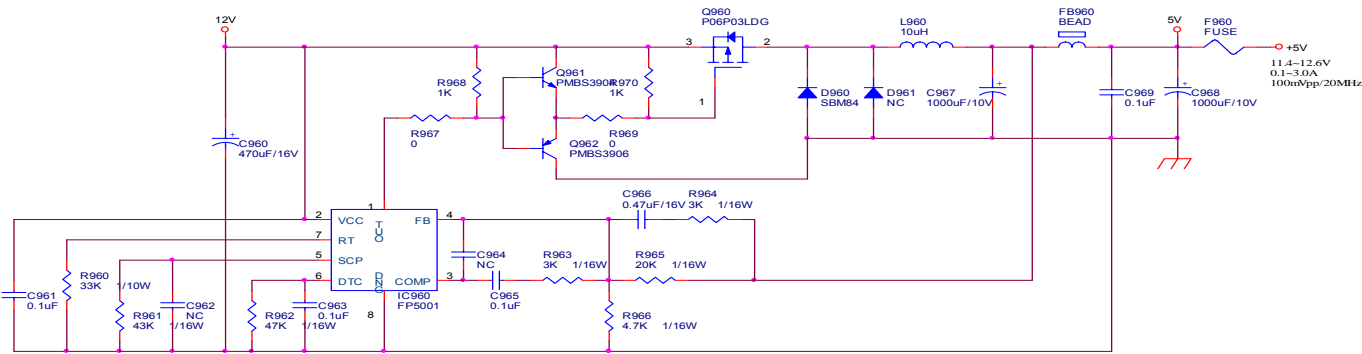
Commute and filter output circuit: When PIN5 of IC901 has pulse output, Q930 gets through while being given a high level, and there is a current in the primary coil of T901 with a voltage up terminal positive and down negative, so the secondary coil produces a reverse electromotive force. It is the stage of storing energy in the coil because D980, D981, D970, D971 are closed. But, while being given a low level, the transistor closes. The primary coil produces a EMF with its down terminal positive and up negative, and the secondary coil appears a reverse EMF at the same time, then D980, D981 get through accompanied with a voltage output of 24V through C981, C982, C983 which are used to filter, and D970, D971 get through accompanied with a voltage out of 12V through C971, C972, C973. R980, C980 contained in the RC circuit is used to absorb the surge voltage produced by D980, D981, while R970 and C970 is used to absorb the surge voltage produced by D970, D971.



Circuit for steadying voltage: The rising of electric net voltage can result in the increase of output voltage, which leads to the increase of the current that flows through photoelectric coupling unit. The brighter the light produced inside the photoelectric coupling unit, the more easily the current can get through the photosensitive, thus the smaller the resistance. That is the reason for the decrease of voltage at PIN2. When the voltage is applied to the reverse-phase terminal of error amplifier inside LD7575, it controls the duty pulse output and declines the voltage output. The whole process acts stable for the output. When the voltage decreases, the same principle applies for steadying the output.



DC to DC Converter: It turns 12V to 5V.

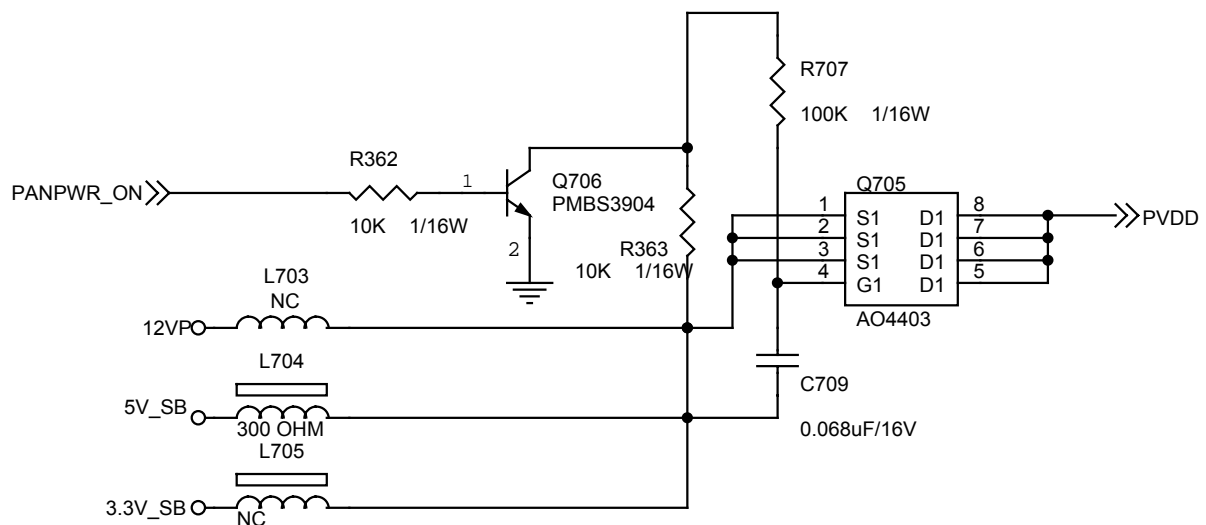


FP5001: Pin description

Name	No.	Status	Description
OUT	1	O	Open Collector Transistor Output
VCC	2	P	IC Power Supply
COMP	3	O	Error Amplifier Feedback Output
FB	4	I	Error Amplifier Inverting Input
SCP	5	I	Short Circuit Protection Input
DTC	6	I	Dead-Time Control Input
RT	7	I	A resistance of Oscillator
GND	8	P	IC Ground

4.2 Panel Control Circuit

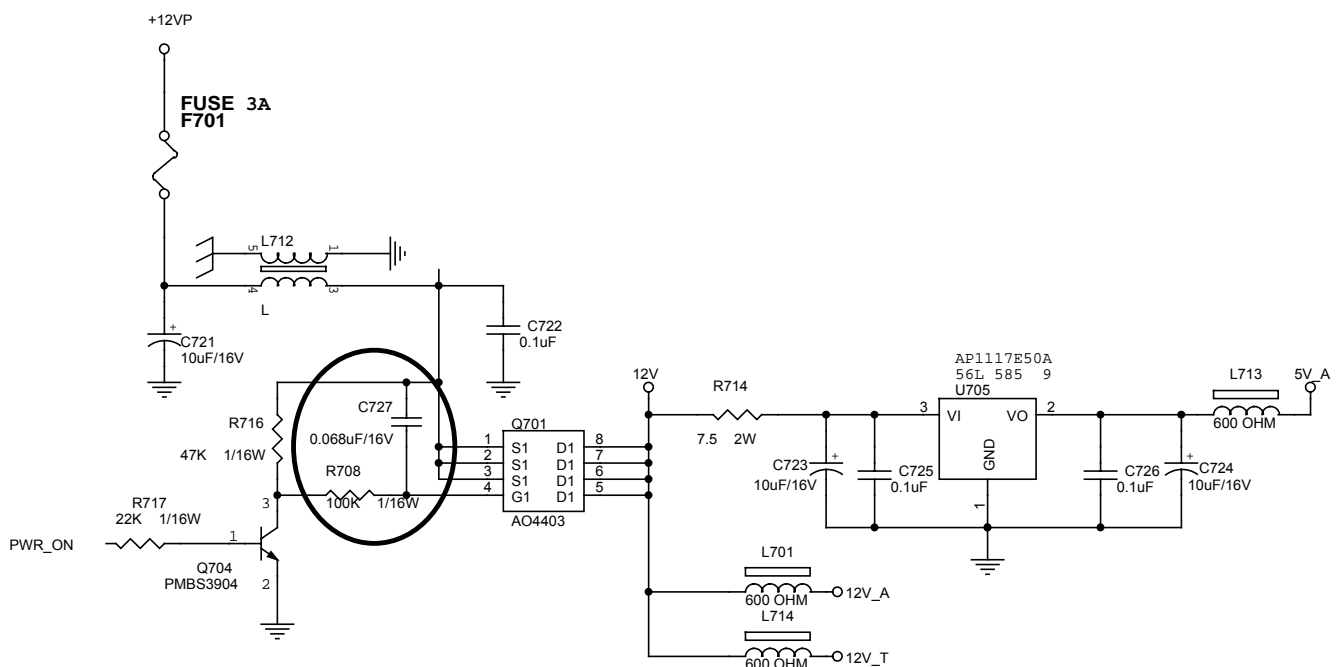
The high level output from U402 makes Q705, Q706 break through, and offer 5V to panel when work well. The output is low level when it's saving energy state and Q706, Q705 break off, so the panel doesn't work.

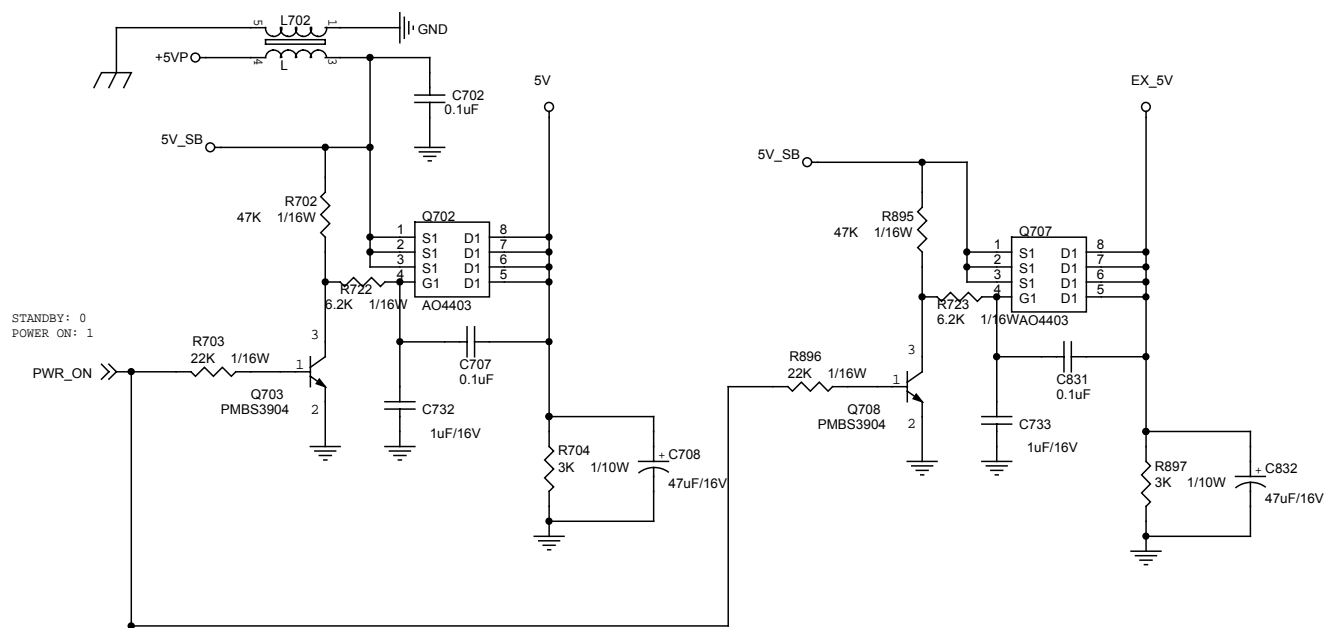


4.3 On/Off /Brightness control circuit

ON/OFF control: When it works well, the outputs are low level, and high in saving energy state.

Brightness control: When it works well, the output PWM pulse from PIN 26 of U402 adjusts the brightness, the smaller the duty, and the higher the brightness.





5. Adjust Procedures

5.1 Adjustment Conditions And Precautions

1. Approximately 30 minutes should be allowed for warm up before proceeding.
2. Adjustments should be undertaken only on those necessary elements since most of them have been carefully preset at the factory.
3. ESD protection is needed before adjustment.

5.2 Main Adjustments

No need to adjust

5.3 Firmware update procedure

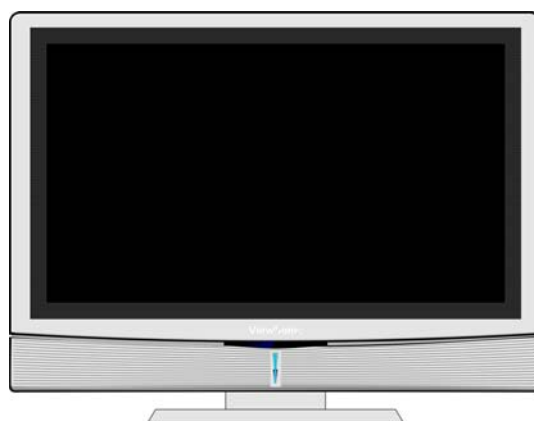
5.3.1 Equipment needed:

- N2060W-1E
- PC (Personal computer)
- LPT cable
- 12V DC
- Firmware upgrade program

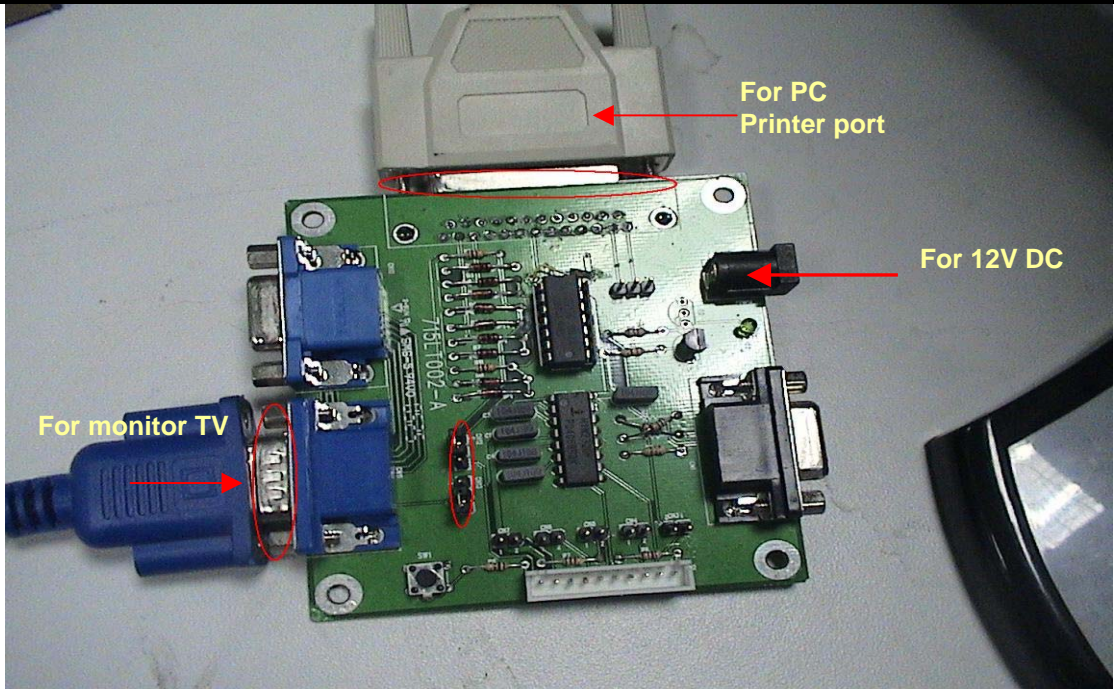
Printer port



PC



N2060W-1E



ISP Board



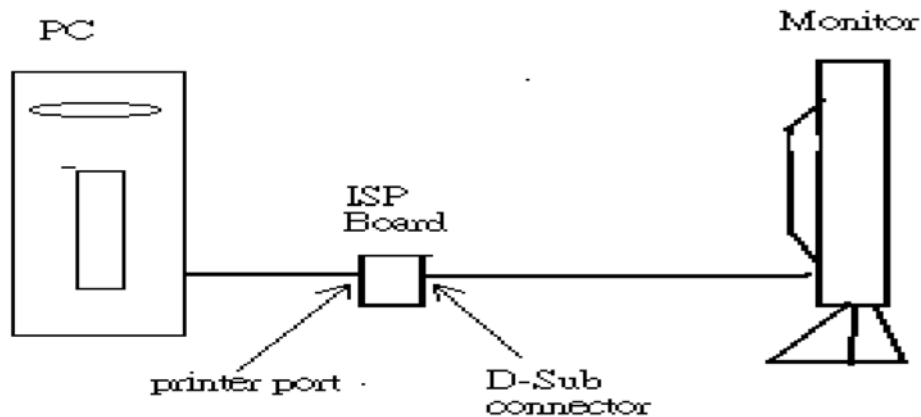
LPT Cable



VGA Cable

5.3.2 Setup Procedure

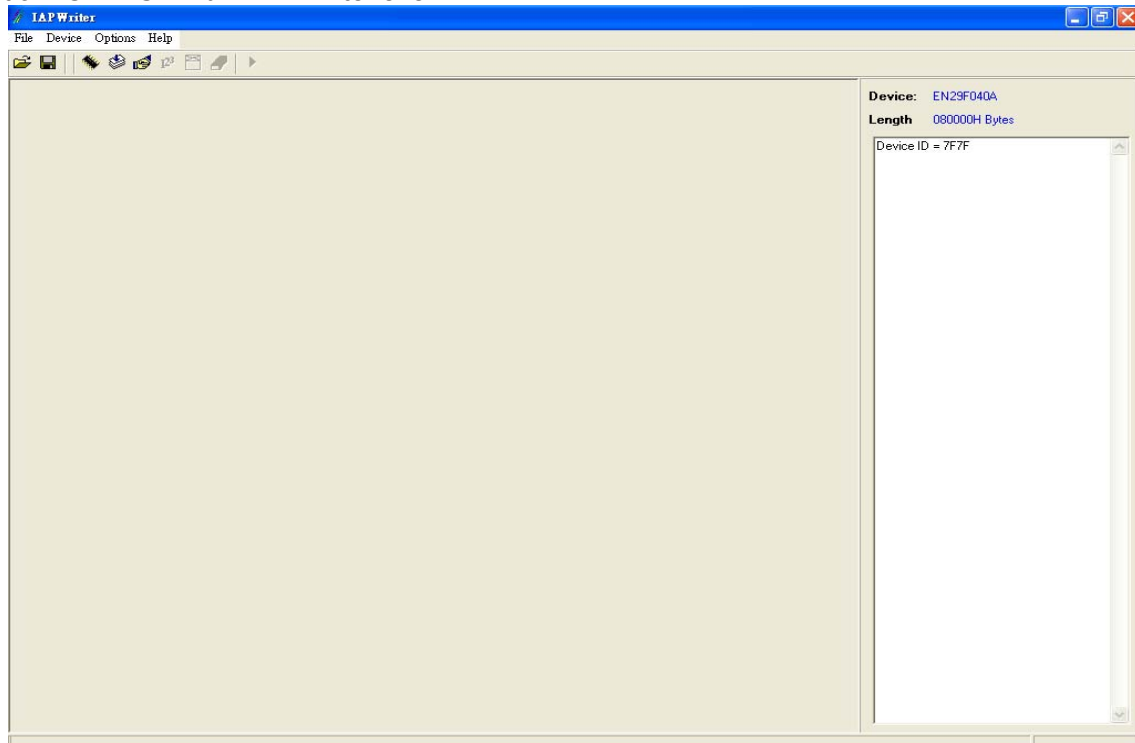
- 4.2.1 Connect P2 of Fixture with printer port of PC by LPT Cable.
- 4.2.2 Connect Power Cord to Monitor.
- 4.2.3 Connect PC to the additional monitor.

5.3.3 ISP Download program procedure**(1). Hardware Connect status****(2). Down load isp program**

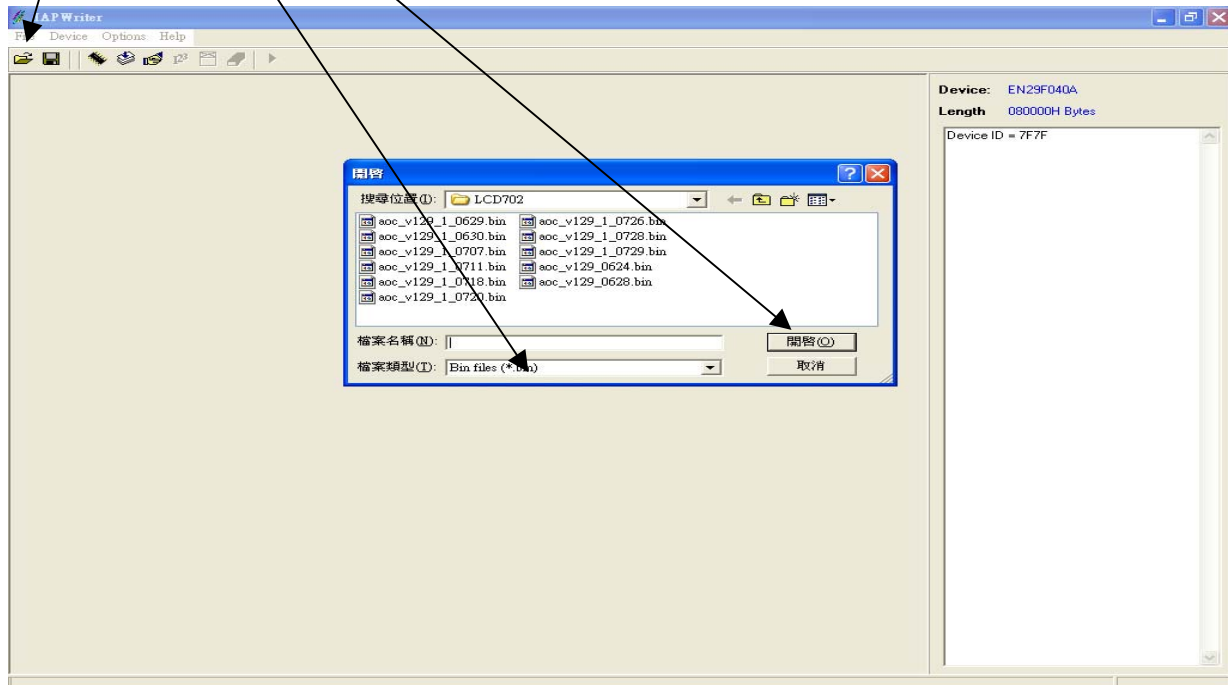
a.) Open the TV into TV mode and press 1992 to ISP mode

b.) To execute the "IAPWriter.exe"

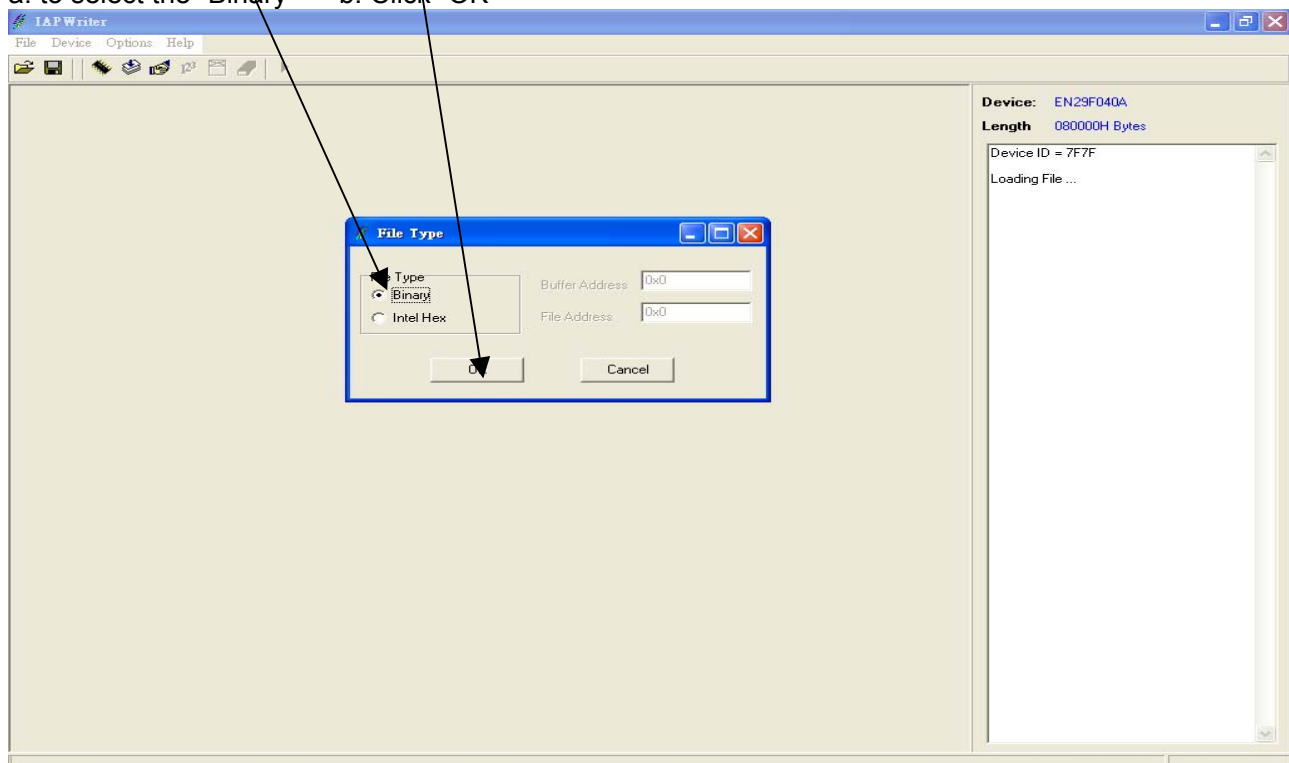
Location: C:\EXSDK\bin\ IAPWriter.exe



- c.) Select the Binary file
- a. to open the FileManager dialog
 - b. to select the binary code.
 - c. open the binary file

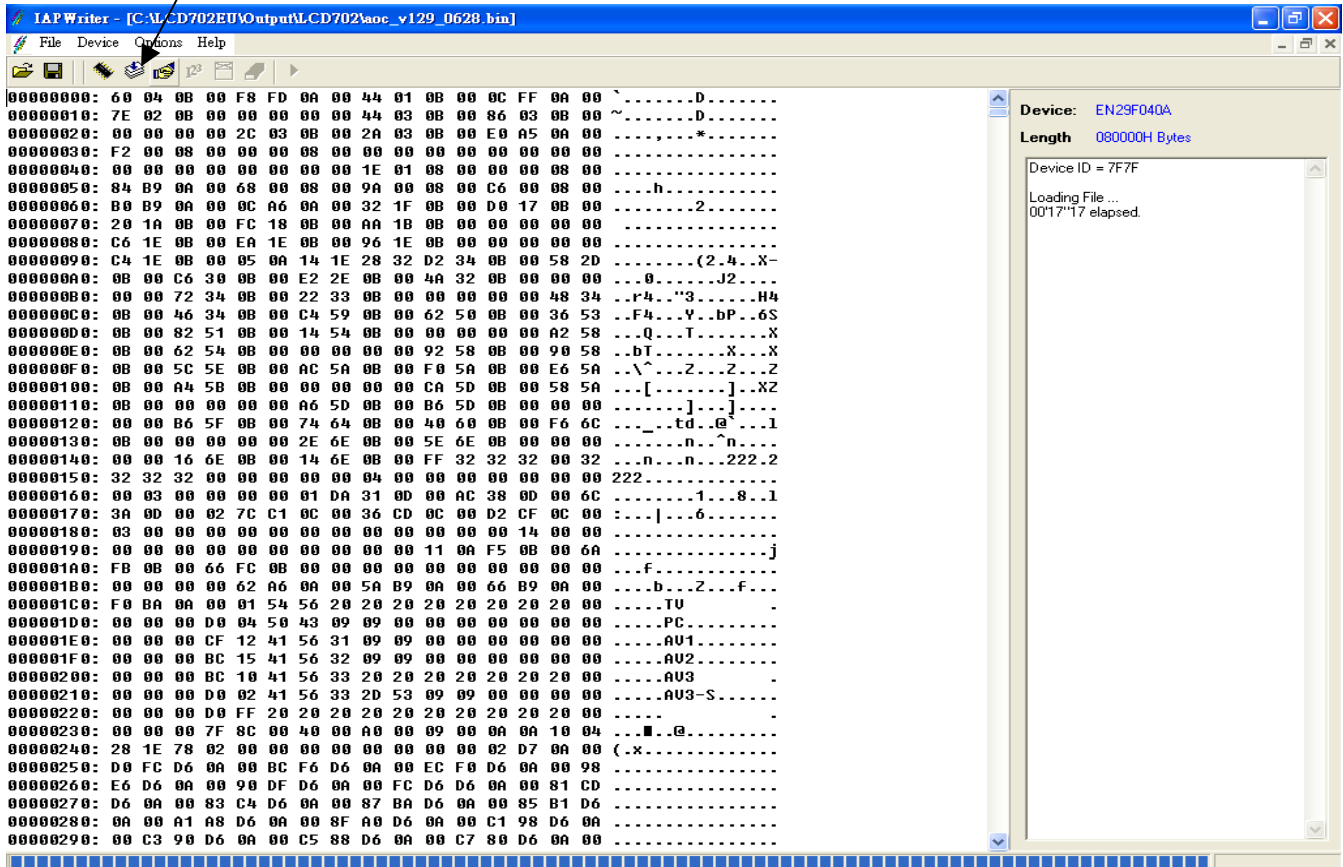


- d.) Select Type
- a. to select the "Binary"
 - b. Click "OK"



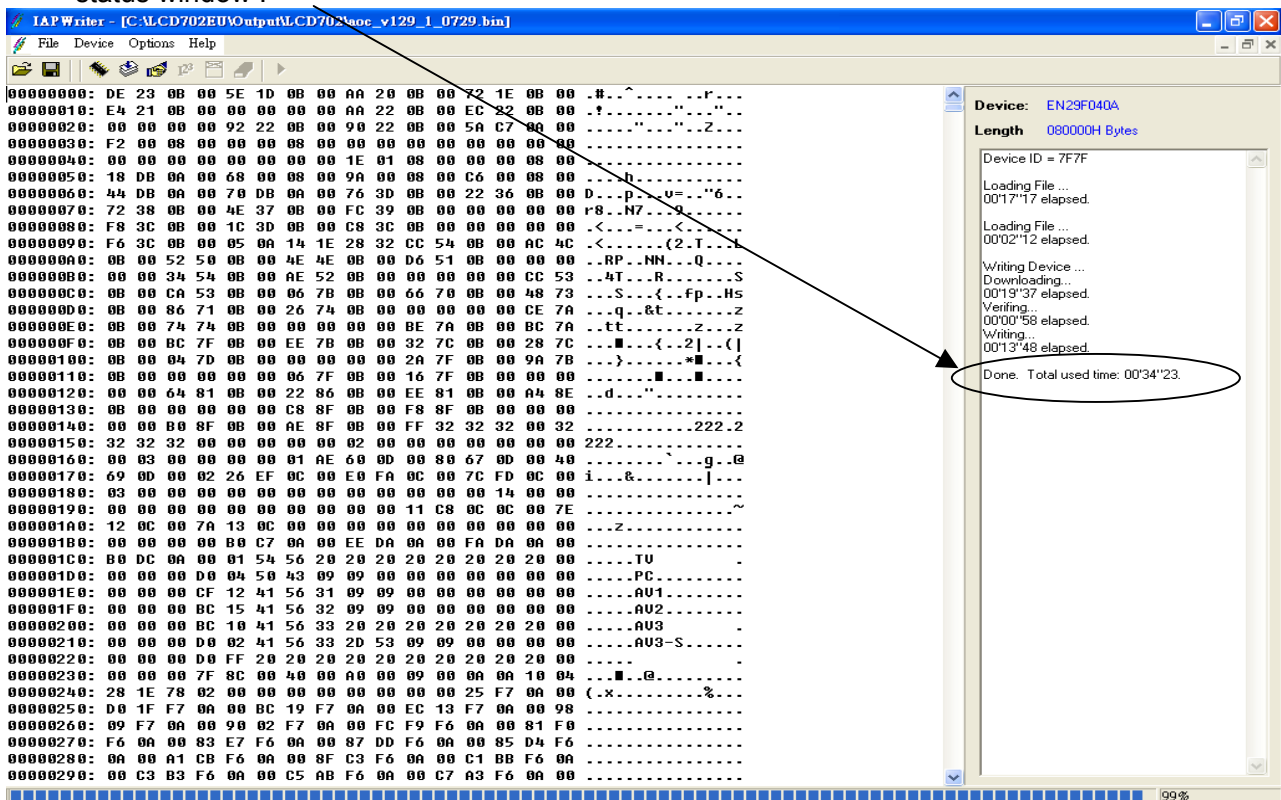
e.) Click the "write" icon

a. click "write" icon



f.) Finish

a. Firmware upgrade finish when the message "Done . Total used time xx",xx"xx " appeared on the status window .



g.) Restart the system.

h.) Next set, pls repeat done e to g

5.4 DDC Key In Procedure

Note:

1. Every time after replacing the main board, you have to do the DDC key in.
2. If you find the DDC does not conform to the LCD TV, you have to do the DDC key in.

5.4.1 Equipment Needed

- N2060W-1E
- PC (Personal computer)
- LPT cable
- 12V DC
- Firmware upgrade program
- DDC Card

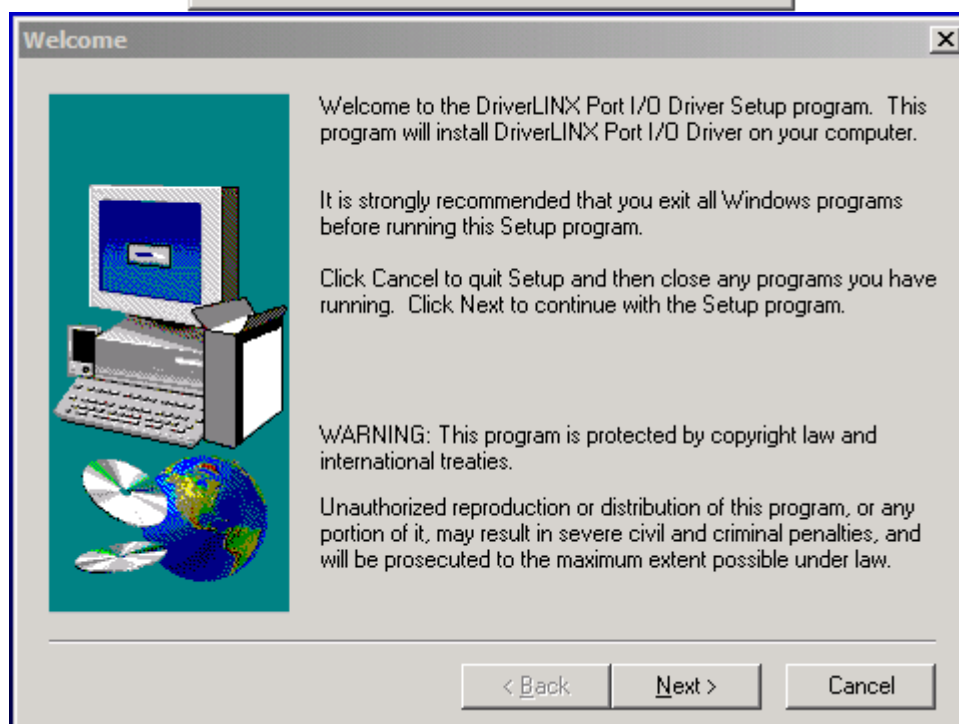
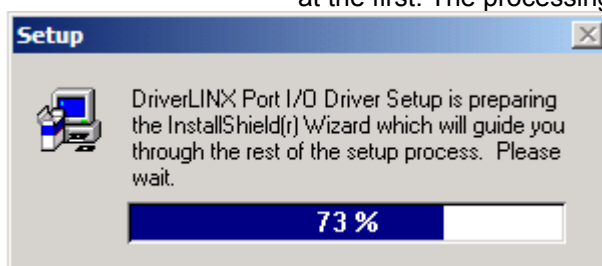
5.4.2 Install software

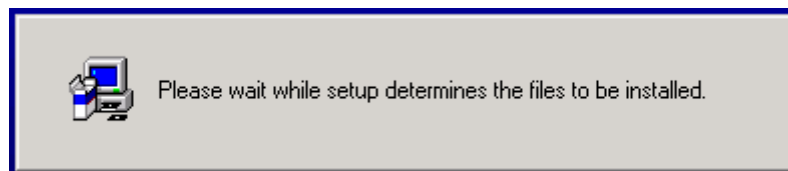
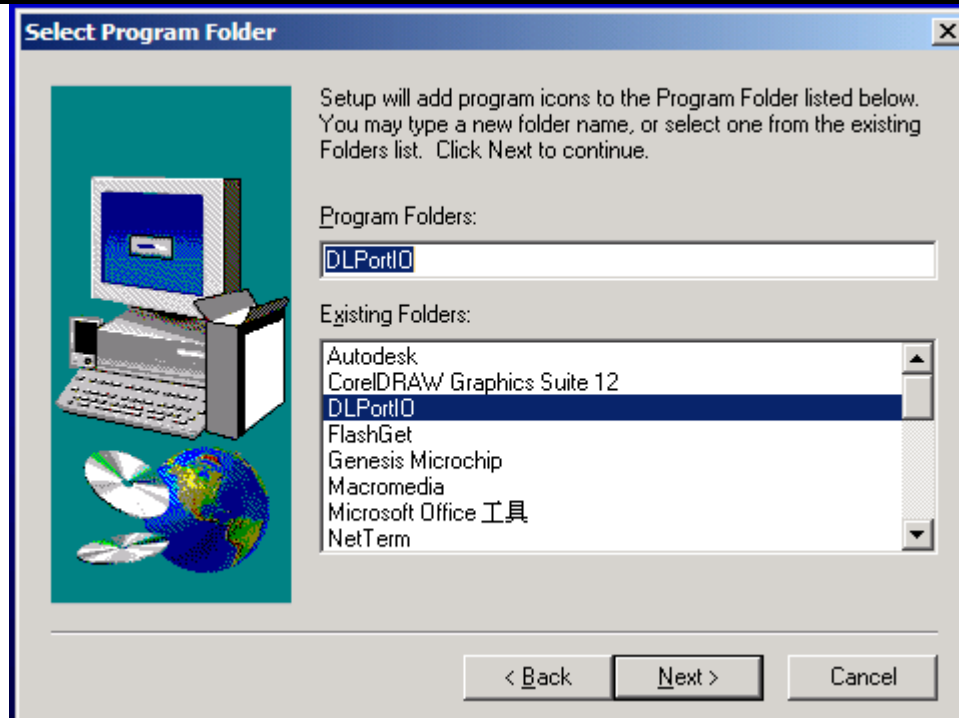
You must install the




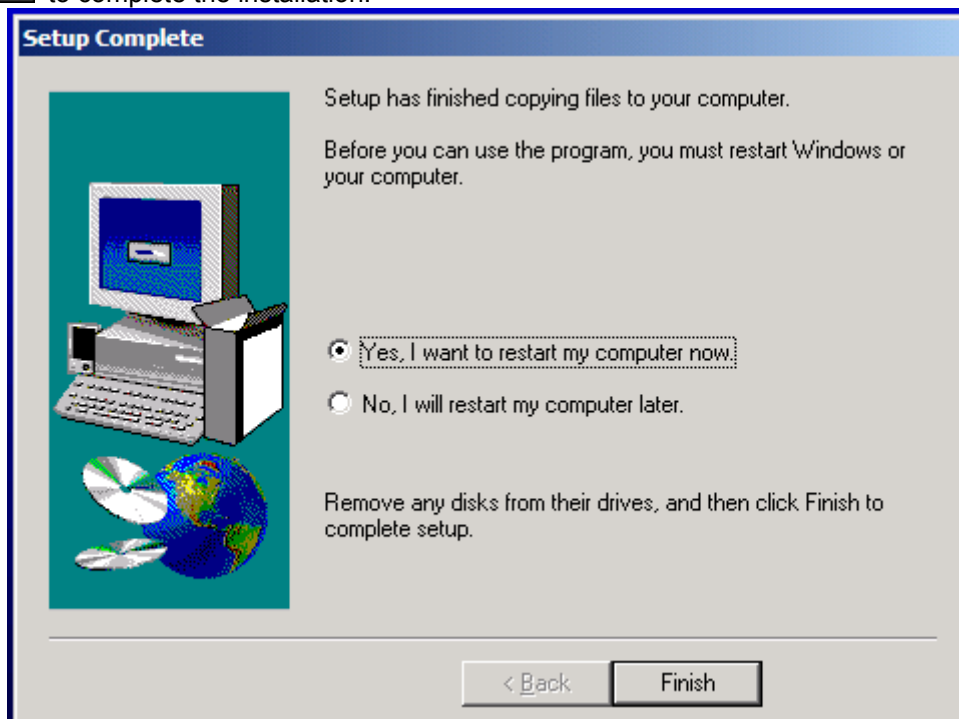
PORT95NT.EXE
PackageForTheWeb Stub
InstallShield Software Corpora...

at the first. The processing as follows:



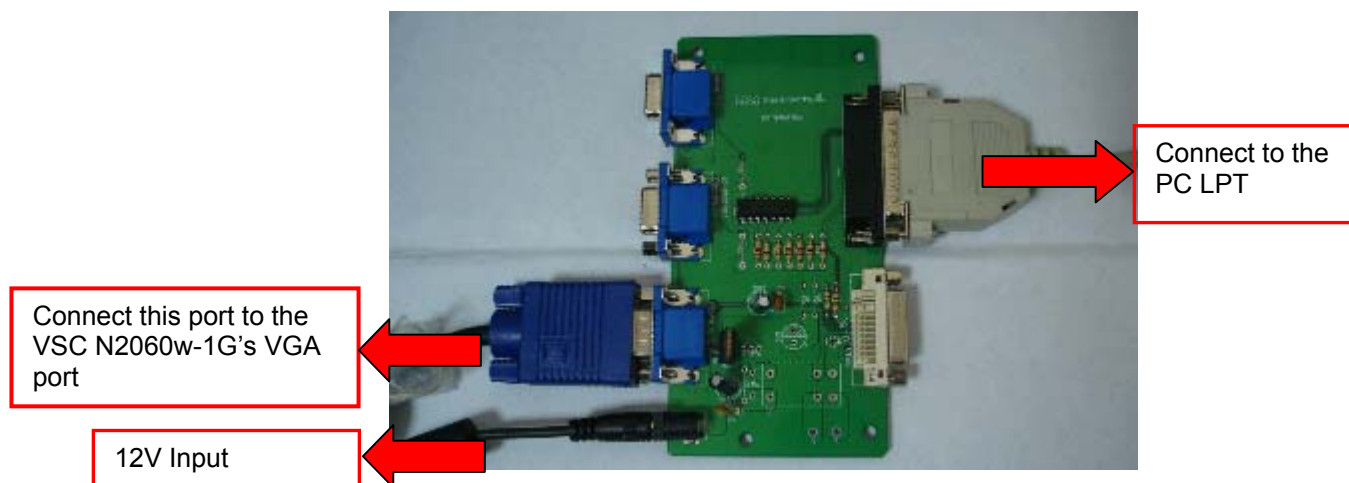


Click  to complete the installation.



Note: After installation, you must restart the PC to take the setup to effect.

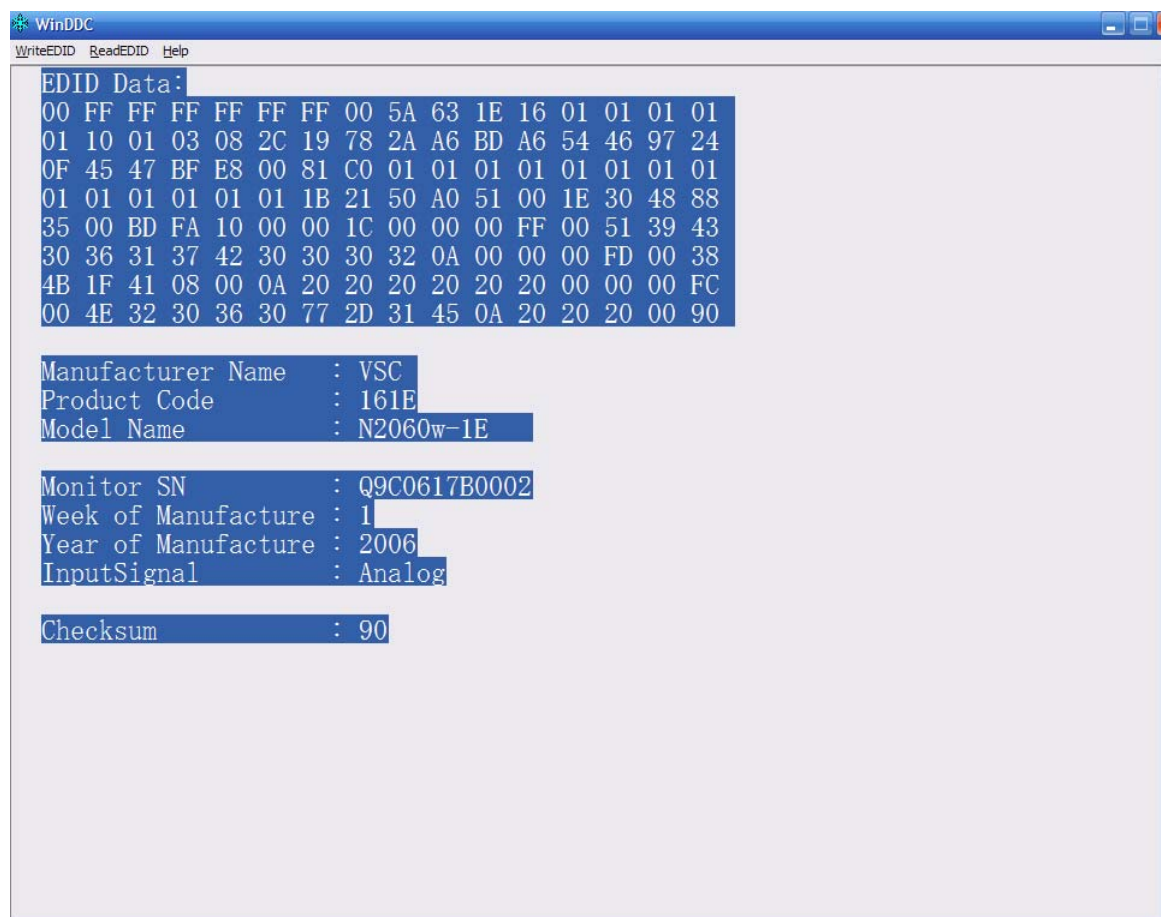
5.5.3 Connect the DDC board as follow:



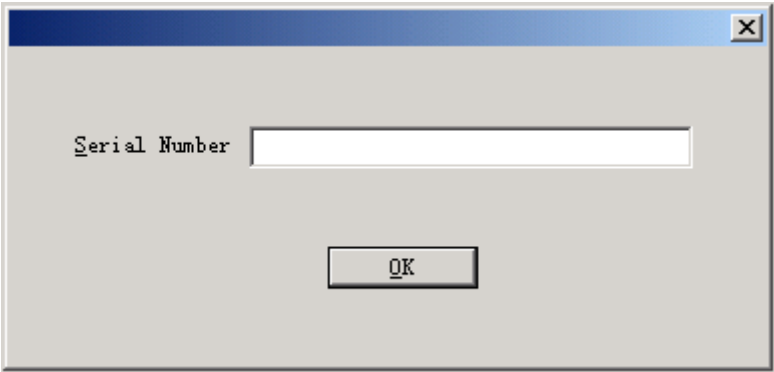
For analog



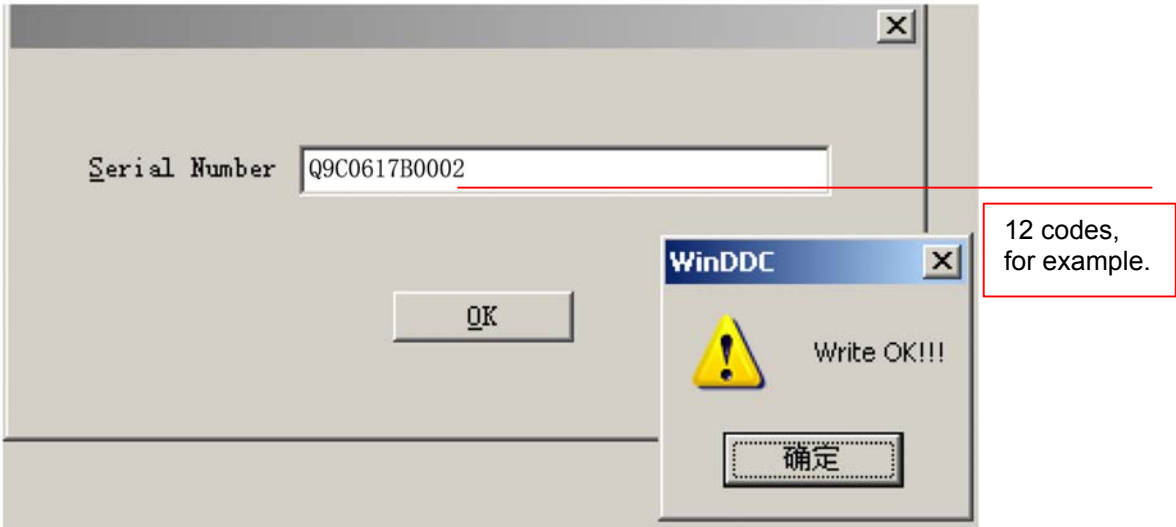
a. Double-click **WinDDC.exe**, appear as follow Figs:



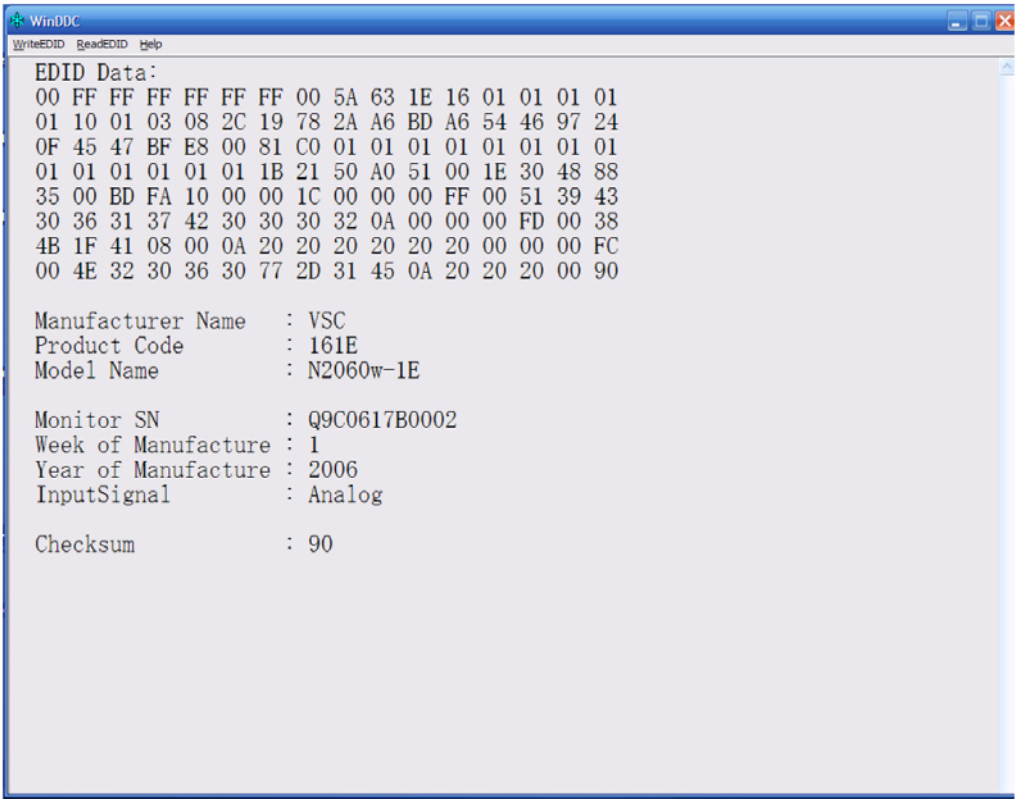
b. Click [WriteEDID](#).



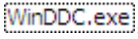
c. Key in the Serial Number printed on the barcode label, then click "OK"

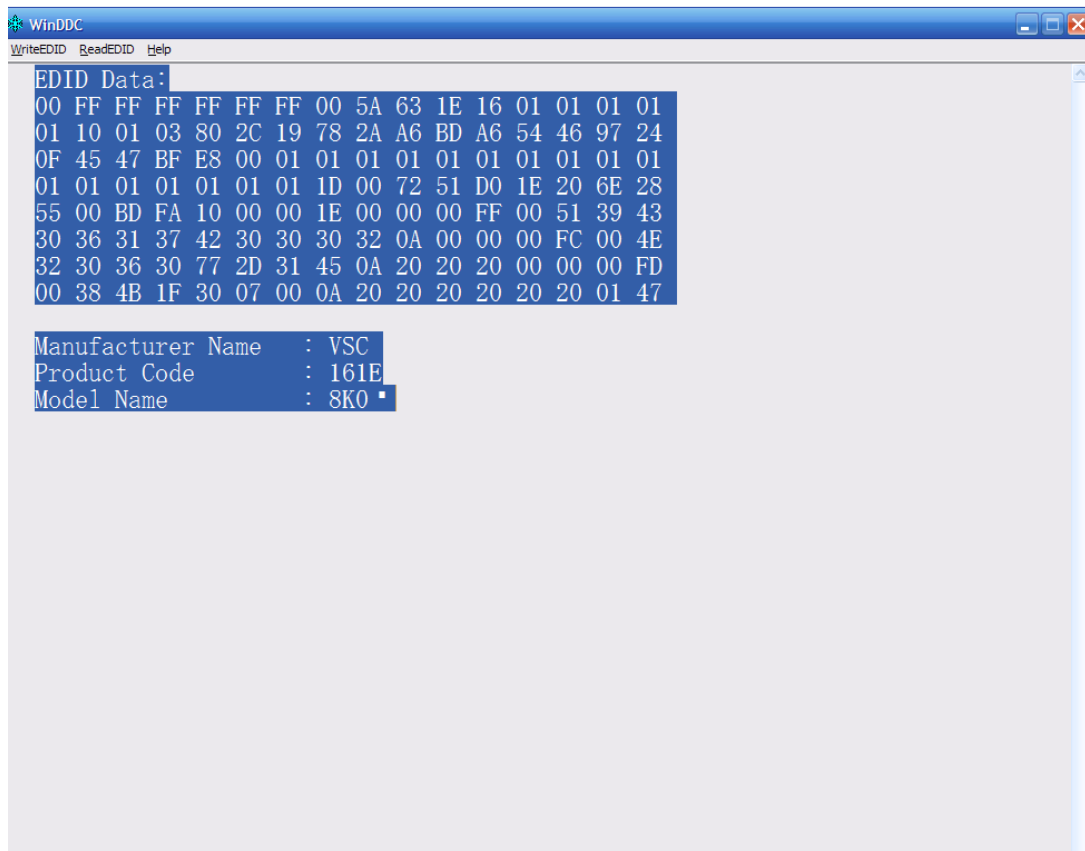


d. Unit appears the following Fig, writer completed.

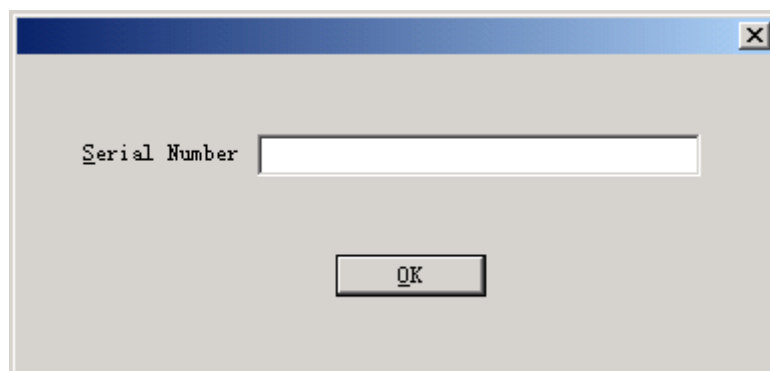




a. Double-click , appear as follow Figs:



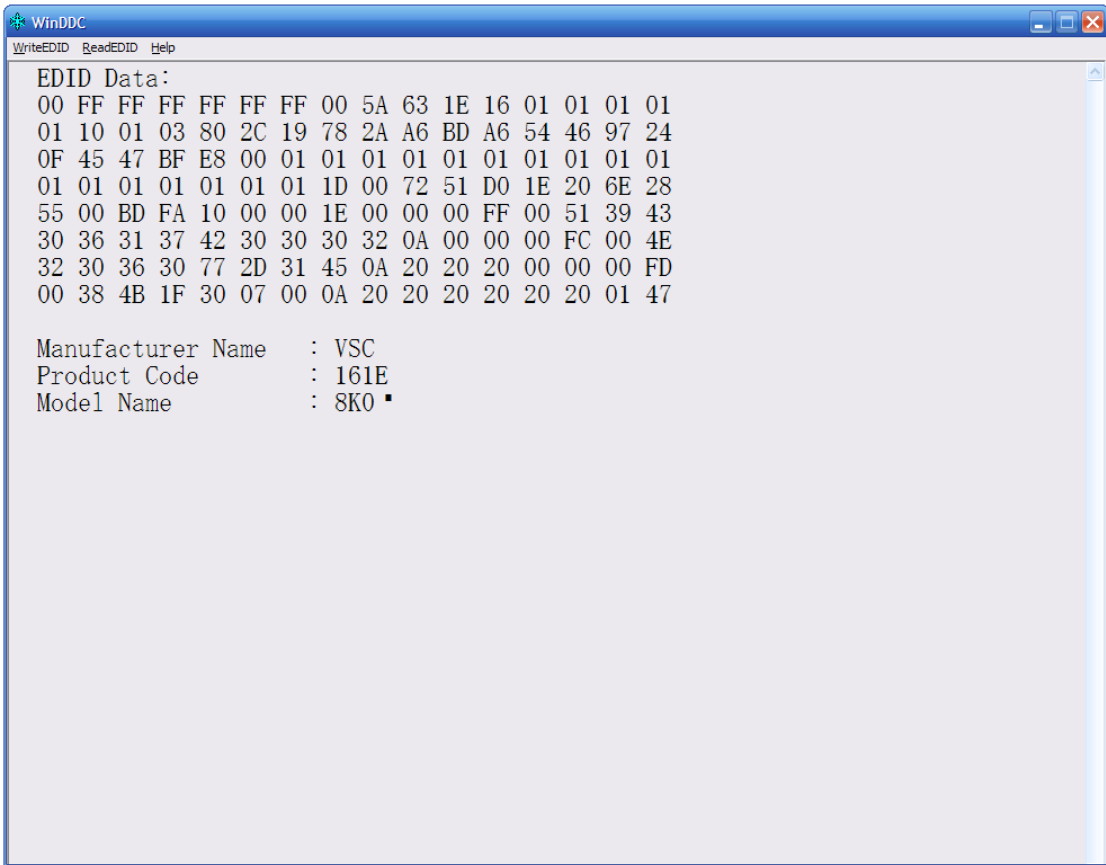
b. Click .






c. Key in the Serial Number printed on the barcode label, then click "OK"



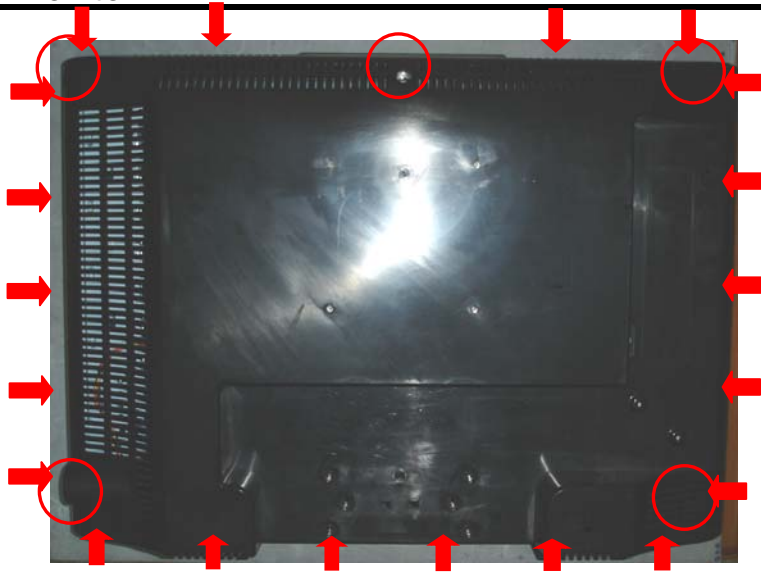
d. Unit appears the following Fig, writer completed.



Note: Take the below mechanical instructions for Example.

Step	Figure	Description
Preparation		Lay the LCD-TV on a flat, soft and clean surface.
Remove the base		Remove the three screws and push the clip for base as the arrowheads.
Remove the stand		Remove the six screws to remove the stand.

Remove the back cover



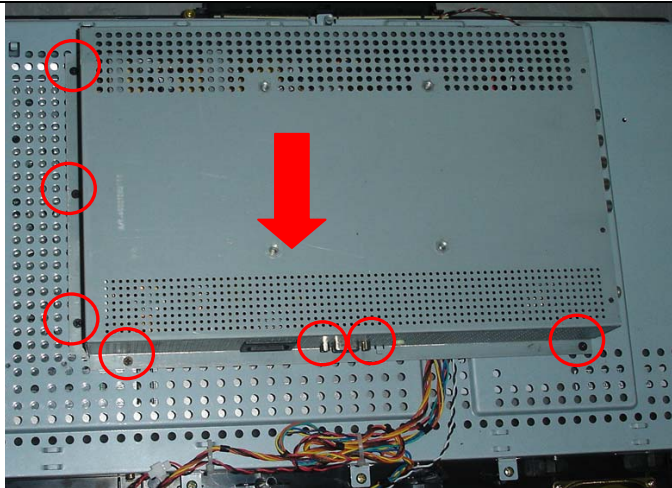
- 1.Remove the five screws.
 - 2.Remove the back cover as the arrowheads.
- Remarks:
The arrowheads is the position of the clips.

Remove the tuner cover



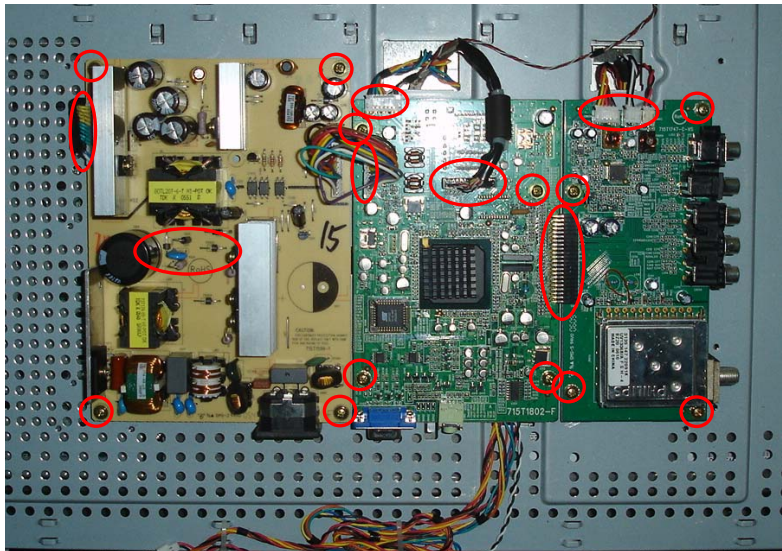
- Remove the eight screws and remove the tuner cover

Remove the shield



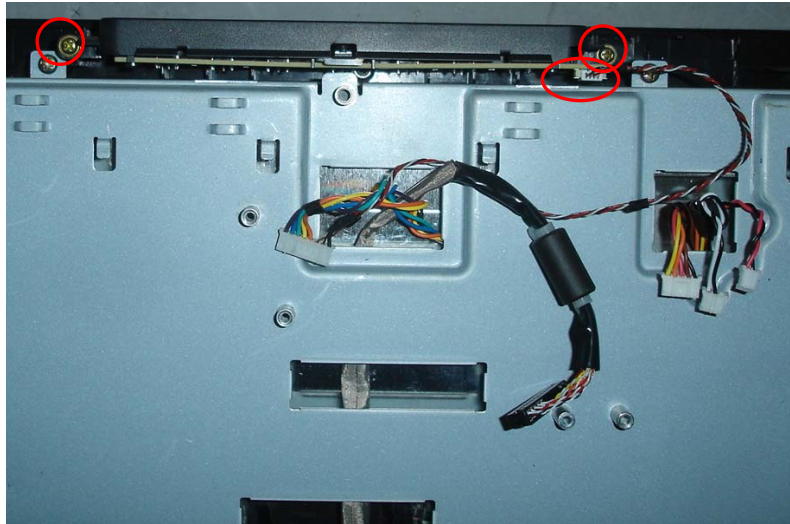
- 1.Remove the seven screws
- 2.Push the shield as the arrowhead direction.

Remove main , tuner and power board



- 1.Remove the twelve screws
- 2.Disconnect the connector and remove the tuner board , power board and main board.

Remove the key board



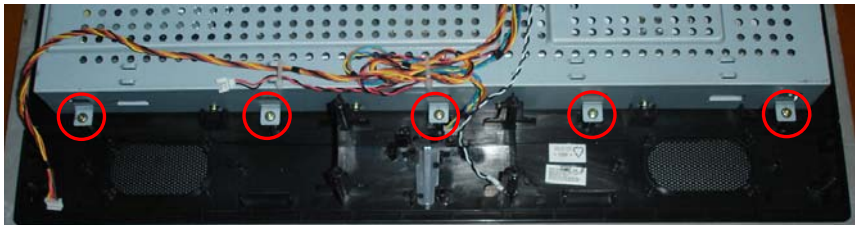
- Remove the two screws and the connector to remove the key board.

Remove the speakers and the IR board



- 1.Remove the total eight screws to remove speakers
- 2.Remove the one screw to remove IR board

Remove the bezel

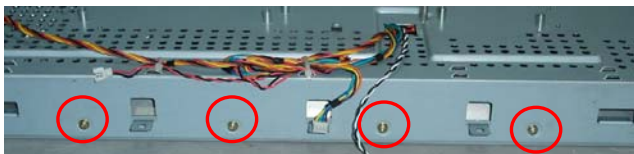
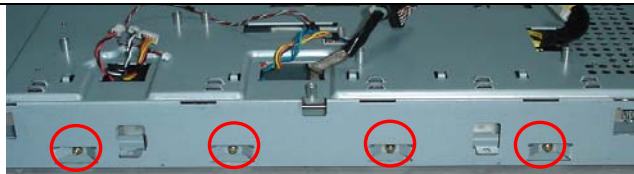


Remove the nine screws(four at the top and five at the bottom)



Remove the six screws(three at the the left and three at the right) and remove the bezel .Remark: (PLS be careful, not to scart the panel)

Remove the main frame



Remove the twelve screws(four screws each at the top and bottom,two screws each at the right and the left) and remove the main frame.

The end



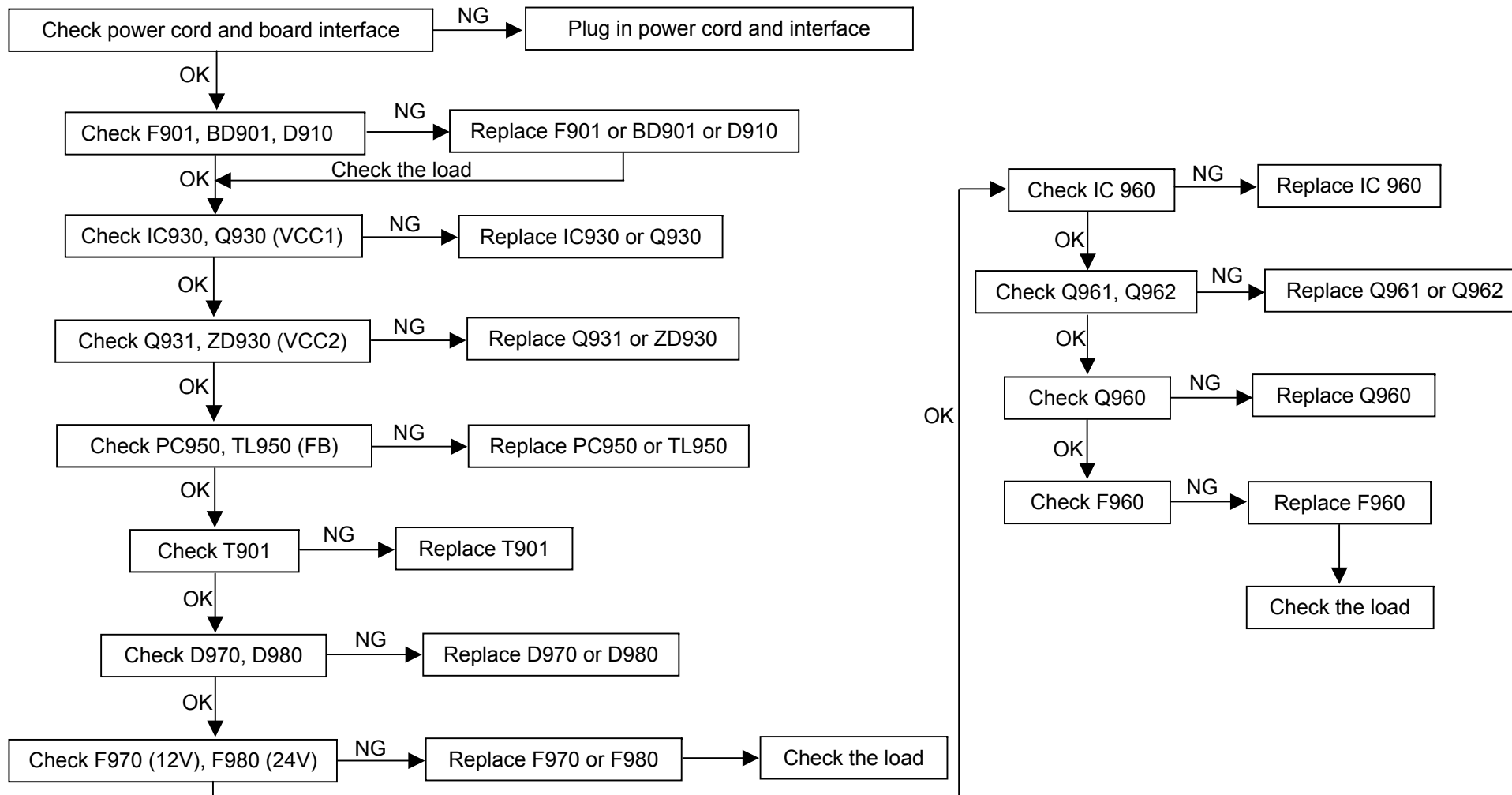
N/A



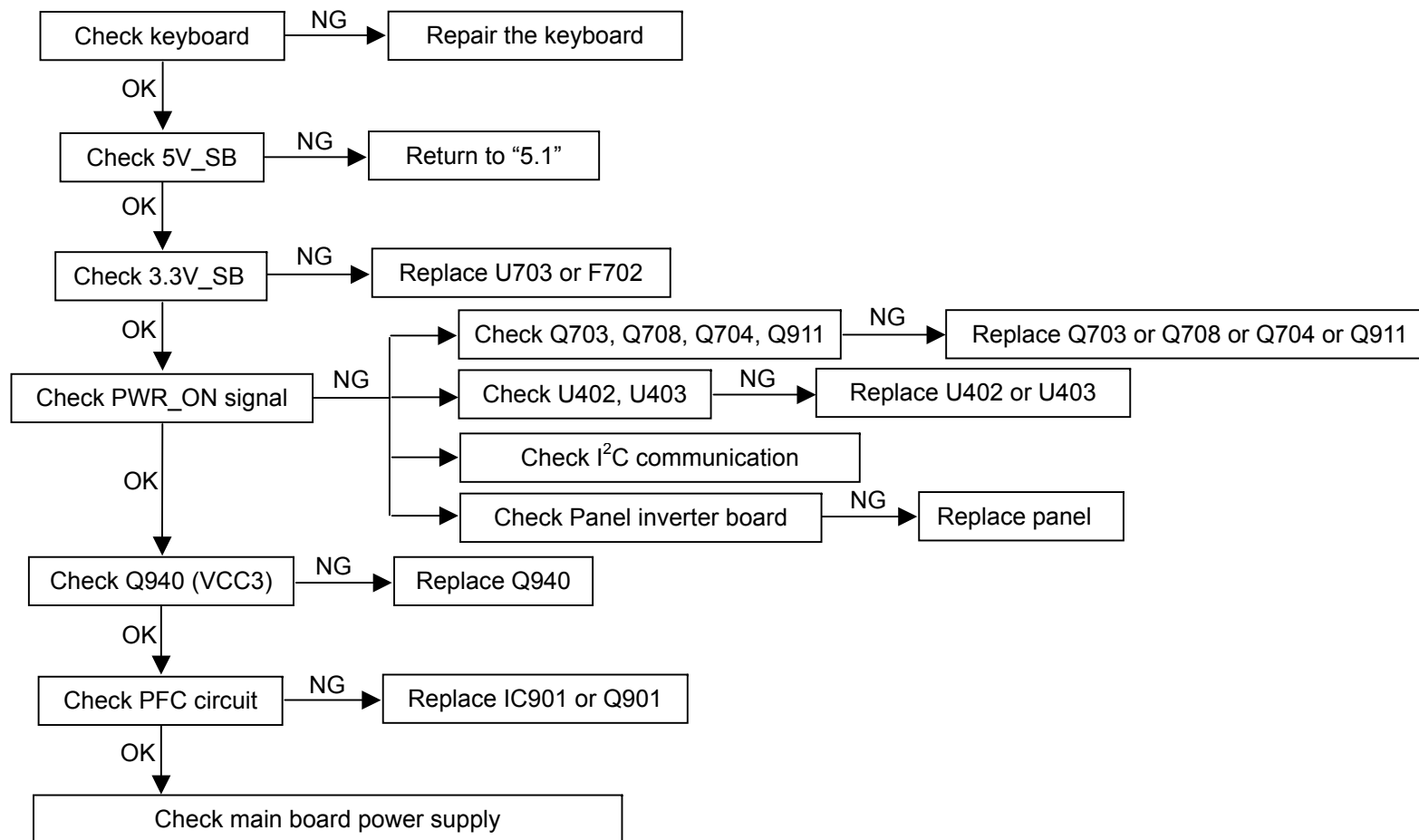
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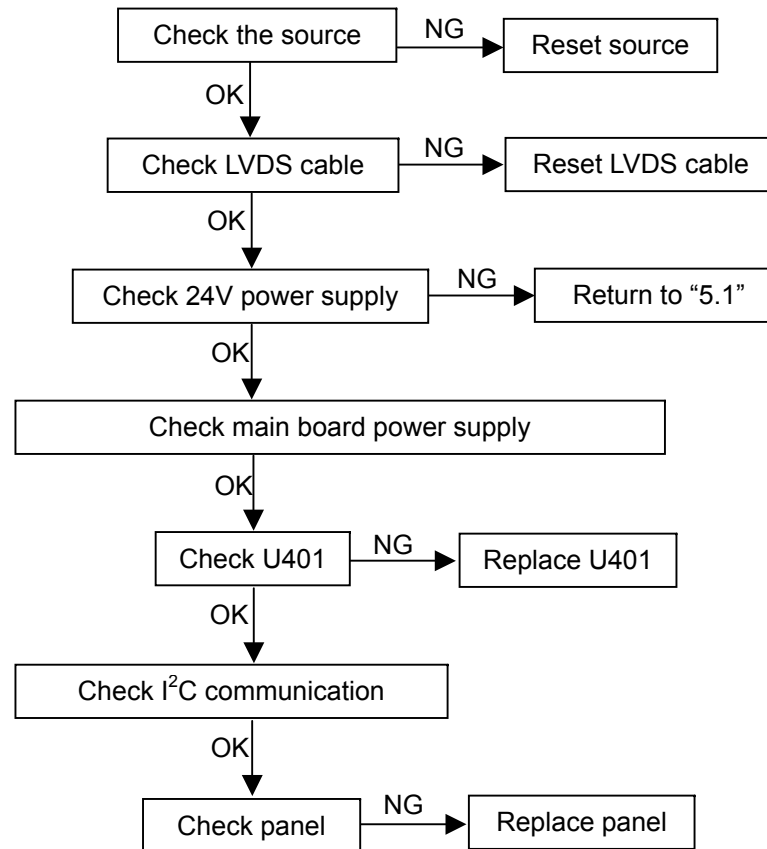
7. Repair Flow Chart

7.1 No Power (No LED indicator)

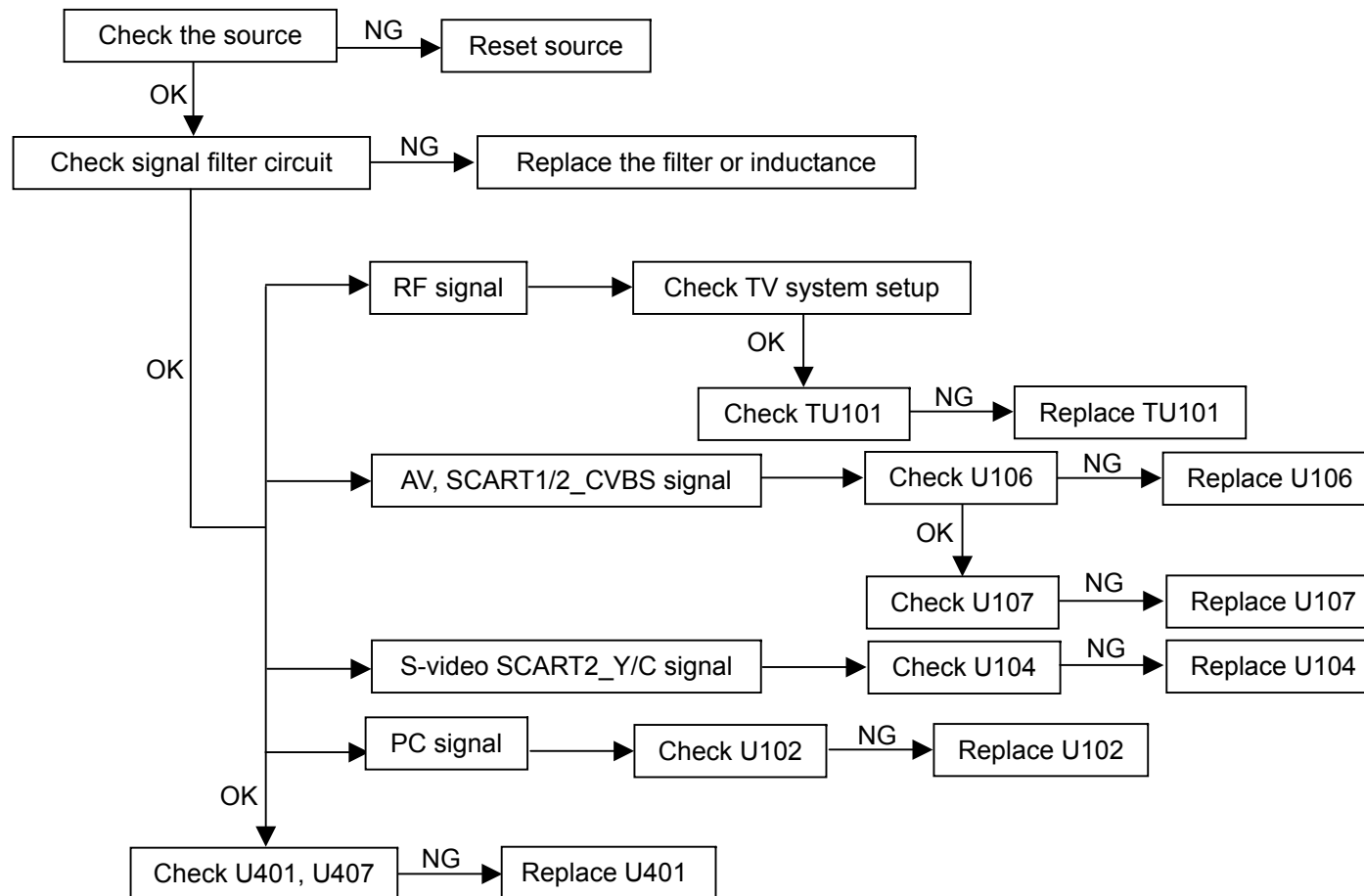


7.2 Can not start (LED indicator yellow)

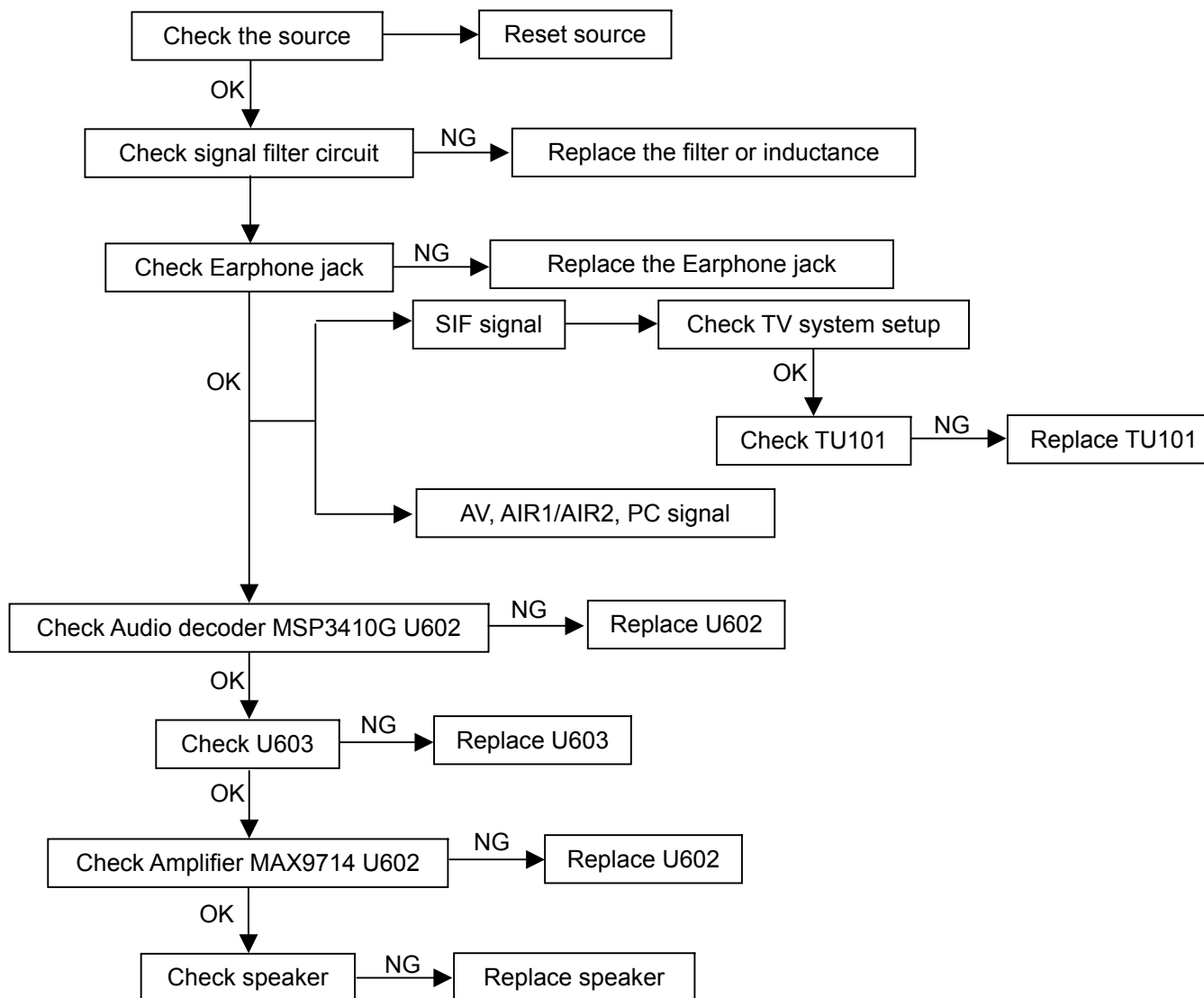


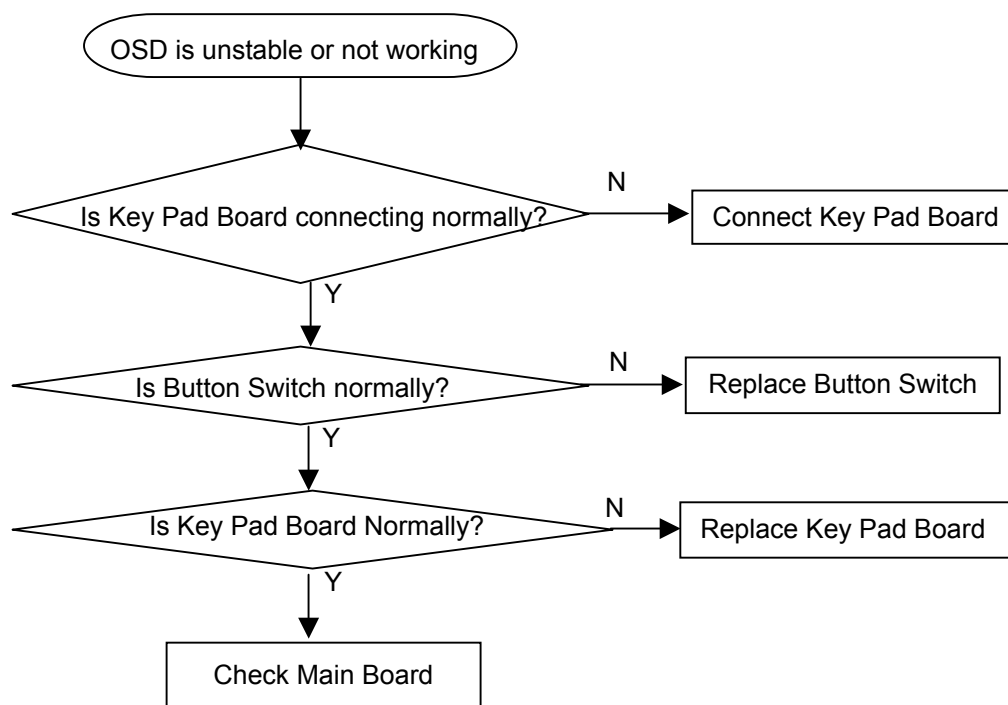


7.4 Abnormal Display



7.5 No sound

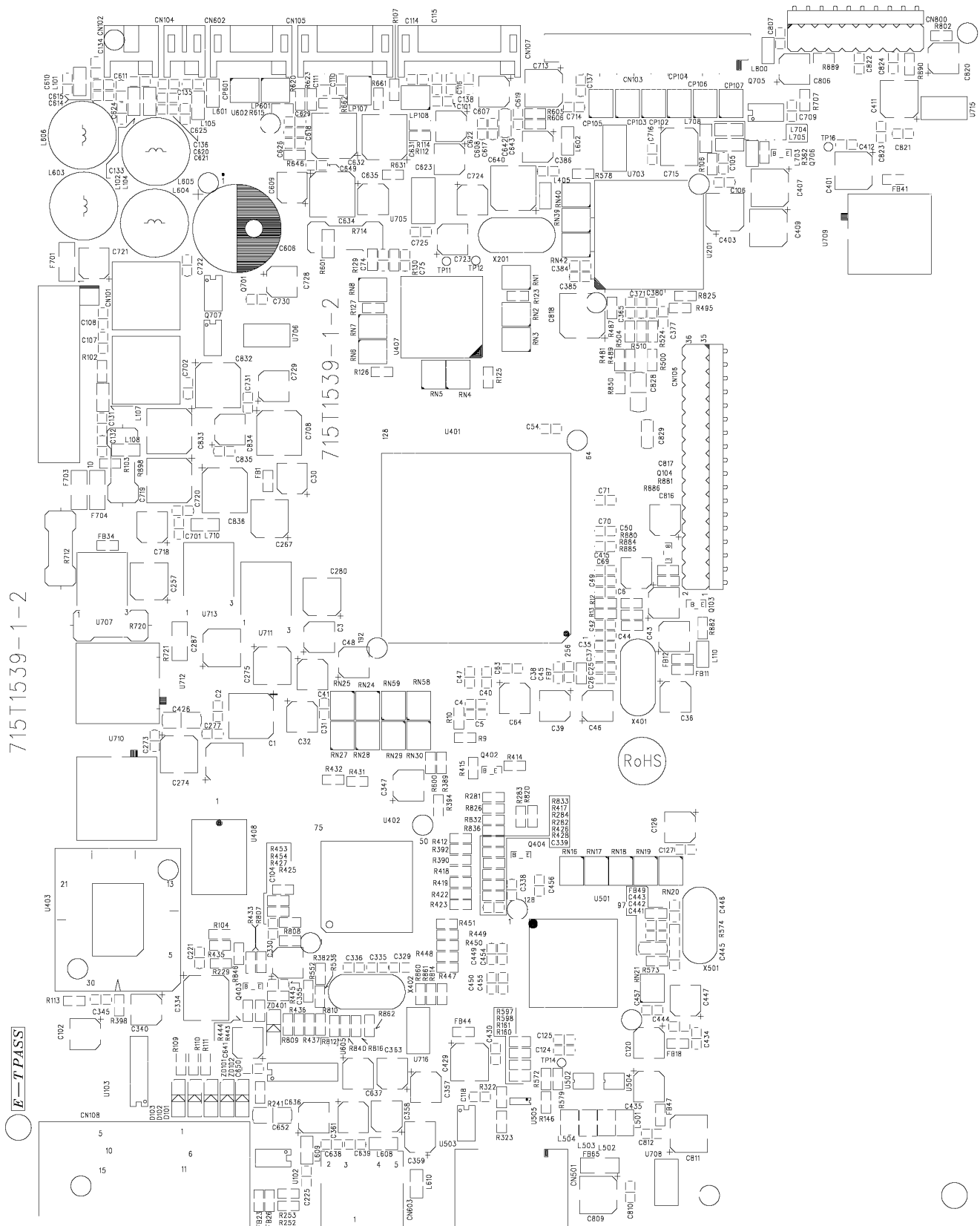


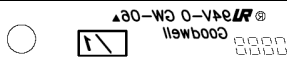


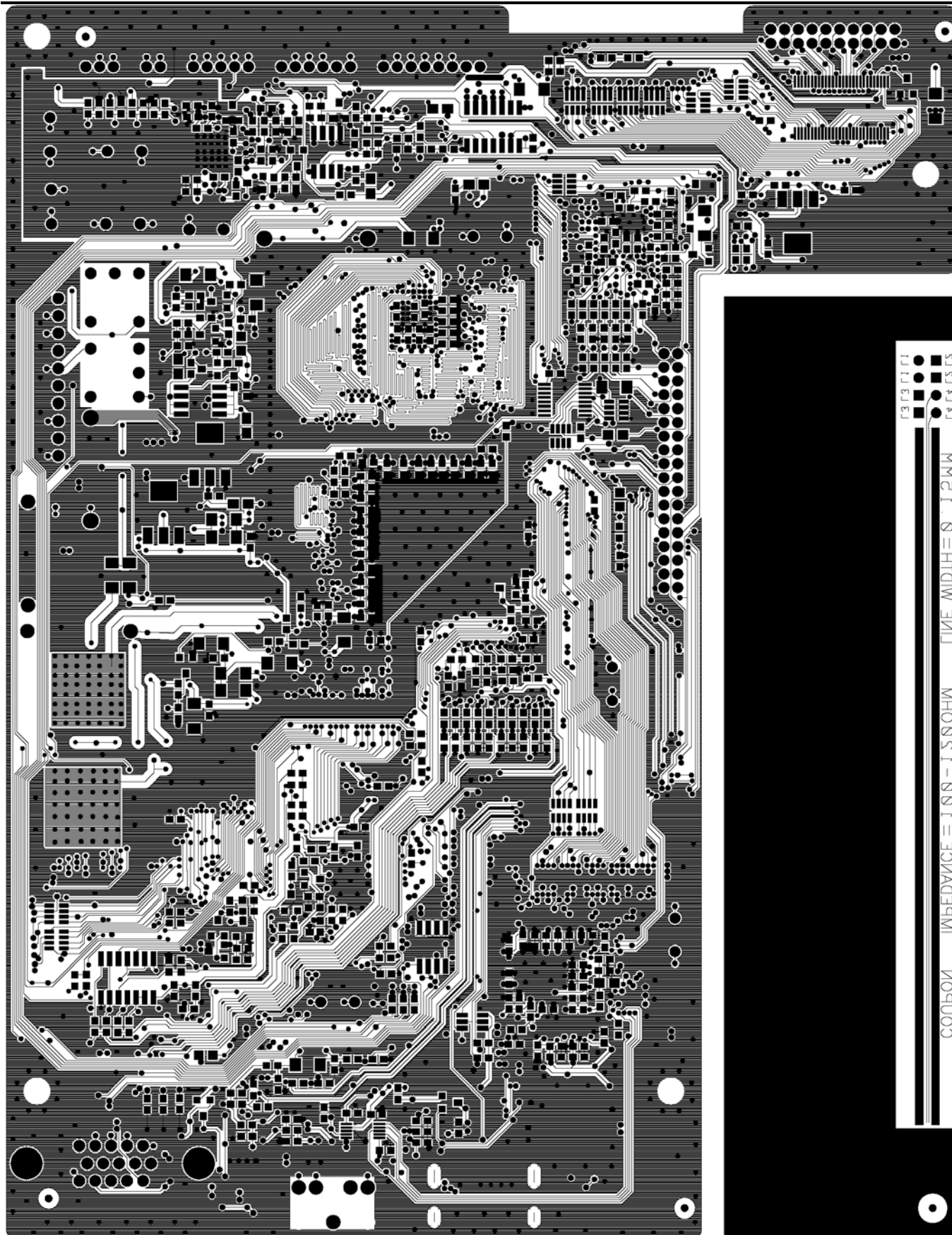
8. PCB Layout

8.1 Main Board

715T1539-1-2

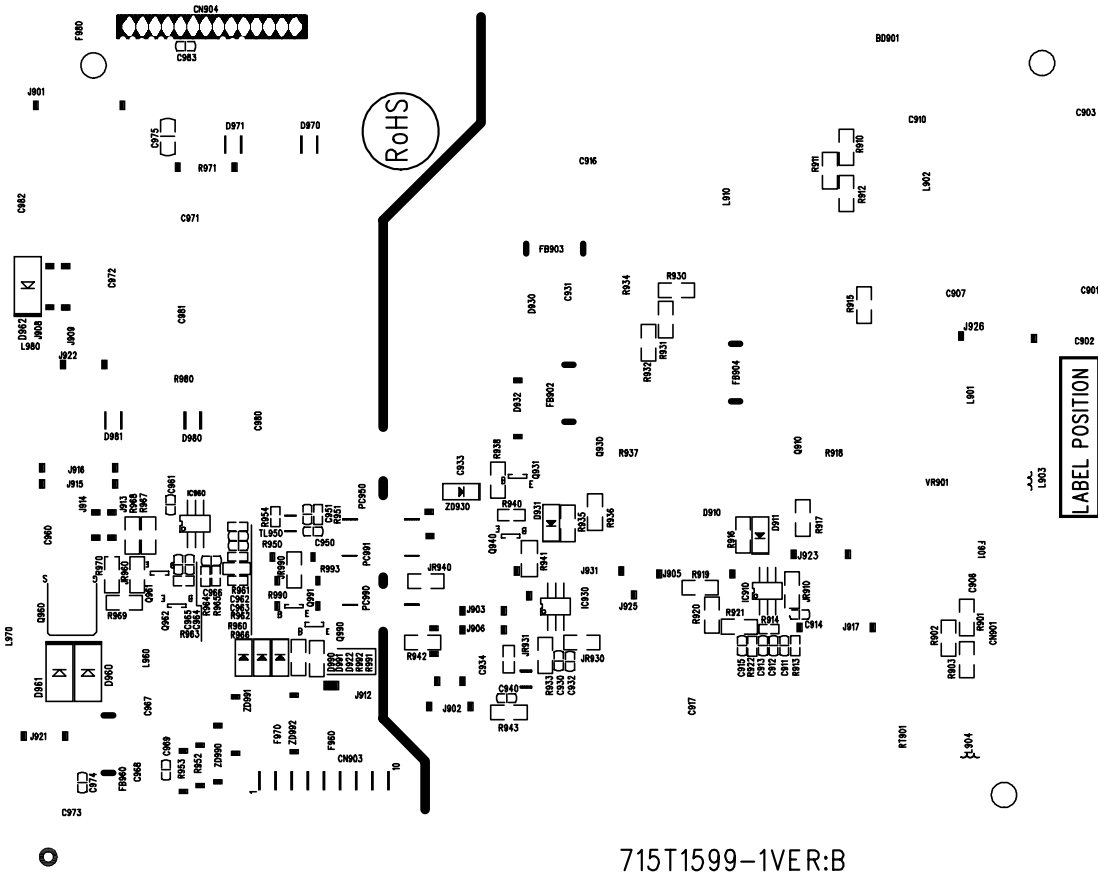
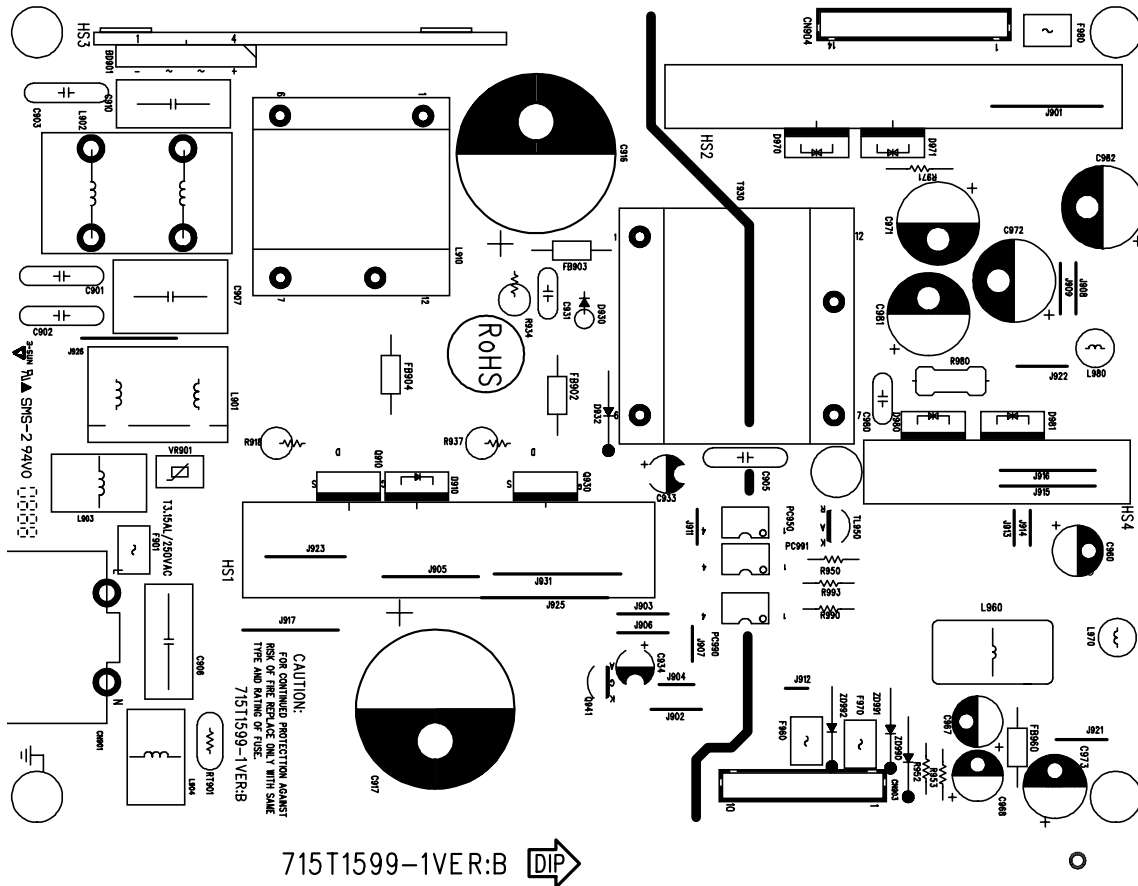


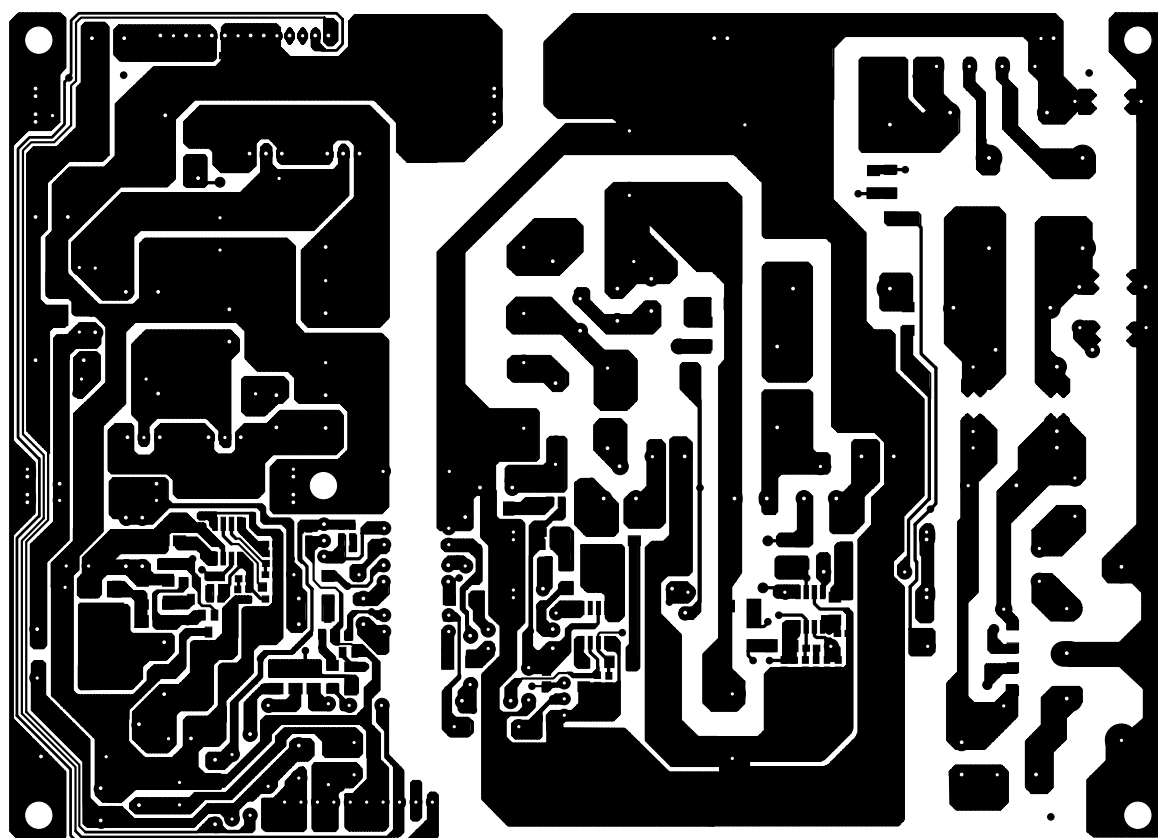




8.2 Power Board

715T1599-1



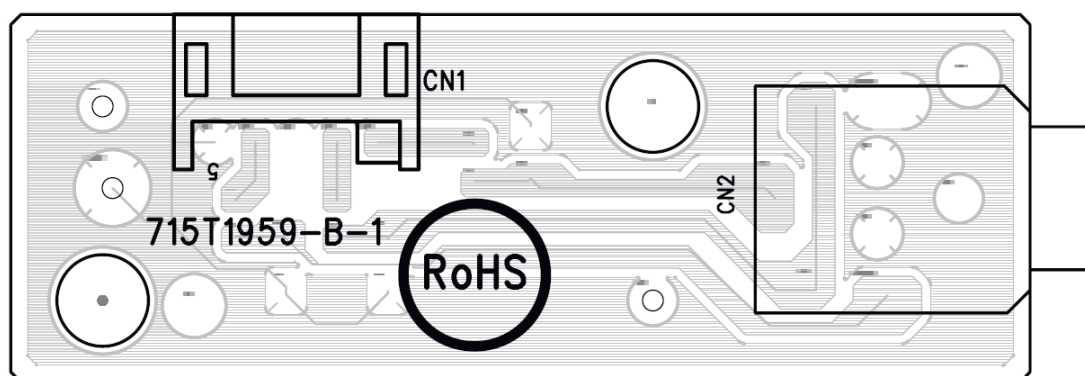


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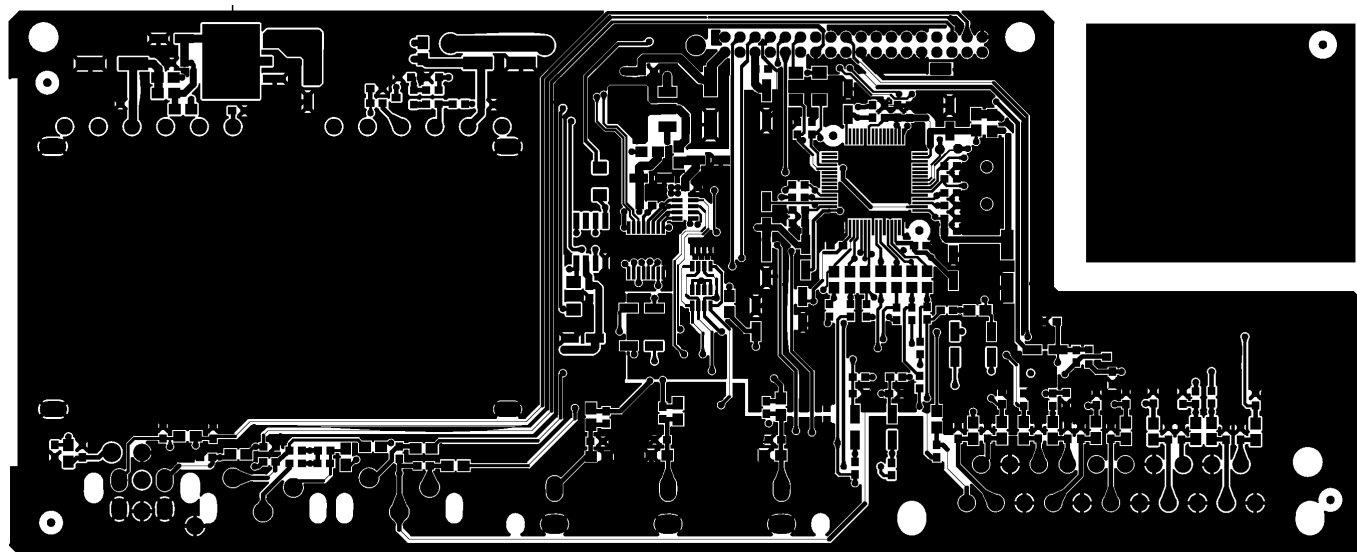
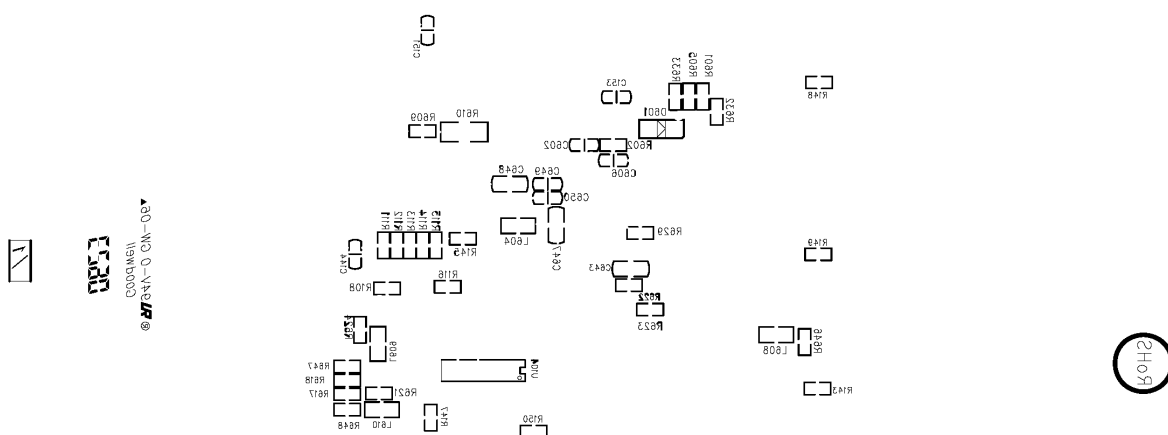
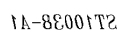
715T1599-1VER:B

8.3 Earphone Board

715T1959-B-1

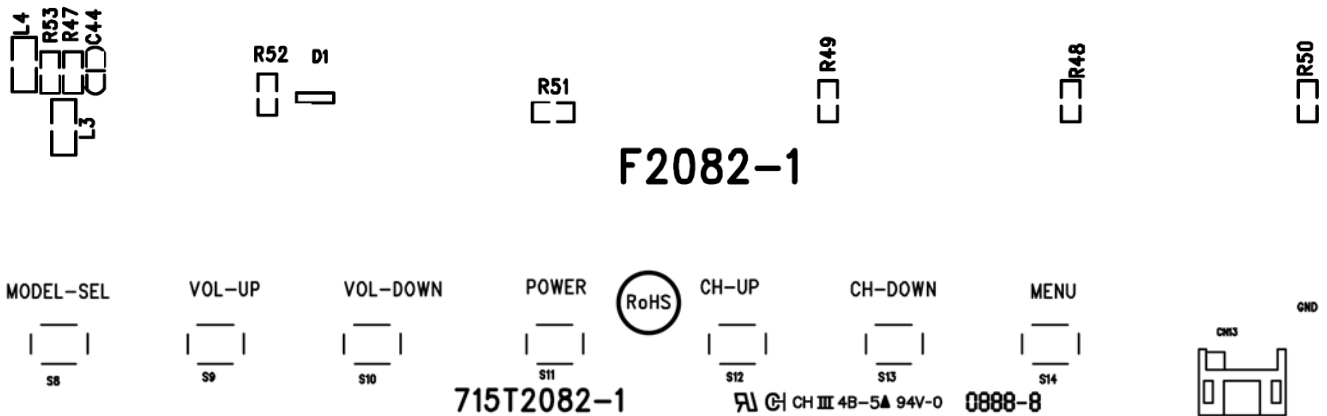


715T1529-1-2



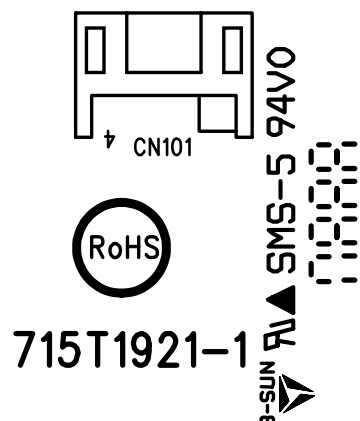
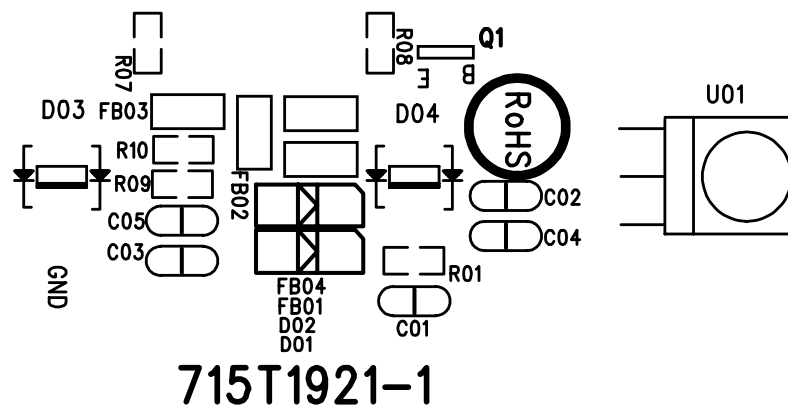
8.5 Key Board

715T2082-B



8.6 IR Board

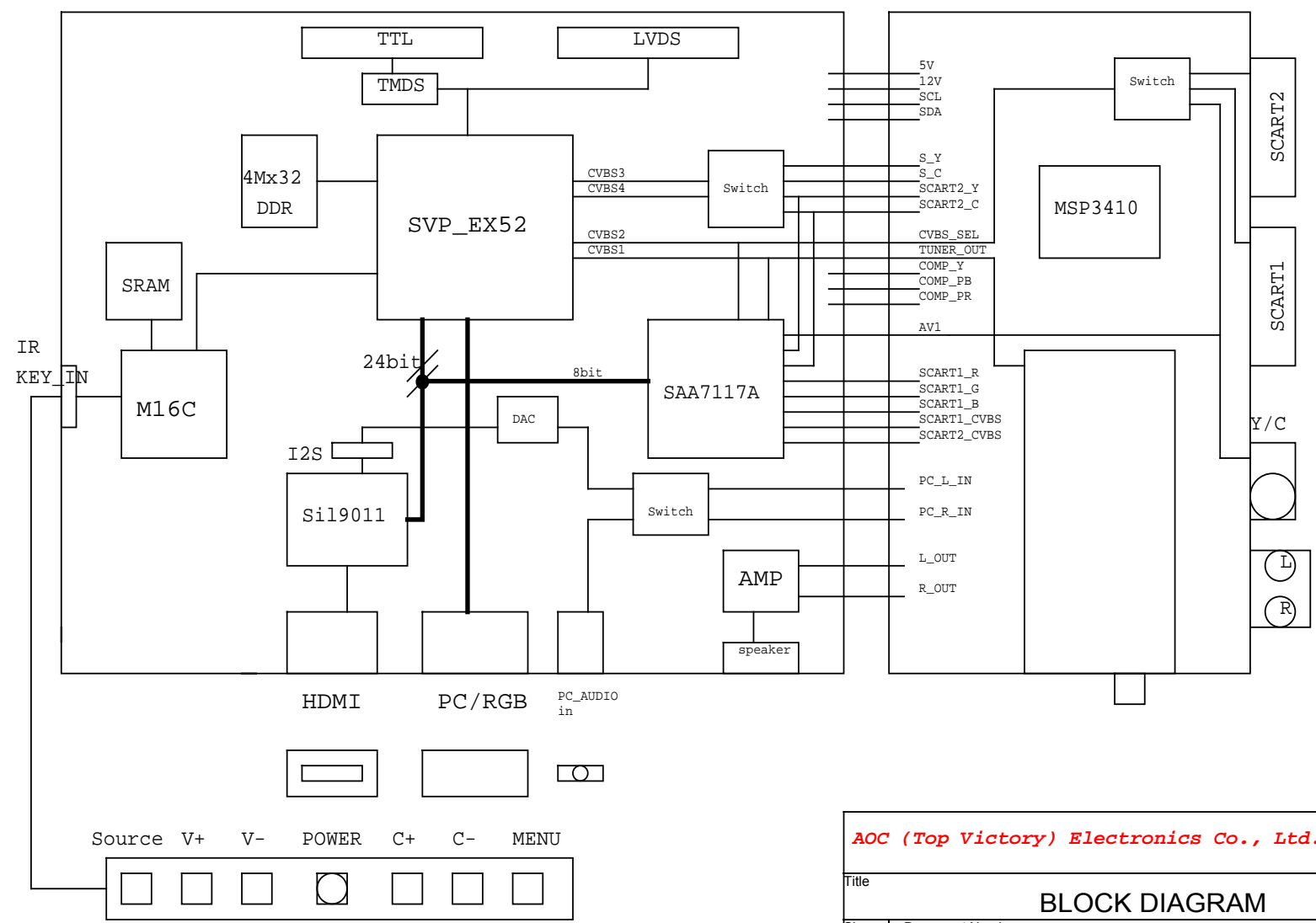
715T1921-1



9. Block Diagram

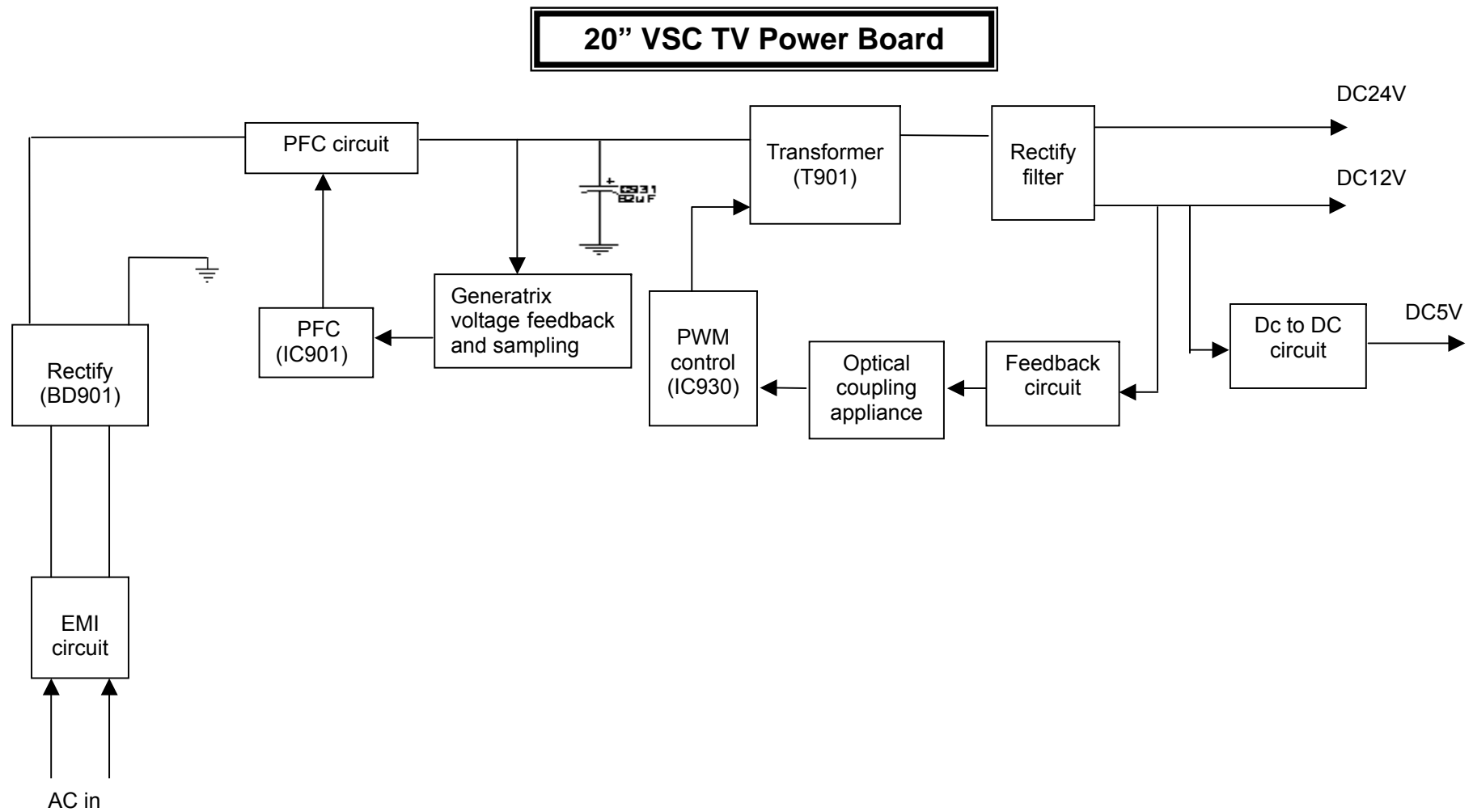
9.1 Main board

715T1539+715T1529 :Block Diagram



AOC (Top Victory) Electronics Co., Ltd.		
Title		
BLOCK DIAGRAM		
Size	Document Number	Rev
A	TV N2060W-1E	1
Date:	Tuesday, May 30, 2006	Sheet 1 of 14

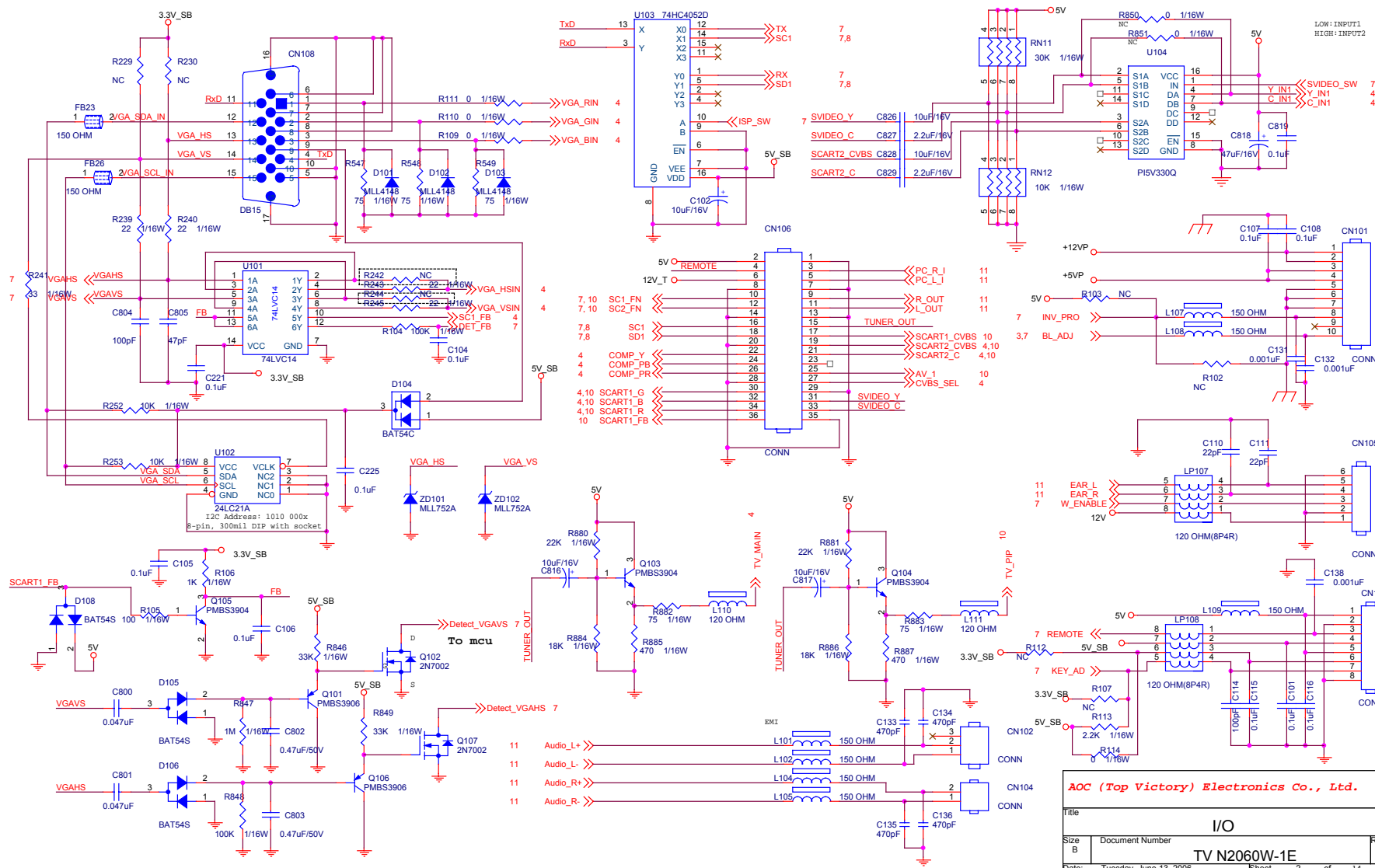
9.2 Power Board

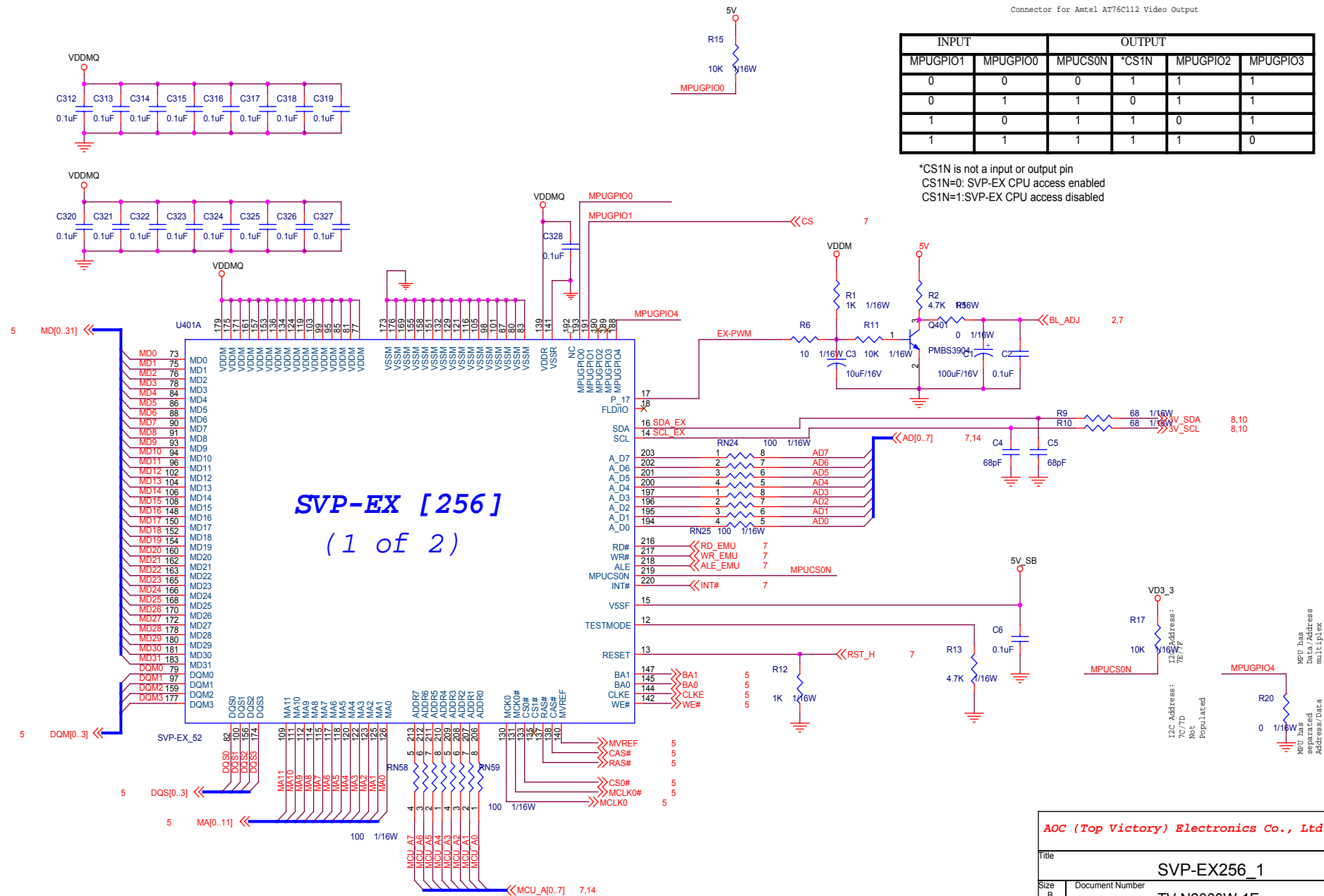


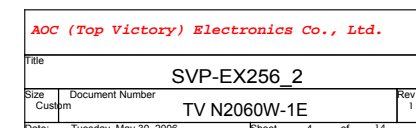
10. Schematic Diagram

10.1 Main Board

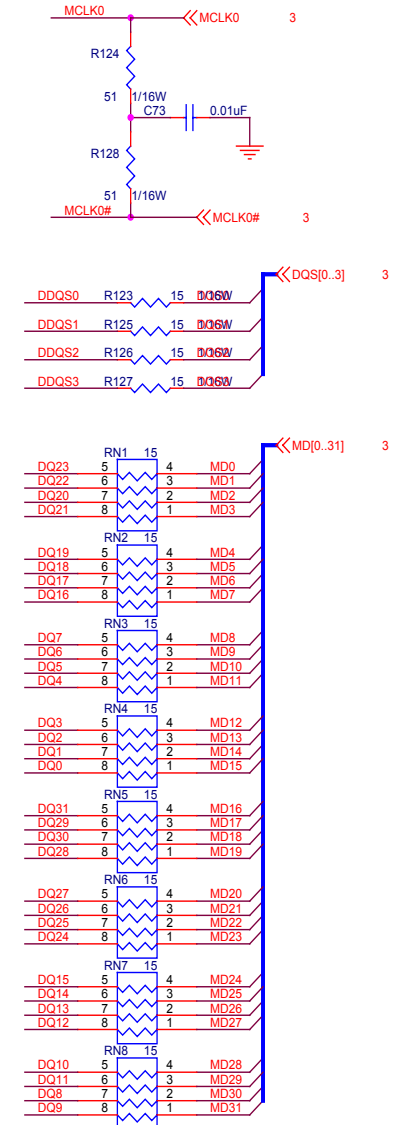
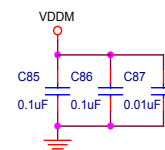
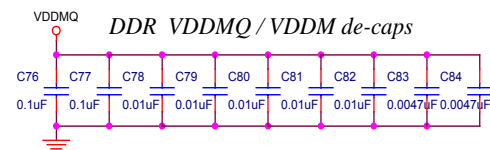
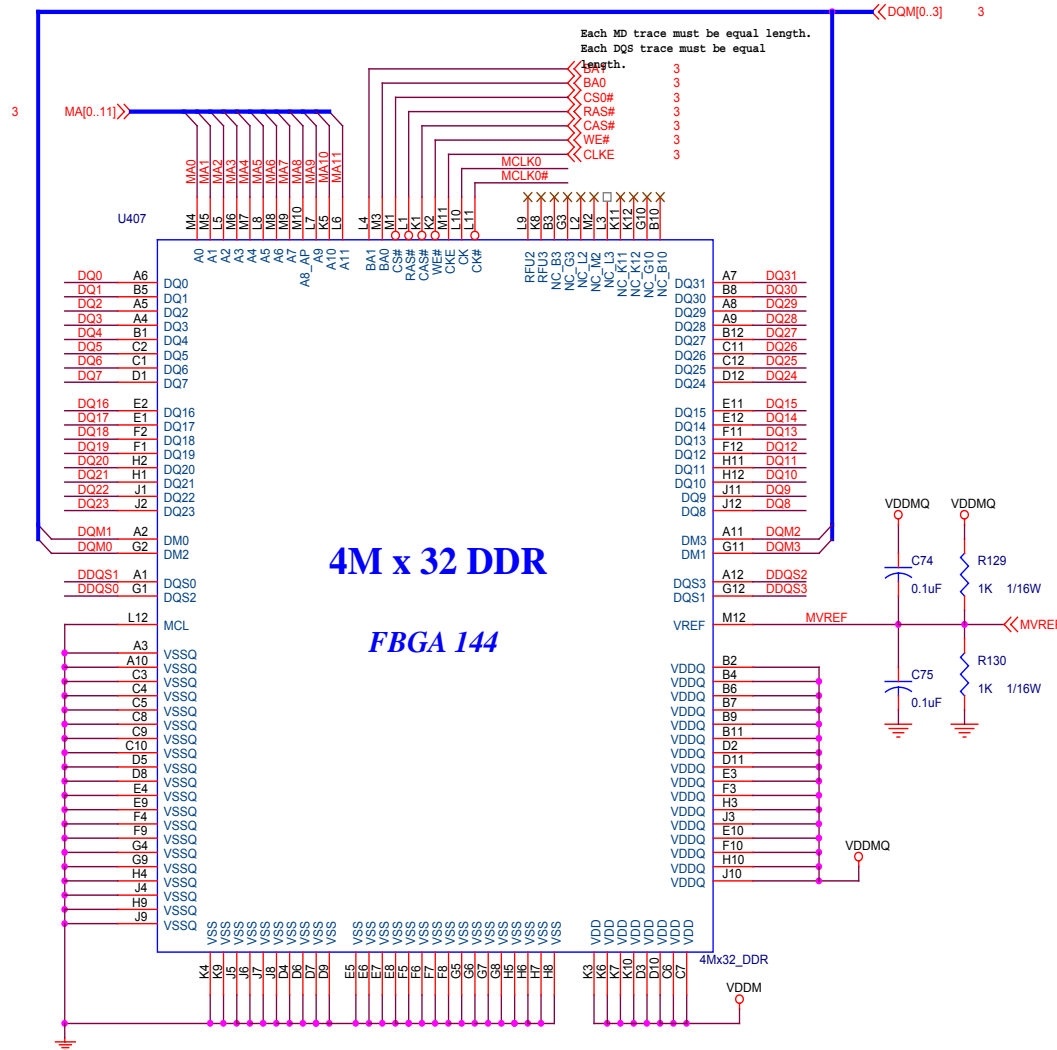
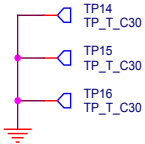
715T1539-1-2





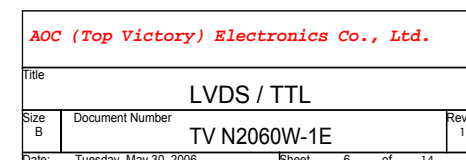


MCLK0	TP7 TP_T_C30
DDQS0	TP8 TP_T_C30
DOM0	TP9 TP_T_C30
DQ23	TP10 TP_T_C30
CAS#	TP11 TP_T_C30
RAS#	TP12 TP_T_C30
CS0#	TP13 TP_T_C30
WE#	TP31 TP_T_C30

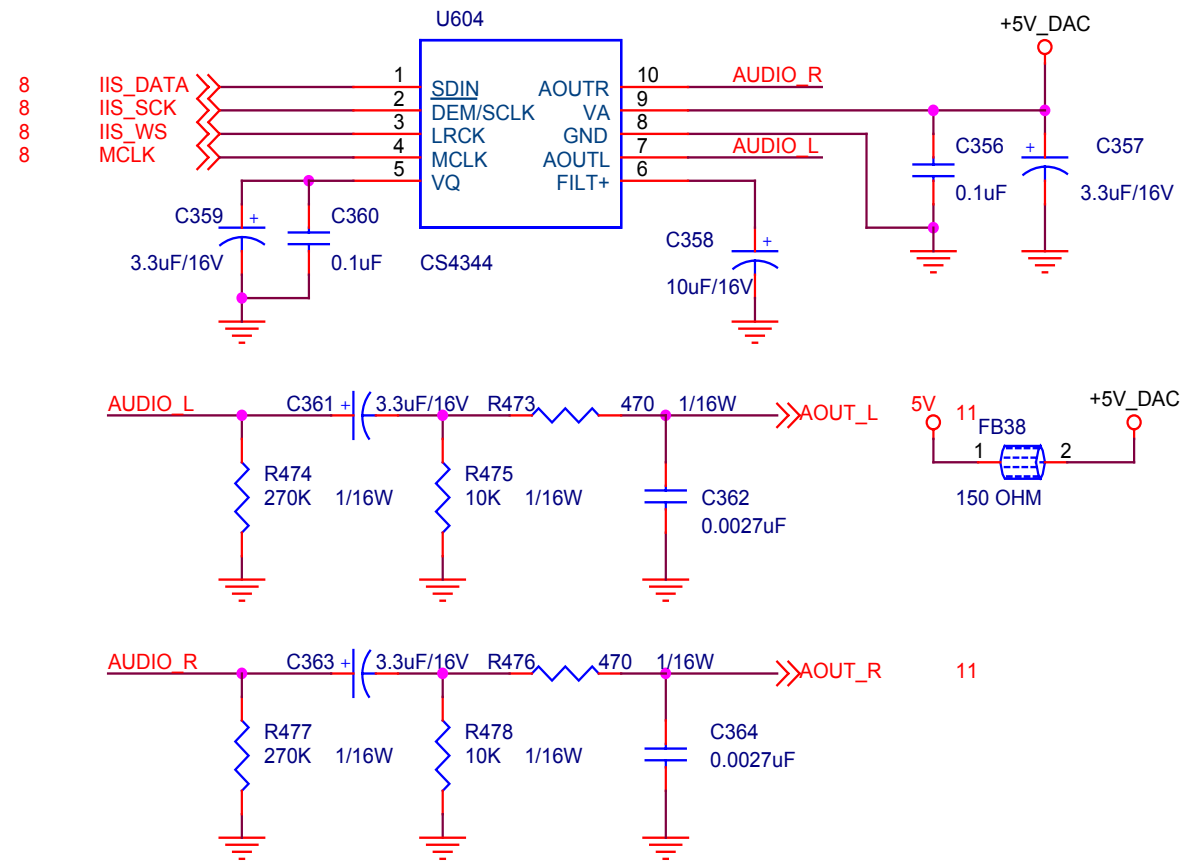


AOC (Top Victory) Electronics Co., Ltd.

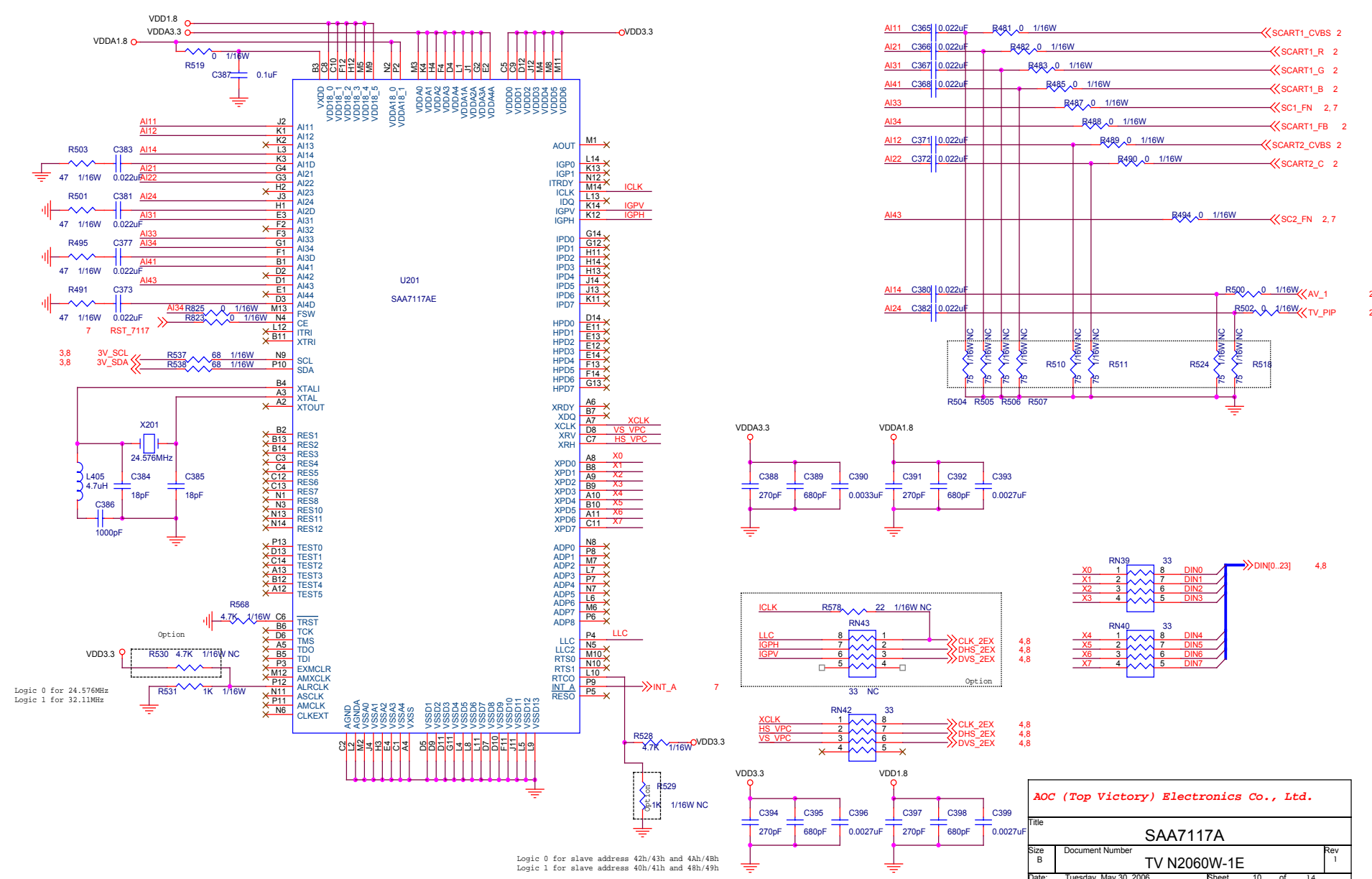
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SVP-EX 4MX32 DDR			
Size B	Document Number		Rev 1
TV N2060W-1E			
Date:	Tuesday, June 13, 2006	Sheet	5 of 14

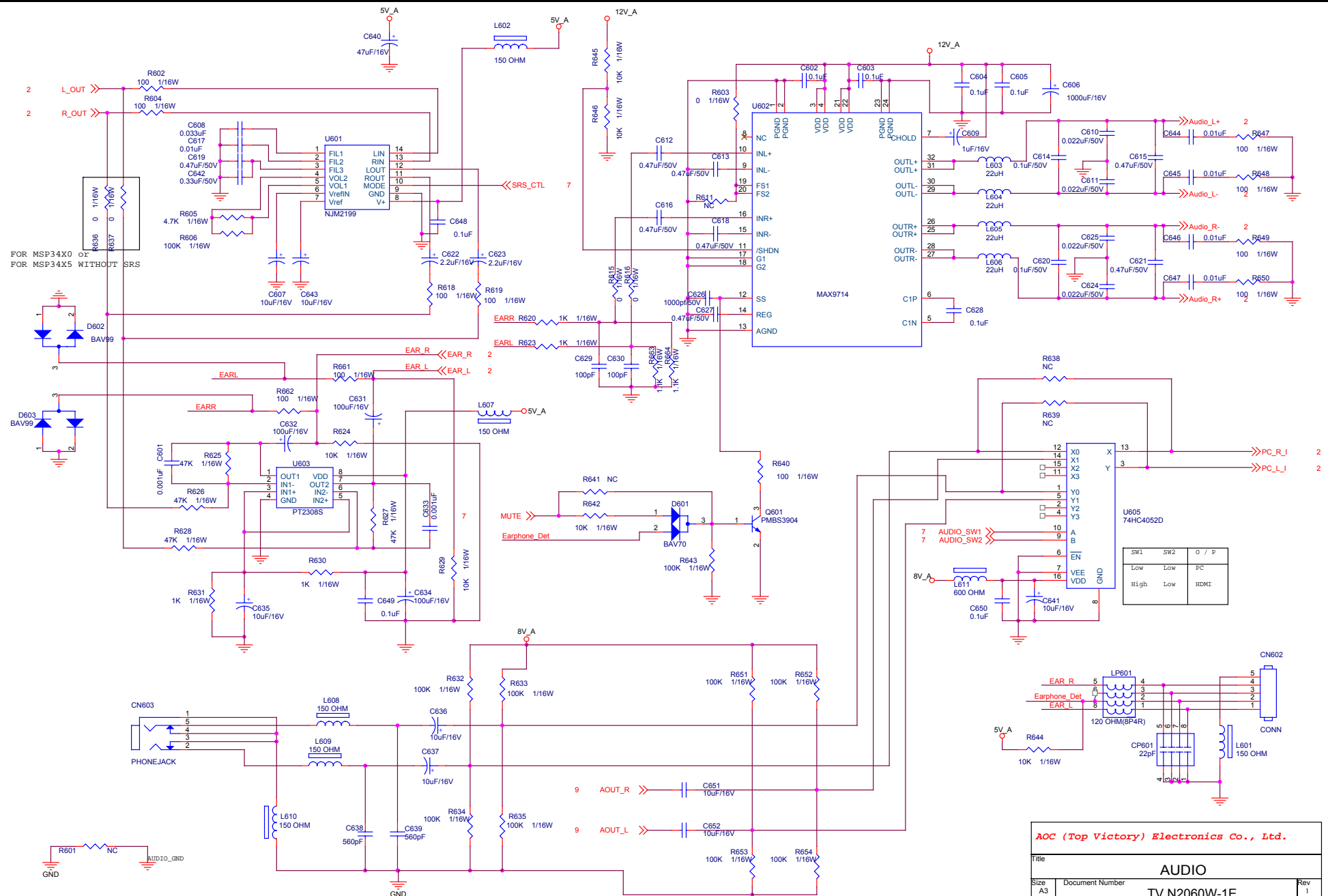


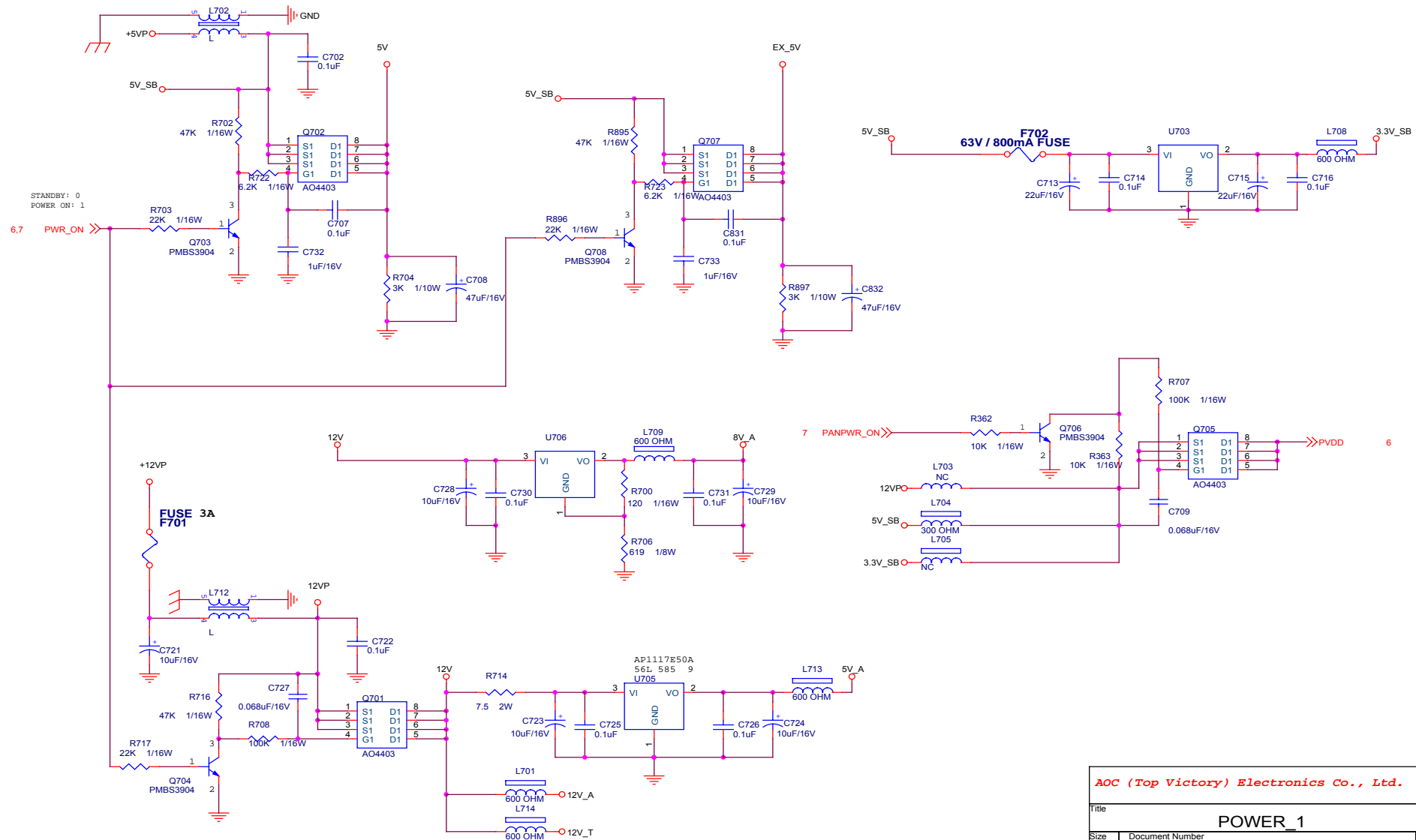




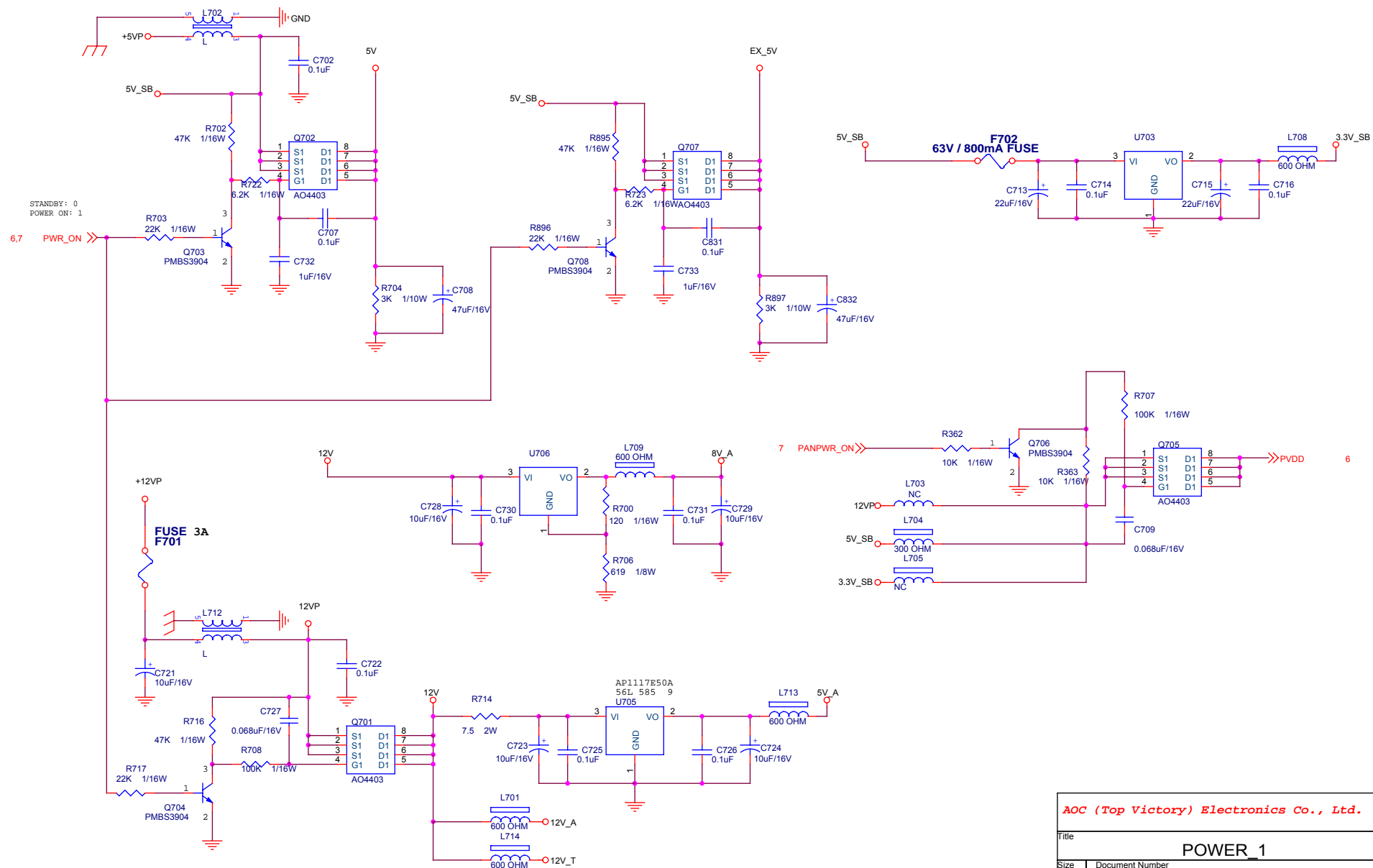
AOC (Top Victory) Electronics Co., Ltd.			
Title			
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Size A	Document Number TV N2060W-1E		Rev 1
Date:	Tuesday, May 30, 2006	Sheet	9 of 14

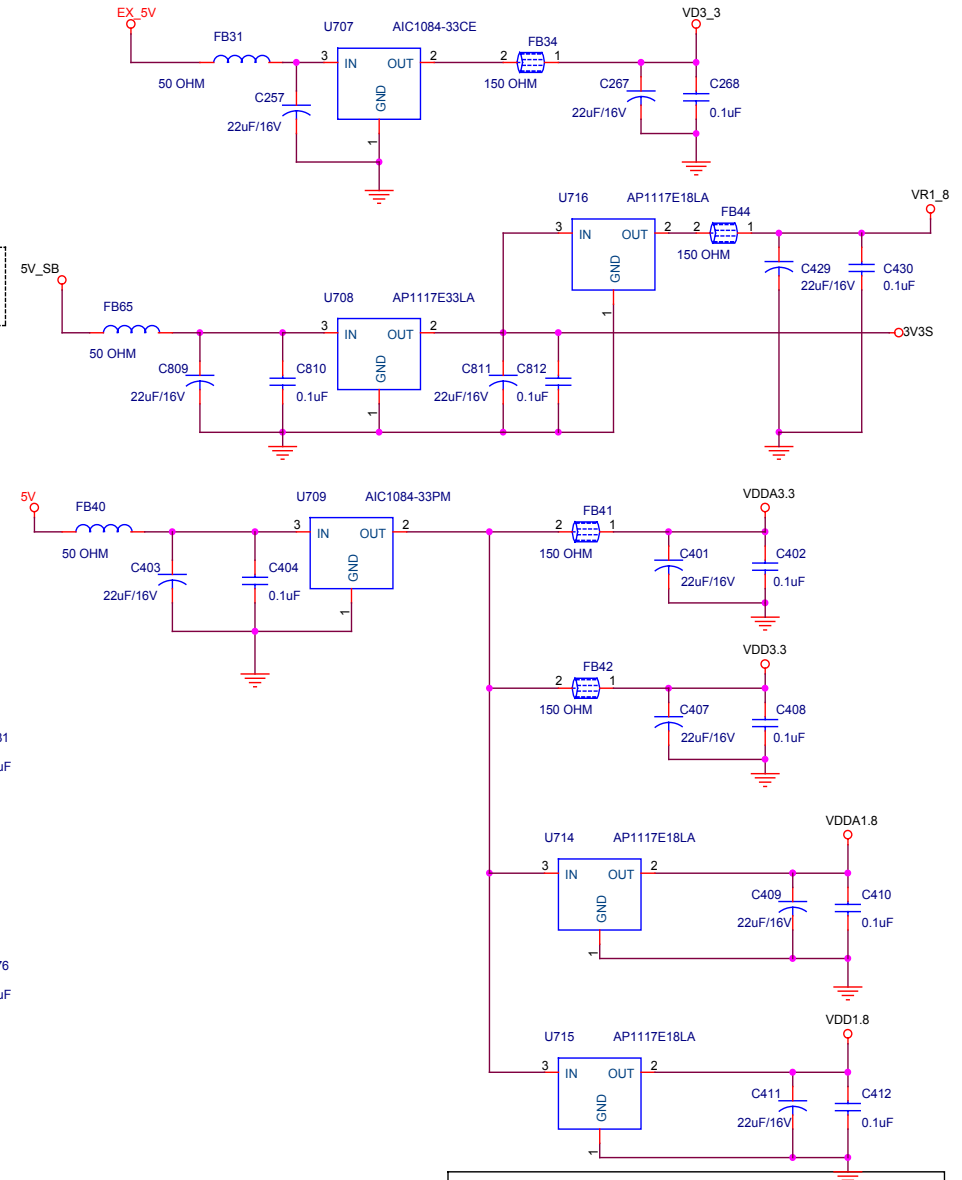
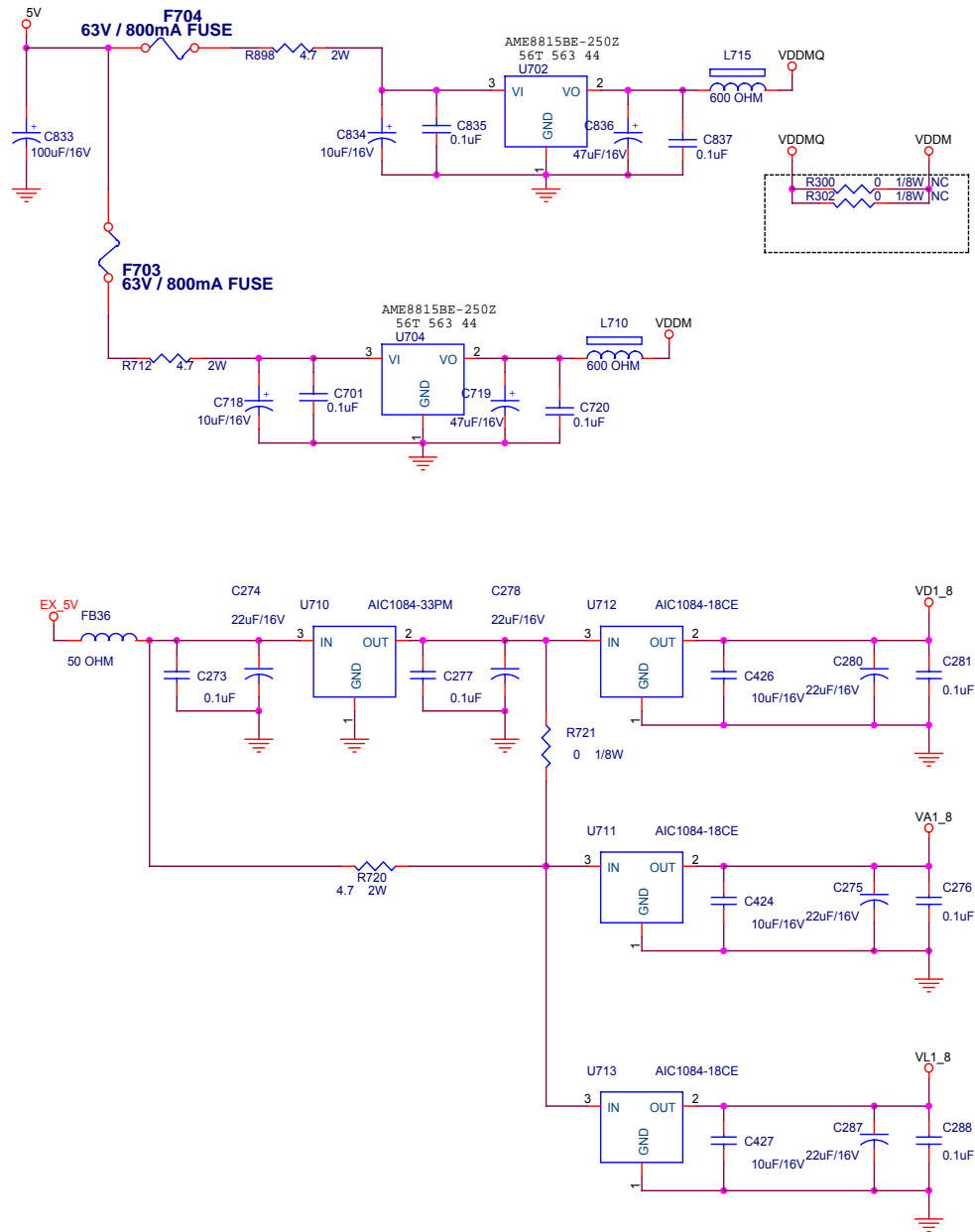




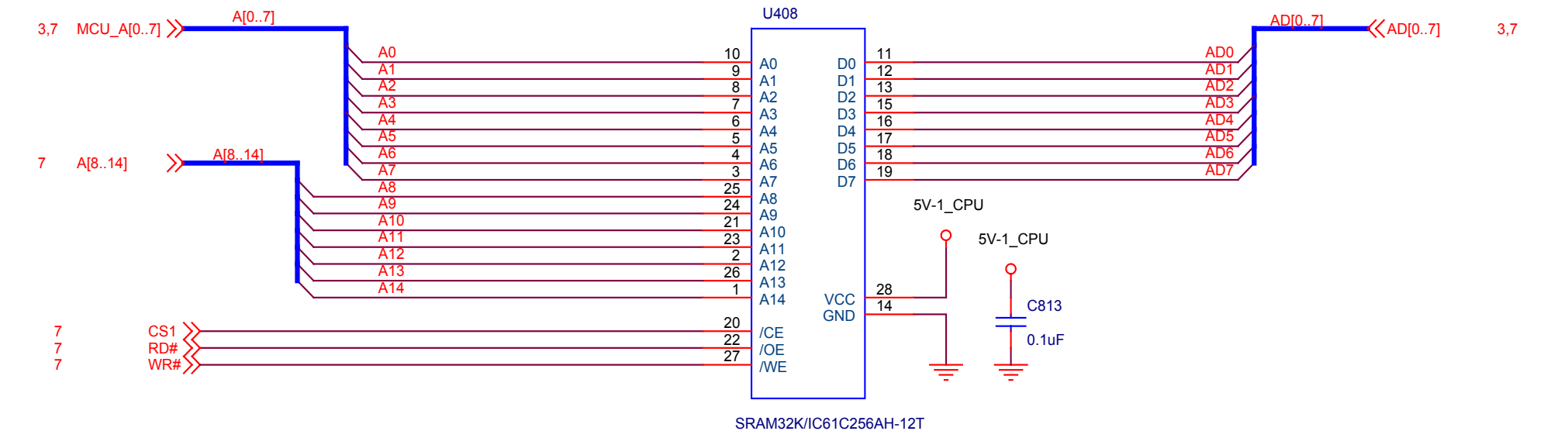


AOC (Top Victory) Electronics Co., Ltd.			
Title			
POWER_1			
Size	Document Number	Rev	
B	TV N2060W-E	1	
Date:	Tuesday, May 30, 2006	Sheet	12 of 14





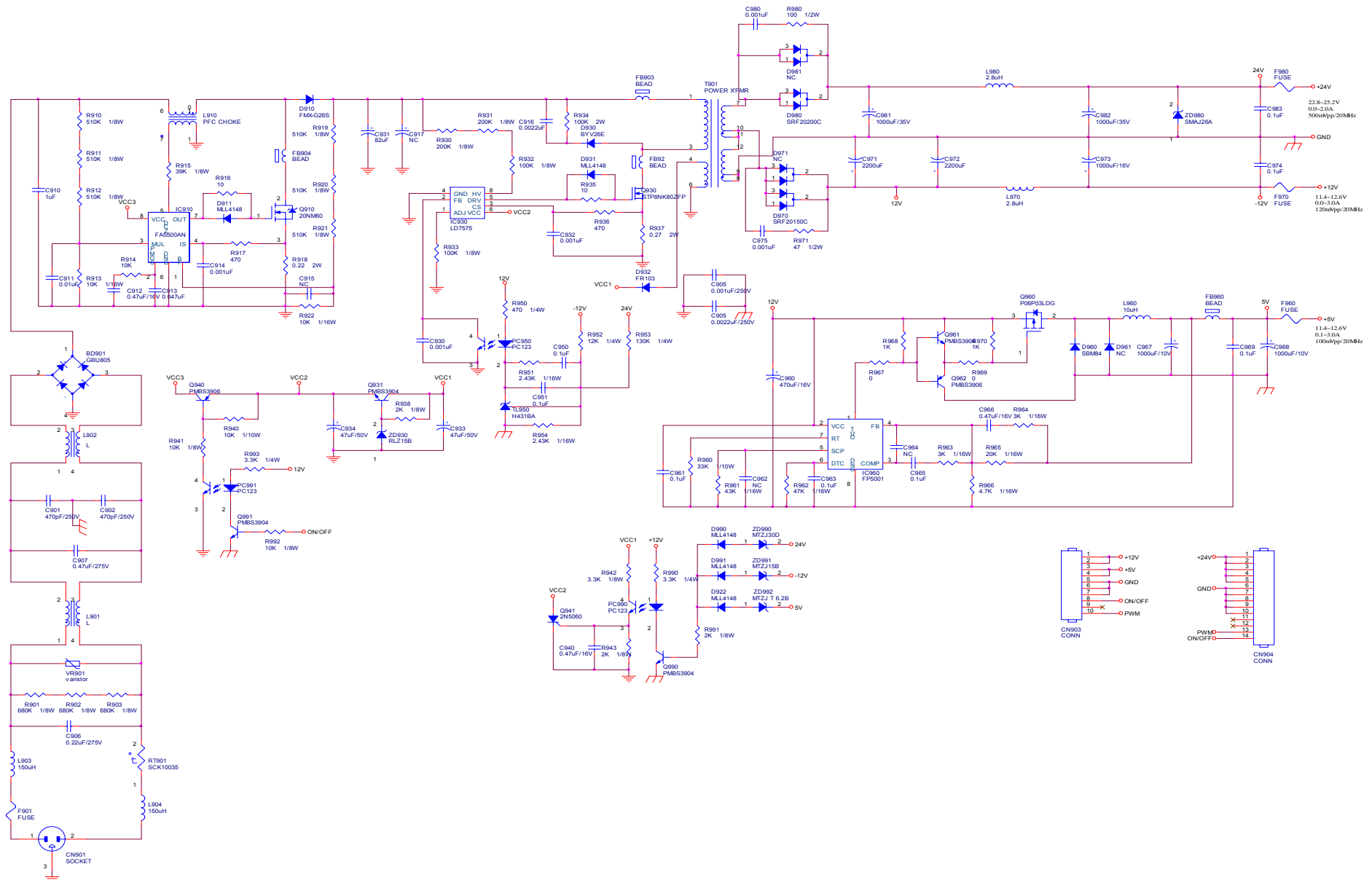
AOC (Top Victory) Electronics Co., Ltd.			
Title		POWER_2	
Size B	Document Number	TV N2060W-1E	
Date:	Tuesday, May 30, 2006	Sheet	13 of 14

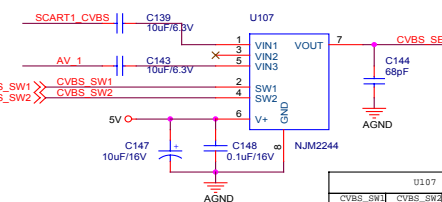
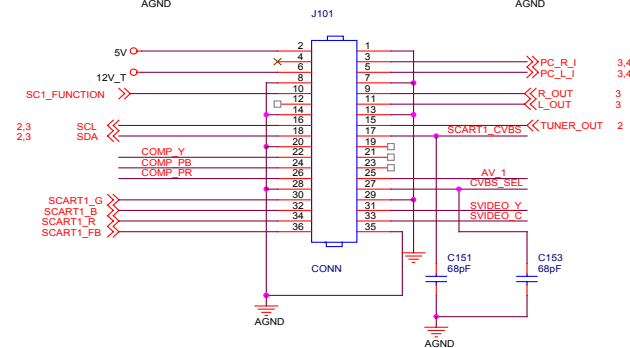
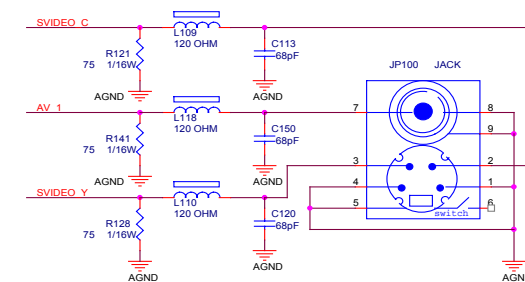


AOC (Top Victory) Electronics Co., Ltd.		
Title		
EXT SRAM 32K FOR MCU		
Size	Document Number	Rev
A	TV N2060W-1E	1
Date:	Tuesday, May 30, 2006	Sheet 14 of 14

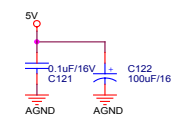
20" LCD TV Color Monitor
10.2 Power Board
715T1599-1

ViewSonic N2060W-1E

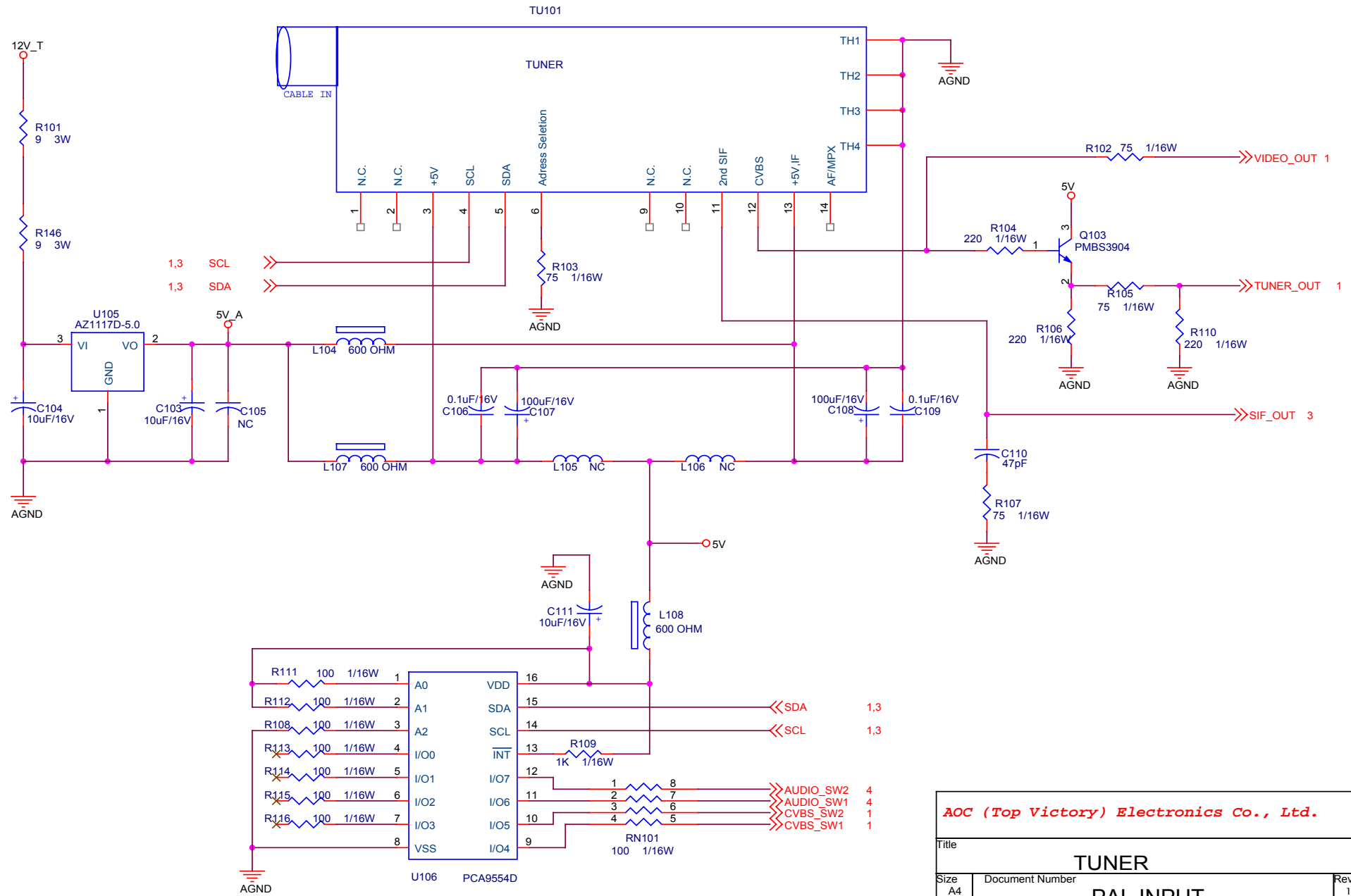




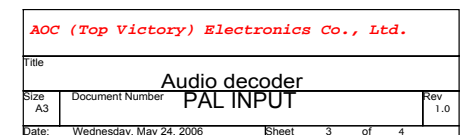
U107		
CVBS_SW1	CVBS_SW2	CVBS_SEL
0	0	SCART1_CV
X	1	AV_1

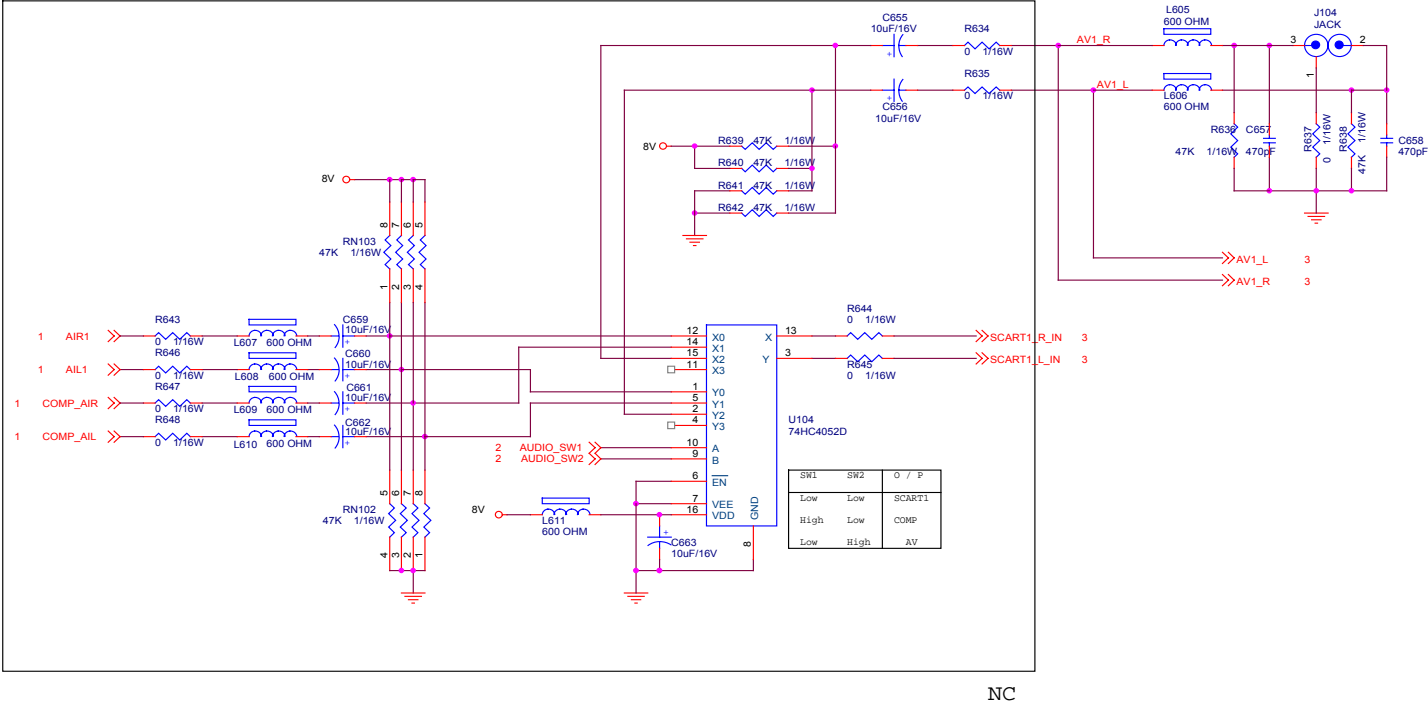


AOC (Top Victory) Electronics Co., Ltd.			
Title			
I/O 715T1529-1-2			
Size A3	Document Number		Rev 1
PAL INPUT			
Date	Wednesday, June 14, 2006	Sheet	1 of 4



AOC (Top Victory) Electronics Co., Ltd.		
Title		
TUNER		
Size	Document Number	Rev
A4	PAL INPUT	1
Date:	Wednesday, May 24, 2006	Sheet 2 of 4

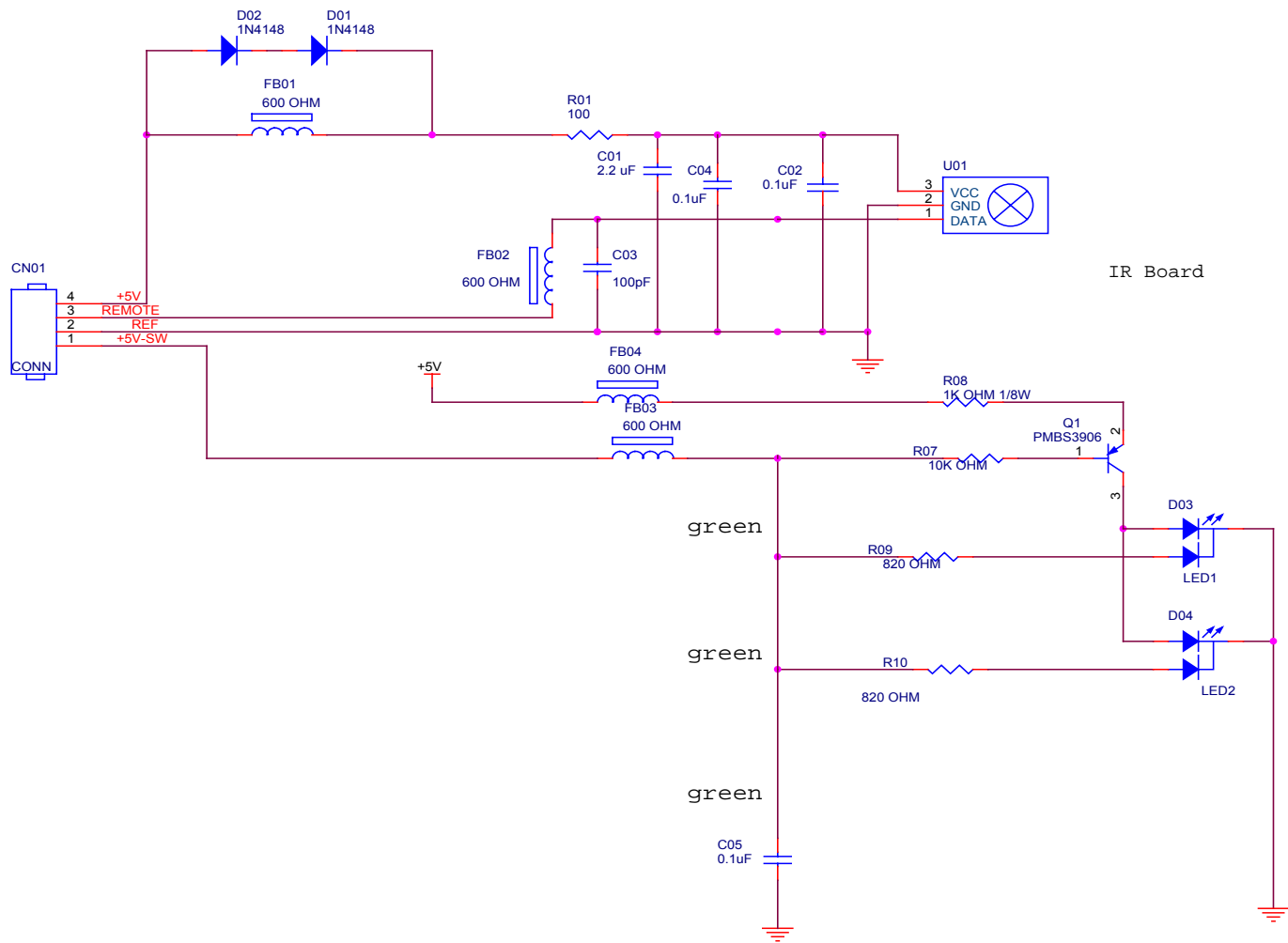




NC

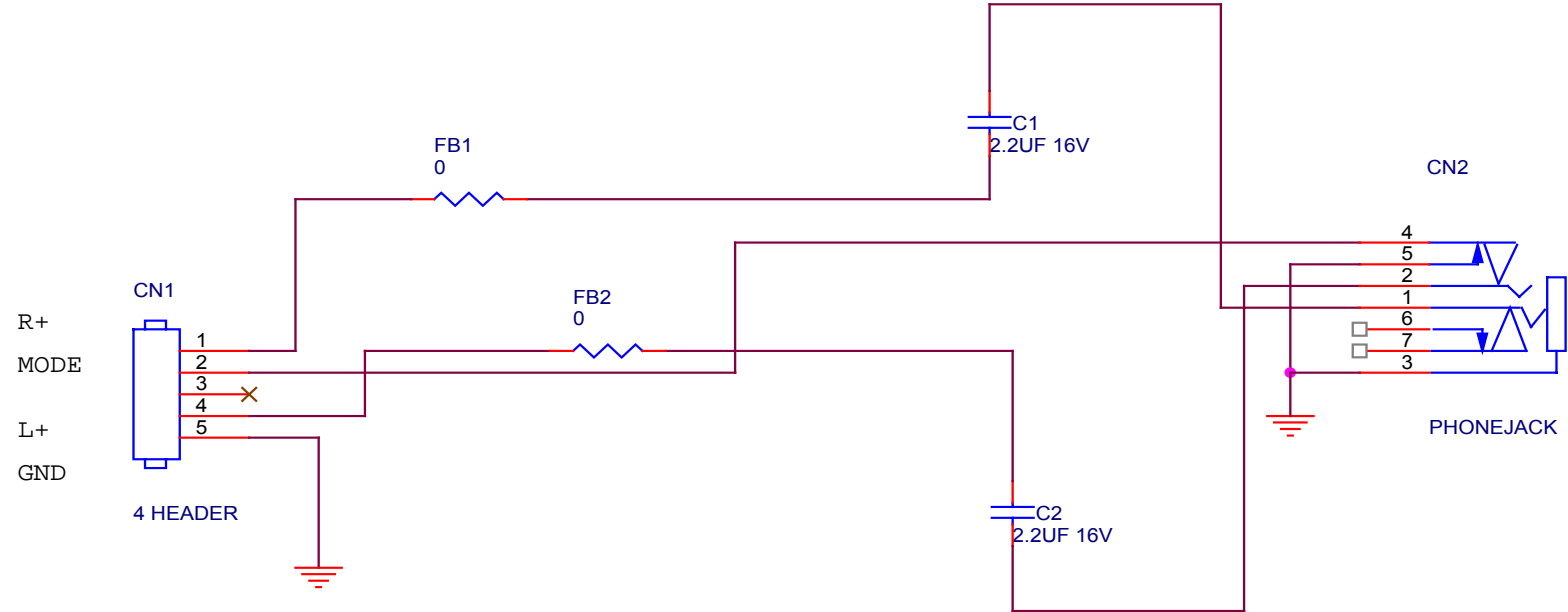
AOC (Top Victory) Electronics Co., Ltd.			
Title			
FOR MSP3415			
Size	Document Number	Rev	
A3	PAL INPUT	1	
Date:	Wednesday, May 24, 2006	Sheet	4 of 4

10.4 IR Board
715T1921-1

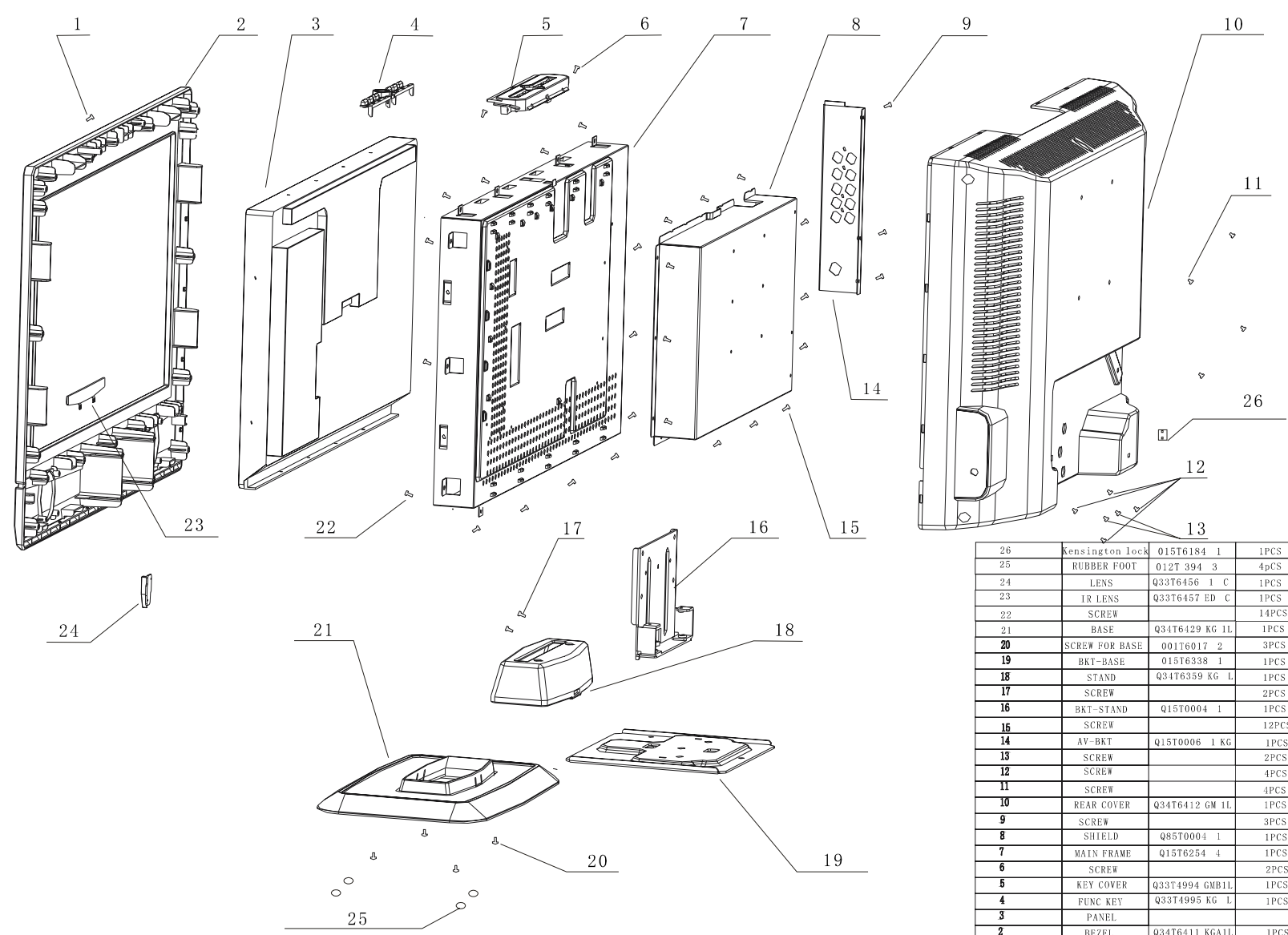


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Title		
KEY&IR BOARD		
Size	Document Number	Rev
A4	<Doc>	<RevCode>
Date: Friday, March 31, 2006		
Sheet 1 of 1		

10.5 Earphone Board
715T1959-B-1



Title		
<Title>		
Size	Document Number	Rev
A	<Doc>	<RevCode>
Date:	Wednesday, March 29, 2006	Sheet 1 of 1



26	Kensington lock	015T6184	1	1PCS
25	RUBBER FOOT	012T 394	3	4PCS
24	LENS	Q33T6456	1	1PCS
23	IR LENS	Q33T6457	ED	1PCS
22	SCREW			14PCS
21	BASE	Q34T6429	KG 1L	1PCS
20	SCREW FOR BASE	001T6017	2	3PCS
19	BKT-BASE	015T6338	1	1PCS
18	STAND	Q34T6359	KG L	1PCS
17	SCREW			2PCS
16	BKT-STAND	Q15T0004	1	1PCS
15	SCREW			12PCS
14	AV-BKT	Q15T0006	1 KG	1PCS
13	SCREW			2PCS
12	SCREW			4PCS
11	SCREW			4PCS
10	REAR COVER	Q34T6412	GM 1L	1PCS
9	SCREW			3PCS
8	SHIELD	Q85T0004	1	1PCS
7	MAIN FRAME	Q15T6254	4	1PCS
6	SCREW			2PCS
5	KEY COVER	Q33T4994	GMB1L	1PCS
4	FUNC KEY	Q33T4995	KG L	1PCS
3	PANEL			
2	BEZEL	Q34T6411	KGAIL	1PCS
1	SCREW			1PCS
Item	part name	part number	quantity	

1

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⑧	EPS CUSHION-TOP	44TA011-2	1	
⑦	ACCESSORY BOX	44TZ001-200-4B	1	Including remote controller, battery, manual, signal cable, power cable and service label ect.
⑥	PE BAG FOR BASE	45T88-606-3	1	
⑤	BASE ASS'Y		1	
④	PE BAG FOR TV SET	45T76-28-V3	1	
③	TV SET-HEAD		1	
②	EPS CUSHION-BOTTOM	44TA011-1	1	
①	CARTON	44TA011-709-1A	1	
ITEM	PART NAME	PART NUMBER	QUANTITY	NOTE

TOP VICTORY ELECTRONICS
TEL:86-591-5285555
FAX:86-591-5285447

DRAWN BY: URGHINXUE

CHECKED BY:

APPROVED BY:

FINISH:

MATERIAL:

PART NAME: PACKAGE PROCEDURE

COLOR:

WALL THICKNESS:

PART NO.

UNIT:

DATE:

VERSION: A

SCALE:

FIRST USED ON:
EAF6MHND2V0KMP
EAF6MHND2V0KMP
REVISION
VERSION A

13. BOM List

EAF6MTNBD2VOKMP

Location	Part No. for TPV	Description
	001T6017 2	SCREW FOR BASE
	040T 457834 5A GP	SN LABEL
	040T 581709 1B	CARTON LABEL
	044TZ001200 4B	PIZZA BOX
	045T 88606 3	PE BAG FOR BASE
	045T 88609 22	EPE COVER
	050T 500 1	CABLE TIE
	052T 1185	MIDDLE TAPE FOR CARTON
	052T 1185 24	VSC TAPE
	052T 1186	SMALL TAPE
	052T 1211 A	ADHESIVE TYPE
	052T6020 22	PROTECT FILM
	089T 173 56 31	AUDION CABLE
	089T 718HAA600	SIGNAL CABLE
	089T404A18N IS	POWER CORD
	089T410A18N IS	POWER CORD WALL-OUT FOR UK
	092TB1JX1A31GF	BATTERY
	095T8014 2524	WIRE HARNESS
	095T8014 3540	WIRE HARNESS
	095T8014 5567	WIRE HARNESS
	095T8014 8607	WIRE HARNESS
	095T8014 14637	WIRE HARNESS
	095T8018 30 86	NO APP HARNESS
	098TR7SWENTVSF	Remote FUHUA for VIEWSONIC
	0M1T 130 6 47	SCREW
	0M1T 340 6 47	SCREW
	0M1T 340 8 47	SCREW
	0M1T1730 6128	SCREW M3X6
	0Q1T 340 10120	SCREW T3X6
	0Q1T 340 12 47	SCREW T4X12
	0Q1T 930 6 47	SCREW
	0Q1T1030 10128	SCREW
	705LAF5FB34018	BACK COVER ASS'Y
	750TVMA1WB1	CMO 20.1"C1 (C2) PANEL
	ADPC24100B1P	POWER BOARD
	CBPFAF5BMWTMP	MAIN BOARD
	IOPFAA6P	IO BOARD FOR ROHS
	Q15T0006 2 KG	AV-BKT
	Q15T6254 5	MAIN FRAME
	Q33T4994 GMC1L	FUNC KEY COVER
	Q40T 200709 3A	RATING LABEL
	Q40T 58170927A	IO LABEL
	Q40T 58170931A	HI POT LABEL
	Q44T3121510522	SPONGE
	Q44T3121510528	PU FOAM
	Q44TA011 1	EPS
	Q44TA011 2	EPS
	Q44TA011709 3A	CARTON
	Q45T 99626 10	PE BAG
	Q85T0004 2	SHIELD

	S95T80183086	LVDS DSSY
	040T 58162435A	LABEL
	045T 76 28 V3	PE BAG
	Q41T2001709 4A	MANUAL
	Q41T780070918A	QSG
	011T 176 1 RL	WIRE HOLDER
	012T 394 3	RUBBER FOOT
	015T6184 1	Kensington lock
	015T6338 1	BKT-BASE
	078T 306502 KL	SPK 8OHM 5W KUAIDA
	078T 306502 KR	SPK 8OHM 5W KUAIDA
	0M1T 330 6120	SCREW
	0M1T 340 12 47	SCREW
	0M1T1130 6120	SCREW
	0Q1T 140 12120	SCREW
	0Q1T 330 6120	SCREW
	0Q1T 330 8120	SCREW 3X8mm
	0Q1T1030 6128	SCREW
	HJPFBA9P	HEAD PHONE JACK BOARD 20"TV
	IRPFAB2P	LCD TV IR BOARD
	KEPFA60KBP	KEY BOARD
	Q15T0004 1	BKT-STAND
	Q33T4995 YE L	BUTTON FUNC
	Q33T6456 1 C	LED LENS
	Q33T6457 ED C	IR LENS
	Q34T6359 YE L	STAND
	Q34T6411 YEB1L	BEZEL
	Q34T6412 GM 2L	REAR COVER
	Q34T6429 YE 1L	BASE
CN904	033T3802 14	CONN
CN903	033T800910Q H	PIN HEADER 1*10P R/A
	040T 45762420A	S/N LABEL
	051T 6 4503	RTV
PC991	056T 139 3A	PC123Y22FZOF
PC990	056T 139 3A	PC123Y22FZOF
PC950	056T 139 3A	PC123Y22FZOF
VR901	061T 46 6 GP	TNR 10V471K
RT901	061T 58030 W	NTCR
R934	061T152M10458G6267	100K OHM 5% 2W
R980	061T152M220 64	22 OHM 5% 2W
R918	061T152M22858G6267	0.22 OHM 5% 2W
R937	061T152M27858G6267	0.27 OHM 5% 2W
C906	063T 10722410S	0.22UF 275VAC X2
C910	063T213J105GFA	MPF CAP
C931	065T 1K222 2A6213	0.0022UF/1KV
C980	065T 1K471 5A6921	470PF +-10% 1KV Y5P
C901	065T306K4712BP	470PF +-10% 250VAC
C902	065T306K4712BP	470PF +-10% 250VAC
C905	065T306M1022BM	Y1.CAP.001UF 250VAC MURATA
C905	065T306M1022BP	Y1.CAP.001UF 250VAC MURATA
C903	065T306M2222BM	Y1.CAP.0022UF 250V AC MUR
C903	065T306M2222BP	Y1.CAP.0022UF 250V AC
C901	065T306M4712BM	Y1.CAP 470PF 250VAC MURATA
C902	065T306M4712BM	Y1.CAP 470PF 250VAC MURATA

C916	067T 4082015K	82UF
C967	067T 215102 2K	1000UF 10V
C968	067T 215102 2K	1000UF 10V
C967	067T 215102 2R	1000UF 10V FOR ROBYCON
C968	067T 215102 2R	1000UF 10V FOR ROBYCON
C960	067T 215471 3K	470UF 16V
C971	067T215B222 3R	ELCAP 2200UF M 16V 105°C RUBYCON
C972	067T215B222 3R	ELCAP 2200UF M 16V 105°C RUBYCON
C973	067T215H102 3R	1000UF 16V FOR ROBYCON
C981	067T215L102 6N	KY35VB1000M-L 5*25MM
C982	067T215L102 6N	KY35VB1000M-L 5*25MM
C960	067T215L471 3R	LOW E.E R470UF +-20% 16V
C973	067T215S102 3K	LOW ESR EC 1000UF 16V
C982	067T215S102 6K	1000UF 35V
C981	067T215S102 6K	1000UF 35V
C972	067T215S222 3K	2200UF 16V
C971	067T215S222 3K	2200UF 16V
L901	073G 174 64 L	LINE FILTER
L901	073G 174 64 LS	LINE FILTER
L901	073G 174 64 YS	LINE FILTER
L902	073L 174 49 LG	LINE FILTER
L902	073L 174 49LSG	LINE FILTER
L910	073T 174 66 T	PFC CHOKE
L910	073T 174 66 LS	E133 POWER INDUCTOR
L903	073T 174 71 L	LINE CHOKE
L904	073T 174 71 L	LINE CHOKE
L904	073T 174 71 HA	LINE CHOKE
L903	073T 174 71 HA	LINE CHOKE
L903	073T 174 71YSA	LINE CHOKE
L904	073T 174 71YSA	LINE CHOKE
L960	073T 253169 LS	7UH (PITCH-10)
L960	073T 253169 YS	7UH (PITCH-10)
L970	073T 253171 LS	2.13 uH
L980	073T 253171 LS	2.13 uH
L970	073T 253171 YS	2.13 uH
L980	073T 253171 YS	2.13 uH
T930	080TL20T 6 T	X'FMR
T930	080TL20T 6 LS	POWER X'FMR
CN901	087T 501 32 S	AC SOCKET
D930	093T1100 1A52T	BYV26E
D930	093T1100 1C52T	BYV26EGP
	705G F95 57 01	Q930/D910/Q910 ASS'Y
	705G F95 93 01	BD901 ASS'Y
	705G F95 93 02	D970 ASS'Y
	705G F95 93 03	D980 ASS'Y
	AD24100B1SMTP	TV POWER ASS'Y FOR SMT
CN104	033T3802 2H	WAFER 2P RIGHT ANGLE
CN102	033T3802 3H	WAFER 3P RIGHT ANGLE
CN602	033T3802 5H	WAFER 5P RIGHT ANGLE PI
CN107	033T3802 8H	WAFER 8P RIGHT ANGLE PITCH 2.0
CN106	033T801736A H	PIN HEADER 36P 2.0MM
CN101	033T802210A H	HEADER FEMALE 1*10P R/A 2.54MM
CN800	033T802720B H	WAFER

	040T 457624 1B	CPU LABEL
	040T 45762412B	CBPC LABEL
	044T3231508512	CHIELD D-SUB
U403	056T1133 77	EN29F040A-70JCP
U403	056T1133 80	A29040BL-70F PLCC-32
R898	061T152M479 64	4.7 OHM +-5% 2W
R720	061T152M479 64	4.7 OHM +-5% 2W
R712	061T152M479 64	4.7 OHM +-5% 2W
R714	061T152M759 64	7.5 OHM +-5% 2W
C606	067T215L102 3R	LOW E.S.R 1000UF +-20% 16V
L712	073T 253137 LS	CHOKO COIL
L702	073T 253137 LS	CHOKO COIL
L605	073T 253158 L	CHOKO COIL
L604	073T 253158 L	CHOKO COIL
L603	073T 253158 L	CHOKO COIL
L606	073T 253158 L	CHOKO COIL
CN603	088T 30214K	PHONE JACK
CN108	088T 35315F HA	D-SU13 15PIN
	090T 372 2	HEAT SINK
X401	093T 2253B J	14.31818MHZ/85C
X201	093T 2258B J	24.576MHZ/20PF/49US
X501	093T 2279B	28.32MHZ/14PF/49US
X402	093T 2281B	10.000MHZ/30PF/49US
	SMTFAF5BMWTMP	MAIN BOARD AUTO INS
	019T 553 8	SPRING
J101	033T802436C H	HEADER FEMALE 36P 2.0MM
R101	061T153M100 59	10 OHM 5% 3W
R146	061T153M100 59	10 OHM 5% 3W
	085T 583510	GASKET
J104	088T 78 10 2C	RCA JACK
J105	088T 78 10 2C	RCA JACK
J103	088T 78 1331N GP	RCA JACK 1*3P R/B/G
JP100	088T 78 137CL	AV-S-01-Y
J102	088T 35521A HC	SCART CONN.R/A 21PIN
X601	093T 2268B J	18.432MHZ
TU101	094TPASEALL 3P	FQ1216ME/IH-5(SV22)
	SMTIOPFAA6P	IO BOARD SMT FOR ROHS
	033F 206 20	DF11-20DS-2C/A2211H-2+10P
	033F 303 30TD1	TD00-30H P2407P30
	033F206T 24	DF11-2428SCF
	033F303TTD1	TD00-T 2407PS-00
	071F 100511 HS	10*5.5*20
CN1	033T3802 5H	WAFER 5P RIGHT ANGLE PI
CN2	088T 30211H CL	PHONE JACK 7PIN DARK GRAY
CN2	088T 30211H TO	PHONE JACK
GND	095T 900599	WIRE HARNESS
	SMTHJPFBA9P	LCD TV HJ BOARD
CN01	033T3802 4H	WAFER 4P RIGHT ANGLE
U01	056T 627503	IC GP18B38BCE-HB GUANGPU
	SMTIRPFAB2P	LCD TV IR BOARD
CN13	033T3802 4H	WAFER 4P RIGHT ANGLE
S11	077T 600 1GCJ	TACT SWITCH TSPB-2 -NP
S10	077T 600 1GCJ	TACT SWITCH TSPB-2 -NP
S9	077T 600 1GCJ	TACT SWITCH TSPB-2 -NP

S8	077T 600 1GCJ	TACT SWITCH TSPB-2 -NP
S14	077T 600 1GCJ	TACT SWITCH TSPB-2 -NP
S13	077T 600 1GCJ	TACT SWITCH TSPB-2 -NP
S12	077T 600 1GCJ	TACT SWITCH TSPB-2 -NP
	095T 900 53	HARNESS 95MM
	SMTKEPFA60K9P	KEY BOARD SMT FOR ROHS
	005T 42 1	CUSHION
	012T 372 1	MICA
Q930	057T 600 35	STP8NK80ZFP BY ST TO-220FP
Q910	057T 667 24	STP20NM60 FP
	090T6268 1	HEAT SINK
D910	093T 220 23	DIODE FMX-G26S TO-220 SANKEN
	0M1T1730 10128	SCREW M3X10
	090T6267 1	HEAT SINK
BD901	093T 50460 14	GBU 805
	0M1T1730 8128	SCREW M3x8
	090T6269 1	HEAT SINK
D970	093T 60242	SRF20150C 20A 150V TO220BY MOS
	0M1T1730 10128	SCREW M3X10
	090T6269 2	HEAT SINK
D980	093T 60244	SRF20200-C T0-220AB
	0M1T1730 10128	SCREW M3X10
IC960	056T 379 37	FP5001DR-LR
IC930	056T 379 61	IC LD7575PS SOP-8 LEADTREND
IC910	056T 538 6	FA5500AN
Q931	057T 417 4	CHIP PMBS3904 BY PHILIPS
Q961	057T 417 4	CHIP PMBS3904 BY PHILIPS
Q990	057T 417 4	CHIP PMBS3904 BY PHILIPS
Q991	057T 417 4	CHIP PMBS3904 BY PHILIPS
Q940	057T 417 6	PMBS3906/PHILIPS-SMT
Q962	057T 417 6	PMBS3906/PHILIPS-SMT
Q960	057T 763 7	AOD405L
Q960	057T 763 9	P06P03LDG
R922	061V0603103	CHIPR 10K OHM+-5% 1/10W
R914	061V0603103	CHIPR 10K OHM+-5% 1/10W
R913	061V0603103	CHIPR 10K OHM+-5% 1/10W
R965	061V0603200 2F	CHIP 20K OHM 1/16W 1%
R951	061V0603243 1F	CHIP 2.43K OHM 1/16W 1%
R954	061V0603243 1F	CHIP 2.43K OHM 1/16W 1%
R963	061V0603300 1F	CHIP 3KOHM 1/16W 1%
R961	061V0603430 2F	CHIP 43K OHM 1/16W 1%
R966	061V0603470 1F	CHIP 4.7K OHM 1/16W 1%
R964	061V0603471	CHIPR 470 OHM+-5% 1/16W
R962	061V0603473	CHIP 47K OHM 1/16W
JR931	061V0805000	CHIP 0OHM 1/10W
R940	061V0805103	CHIP 10K OHM 1/10W
R960	061V0805330 2F	CHIP 33K OHM 1/10W 1%
R969	061V1206000	CHIP 0 OHM 1/8W
R967	061V1206000	CHIP 0 OHM 1/8W
JR990	061V1206000	CHIP 0 OHM 1/8W
JR960	061V1206000	CHIP 0 OHM 1/8W
JR940	061V1206000	CHIP 0 OHM 1/8W
JR930	061V1206000	CHIP 0 OHM 1/8W
JR910	061V1206000	CHIP 0 OHM 1/8W

R916	061V1206100	CHIP 10 OHM 1/8W
R935	061V1206100	CHIP 10 OHM 1/8W
R968	061V1206102	CHIP 1K OHM 5% 1/8W
R970	061V1206102	CHIP 1K OHM 5% 1/8W
R941	061V1206103	CHIP 10KOHM 1/4W
R992	061V1206103	CHIP 10KOHM 1/4W
R932	061V1206104	CHIP 100K OHM 1/8W 5%
R933	061V1206104	CHIP 100K OHM 1/8W 5%
R938	061V1206202	CHIP 2K 5% 1/8W
R943	061V1206202	CHIP 2K 5% 1/8W
R991	061V1206202	CHIP 2K 5% 1/8W
R930	061V1206204	CHIP 200KOHM 1/4W
R931	061V1206204	CHIP 200KOHM 1/4W
R942	061V1206332	CHIP 3.3KOHM 1/8W 5%
R915	061V1206393	CHIP 39K OHM 5% 1/8W
R901	061V1206394	RST CHIPR 390KOHM +-5% 1/4W
R902	061V1206394	RST CHIPR 390KOHM +-5% 1/4W
R903	061V1206394	RST CHIPR 390KOHM +-5% 1/4W
R917	061V1206471	CHIP 470OHM 1/8W
R936	061V1206471	CHIP 470OHM 1/8W
R910	061V1206514	CHIP 510K OHM 1/8W
R911	061V1206514	CHIP 510K OHM 1/8W
R912	061V1206514	CHIP 510K OHM 1/8W
R919	061V1206514	CHIP 510K OHM 1/8W
R920	061V1206514	CHIP 510K OHM 1/8W
R921	061V1206514	CHIP 510K OHM 1/8W
C914	065T0603102 32	CHIP 1000PF 50V X7R
C930	065T0603102 32	CHIP 1000PF 50V X7R
C932	065T0603102 32	CHIP 1000PF 50V X7R
C911	065T0603103 32	CHIP 0.01UF 50V X7R
C950	065T0603104 32	CHIP 0.1UF 50V X7R
C951	065T0603104 32	CHIP 0.1UF 50V X7R
C961	065T0603104 32	CHIP 0.1UF 50V X7R
C963	065T0603104 32	CHIP 0.1UF 50V X7R
C965	065T0603104 32	CHIP 0.1UF 50V X7R
C969	065T0603104 32	CHIP 0.1UF 50V X7R
C974	065T0603104 32	CHIP 0.1UF 50V X7R
C983	065T0603104 32	CHIP 0.1UF 50V X7R
C913	065T0603473 32	CHIP 0.047UF 50V X7R
C912	065T0603474 17	CHIP 0.47UF 16V Y5V
C966	065T0603474 17	CHIP 0.47UF 16V Y5V
C940	065T0603474 27	CHIP 0.47UF 25V Y5V
C975	065T1206102 726213	CHIP 1000PF 500V X7R
C975	065T1206102 726784	CHIP 1000PF 500V X7R
C975	065T1206102 726857	CHIP 1000PF 500V X7R
D911	093T 6432P	LL4148 BY PANJIT
D922	093T 6432P	LL4148 BY PANJIT
D931	093T 6432P	LL4148 BY PANJIT
D990	093T 6432P	LL4148 BY PANJIT
D991	093T 6432P	LL4148 BY PANJIT
D911	093T 6432V	LL4148-GSO8 SMD BY VISHA
D922	093T 6432V	LL4148-GSO8 SMD BY VISHA
D931	093T 6432V	LL4148-GSO8 SMD BY VISHA
D990	093T 6432V	LL4148-GSO8 SMD BY VISHA

D991	093T 6432V	LL4148-GS08 SMD BY VISHA
ZD930	093T 39S 15 T	RLZ15B
D962	093T 39S 63 T	SMAJ22A
D962	093T 39S 64 T	SMAJ22A
D962	093T 39S501 T	SMAJ22A
D960	093T8004 2	SBM84PT
D961	093T8004 2	SBM84PT
	AD24100B1AIP	TV POWER ASS'Y FOR AI
U706	056T 133 30AAC	AZ1117H-1.8-E1
U602	056T 535 7	MAX9714ETJ
U401	056T 562600	SVPTMEX52-LF QFP-256
U710	056T 563 7	AIC1084-33PM TO-263 AIC
U709	056T 563 7	AIC1084-33PM TO-263 AIC
U707	056T 563 25	AIC1084-33PE
U714	056T 563 27	AIC1117A-18PY SOT223 AIC
U715	056T 563 27	AIC1117A-18PY SOT223 AIC
U716	056T 563 27	AIC1117A-18PY SOT223 AIC
U713	056T 563 33	AIC1084-18PE
U711	056T 563 33	AIC1084-18PE
U712	056T 563 34	AIC1084-18PM
U704	056T 563 44	AME8815BEGT 250Z SOP-223
U702	056T 563 44	AME8815BEGT 250Z SOP-223
U705	056T 585 9	IC AP1117E50LA ANACHIP
U703	056T 585 4A	AP1117E33LA
U708	056T 585 4A	AP1117E33LA
U103	056T 614 1	74HC4052D
U605	056T 614 1	74HC4052D
U407	056T 615 9	NO APP EM6A9320BI-5MG
U408	056T 615103	IC61C256AH-12T TSOP-1
U408	056T 615104	LY61256RL-12E TSOP-1
U408	056T 615105	AS 7C256A-10TIN TSOP-1
U603	056T 616 3	PT2308S SO-8 PTC
U201	056T 623 11	SAA7117AE/V2/G BGA-156
U104	056T 634 2	PI5V330Q QSOP-16 BY PER
U604	056T 638601	CS4344-CZZ
U501	056T 642600	SI9011CLU
U502	056T 662 4	RCLAMP0514M.TBT
U504	056T 662 4	RCLAMP0514M.TBT
U402	056T1125182	IC M30300SAGP RENESAS
U402	056T1125610	M30620SPGP LQFP-100PIN
U102	056T1133 16	24LC21A/SG
U503	056T1133 34	M24C02-WMN6TP
U406	056T1133 78	24LC64 ISNG SOIC(150MIL)
U101	056T4LVC 14 P	74LVC14ADT
U506	056T566N600	NDC7002N SOT-6 FAIRCHILD
Q708	057T 417 4	CHIP PMBS3904 BY PHILIPS
Q706	057T 417 4	CHIP PMBS3904 BY PHILIPS
Q704	057T 417 4	CHIP PMBS3904 BY PHILIPS
Q703	057T 417 4	CHIP PMBS3904 BY PHILIPS
Q601	057T 417 4	CHIP PMBS3904 BY PHILIPS
Q404	057T 417 4	CHIP PMBS3904 BY PHILIPS
Q401	057T 417 4	CHIP PMBS3904 BY PHILIPS
Q105	057T 417 4	CHIP PMBS3904 BY PHILIPS
Q104	057T 417 4	CHIP PMBS3904 BY PHILIPS

Q103	057T 417 4	CHIP PMBS3904 BY PHILIPS
Q403	057T 417 6	PMBS3906/PHILIPS-SMT
Q106	057T 417 6	PMBS3906/PHILIPS-SMT
Q101	057T 417 6	PMBS3906/PHILIPS-SMT
Q102	057T 759 2	RK7002
Q107	057T 759 2	RK7002
U505	057T 763 15	FDC6301N SSOT-6
Q701	057T 763 3B	AM9435P.T1-PF SO-8
Q702	057T 763 3B	AM9435P.T1-PF SO-8
Q705	057T 763 3B	AM9435P.T1-PF SO-8
Q707	057T 763 3B	AM9435P.T1-PF SO-8
R708	061L0603104	RST SM 0603 RC0603 100K PM5 R
R654	061L0603104	RST SM 0603 RC0603 100K PM5 R
R653	061L0603104	RST SM 0603 RC0603 100K PM5 R
R652	061L0603104	RST SM 0603 RC0603 100K PM5 R
R651	061L0603104	RST SM 0603 RC0603 100K PM5 R
R633	061L0603104	RST SM 0603 RC0603 100K PM5 R
R632	061L0603104	RST SM 0603 RC0603 100K PM5 R
RN41	061V 125000 8	CHIP ARRAY 0 OHM
RN59	061V 125101 8	CHIP ARRAY 100OHM 1/15W 8P4R
RN58	061V 125101 8	CHIP ARRAY 100OHM 1/15W 8P4R
RN25	061V 125101 8	CHIP ARRAY 100OHM 1/15W 8P4R
RN24	061V 125101 8	CHIP ARRAY 100OHM 1/15W 8P4R
RN12	061V 125103 8	CHIP ARRAY 10K OHM 1/16W 8P4R
RN1	061V 125150 8	CHIP ARRAY 15 OHM 1/16W 8P4R
RN2	061V 125150 8	CHIP ARRAY 15 OHM 1/16W 8P4R
RN3	061V 125150 8	CHIP ARRAY 15 OHM 1/16W 8P4R
RN4	061V 125150 8	CHIP ARRAY 15 OHM 1/16W 8P4R
RN5	061V 125150 8	CHIP ARRAY 15 OHM 1/16W 8P4R
RN6	061V 125150 8	CHIP ARRAY 15 OHM 1/16W 8P4R
RN7	061V 125150 8	CHIP ARRAY 15 OHM 1/16W 8P4R
RN8	061V 125150 8	CHIP ARRAY 15 OHM 1/16W 8P4R
RN15	061V 125330 8	CHIP ARRAY 33 OHM 1/16W 8P4R
RN16	061V 125330 8	CHIP ARRAY 33 OHM 1/16W 8P4R
RN17	061V 125330 8	CHIP ARRAY 33 OHM 1/16W 8P4R
RN18	061V 125330 8	CHIP ARRAY 33 OHM 1/16W 8P4R
RN19	061V 125330 8	CHIP ARRAY 33 OHM 1/16W 8P4R
RN20	061V 125330 8	CHIP ARRAY 33 OHM 1/16W 8P4R
RN21	061V 125330 8	CHIP ARRAY 33 OHM 1/16W 8P4R
RN27	061V 125330 8	CHIP ARRAY 33 OHM 1/16W 8P4R
RN28	061V 125330 8	CHIP ARRAY 33 OHM 1/16W 8P4R
RN29	061V 125330 8	CHIP ARRAY 33 OHM 1/16W 8P4R
RN30	061V 125330 8	CHIP ARRAY 33 OHM 1/16W 8P4R
RN31	061V 125330 8	CHIP ARRAY 33 OHM 1/16W 8P4R
RN32	061V 125330 8	CHIP ARRAY 33 OHM 1/16W 8P4R
RN39	061V 125330 8	CHIP ARRAY 33 OHM 1/16W 8P4R
RN40	061V 125330 8	CHIP ARRAY 33 OHM 1/16W 8P4R
RN42	061V 125330 8	CHIP ARRAY 33 OHM 1/16W 8P4R
RN11	061V 125333 8	ARRAY 33K OHM 1/16 8P4R
R431	061V0603000	CHIPR 0OHM +-5% 1/10W
R394	061V0603000	CHIPR 0OHM +-5% 1/10W
R23	061V0603000	CHIPR 0OHM +-5% 1/10W
R20	061V0603000	CHIPR 0OHM +-5% 1/10W
R151	061V0603000	CHIPR 0OHM +-5% 1/10W

R150	061V0603000	CHIPR 0OHM +-5% 1/10W
R432	061V0603000	CHIPR 0OHM +-5% 1/10W
R481	061V0603000	CHIPR 0OHM +-5% 1/10W
R482	061V0603000	CHIPR 0OHM +-5% 1/10W
R483	061V0603000	CHIPR 0OHM +-5% 1/10W
R485	061V0603000	CHIPR 0OHM +-5% 1/10W
R487	061V0603000	CHIPR 0OHM +-5% 1/10W
R488	061V0603000	CHIPR 0OHM +-5% 1/10W
R489	061V0603000	CHIPR 0OHM +-5% 1/10W
R490	061V0603000	CHIPR 0OHM +-5% 1/10W
R494	061V0603000	CHIPR 0OHM +-5% 1/10W
R5	061V0603000	CHIPR 0OHM +-5% 1/10W
R500	061V0603000	CHIPR 0OHM +-5% 1/10W
R502	061V0603000	CHIPR 0OHM +-5% 1/10W
R519	061V0603000	CHIPR 0OHM +-5% 1/10W
R603	061V0603000	CHIPR 0OHM +-5% 1/10W
R615	061V0603000	CHIPR 0OHM +-5% 1/10W
R616	061V0603000	CHIPR 0OHM +-5% 1/10W
R636	061V0603000	CHIPR 0OHM +-5% 1/10W
R637	061V0603000	CHIPR 0OHM +-5% 1/10W
R820	061V0603000	CHIPR 0OHM +-5% 1/10W
R823	061V0603000	CHIPR 0OHM +-5% 1/10W
R620	061V0603000	CHIPR 0OHM +-5% 1/10W
R623	061V0603000	CHIPR 0OHM +-5% 1/10W
R149	061V0603000	CHIPR 0OHM +-5% 1/10W
R148	061V0603000	CHIPR 0OHM +-5% 1/10W
R114	061V0603000	CHIPR 0OHM +-5% 1/10W
R111	061V0603000	CHIPR 0OHM +-5% 1/10W
R110	061V0603000	CHIPR 0OHM +-5% 1/10W
R109	061V0603000	CHIPR 0OHM +-5% 1/10W
FB9	061V0603000	CHIPR 0OHM +-5% 1/10W
R6	061V0603100	CHIP 10 OHM 1/16W
R648	061V0603101	CHIPR 100 OHM+-5% 1/10W
R647	061V0603101	CHIPR 100 OHM+-5% 1/10W
R640	061V0603101	CHIPR 100 OHM+-5% 1/10W
R451	061V0603101	CHIPR 100 OHM+-5% 1/10W
R450	061V0603101	CHIPR 100 OHM+-5% 1/10W
R440	061V0603101	CHIPR 100 OHM+-5% 1/10W
R437	061V0603101	CHIPR 100 OHM+-5% 1/10W
R436	061V0603101	CHIPR 100 OHM+-5% 1/10W
R435	061V0603101	CHIPR 100 OHM+-5% 1/10W
R427	061V0603101	CHIPR 100 OHM+-5% 1/10W
R433	061V0603101	CHIPR 100 OHM+-5% 1/10W
R428	061V0603101	CHIPR 100 OHM+-5% 1/10W
R649	061V0603101	CHIPR 100 OHM+-5% 1/10W
R662	061V0603101	CHIPR 100 OHM+-5% 1/10W
R661	061V0603101	CHIPR 100 OHM+-5% 1/10W
R862	061V0603101	CHIPR 100 OHM+-5% 1/10W
R842	061V0603101	CHIPR 100 OHM+-5% 1/10W
R841	061V0603101	CHIPR 100 OHM+-5% 1/10W
R836	061V0603101	CHIPR 100 OHM+-5% 1/10W
R835	061V0603101	CHIPR 100 OHM+-5% 1/10W
R832	061V0603101	CHIPR 100 OHM+-5% 1/10W
R829	061V0603101	CHIPR 100 OHM+-5% 1/10W

R817	061V0603101	CHIPR 100 OHM+-5% 1/10W
R816	061V0603101	CHIPR 100 OHM+-5% 1/10W
R800	061V0603101	CHIPR 100 OHM+-5% 1/10W
R650	061V0603101	CHIPR 100 OHM+-5% 1/10W
R426	061V0603101	CHIPR 100 OHM+-5% 1/10W
R425	061V0603101	CHIPR 100 OHM+-5% 1/10W
R415	061V0603101	CHIPR 100 OHM+-5% 1/10W
R105	061V0603101	CHIPR 100 OHM+-5% 1/10W
R146	061V0603102	CHIPR 1K OHM+-5% 1/10W
R631	061V0603102	CHIPR 1K OHM+-5% 1/10W
R630	061V0603102	CHIPR 1K OHM+-5% 1/10W
R1	061V0603102	CHIPR 1K OHM+-5% 1/10W
R106	061V0603102	CHIPR 1K OHM+-5% 1/10W
R12	061V0603102	CHIPR 1K OHM+-5% 1/10W
R129	061V0603102	CHIPR 1K OHM+-5% 1/10W
R130	061V0603102	CHIPR 1K OHM+-5% 1/10W
R445	061V0603102	CHIPR 1K OHM+-5% 1/10W
R509	061V0603102	CHIPR 1K OHM+-5% 1/10W
R531	061V0603102	CHIPR 1K OHM+-5% 1/10W
R11	061V0603103	CHIPR 10K OHM+-5% 1/10W
R15	061V0603103	CHIPR 10K OHM+-5% 1/10W
R17	061V0603103	CHIPR 10K OHM+-5% 1/10W
R252	061V0603103	CHIPR 10K OHM+-5% 1/10W
R253	061V0603103	CHIPR 10K OHM+-5% 1/10W
R579	061V0603103	CHIPR 10K OHM+-5% 1/10W
R646	061V0603103	CHIPR 10K OHM+-5% 1/10W
R645	061V0603103	CHIPR 10K OHM+-5% 1/10W
R644	061V0603103	CHIPR 10K OHM+-5% 1/10W
R642	061V0603103	CHIPR 10K OHM+-5% 1/10W
R629	061V0603103	CHIPR 10K OHM+-5% 1/10W
R624	061V0603103	CHIPR 10K OHM+-5% 1/10W
R478	061V0603103	CHIPR 10K OHM+-5% 1/10W
R475	061V0603103	CHIPR 10K OHM+-5% 1/10W
R449	061V0603103	CHIPR 10K OHM+-5% 1/10W
R448	061V0603103	CHIPR 10K OHM+-5% 1/10W
R447	061V0603103	CHIPR 10K OHM+-5% 1/10W
R414	061V0603103	CHIPR 10K OHM+-5% 1/10W
R363	061V0603103	CHIPR 10K OHM+-5% 1/10W
R362	061V0603103	CHIPR 10K OHM+-5% 1/10W
R635	061V0603104	CHIPR 100K OHM+-5% 1/10W
R634	061V0603104	CHIPR 100K OHM+-5% 1/10W
R848	061V0603104	CHIPR 100K OHM+-5% 1/10W
R104	061V0603104	CHIPR 100K OHM+-5% 1/10W
R411	061V0603104	CHIPR 100K OHM+-5% 1/10W
R643	061V0603104	CHIPR 100K OHM+-5% 1/10W
R707	061V0603104	CHIPR 100K OHM+-5% 1/10W
R574	061V0603105	CHIP 1MOHM 1/16W
R847	061V0603105	CHIP 1MOHM 1/16W
R700	061V0603120 0F	CHIP 120OHM 0603 1%
R123	061V0603150	CHIP 15 OHM 1/16W
R125	061V0603150	CHIP 15 OHM 1/16W
R126	061V0603150	CHIP 15 OHM 1/16W
R127	061V0603150	CHIP 15 OHM 1/16W
R884	061V0603183	CHIP 18K OHM 1/16W

R886	061V0603183	CHIP 18K OHM 1/16W
R284	061V0603202	CHIP 2K OHM 1/16W
R600	061V0603220	CHIPR 22 OHM+-5% 1/10W
R418	061V0603220	CHIPR 22 OHM+-5% 1/10W
R412	061V0603220	CHIPR 22 OHM+-5% 1/10W
R393	061V0603220	CHIPR 22 OHM+-5% 1/10W
R390	061V0603220	CHIPR 22 OHM+-5% 1/10W
R389	061V0603220	CHIPR 22 OHM+-5% 1/10W
R245	061V0603220	CHIPR 22 OHM+-5% 1/10W
R243	061V0603220	CHIPR 22 OHM+-5% 1/10W
R240	061V0603220	CHIPR 22 OHM+-5% 1/10W
R239	061V0603220	CHIPR 22 OHM+-5% 1/10W
R443	061V0603221	220 OHM
R113	061V0603222	CHIPR 2.2K OHM+-5% 1/10W
R896	061V0603223	CHIP 22KOHM 1/16W
R881	061V0603223	CHIP 22KOHM 1/16W
R880	061V0603223	CHIP 22KOHM 1/16W
R717	061V0603223	CHIP 22KOHM 1/16W
R703	061V0603223	CHIP 22KOHM 1/16W
R573	061V0603330	CHIP 33 OH 1/16W
R571	061V0603330	CHIP 33 OH 1/16W
R551	061V0603330	CHIP 33 OH 1/16W
R550	061V0603330	CHIP 33 OH 1/16W
R400	061V0603330	CHIP 33 OH 1/16W
R397	061V0603330	CHIP 33 OH 1/16W
R241	061V0603330	CHIP 33 OH 1/16W
R846	061V0603333	CHIP 33K OHM 1/10W
R849	061V0603333	CHIP 33K OHM 1/10W
R491	061V0603470	CHIP 47OHM 1/16W 1%
R495	061V0603470	CHIP 47OHM 1/16W 1%
R501	061V0603470	CHIP 47OHM 1/16W 1%
R503	061V0603470	CHIP 47OHM 1/16W 1%
R13	061V0603471	CHIPR 470 OHM+-5% 1/16W
R473	061V0603471	CHIPR 470 OHM+-5% 1/16W
R476	061V0603471	CHIPR 470 OHM+-5% 1/16W
R885	061V0603471	CHIPR 470 OHM+-5% 1/16W
R887	061V0603471	CHIPR 470 OHM+-5% 1/16W
R568	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R552	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R536	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R528	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R454	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R453	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R452	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R439	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R423	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R834	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R833	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R814	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R812	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R811	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R810	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R809	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R808	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W

R807	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R801	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R577	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R840	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R860	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R861	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R572	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R160	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R161	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R575	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R821	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R822	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R826	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R827	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R828	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R156	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R157	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R2	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R281	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R282	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R283	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R392	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R419	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R422	061V0603472	RST CHIPR 4.7KOHM +-5% 1/10W
R323	061V0603473	CHIP 47K OHM 1/16W
R895	061V0603473	CHIP 47K OHM 1/16W
R716	061V0603473	CHIP 47K OHM 1/16W
R702	061V0603473	CHIP 47K OHM 1/16W
R628	061V0603473	CHIP 47K OHM 1/16W
R627	061V0603473	CHIP 47K OHM 1/16W
R626	061V0603473	CHIP 47K OHM 1/16W
R417	061V0603473	CHIP 47K OHM 1/16W
R625	061V0603473	CHIP 47K OHM 1/16W
R124	061V0603510	CHIP 51 OHM 1/16W
R128	061V0603510	CHIP 51 OHM 1/16W
R722	061V0603622	CHIPR 6.2KOHM +-5% 1/10W
R723	061V0603622	CHIPR 6.2KOHM +-5% 1/10W
R9	061V0603680	CHIP 68 OHM 1/16W
R598	061V0603680	CHIP 68 OHM 1/16W
R597	061V0603680	CHIP 68 OHM 1/16W
R538	061V0603680	CHIP 68 OHM 1/16W
R537	061V0603680	CHIP 68 OHM 1/16W
R10	061V0603680	CHIP 68 OHM 1/16W
R547	061V0603750	CHIP 75OHM 1/16W
R548	061V0603750	CHIP 75OHM 1/16W
R549	061V0603750	CHIP 75OHM 1/16W
R825	061V0603750	CHIP 75OHM 1/16W
R882	061V0603750	CHIP 75OHM 1/16W
R883	061V0603750	CHIP 75OHM 1/16W
R444	061V0603822	CHIP 8.2K OHM 1/16W
L601	061V0805000	CHIP 0OHM 1/10W
L610	061V0805000	CHIP 0OHM 1/10W
R704	061V0805302	CHIP 3K OHM 1/10W
R897	061V0805302	CHIP 3K OHM 1/10W

F702	061V1206000	CHIP 0 OHM 1/8W
F703	061V1206000	CHIP 0 OHM 1/8W
F704	061V1206000	CHIP 0 OHM 1/8W
R706	061V1206620 0F	CHIP 620OHM 1/8W 1%
C114	065T0603101 32	CHIP 100PF 50V X7R
C338	065T0603101 32	CHIP 100PF 50V X7R
C339	065T0603101 32	CHIP 100PF 50V X7R
C414	065T0603101 32	CHIP 100PF 50V X7R
C629	065T0603101 32	CHIP 100PF 50V X7R
C630	065T0603101 32	CHIP 100PF 50V X7R
C804	065T0603101 32	CHIP 100PF 50V X7R
C130	065T0603102 32	CHIP 1000PF 50V X7R
C129	065T0603102 32	CHIP 1000PF 50V X7R
C131	065T0603102 32	CHIP 1000PF 50V X7R
C132	065T0603102 32	CHIP 1000PF 50V X7R
C138	065T0603102 32	CHIP 1000PF 50V X7R
C626	065T0603102 32	CHIP 1000PF 50V X7R
C465	065T0603102 32	CHIP 1000PF 50V X7R
C464	065T0603102 32	CHIP 1000PF 50V X7R
C463	065T0603102 32	CHIP 1000PF 50V X7R
C462	065T0603102 32	CHIP 1000PF 50V X7R
C461	065T0603102 32	CHIP 1000PF 50V X7R
C460	065T0603102 32	CHIP 1000PF 50V X7R
C457	065T0603102 32	CHIP 1000PF 50V X7R
C456	065T0603102 32	CHIP 1000PF 50V X7R
C455	065T0603102 32	CHIP 1000PF 50V X7R
C454	065T0603102 32	CHIP 1000PF 50V X7R
C453	065T0603102 32	CHIP 1000PF 50V X7R
C452	065T0603102 32	CHIP 1000PF 50V X7R
C437	065T0603102 32	CHIP 1000PF 50V X7R
C436	065T0603102 32	CHIP 1000PF 50V X7R
C433	065T0603102 32	CHIP 1000PF 50V X7R
C432	065T0603102 32	CHIP 1000PF 50V X7R
C431	065T0603102 32	CHIP 1000PF 50V X7R
C355	065T0603102 32	CHIP 1000PF 50V X7R
C329	065T0603102 32	CHIP 1000PF 50V X7R
C125	065T0603102 32	CHIP 1000PF 50V X7R
C123	065T0603102 32	CHIP 1000PF 50V X7R
C345	065T0603103 32	CHIP 0.01UF 50V X7R
C440	065T0603103 32	CHIP 0.01UF 50V X7R
C443	065T0603103 32	CHIP 0.01UF 50V X7R
C644	065T0603103 32	CHIP 0.01UF 50V X7R
C645	065T0603103 32	CHIP 0.01UF 50V X7R
C646	065T0603103 32	CHIP 0.01UF 50V X7R
C647	065T0603103 32	CHIP 0.01UF 50V X7R
C73	065T0603103 32	CHIP 0.01UF 50V X7R
C78	065T0603103 32	CHIP 0.01UF 50V X7R
C79	065T0603103 32	CHIP 0.01UF 50V X7R
C80	065T0603103 32	CHIP 0.01UF 50V X7R
C81	065T0603103 32	CHIP 0.01UF 50V X7R
C82	065T0603103 32	CHIP 0.01UF 50V X7R
C87	065T0603103 32	CHIP 0.01UF 50V X7R
C812	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C810	065T0603104 12	MLCC 0603 0.1UF K 16V X7R

C731	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C730	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C650	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C121	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C122	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C124	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C127	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C128	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C356	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C360	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C430	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C434	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C439	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C442	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C444	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C448	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C449	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C450	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C451	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C458	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C459	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C118	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C51	065T0603104 32	CHIP 0.1UF 50V X7R
C52	065T0603104 32	CHIP 0.1UF 50V X7R
C53	065T0603104 32	CHIP 0.1UF 50V X7R
C54	065T0603104 32	CHIP 0.1UF 50V X7R
C55	065T0603104 32	CHIP 0.1UF 50V X7R
C56	065T0603104 32	CHIP 0.1UF 50V X7R
C57	065T0603104 32	CHIP 0.1UF 50V X7R
C58	065T0603104 32	CHIP 0.1UF 50V X7R
C59	065T0603104 32	CHIP 0.1UF 50V X7R
C6	065T0603104 32	CHIP 0.1UF 50V X7R
C60	065T0603104 32	CHIP 0.1UF 50V X7R
C602	065T0603104 32	CHIP 0.1UF 50V X7R
C603	065T0603104 32	CHIP 0.1UF 50V X7R
C604	065T0603104 32	CHIP 0.1UF 50V X7R
C605	065T0603104 32	CHIP 0.1UF 50V X7R
C61	065T0603104 32	CHIP 0.1UF 50V X7R
C614	065T0603104 32	CHIP 0.1UF 50V X7R
C327	065T0603104 32	CHIP 0.1UF 50V X7R
C328	065T0603104 32	CHIP 0.1UF 50V X7R
C346	065T0603104 32	CHIP 0.1UF 50V X7R
C37	065T0603104 32	CHIP 0.1UF 50V X7R
C38	065T0603104 32	CHIP 0.1UF 50V X7R
C387	065T0603104 32	CHIP 0.1UF 50V X7R
C40	065T0603104 32	CHIP 0.1UF 50V X7R
C402	065T0603104 32	CHIP 0.1UF 50V X7R
C404	065T0603104 32	CHIP 0.1UF 50V X7R
C408	065T0603104 32	CHIP 0.1UF 50V X7R
C410	065T0603104 32	CHIP 0.1UF 50V X7R
C412	065T0603104 32	CHIP 0.1UF 50V X7R
C415	065T0603104 32	CHIP 0.1UF 50V X7R
C44	065T0603104 32	CHIP 0.1UF 50V X7R
C45	065T0603104 32	CHIP 0.1UF 50V X7R

C47	065T0603104 32	CHIP 0.1UF 50V X7R
C49	065T0603104 32	CHIP 0.1UF 50V X7R
C62	065T0603104 32	CHIP 0.1UF 50V X7R
C725	065T0603104 32	CHIP 0.1UF 50V X7R
C726	065T0603104 32	CHIP 0.1UF 50V X7R
C74	065T0603104 32	CHIP 0.1UF 50V X7R
C75	065T0603104 32	CHIP 0.1UF 50V X7R
C76	065T0603104 32	CHIP 0.1UF 50V X7R
C77	065T0603104 32	CHIP 0.1UF 50V X7R
C8	065T0603104 32	CHIP 0.1UF 50V X7R
C807	065T0603104 32	CHIP 0.1UF 50V X7R
C813	065T0603104 32	CHIP 0.1UF 50V X7R
C819	065T0603104 32	CHIP 0.1UF 50V X7R
C831	065T0603104 32	CHIP 0.1UF 50V X7R
C835	065T0603104 32	CHIP 0.1UF 50V X7R
C837	065T0603104 32	CHIP 0.1UF 50V X7R
C85	065T0603104 32	CHIP 0.1UF 50V X7R
C86	065T0603104 32	CHIP 0.1UF 50V X7R
C9	065T0603104 32	CHIP 0.1UF 50V X7R
C277	065T0603104 32	CHIP 0.1UF 50V X7R
C620	065T0603104 32	CHIP 0.1UF 50V X7R
C628	065T0603104 32	CHIP 0.1UF 50V X7R
C63	065T0603104 32	CHIP 0.1UF 50V X7R
C648	065T0603104 32	CHIP 0.1UF 50V X7R
C649	065T0603104 32	CHIP 0.1UF 50V X7R
C69	065T0603104 32	CHIP 0.1UF 50V X7R
C7	065T0603104 32	CHIP 0.1UF 50V X7R
C70	065T0603104 32	CHIP 0.1UF 50V X7R
C701	065T0603104 32	CHIP 0.1UF 50V X7R
C702	065T0603104 32	CHIP 0.1UF 50V X7R
C707	065T0603104 32	CHIP 0.1UF 50V X7R
C71	065T0603104 32	CHIP 0.1UF 50V X7R
C714	065T0603104 32	CHIP 0.1UF 50V X7R
C716	065T0603104 32	CHIP 0.1UF 50V X7R
C72	065T0603104 32	CHIP 0.1UF 50V X7R
C720	065T0603104 32	CHIP 0.1UF 50V X7R
C722	065T0603104 32	CHIP 0.1UF 50V X7R
C326	065T0603104 32	CHIP 0.1UF 50V X7R
C24	065T0603104 32	CHIP 0.1UF 50V X7R
C23	065T0603104 32	CHIP 0.1UF 50V X7R
C225	065T0603104 32	CHIP 0.1UF 50V X7R
C221	065T0603104 32	CHIP 0.1UF 50V X7R
C22	065T0603104 32	CHIP 0.1UF 50V X7R
C21	065T0603104 32	CHIP 0.1UF 50V X7R
C20	065T0603104 32	CHIP 0.1UF 50V X7R
C2	065T0603104 32	CHIP 0.1UF 50V X7R
C19	065T0603104 32	CHIP 0.1UF 50V X7R
C15	065T0603104 32	CHIP 0.1UF 50V X7R
C14	065T0603104 32	CHIP 0.1UF 50V X7R
C13	065T0603104 32	CHIP 0.1UF 50V X7R
C12	065T0603104 32	CHIP 0.1UF 50V X7R
C116	065T0603104 32	CHIP 0.1UF 50V X7R
C115	065T0603104 32	CHIP 0.1UF 50V X7R
C11	065T0603104 32	CHIP 0.1UF 50V X7R

C108	065T0603104 32	CHIP 0.1UF 50V X7R
C107	065T0603104 32	CHIP 0.1UF 50V X7R
C106	065T0603104 32	CHIP 0.1UF 50V X7R
C105	065T0603104 32	CHIP 0.1UF 50V X7R
C104	065T0603104 32	CHIP 0.1UF 50V X7R
C101	065T0603104 32	CHIP 0.1UF 50V X7R
C10	065T0603104 32	CHIP 0.1UF 50V X7R
C325	065T0603104 32	CHIP 0.1UF 50V X7R
C324	065T0603104 32	CHIP 0.1UF 50V X7R
C323	065T0603104 32	CHIP 0.1UF 50V X7R
C322	065T0603104 32	CHIP 0.1UF 50V X7R
C321	065T0603104 32	CHIP 0.1UF 50V X7R
C320	065T0603104 32	CHIP 0.1UF 50V X7R
C319	065T0603104 32	CHIP 0.1UF 50V X7R
C318	065T0603104 32	CHIP 0.1UF 50V X7R
C317	065T0603104 32	CHIP 0.1UF 50V X7R
C316	065T0603104 32	CHIP 0.1UF 50V X7R
C315	065T0603104 32	CHIP 0.1UF 50V X7R
C314	065T0603104 32	CHIP 0.1UF 50V X7R
C268	065T0603104 32	CHIP 0.1UF 50V X7R
C27	065T0603104 32	CHIP 0.1UF 50V X7R
C273	065T0603104 32	CHIP 0.1UF 50V X7R
C276	065T0603104 32	CHIP 0.1UF 50V X7R
C281	065T0603104 32	CHIP 0.1UF 50V X7R
C288	065T0603104 32	CHIP 0.1UF 50V X7R
C29	065T0603104 32	CHIP 0.1UF 50V X7R
C31	065T0603104 32	CHIP 0.1UF 50V X7R
C311	065T0603104 32	CHIP 0.1UF 50V X7R
C312	065T0603104 32	CHIP 0.1UF 50V X7R
C313	065T0603104 32	CHIP 0.1UF 50V X7R
C732	065T0603105 17	CHIP 1UF 16V Y5V
C733	065T0603105 17	CHIP 1UF 16V Y5V
C446	065T0603180 31	CHIP 18PF 50V NPO
C445	065T0603180 31	CHIP 18PF 50V NPO
C625	065T0603223 32	CHIP 0.022UF 50V X7R 0603
C624	065T0603223 32	CHIP 0.022UF 50V X7R 0603
C611	065T0603223 32	CHIP 0.022UF 50V X7R 0603
C610	065T0603223 32	CHIP 0.022UF 50V X7R 0603
C383	065T0603223 32	CHIP 0.022UF 50V X7R 0603
C382	065T0603223 32	CHIP 0.022UF 50V X7R 0603
C365	065T0603223 32	CHIP 0.022UF 50V X7R 0603
C366	065T0603223 32	CHIP 0.022UF 50V X7R 0603
C367	065T0603223 32	CHIP 0.022UF 50V X7R 0603
C381	065T0603223 32	CHIP 0.022UF 50V X7R 0603
C380	065T0603223 32	CHIP 0.022UF 50V X7R 0603
C377	065T0603223 32	CHIP 0.022UF 50V X7R 0603
C373	065T0603223 32	CHIP 0.022UF 50V X7R 0603
C368	065T0603223 32	CHIP 0.022UF 50V X7R 0603
C371	065T0603223 32	CHIP 0.022UF 50V X7R 0603
C372	065T0603223 32	CHIP 0.022UF 50V X7R 0603
C388	065T0603271 31	CHIP 270PF 50V NPO
C391	065T0603271 31	CHIP 270PF 50V NPO
C394	065T0603271 31	CHIP 270PF 50V NPO
C397	065T0603271 31	CHIP 270PF 50V NPO

C42	065T0603272 32	CHIP 2700PF 50V X7R
C399	065T0603272 32	CHIP 2700PF 50V X7R
C396	065T0603272 32	CHIP 2700PF 50V X7R
C393	065T0603272 32	CHIP 2700PF 50V X7R
C364	065T0603272 32	CHIP 2700PF 50V X7R
C362	065T0603272 32	CHIP 2700PF 50V X7R
C35	065T0603272 32	CHIP 2700PF 50V X7R
C384	065T0603330 31	CHIP 33PF 50V NPO
C385	065T0603330 31	CHIP 33PF 50V NPO
C25	065T0603330 31	CHIP 33PF 50V NPO
C26	065T0603330 31	CHIP 33PF 50V NPO
C335	065T0603330 31	CHIP 33PF 50V NPO
C336	065T0603330 31	CHIP 33PF 50V NPO
C390	065T0603332 32	CHIP 3300PF 50V X7R
C805	065T0603470 31	CHIP 47PF 50V NPO
C133	065T0603471 31	CHIP 470PF 50V NPO
C134	065T0603471 31	CHIP 470PF 50V NPO
C135	065T0603471 31	CHIP 470PF 50V NPO
C136	065T0603471 31	CHIP 470PF 50V NPO
C83	065T0603472 32	CHIP 4700PF 50V X7R
C84	065T0603472 32	CHIP 4700PF 50V X7R
C800	065T0603473 32	CHIP 0.047UF 50V X7R
C801	065T0603473 32	CHIP 0.047UF 50V X7R
C612	065T0603474 27	CHIP 0.47UF 25V Y5V
C613	065T0603474 27	CHIP 0.47UF 25V Y5V
C615	065T0603474 27	CHIP 0.47UF 25V Y5V
C616	065T0603474 27	CHIP 0.47UF 25V Y5V
C618	065T0603474 27	CHIP 0.47UF 25V Y5V
C621	065T0603474 27	CHIP 0.47UF 25V Y5V
C627	065T0603474 27	CHIP 0.47UF 25V Y5V
C802	065T0603474 27	CHIP 0.47UF 25V Y5V
C803	065T0603474 27	CHIP 0.47UF 25V Y5V
C639	065T0603561 31	CHIP 560PF 50V NPO
C638	065T0603561 31	CHIP 560PF 50V NPO
C5	065T0603680 31	CHIP 68PF 50V NPO
C4	065T0603680 31	CHIP 68PF 50V NPO
C398	065T0603681 31	CHIP 680PF 50V NPO
C395	065T0603681 31	CHIP 680PF 50V NPO
C392	065T0603681 31	CHIP 680PF 50V NPO
C389	065T0603681 31	CHIP 680PF 50V NPO
C727	065T0603683 12	CHIP 0.68UF 16V X7R
C709	065T0603683 12	CHIP 0.68UF 16V X7R
C441	065T0805105 12	1UF +-10% 6V X7R
C438	065T0805105 12	1UF +-10% 6V X7R
C829	065T0805225 17	CHIP 2.2UF 16V Y5V
C827	065T0805225 17	CHIP 2.2UF 16V Y5V
C652	065T1206106 17	CHIP 10UF 16V Y5V
C651	065T1206106 17	CHIP 10UF 16V Y5V
C828	065T1206106 17	CHIP 10UF 16V Y5V
C826	065T1206106 17	CHIP 10UF 16V Y5V
C427	065T1206106 17	CHIP 10UF 16V Y5V
C426	065T1206106 17	CHIP 10UF 16V Y5V
C424	065T1206106 17	CHIP 10UF 16V Y5V
CP601	065T600M471 8T	CHIP ARRAY 470PF 8P

C817	067T 312100	3	SMD EC 10UF 16V 85C B
C816	067T 312100	3	SMD EC 10UF 16V 85C B
C102	067T 312100	3	SMD EC 10UF 16V 85C B
C120	067T 312100	3	SMD EC 10UF 16V 85C B
C126	067T 312100	3	SMD EC 10UF 16V 85C B
C3	067T 312100	3	SMD EC 10UF 16V 85C B
C30	067T 312100	3	SMD EC 10UF 16V 85C B
C32	067T 312100	3	SMD EC 10UF 16V 85C B
C330	067T 312100	3	SMD EC 10UF 16V 85C B
C340	067T 312100	3	SMD EC 10UF 16V 85C B
C347	067T 312100	3	SMD EC 10UF 16V 85C B
C358	067T 312100	3	SMD EC 10UF 16V 85C B
C36	067T 312100	3	SMD EC 10UF 16V 85C B
C39	067T 312100	3	SMD EC 10UF 16V 85C B
C41	067T 312100	3	SMD EC 10UF 16V 85C B
C428	067T 312100	3	SMD EC 10UF 16V 85C B
C43	067T 312100	3	SMD EC 10UF 16V 85C B
C435	067T 312100	3	SMD EC 10UF 16V 85C B
C447	067T 312100	3	SMD EC 10UF 16V 85C B
C46	067T 312100	3	SMD EC 10UF 16V 85C B
C723	067T 312100	3	SMD EC 10UF 16V 85C B
C721	067T 312100	3	SMD EC 10UF 16V 85C B
C718	067T 312100	3	SMD EC 10UF 16V 85C B
C641	067T 312100	3	SMD EC 10UF 16V 85C B
C64	067T 312100	3	SMD EC 10UF 16V 85C B
C637	067T 312100	3	SMD EC 10UF 16V 85C B
C48	067T 312100	3	SMD EC 10UF 16V 85C B
C50	067T 312100	3	SMD EC 10UF 16V 85C B
C635	067T 312100	3	SMD EC 10UF 16V 85C B
C636	067T 312100	3	SMD EC 10UF 16V 85C B
C806	067T 312100	3	SMD EC 10UF 16V 85C B
C729	067T 312100	3	SMD EC 10UF 16V 85C B
C728	067T 312100	3	SMD EC 10UF 16V 85C B
C724	067T 312100	3	SMD EC 10UF 16V 85C B
C834	067T 312100	3	SMD EC 10UF 16V 85C B
C632	067T 312101	3	SMD EC 100UF 16V 85C D
C631	067T 312101	3	SMD EC 100UF 16V 85C D
C334	067T 312101	3	SMD EC 100UF 16V 85C D
C1	067T 312101	3	SMD EC 100UF 16V 85C D
C833	067T 312101	3	SMD EC 100UF 16V 85C D
C634	067T 312101	3	SMD EC 100UF 16V 85C D
C609	067T 312109	3	SMD EC 1UF 16V 85C
C257	067T 312220	3	SMD EC 22UF 16V 85C
C267	067T 312220	3	SMD EC 22UF 16V 85C
C274	067T 312220	3	SMD EC 22UF 16V 85C
C275	067T 312220	3	SMD EC 22UF 16V 85C
C280	067T 312220	3	SMD EC 22UF 16V 85C
C287	067T 312220	3	SMD EC 22UF 16V 85C
C401	067T 312220	3	SMD EC 22UF 16V 85C
C403	067T 312220	3	SMD EC 22UF 16V 85C
C407	067T 312220	3	SMD EC 22UF 16V 85C
C409	067T 312220	3	SMD EC 22UF 16V 85C
C411	067T 312220	3	SMD EC 22UF 16V 85C
C429	067T 312220	3	SMD EC 22UF 16V 85C

C713	067T 312220 3	SMD EC 22UF 16V 85C
C715	067T 312220 3	SMD EC 22UF 16V 85C
C809	067T 312220 3	SMD EC 22UF 16V 85C
C811	067T 312220 3	SMD EC 22UF 16V 85C
C278	067T 312220 3	SMD EC 22UF 16V 85C
C357	067T 312339 3T	CHIP EC 3.3UF 16V 85C
C359	067T 312339 3T	CHIP EC 3.3UF 16V 85C
C361	067T 312339 3T	CHIP EC 3.3UF 16V 85C
C363	067T 312339 3T	CHIP EC 3.3UF 16V 85C
C640	067T 312470 3	SMD EC 47UF 16V 85C D
C708	067T 312470 3	SMD EC 47UF 16V 85C D
C719	067T 312470 3	SMD EC 47UF 16V 85C D
C818	067T 312470 3	SMD EC 47UF 16V 85C D
C832	067T 312470 3	SMD EC 47UF 16V 85C D
C836	067T 312470 3	SMD EC 47UF 16V 85C D
LP108	071T 56A121 8T	CHIP BEAD ARRAY 120 OHM
FB7	071T 56G151 A	CHIOP BEAD 150 OHM
FB57	071T 56G151 A	CHIOP BEAD 150 OHM
FB42	071T 56G151 A	CHIOP BEAD 150 OHM
FB41	071T 56G151 A	CHIOP BEAD 150 OHM
FB4	071T 56G151 A	CHIOP BEAD 150 OHM
FB26	071T 56G151 A	CHIOP BEAD 150 OHM
FB23	071T 56G151 A	CHIOP BEAD 150 OHM
FB10	071T 56G151 A	CHIOP BEAD 150 OHM
FB1	071T 56G151 A	CHIOP BEAD 150 OHM
FB49	071T 56G151 A	CHIOP BEAD 150 OHM
FB48	071T 56G151 A	CHIOP BEAD 150 OHM
FB47	071T 56G151 A	CHIOP BEAD 150 OHM
FB44	071T 56G151 A	CHIOP BEAD 150 OHM
FB38	071T 56G151 A	CHIOP BEAD 150 OHM
FB18	071T 56G151 A	CHIOP BEAD 150 OHM
L107	071T 56G151 B	BEAD 0805 150 OHM
L108	071T 56G151 B	BEAD 0805 150 OHM
FB34	071T 56G151 MD	0603 150 OHM
L101	071T 56G301 EA	CHIP BEAD 300 OHM 0805
L102	071T 56G301 EA	CHIP BEAD 300 OHM 0805
L104	071T 56G301 EA	CHIP BEAD 300 OHM 0805
L105	071T 56G301 EA	CHIP BEAD 300 OHM 0805
L704	071T 56G301 EA	CHIP BEAD 300 OHM 0805
L800	071T 56G301 EA	CHIP BEAD 300 OHM 0805
L109	071T 56U601	BEAD 600 OHM
L607	071T 56U601	BEAD 600 OHM
L608	071T 56U601	BEAD 600 OHM
L609	071T 56U601	BEAD 600 OHM
L611	071T 56U601	BEAD 600 OHM
L708	071T 56U601	BEAD 600 OHM
L709	071T 56U601	BEAD 600 OHM
L713	071T 56U601	BEAD 600 OHM
L715	071T 56U601	BEAD 600 OHM
L710	071T 56U601 MA	0805 600 OHM
L111	071T 56Z121	BEAD 120 OHM
L110	071T 56Z121	BEAD 120 OHM
L714	071T 57G601	BEAD 1206 600 OHM
L701	071T 57G601 N	TI3216JIG

LP601	071T 57G601 EB	CHIP BEAD
FB36	071T 57S480 YA	1206 48 OHM
FB65	071T 57U500	CHIP BEAD
FB40	071T 57U500	CHIP BEAD
FB31	071T 57U500	CHIP BEAD
FB12	071T 59C300	CHIP BEAD 30 OHM 0603
FB11	071T 59C300	CHIP BEAD 30 OHM 0603
L404	073T 12622910K	2.2UH +-10%
L403	073T 12622910K	2.2UH +-10%
L402	073T 12622910K	2.2UH +-10%
L401	073T 12622910K	2.2UH +-10%
L504	073T253S 6 K	CHOKE COIL
L503	073T253S 6 K	CHOKE COIL
L502	073T253S 6 K	CHOKE COIL
L501	073T253S 6 K	CHOKE COIL
F701	084T 52 5	CHIP FUSE
U403	087T 202 32 NY	IC SOCKET 32PIN PLCC
CN501	088T 340 19 H	HDMI HEADER
ZD102	093T 39147	TZMC 5V6
ZD101	093T 39147	TZMC 5V6
ZD102	093T 39147SEM	ZMM5V6
ZD101	093T 39147SEM	ZMM5V6
D104	093T 60230	BAT54C BY MCC
D501	093T 60230	BAT54C BY MCC
D105	093T 60231	NO APP BAT54S SOT-23
D106	093T 60231	NO APP BAT54S SOT-23
D108	093T 60231	NO APP BAT54S SOT-23
D601	093T 64 42 P	BAV70 SOT23
D102	093T 6432P	LL4148 BY PANJIT
D103	093T 6432P	LL4148 BY PANJIT
D101	093T 6432P	LL4148 BY PANJIT
D602	093T 6433P	BAV99
D603	093T 6433P	BAV99
ZD401	093T 39S 60 T	MLL5227B
	715T1539 1 2	MAIN BOARD PCB
U601	056T 133 30AAC	AZ1117H-1.8-E1
U105	056T 585 11	AZ1117D-5.0-E1
U602	056T 593 8	IC MSP3410G-QI-C12-100 MICRONAS
U107	056T 625 1	NJM-2244M-TE1/JRC
U106	056T 652 1	PCA9554PW TSSOP-16 PHILIPS 8BI
U106	056T 652500	WT6854 512
Q103	057T 417 4	CHIP PMBS3904 BY PHILIPS
Q101	057T 417 4	CHIP PMBS3904 BY PHILIPS
RN101	061V 125101 8	CHIP ARRAY 100OHM 1/15W 8P4R
R114	061V0603000	CHIPR 0OHM +-5% 1/10W
R143	061V0603000	CHIPR 0OHM +-5% 1/10W
R144	061V0603000	CHIPR 0OHM +-5% 1/10W
R145	061V0603000	CHIPR 0OHM +-5% 1/10W
R147	061V0603000	CHIPR 0OHM +-5% 1/10W
R637	061V0603000	CHIPR 0OHM +-5% 1/10W
R629	061V0603000	CHIPR 0OHM +-5% 1/10W
R628	061V0603000	CHIPR 0OHM +-5% 1/10W
R627	061V0603000	CHIPR 0OHM +-5% 1/10W
R626	061V0603000	CHIPR 0OHM +-5% 1/10W

R625	061V0603000	CHIPR 00HM +-5% 1/10W
R624	061V0603000	CHIPR 00HM +-5% 1/10W
R622	061V0603000	CHIPR 00HM +-5% 1/10W
R621	061V0603000	CHIPR 00HM +-5% 1/10W
R619	061V0603000	CHIPR 00HM +-5% 1/10W
R150	061V0603000	CHIPR 00HM +-5% 1/10W
R149	061V0603000	CHIPR 00HM +-5% 1/10W
R148	061V0603000	CHIPR 00HM +-5% 1/10W
R612	061V0603101	CHIPR 100 OHM+-5% 1/10W
R611	061V0603101	CHIPR 100 OHM+-5% 1/10W
R116	061V0603101	CHIPR 100 OHM+-5% 1/10W
R115	061V0603101	CHIPR 100 OHM+-5% 1/10W
R113	061V0603101	CHIPR 100 OHM+-5% 1/10W
R112	061V0603101	CHIPR 100 OHM+-5% 1/10W
R111	061V0603101	CHIPR 100 OHM+-5% 1/10W
R108	061V0603101	CHIPR 100 OHM+-5% 1/10W
R602	061V0603102	CHIPR 1K OHM+-5% 1/10W
R109	061V0603102	CHIPR 1K OHM+-5% 1/10W
R633	061V0603103	CHIPR 10K OHM+-5% 1/10W
R632	061V0603103	CHIPR 10K OHM+-5% 1/10W
R608	061V0603103	CHIPR 10K OHM+-5% 1/10W
R609	061V0603120 0F	CHIP 120OHM 0603 1%
R131	061V0603153	CHIPR 15KOHM+-5% 1/16W
R127	061V0603183	CHIP 18K OHM 1/16W
R601	061V0603220	CHIPR 22 OHM+-5% 1/10W
R605	061V0603220	CHIPR 22 OHM+-5% 1/10W
R104	061V0603221	220 OHM
R106	061V0603221	220 OHM
R110	061V0603221	220 OHM
R120	061V0603223	CHIP 22KOHM 1/16W
R130	061V0603392	CHIP 3.9K OHM 1/16W
R129	061V0603471	CHIPR 470 OHM+-5% 1/16W
R615	061V0603473	CHIP 47K OHM 1/16W
R616	061V0603473	CHIP 47K OHM 1/16W
R617	061V0603473	CHIP 47K OHM 1/16W
R618	061V0603473	CHIP 47K OHM 1/16W
R636	061V0603473	CHIP 47K OHM 1/16W
R638	061V0603473	CHIP 47K OHM 1/16W
R121	061V0603750	CHIP 75OHM 1/16W
R107	061V0603750	CHIP 75OHM 1/16W
R105	061V0603750	CHIP 75OHM 1/16W
R103	061V0603750	CHIP 75OHM 1/16W
R102	061V0603750	CHIP 75OHM 1/16W
R119	061V0603750	CHIP 75OHM 1/16W
R133	061V0603750	CHIP 75OHM 1/16W
R132	061V0603750	CHIP 75OHM 1/16W
R128	061V0603750	CHIP 75OHM 1/16W
R117	061V0603750	CHIP 75OHM 1/16W
R126	061V0603750	CHIP 75OHM 1/16W
R118	061V0603750	CHIP 75OHM 1/16W
R141	061V0603750	CHIP 75OHM 1/16W
R125	061V0603750	CHIP 75OHM 1/16W
R124	061V0603750	CHIP 75OHM 1/16W
R123	061V0603750	CHIP 75OHM 1/16W

R122	061V0603750	CHIP 75OHM 1/16W
R610	061V1206620 0F	CHIP 620OHM 1/8W 1%
C602	065T0603101 31	CHIP 100PF 50V NPO
C150	065T0603101 32	CHIP 100PF 50V X7R
C650	065T0603102 32	CHIP 1000PF 50V X7R
C649	065T0603102 32	CHIP 1000PF 50V X7R
C109	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C106	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C631	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C630	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C624	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C610	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C148	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C121	065T0603104 12	MLCC 0603 0.1UF K 16V X7R
C617	065T0603152 32	CHIP 1500PF 50V X7R
C609	065T0603152 32	CHIP 1500PF 50V X7R
C601	065T0603152 32	CHIP 1500PF 50V X7R
C618	065T0603221 31	CHIP 220PF 50V NPO
C641	065T0603222 32	CHIP 2200PF 50V X7R
C640	065T0603222 32	CHIP 2200PF 50V X7R
C126	065T0603222 32	CHIP 2200PF 50V X7R
C125	065T0603222 32	CHIP 2200PF 50V X7R
C603	065T0603330 31	CHIP 33PF 50V NPO
C604	065T0603330 31	CHIP 33PF 50V NPO
C101	065T0603331 31	CHIP 330PF 50V NPO
C110	065T0603470 31	CHIP 47PF 50V NPO
C658	065T0603471 31	CHIP 470PF 50V NPO
C657	065T0603471 31	CHIP 470PF 50V NPO
C639	065T0603471 31	CHIP 470PF 50V NPO
C638	065T0603471 31	CHIP 470PF 50V NPO
C608	065T0603471 31	CHIP 470PF 50V NPO
C619	065T0603471 31	CHIP 470PF 50V NPO
C633	065T0603471 31	CHIP 470PF 50V NPO
C636	065T0603472 32	CHIP 4700PF 50V X7R
C637	065T0603472 32	CHIP 4700PF 50V X7R
C605	065T0603560 31	CHIP 56PF 50V NPO
C606	065T0603560 31	CHIP 56PF 50V NPO
C646	065T0603560 31	CHIP 56PF 50V NPO
C115	065T0603680 31	CHIP 68PF 50V NPO
C113	065T0603680 31	CHIP 68PF 50V NPO
C153	065T0603680 31	CHIP 68PF 50V NPO
C152	065T0603680 31	CHIP 68PF 50V NPO
C151	065T0603680 31	CHIP 68PF 50V NPO
C144	065T0603680 31	CHIP 68PF 50V NPO
C127	065T0603680 31	CHIP 68PF 50V NPO
C120	065T0603680 31	CHIP 68PF 50V NPO
C119	065T0603680 31	CHIP 68PF 50V NPO
C117	065T0603680 31	CHIP 68PF 50V NPO
C116	065T0603680 31	CHIP 68PF 50V NPO
C112	065T0603680 31	CHIP 68PF 50V NPO
C129	065T0805470 31	MLCC 0805 47PF J 50V NP0
C131	065T0805470 31	MLCC 0805 47PF J 50V NP0
C133	065T0805470 31	MLCC 0805 47PF J 50V NP0
C643	065T0805475 17	0805 4.7UF +80%~-20% 16

C642	065T0805475 17	0805 4.7UF +80%~-20% 16
C615	065T0805475 17	0805 4.7UF +80%~-20% 16
C614	065T0805475 17	0805 4.7UF +80%~-20% 16
C644	065T0805475 17	0805 4.7UF +80%~-20% 16
C648	065T0805475 17	0805 4.7UF +80%~-20% 16
C647	065T0805475 17	0805 4.7UF +80%~-20% 16
C645	065T0805475 17	0805 4.7UF +80%~-20% 16
C612	065T0805475 17	0805 4.7UF +80%~-20% 16
C613	065T0805475 17	0805 4.7UF +80%~-20% 16
C139	065T1206106 05	CHIP 10UF 6.3V X5R
C143	065T1206106 05	CHIP 10UF 6.3V X5R
C634	065T1206106 17	CHIP 10UF 16V Y5V
C635	065T1206106 17	CHIP 10UF 16V Y5V
C103	067T 312100 3	SMD EC 10UF 16V 85C B
C104	067T 312100 3	SMD EC 10UF 16V 85C B
C111	067T 312100 3	SMD EC 10UF 16V 85C B
C114	067T 312100 3	SMD EC 10UF 16V 85C B
C147	067T 312100 3	SMD EC 10UF 16V 85C B
C611	067T 312100 3	SMD EC 10UF 16V 85C B
C616	067T 312100 3	SMD EC 10UF 16V 85C B
C623	067T 312100 3	SMD EC 10UF 16V 85C B
C625	067T 312100 3	SMD EC 10UF 16V 85C B
C628	067T 312100 3	SMD EC 10UF 16V 85C B
C629	067T 312100 3	SMD EC 10UF 16V 85C B
C632	067T 312100 3	SMD EC 10UF 16V 85C B
C627	067T 312100 6	SMD EC 10UF 35V 85C
C607	067T 312101 3	SMD EC 100UF 16V 85C D
C122	067T 312101 3	SMD EC 100UF 16V 85C D
C108	067T 312101 3	SMD EC 100UF 16V 85C D
C107	067T 312101 3	SMD EC 100UF 16V 85C D
C626	067T 312339 7	SMD EC 3.3 UF 50V 85C
L125	071T 56G151 A	CHIOP BEAD 150 OHM
L124	071T 56G151 A	CHIOP BEAD 150 OHM
L123	071T 56G151 A	CHIOP BEAD 150 OHM
L104	071T 56U601	BEAD 600 OHM
L107	071T 56U601	BEAD 600 OHM
L108	071T 56U601	BEAD 600 OHM
L115	071T 56U601	BEAD 600 OHM
L116	071T 56U601	BEAD 600 OHM
L119	071T 56U601	BEAD 600 OHM
L120	071T 56U601	BEAD 600 OHM
L121	071T 56U601	BEAD 600 OHM
L122	071T 56U601	BEAD 600 OHM
L601	071T 56U601	BEAD 600 OHM
L602	071T 56U601	BEAD 600 OHM
L603	071T 56U601	BEAD 600 OHM
L604	071T 56U601	BEAD 600 OHM
L605	071T 56U601	BEAD 600 OHM
L606	071T 56U601	BEAD 600 OHM
L103	071T 56Z121	BEAD 120 OHM
L102	071T 56Z121	BEAD 120 OHM
L101	071T 56Z121	BEAD 120 OHM
L109	071T 56Z121	BEAD 120 OHM
L110	071T 56Z121	BEAD 120 OHM

L111	071T 56Z121	BEAD 120 OHM
L112	071T 56Z121	BEAD 120 OHM
L113	071T 56Z121	BEAD 120 OHM
L117	071T 56Z121	BEAD 120 OHM
L118	071T 56Z121	BEAD 120 OHM
D601	093T 6432V	LL4148-GSO8 SMD BY VISHA
	715T1529 1 2	TUNER BOARD PCB
C1	065T0603103 32	CHIP 0.01UF 50V X7R
C2	065T0603103 32	CHIP 0.01UF 50V X7R
C3	065T0603103 32	CHIP 0.01UF 50V X7R
FB4	071T 56U601	BEAD 600 OHM
FB2	071T 56Z601	CHIP BEAD 600 OHM
FB1	071T 56Z601	CHIP BEAD 600 OHM
	715T1959 B 1	EARPHONE BOARD PCB
R01	061V0603101	CHIPR 100 OHM+-5% 1/10W
R07	061V0603103	CHIPR 10K OHM+-5% 1/10W
R09	061V0603821	CHIP 820 OHM 1/16W
R10	061V0603821	CHIP 820 OHM 1/16W
C03	065T0603101 31	CHIP 100PF 50V NPO
C02	065T0603104 32	CHIP 0.1UF 50V X7R
C04	065T0603104 32	CHIP 0.1UF 50V X7R
C01	065T0603105 17	CHIP 1UF 16V Y5V
FB03	071T 56Z601	CHIP BEAD 600 OHM
FB02	071T 56Z601	CHIP BEAD 600 OHM
FB04	071T 56Z601 M	CHIP BEAD
FB03	071T 56Z601 M	CHIP BEAD
FB02	071T 56Z601 M	CHIP BEAD
D03	081T 14 12 KT	CHIP LED KTL-HKBB333B-TRB
D04	081T 14 12 KT	CHIP LED KTL-HKBB333B-TRB
D02	093T 6432S	IN4148W
D01	093T 6432S	IN4148W
	715T1921 1	IR BOARD PCB
R51	061V0603100 1F	CHIP 1KOHM 1/10W 1%
R53	061V0603180 1F	CHIP 1.8K OHM 1/16W 1%
R50	061V0603220 2F	CHIP 20K OHM 1/16W 1%
R49	061V0603330 1F	Chipr 3.3KOHM +-1% 1/10W
R52	061V0603390 0F	CHIP 390 OHM 1/16W
R48	061V0603680 1F	CHIP 6.8KOHM 1% 1/10W
C44	065T0603104 32	CHIP 0.1UF 50V X7R
L4	071T 56G151 A	CHIOP BEAD 150 OHM
L3	071T 56G151 A	CHIOP BEAD 150 OHM
D1	093T 6433P	BAV99
D1	093T 6433P	BAV99
	715T2082 B	KEY BOARD PCB
CN901	006T 31500	EYELET
L902	006T 31502	1.5MM RIVET
L910	006T 31502	1.5MM RIVET
T930	006T 31502	1.5MM RIVET
C933	067T 2154707NT	47UF 50V NCC 5*11MM
C934	067T 2154707NT	47UF 50V NCC 5*11MM
C933	067T215Y4707KT	47UF 50V
FB904	071T 55 29	BEAD
FB903	071T 55 29	BEAD
FB902	071T 55 29	BEAD

	715T1599 1	POWER BOARD PCB
J901	095T 90 23	TIN COATED
J902	095T 90 23	TIN COATED
J903	095T 90 23	TIN COATED
J904	095T 90 23	TIN COATED
J905	095T 90 23	TIN COATED
J906	095T 90 23	TIN COATED
J931	095T 90 23	TIN COATED
J926	095T 90 23	TIN COATED
J925	095T 90 23	TIN COATED
J923	095T 90 23	TIN COATED
J922	095T 90 23	TIN COATED
J921	095T 90 23	TIN COATED
J917	095T 90 23	TIN COATED
J916	095T 90 23	TIN COATED
J915	095T 90 23	TIN COATED
J914	095T 90 23	TIN COATED
J913	095T 90 23	TIN COATED
J912	095T 90 23	TIN COATED
J911	095T 90 23	TIN COATED
J909	095T 90 23	TIN COATED
J908	095T 90 23	TIN COATED
J907	095T 90 23	TIN COATED
R952	061T 17112352T	CHIP 12KOHM 1/16W 1%
R953	061T 17113452T	CHIP 130KOHM 1/16W 1%
R990	061T 17233252T	3.3K 1/4W
R993	061T 17233252T	3.3K 1/4W
R950	061T 17247152T	470OHM 5% 1/4W
R971	061T175L47052T	470OHM +-5% 1/2W
C934	067T215Y4707KT	47UF 50V
FB960	071T 55 29	BEAD
ZD991	093T 3916652T	MTZJ T-72 15B
ZD990	093T 3917252T	MTZJT-72 33B DO-34
ZD992	093T 3952552T	MTZJ T 6.2B
D932	093T 6038T52T	FR103
TL950	056T 158 4 T	H431BA
TL950	056T 158 10 T	IC AZ431AZ-AE1 TO-92 AAC
Q941	057T 566 1	2N5060RLRAG TO-92 BY ON
Q941	057T 566 4	MCR100-6SCR
F901	084T 56 3W	FUSE
F970	084T 56 3W	FUSE
F980	084T 56 3W	FUSE
F960	084T 56 4W	FUSE 4A