

Liquid Crystal Display Television Service Manual

Chassis: CORTEZ

Product Type: LFD4288EU

Ver 1.0

Sep. 4 2007

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Service Manual

1. Product Safety Servicing Guidelines

1-1 Fire And Shock Precautions

1、Adequate ventilation must be provided to prevent heat build up inside unit. Keep the inside of unit free from foreign objects, such as hairpins, nails, paper, etc. Do not build the set into a bookcase or other enclosures in which it would be poorly ventilated. Do not place it on carpet or a bed as low ventilation holes could become obstructed.

2、Do not set liquids, including flower vases and vessels filled with chemicals or water etc., On top of the unit as liquid could get inside the unit. If a hazardous object falls inside the TV set, unplug it immediately and call a qualified technician for removal.

3、When placing or moving the TV set, take care to insure that the power cord is fitted into the allocated slot.

To avoid damage to the power cord, never allow heavy objects such as the TV set itself to be placed on the power cord. Keep cord away from radiating appliances. Do not allow cord to become knotted or tangled. Do not lengthen the cord. When removing the power plug from the socket, always hold onto the plug, never pull by the cord.

4、This TV set shall be connected to a main socket outlet with a protective earthing connection.

5、The main plug and main switch should be remain readily operable after installation.

6、No naked flame sources, such as lighted candles, should be placed

on the apparatus.

7、 Minimum distances around the apparatus for sufficient ventilation

8、 The use of apparatus in moderate climates.

1-2 Warning

1、 During vacation or other occasions when you will not be using the set for an extended period, remove the power plug from the socket.

2、 This appliance should not be operated by children or infirm persons without adequate supervision.



The lightning flash with arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of uninsulated dangerous voltage within the products enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



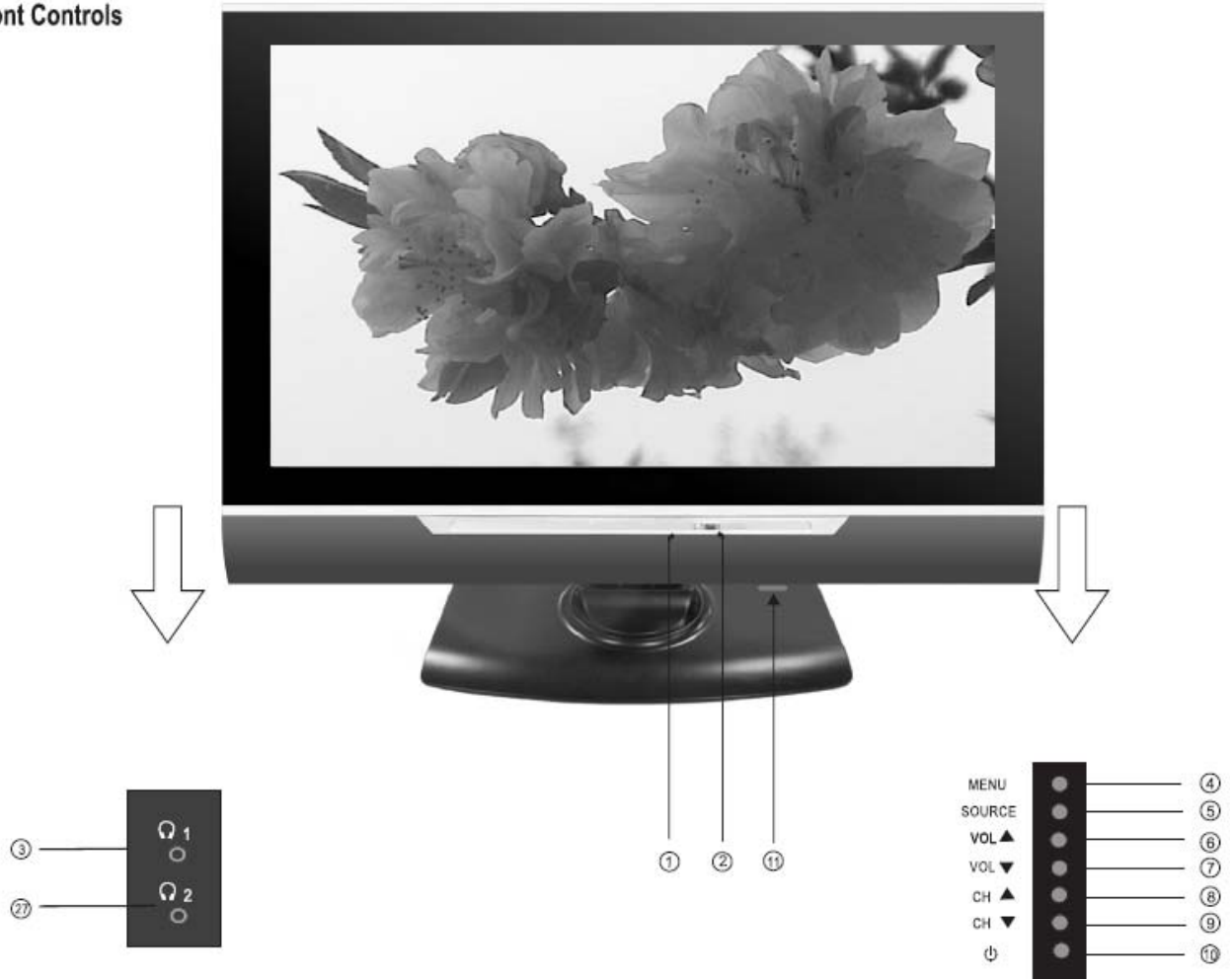
The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance(servicing) instructions in the literature accompanying the set.

2. Product Function Specifications

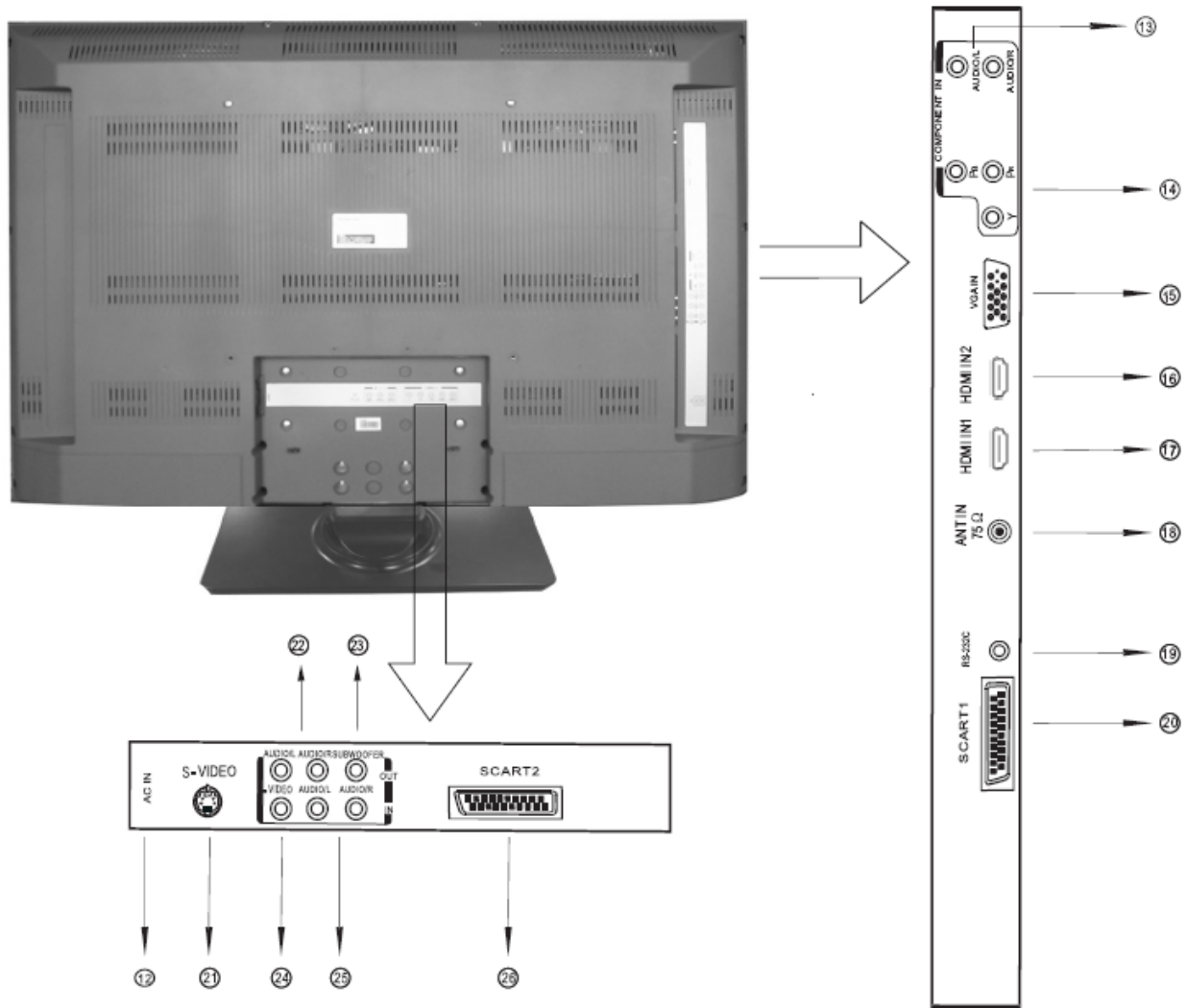
2-1 LFD4288EU Product Function

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Front Controls



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- | | | |
|----------------------------|-------------------------|------------------------|
| ① Remote Sensing Window | ⑪ Power Switch (ON/OFF) | ⑳ SCART1 connector |
| ② Power indicator | ⑫ AC Power Socket | |
| ③ Headphone output | ⑬ YPbPr PC Audio input | |
| ④ Menu button | ⑭ YPbPr input | |
| ⑤ Source select | ⑮ PC VGA input | |
| ⑥ Volume up/cursor up | ⑯ HDMI input 2 | |
| ⑦ Volume down/cursor down | ⑰ HDMI input 1 | |
| ⑧ Channel up/cursor up | ⑱ CATV antenna input | |
| ⑨ Channel down/cursor down | ⑲ RS232C DEBUG input | |
| ⑩ Power button (standby) | ⑳ SCART1 connector | |
| | | ㉑ S-Video input |
| | | ㉒ Audio output |
| | | ㉓ Subwoofer output |
| | | ㉔ AV video input |
| | | ㉕ AV audio input |
| | | ㉖ SCART2 connector |
| | | ㉗ PIP headphone output |

Note: The above figures are for reference only, please refer to the actual units to determine their appearance.

- Multimedia – TV receiver, Video monitor and PC display, all in one.
- Wider viewing angle, 16:9 display – 176° viewing angle at typical value.
- Digital display device – truthfully reproducing the images, without distortion or blurring, irrespective of magnetic or geomagnetic effect.
- 200 channels storage
- Sleep timer
- Teletext with 1000 pages memory
- NICAM
- Two SCART interface
- Two HDMI
- Multi-language OSD

2-2 LFD4288EU Specifications

LCD panel	107cm TFT LCD
Television system	Multi- system(PAL, SECAM)
Tuner	VHF/UHF: 40~870MHz
VGA	15Pin, Analog RGB signal, 0.7Vp-p, 75Ω input (VGA, SVGA, XGA)
Y PB/CB PR/CR mode	480I/60Hz, 480P/60Hz, 576I/50Hz, 576P/50Hz, 720P/60Hz, 1080I/50Hz, 1080I/60Hz, 1080P/50Hz, 1080P/60Hz
Resolution	1080X1920
Brightness	550cd/m2
Viewing angle	178° (H) /178° (V)
Speaker Output	7W+7W
Power source	AC160V--240V, 50/60Hz
Power consumption	250W

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Connection interface	RF input: Cable/ antenna RF $\times 1$ VIDEO input: YPBPR $\times 1$, CVBS $\times 1$, Y/C $\times 1$, GRAPHIC input: Analog RGB 15pin(VGA) $\times 1$ (0.7Vp-p 75 Ω) AUDIO input: SCART 1 audio, SCART 2 audio CVBS audio, Mini-jack for PC (3.5 ϕ) $\times 2$ AUDIO output: SCART 1 audio, SCART 2 audio SCART INPUT: SCART1 (for RGB+CVBS) SCART2 (for CANAL+) OTHER: HDMI $\times 2$ RS232C $\times 1$ (for software updating)
Dimensions	1160mmX400mmX900mm
Weight	41kg
Supplied accessories	remote control ac power cord batteries
Design and specifications are subject to change without notice.	

3. Lcd Panel Spec

3-1 General Description

LFD4288EU' S Lcd Panel is a Color Active Matrix Liquid Crystal Display with an integral External Electrode Fluorescent Lamp (EEFLFL) backlight system. The matrix employs a-Si Thin Film Transistor as the active element.

It is a transmissive type display operating in the normally black mode. It has a 42.02 inch diagonally measured active display area with WUXGA resolution (1080 vertical by 1920 horizontal pixel array)

Each pixel is divided into Red, Green and Blue sub-pixels or dots which are arranged in vertical stripes.

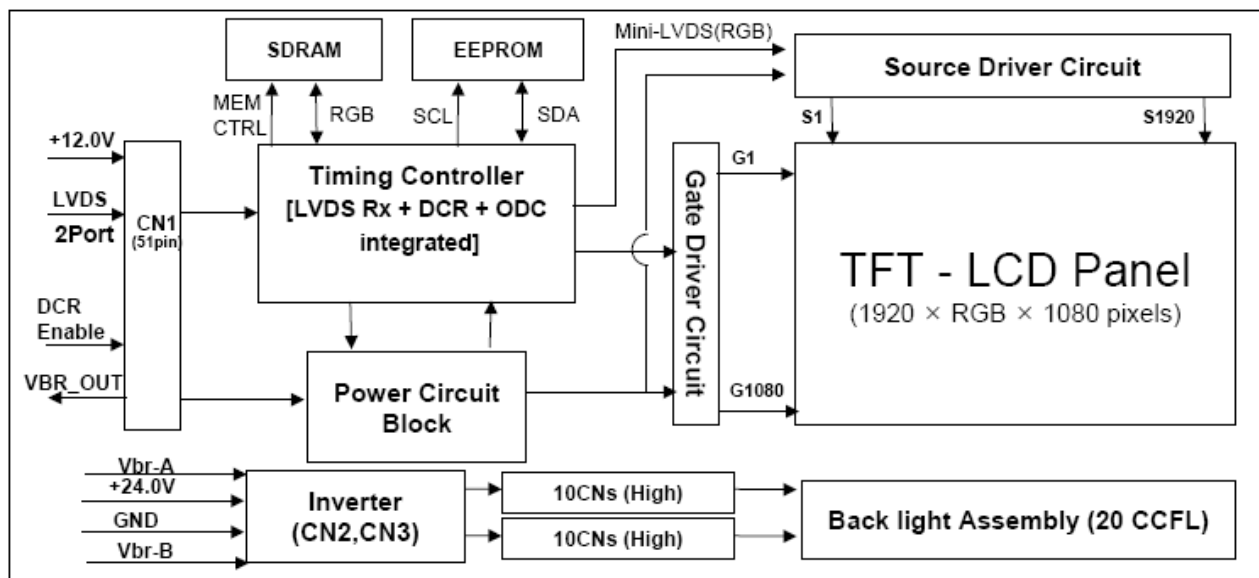
Gray scale or the luminance of the sub-pixel color is determined with a 8-bit gray scale signal for each dot,

thus presenting a palette of more than 16.7M(true) colors.

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It has been designed to apply the 8-bit 1 port LVDS interface.

It is intended to support LCD TV, PCTV where high brightness, super wide viewing angle, high color gamut, high color depth and fast response time are important.

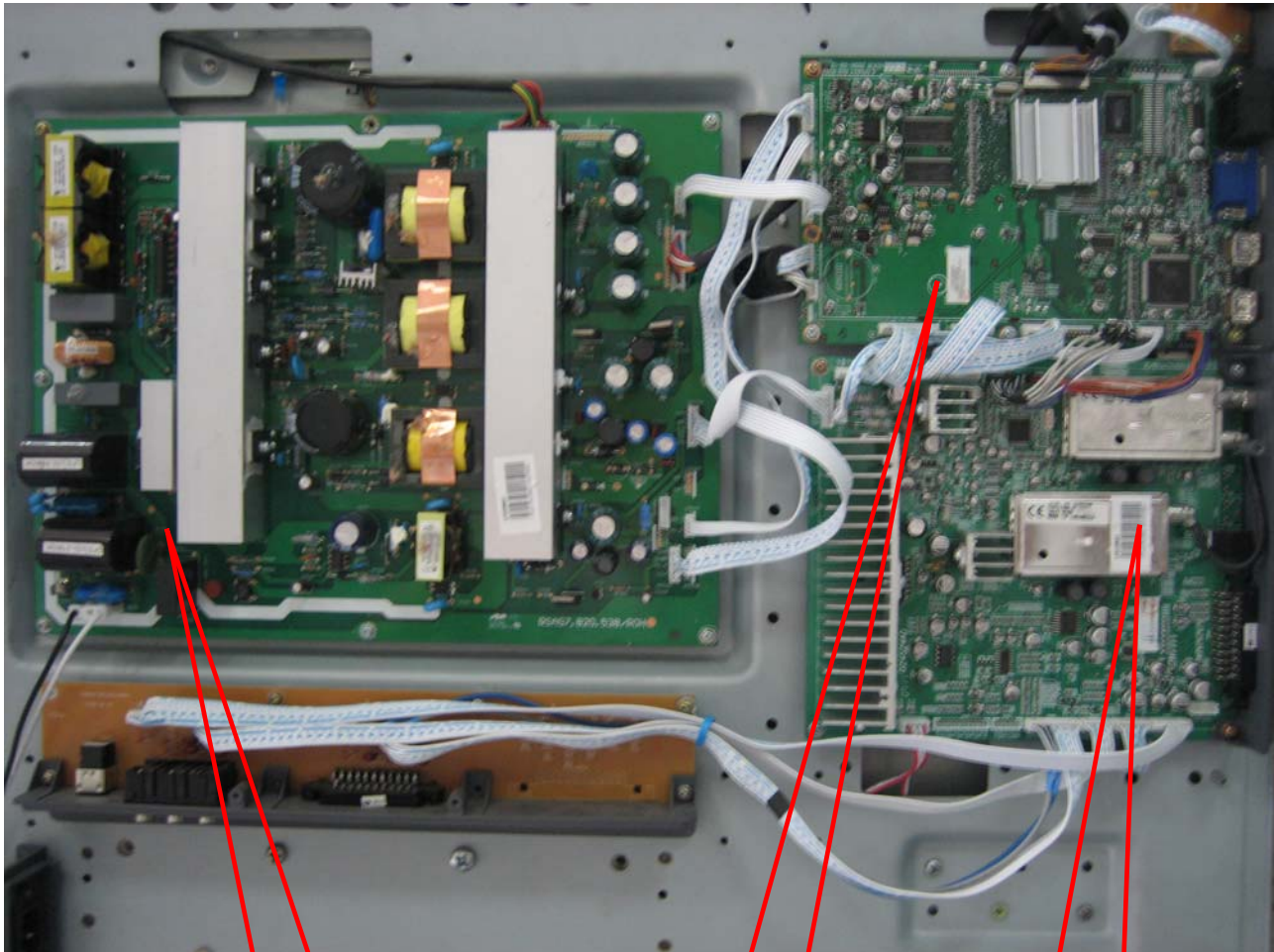


3-2 General Features

Active Screen Size	42.02 inches(1067.31mm) diagonal
Outline Dimension	983.0(H) x 576.0 (V) x 51.0 mm(D) (Typ.)
Pixel Pitch	0.4845 mm x 0.4845 mm
Pixel Format	1920 horiz. by 1080 vert. Pixels, RGB stripe arrangement
Color Depth	8-bit, 16.7 M colors
Luminance, White	550 cd/m ² (Center 1point ,Typ.)
Viewing Angle (CR>10)	Viewing angle free (R/L 178 (Typ.), U/D 178 (Typ.))
Power Consumption	Total 167.3 W (Typ.) (Logic=7.3 W, Inverter=160W [I _{BL} =6.0 mA])
Weight	13.0K g (Typ.)
Display Mode	Transmissive mode, Normally black
Surface Treatment	Hard coating(3H), Anti-glare treatment of the front polarizer(Haze 13%)

4. Block Diagram

4-1 Chassis Block Diagram



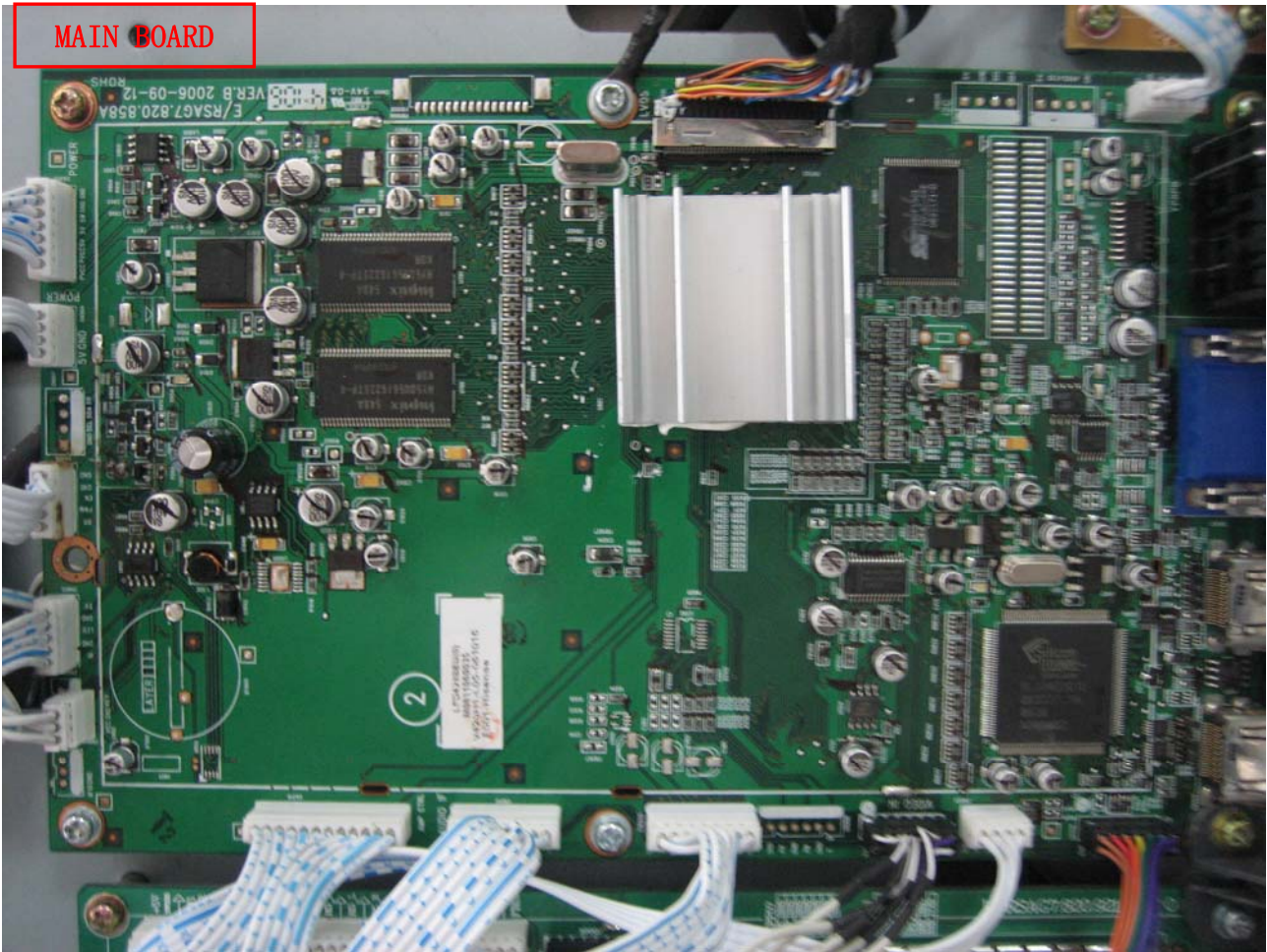
POWER BOARD

MAIN BOARD

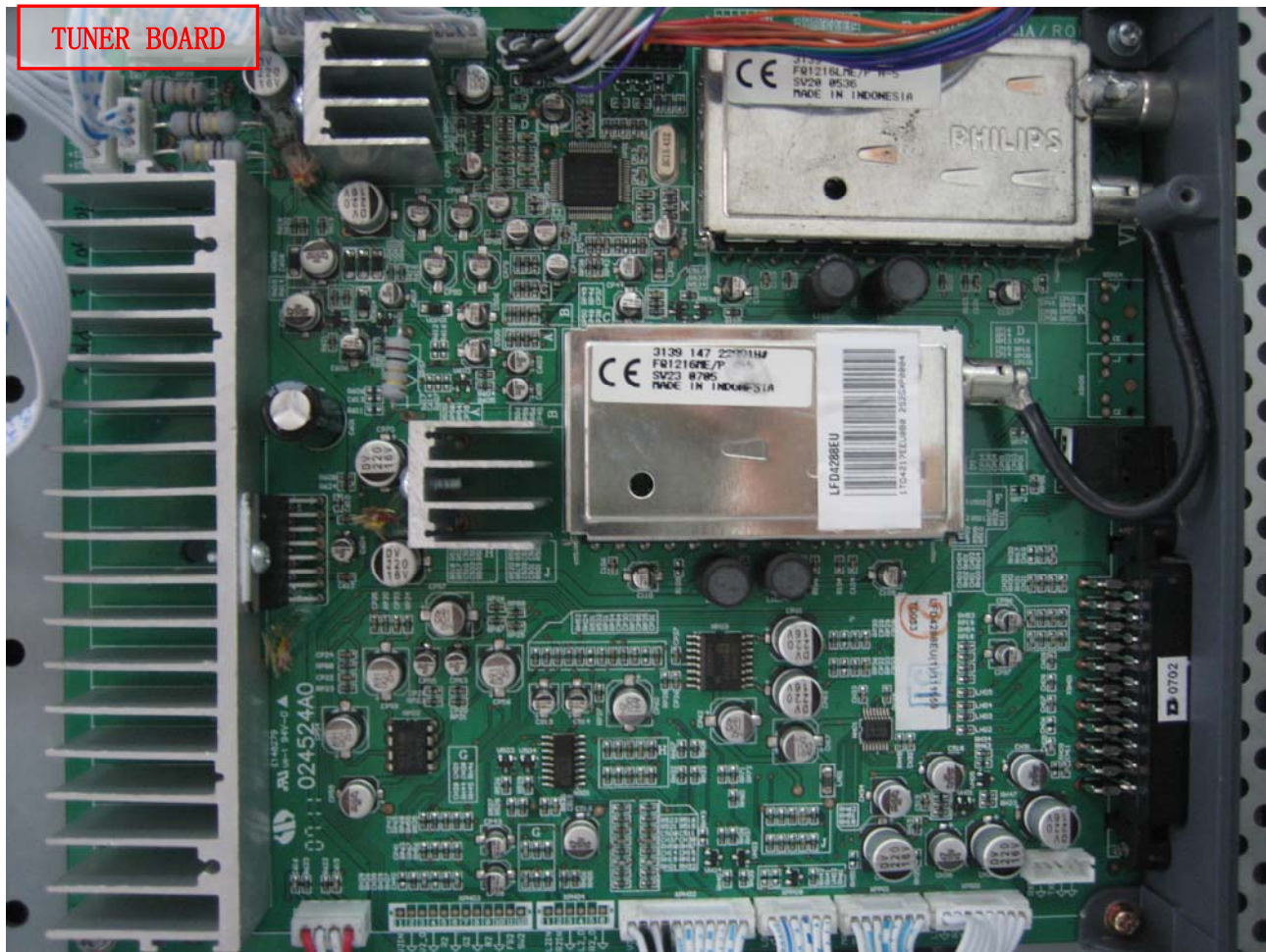
TUNNER BOARD

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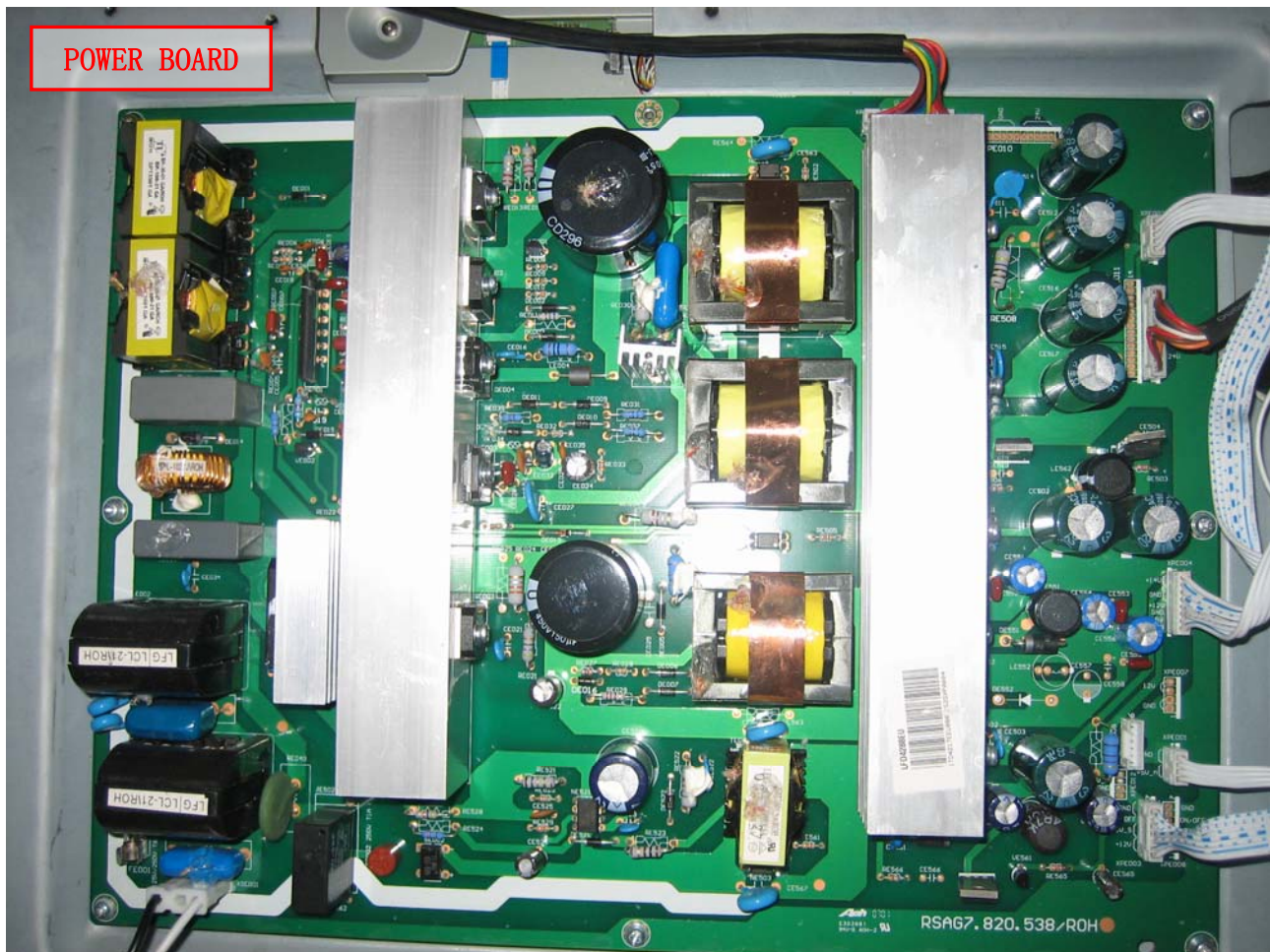
MAIN BOARD



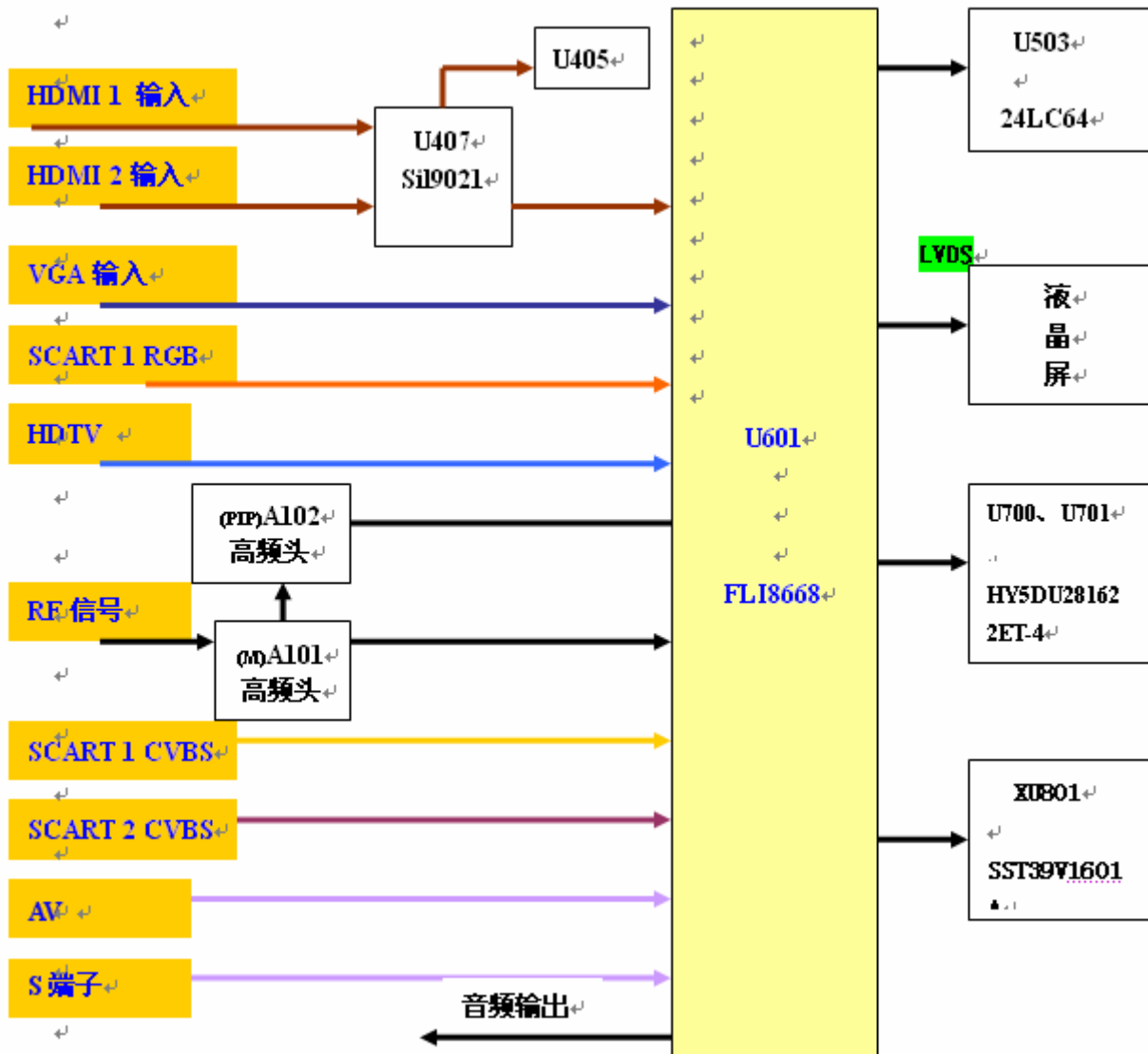
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LCD TV Service Manual

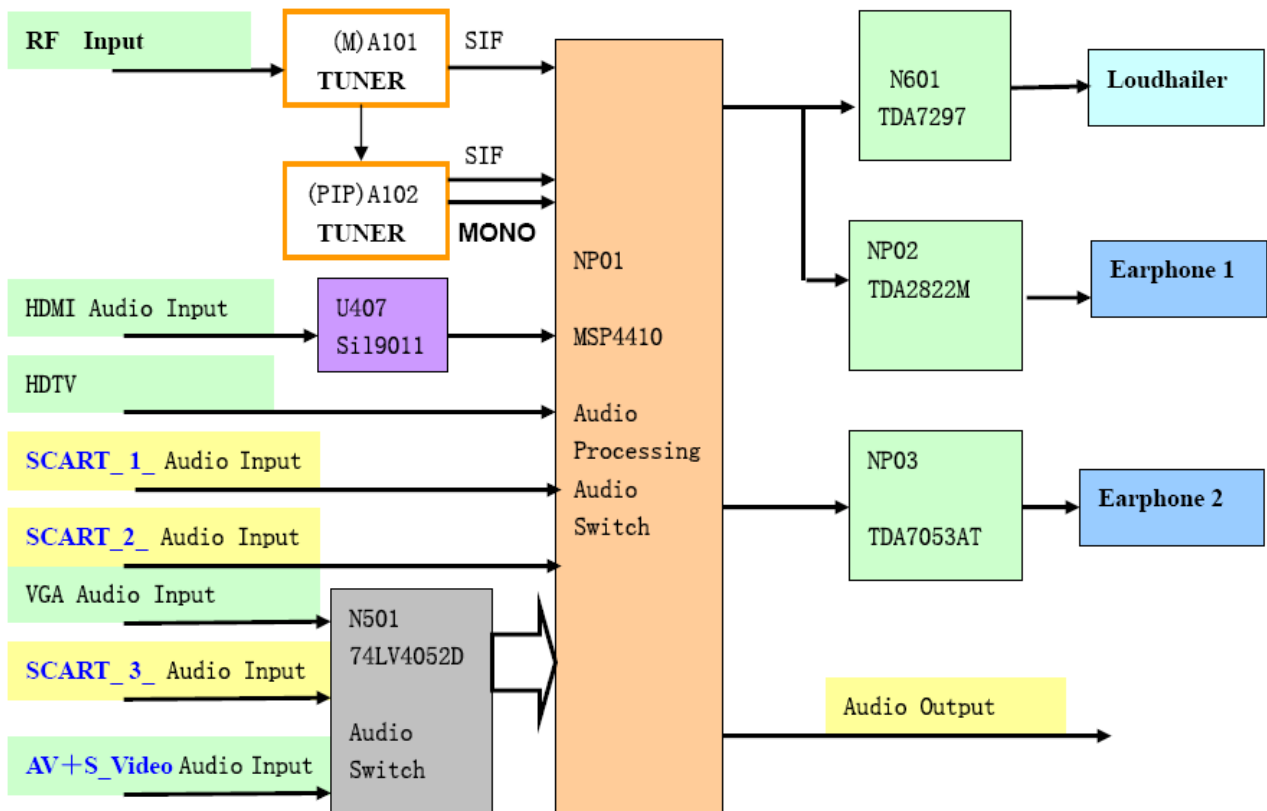


4-2 Video Processing Part



4-3 Audio Processing Part

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5. Service Mode And Adjustment

5-1 Service Mode

Use the remote control, first open MAIN MENU with MENU button, and choose AUDIO SETTING with the CHANNEL UP/DOWN button, then choose the BALANCE with VOLUME UP/DOWN, In this condition, press 0、5、3、2, you can enter factory menu.

5-1-1、Fac. Menu

1、White Balance:

NO.	NAME	DEFAULT	Alternative value	Remarks
1	RDRV	220		Adjustment white balance use
2	GDRV	226		Adjustment white balance use

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3	BDRV	220		Adjustment white balance use
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2、Factory Init

Set Channel

Clear Rom(It is best not to use)

Clear RomAll(It is best not to use)

3、Options:

NO.	NAME	DEFAULT	ALTERNATIVE VALUE	REMARKS
1	To Factory	0	1	
2	AtsEnable	1	0	
3	Is PAL 60Hz	0	1	
4	LOGO Select	0	*	

4、OSD Language: LanguageID

5、auto color:

NO.	NAME	ALTERNATIVE VALUE	REMARKS
1	ADC Graphics	auto calibration	VGA
2	ADC CVBS	Calibrating ADC	AV
3	ADC COMP	Calibrating ADC	COMP
4	ADC scart RGB Main		SCART RGB

5-1-2、Design Menu

1、Picture Setting:

NO.	NAME	DEFAULT VALUE	REMARKS	NO.	NAME	DEFAULT VALUE	REMARKS
1	BriB	70	brightness	7	ColN	60	standard
2	ConB	70	brightness	8	ShpN	0	No use
3	ColB	60	brightness	9	BriS	60	softness
4	ShpB	0	No use	10	ConS	60	softness
5	BriN	65	standard	11	ColS	60	softness
6	ConN	65	standard	12	ShoS	0	No use

2、Option Setting

NO.	NAME	DEFAULT VALUE	NO.	NAME	DEFAULT VALUE
1	NTSC US/JP	1	3	EMC Test	0
2	AGC	17	4	HDTV 2 Cal	0

3、Sound Options:

NO.	NAME	NAME	ALTERNATIVE	REMARKS
-----	------	------	-------------	---------

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			VALUE	
1	Devitation	HDEV option	0	
		FMAM Devitation	75	
		Carry mute	0	
2	Prescale	Scart prescale	110	Voice (except TV、HDMI)
		I ² s prescale	90	HDMI Voice adjustment
		SIF prescale	0	No use,
3	MAX volume	—	100	
4	MIN volume	—	40	
5	volume 20	—	70	
6	Mid volume	—	90	

4、PWM Control

NO.	NAME	DEFAULT	ALTERNATIVE VALUE	REMARKS
1	PWM Normal	0		
2	PWM mode	20		
3	PWM period	119		

5、EMI:

NO.	NAME	DEFAULT	ALTERNATIVE VALUE	REMARKS
1	EMI	0		Do not use

6、VDSP:

NO.	NAME	DEFAULT	ALTERNATIVE VALUE	REMARKS
1	Gamma	ON	2.2	No use, Do not use
2	ChromaBugReduction	ON		No use, Do not use
3	LCD Overdrive	OFF		No use, Do not use
4	ACM saturation	red	0	No use, Do not use
		green	0	No use, Do not use
		blue	0	No use, Do not use
		yellow	0	No use, Do not use
		magen	0	No use, Do not use
		cyan	0	No use, Do not use
5	ACM hue	red	0	No use, Do not use
		green	0	No use, Do not use
		blue	0	No use, Do not use
		yellow	0	No use, Do not use
		magen	0	No use, Do not use
		cyan	0	No use, Do not use

7、Debug

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NO.	NAME	DEFAULT	ALTERNATIVE VALUE	REMARKS
1	adress	0×8888		Do not use
2	value	0×		Do not use
3	action	Read		Do not use
4	custom	ON		Do not use

8、Hardware Info

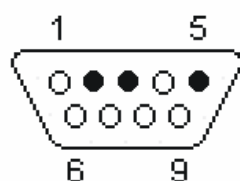
panel LC420WU2-SLB1

tuner PHILIPS FQ1216LME

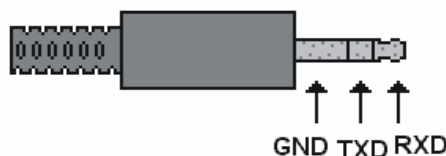
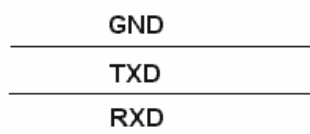
6. Software Updating

6-1、Updating Cable

- You can update our LCD' s software through a special RS232 cable(show as below)



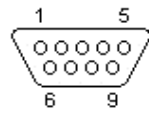
9 PIN D-SUB FEMALE



3.5mm Stereo Earphone plug

- This RS232 cable includes a 9 PIN D-SUB FEMALE, a 3.5mm Stereo Earphone plug and 3 wires Built the cable as show

Serial (PC 9)



(At the Computer)

9 PIN D-SUB MALE at the Computer.

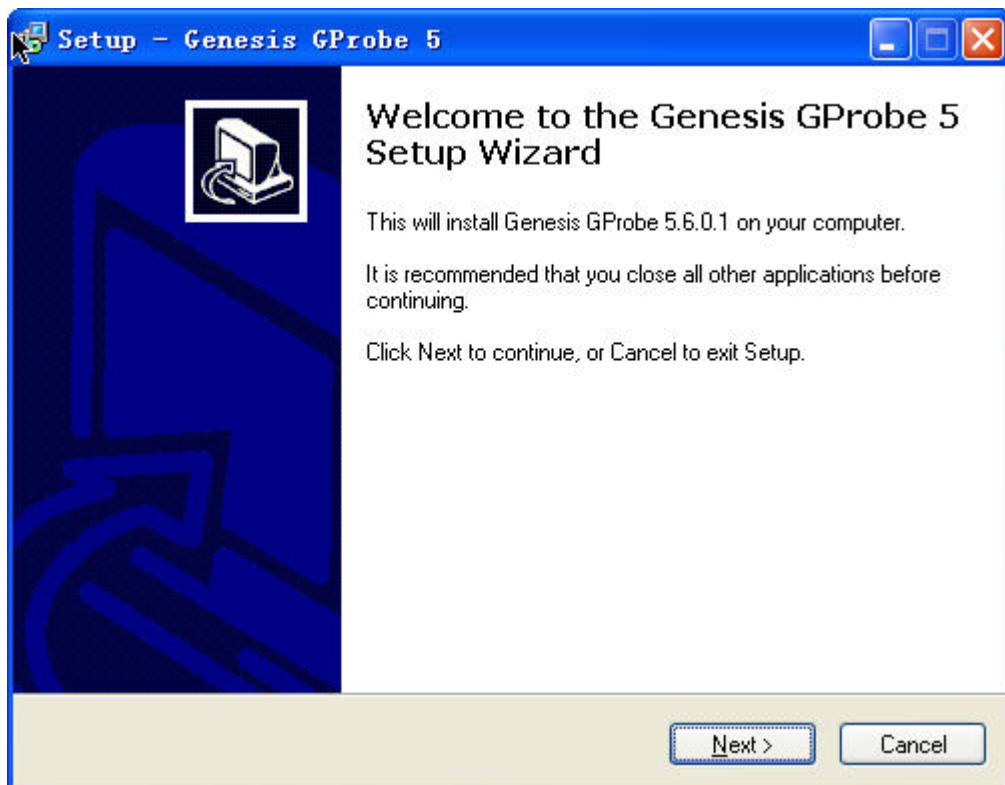
Pin	Name	Dir	Description
1	CD	←	Carrier Detect
2	RXD	←	Receive Data
3	TXD	→	Transmit Data
4	DTR	→	Data Terminal Ready
5	GND	—	System Ground
6	DSR	←	Data Set Ready
7	RTS	→	Request to Send
8	CTS	←	Clear to Send
9	RI	←	Ring Indicator

6-2、LFD4288EU Software Updating

First pls turn off the TV, then plug one end of the serial cable to the COM port of PC and other end to RS232 port of TV.

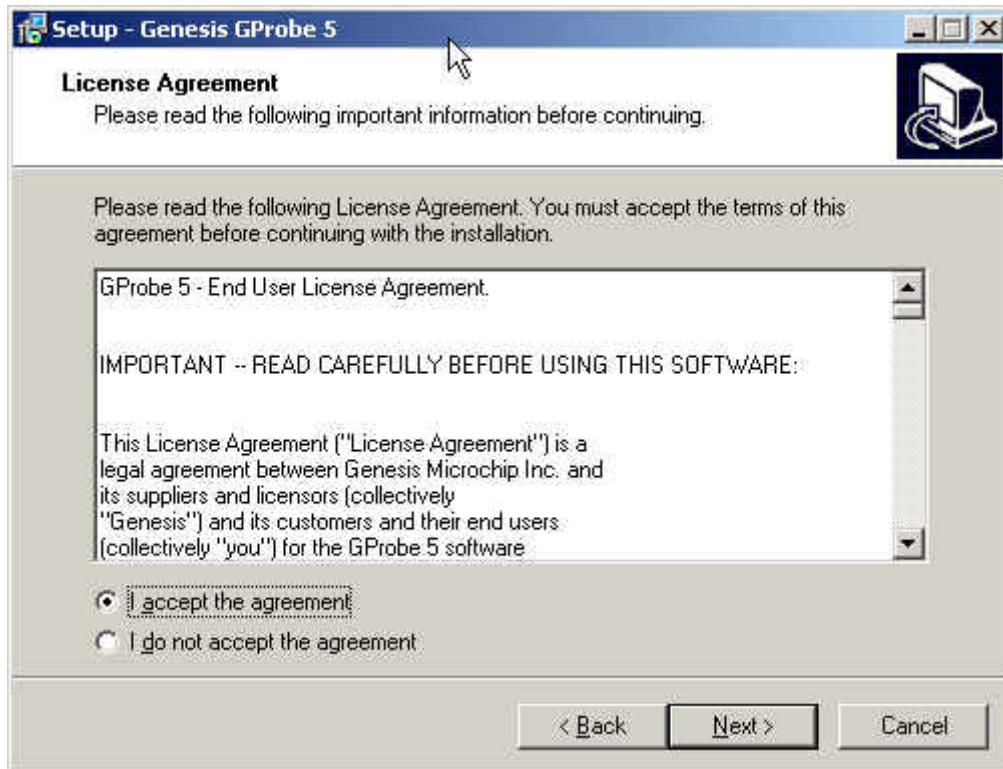
6-2-1、Software prepare

Click next

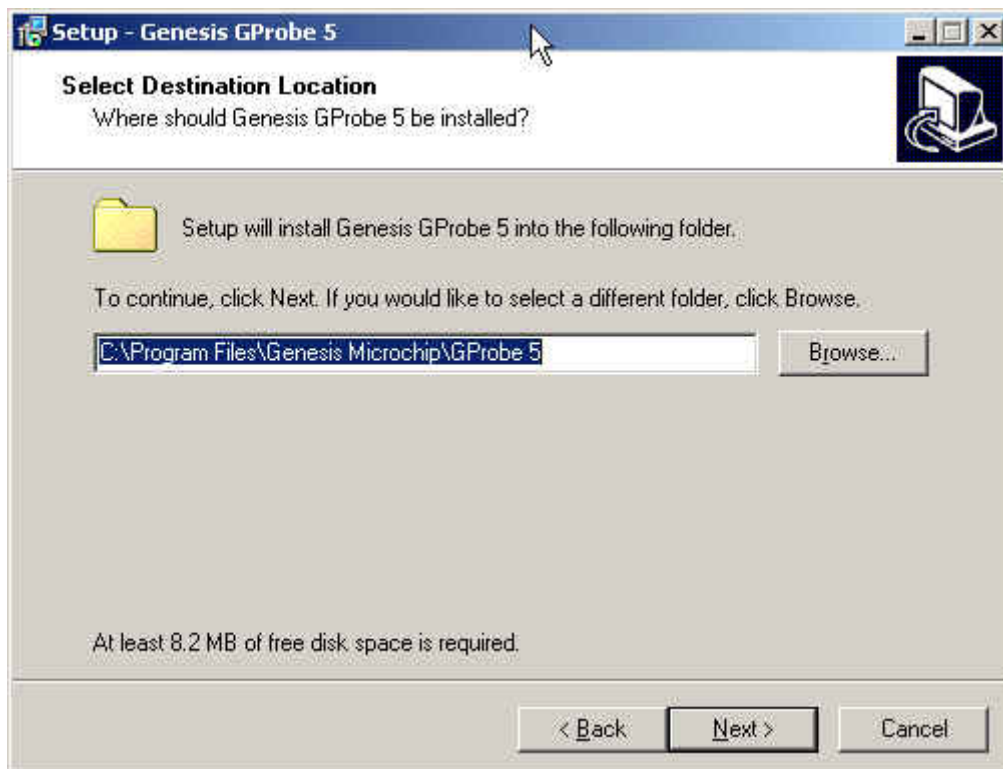


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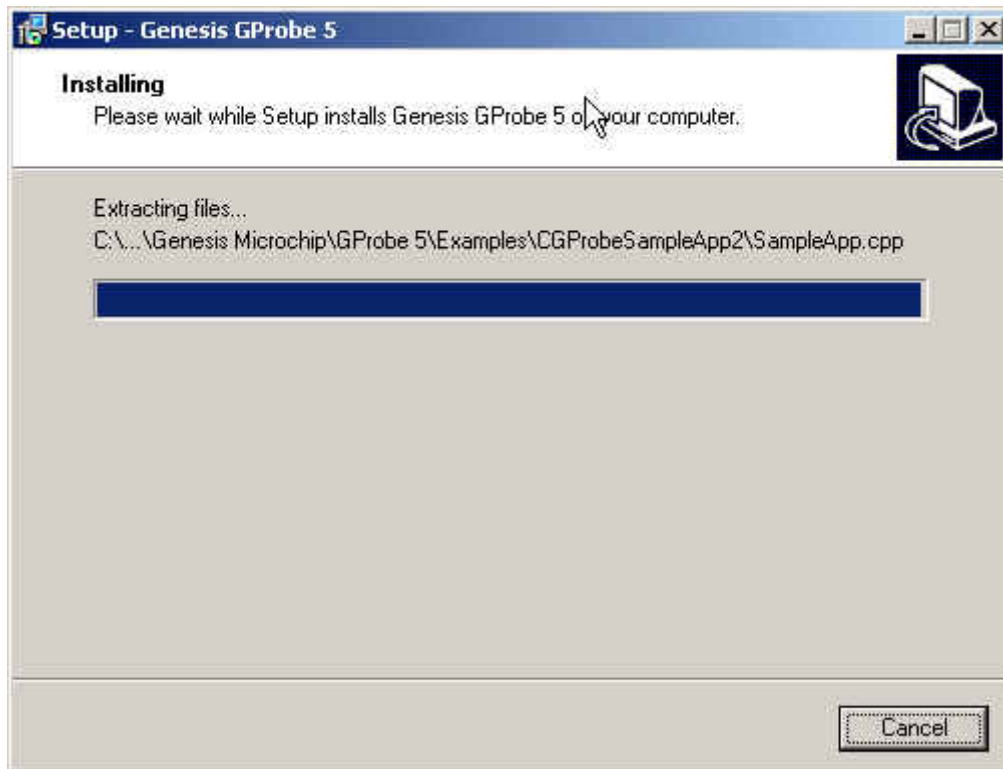
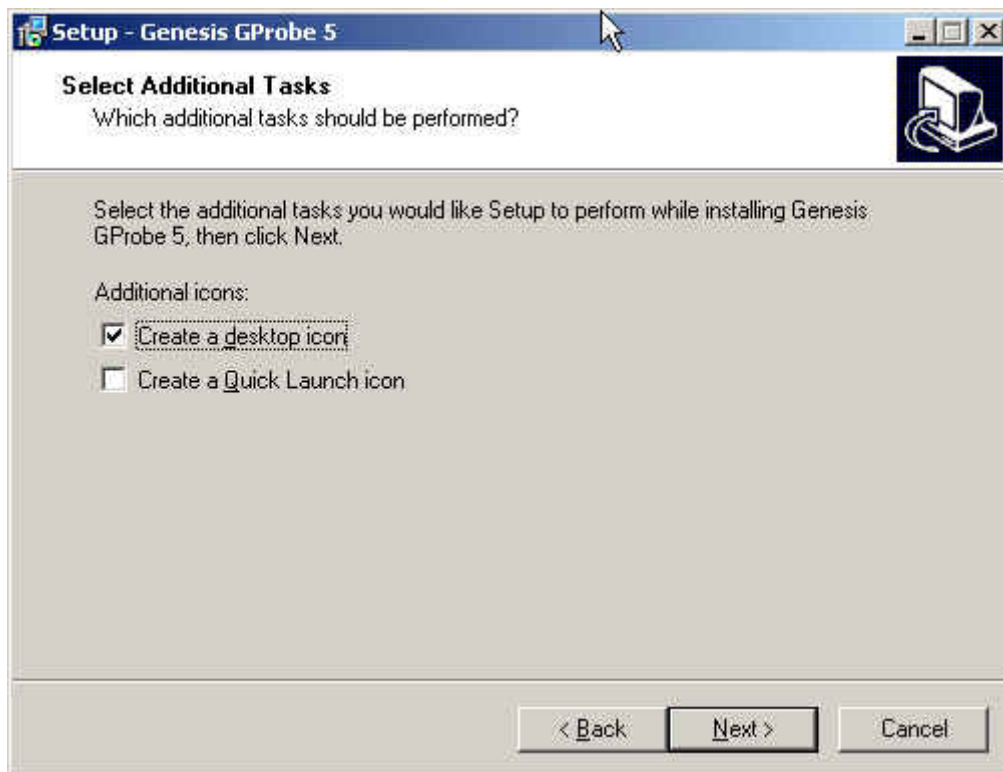
Choose “accept”



Click “next”

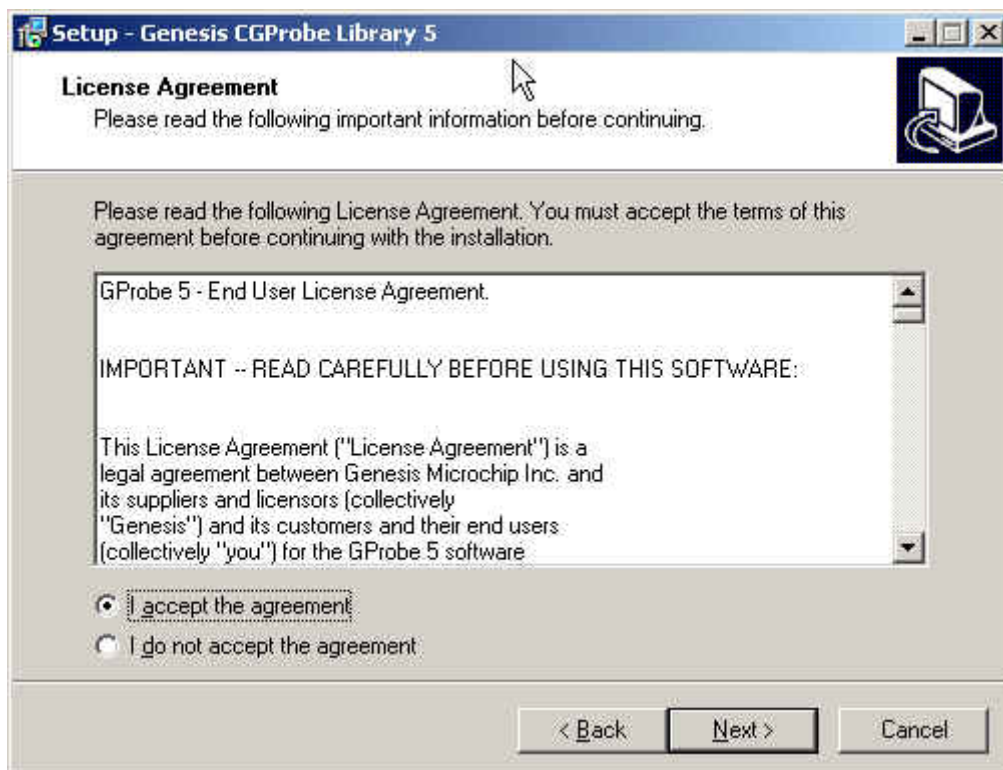
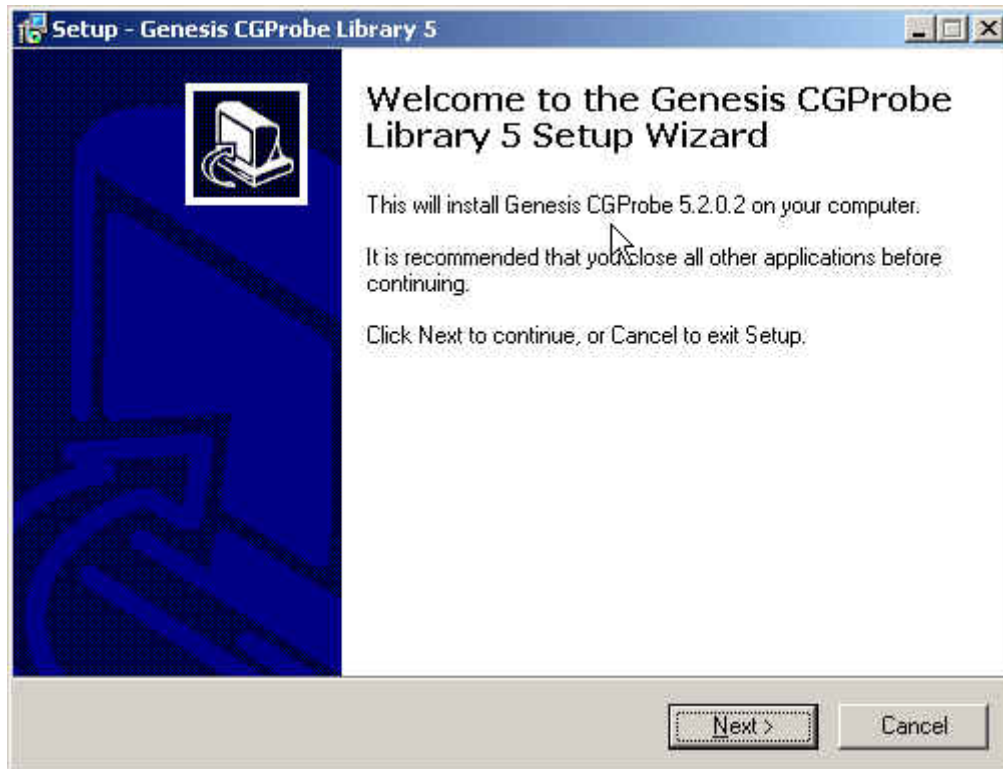


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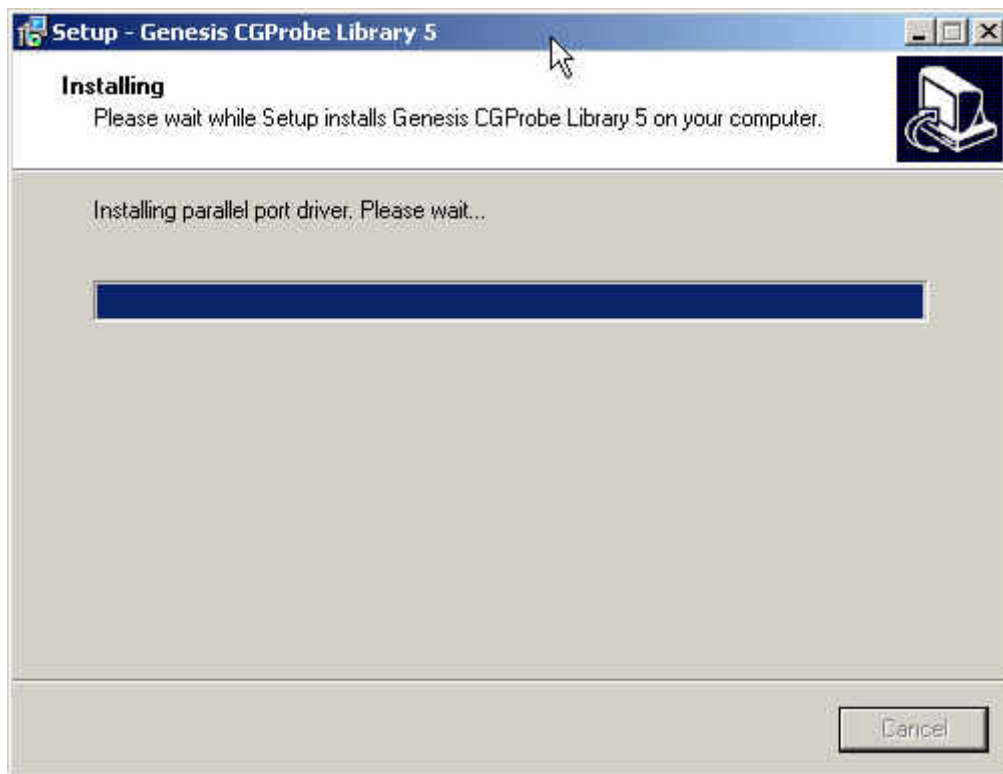


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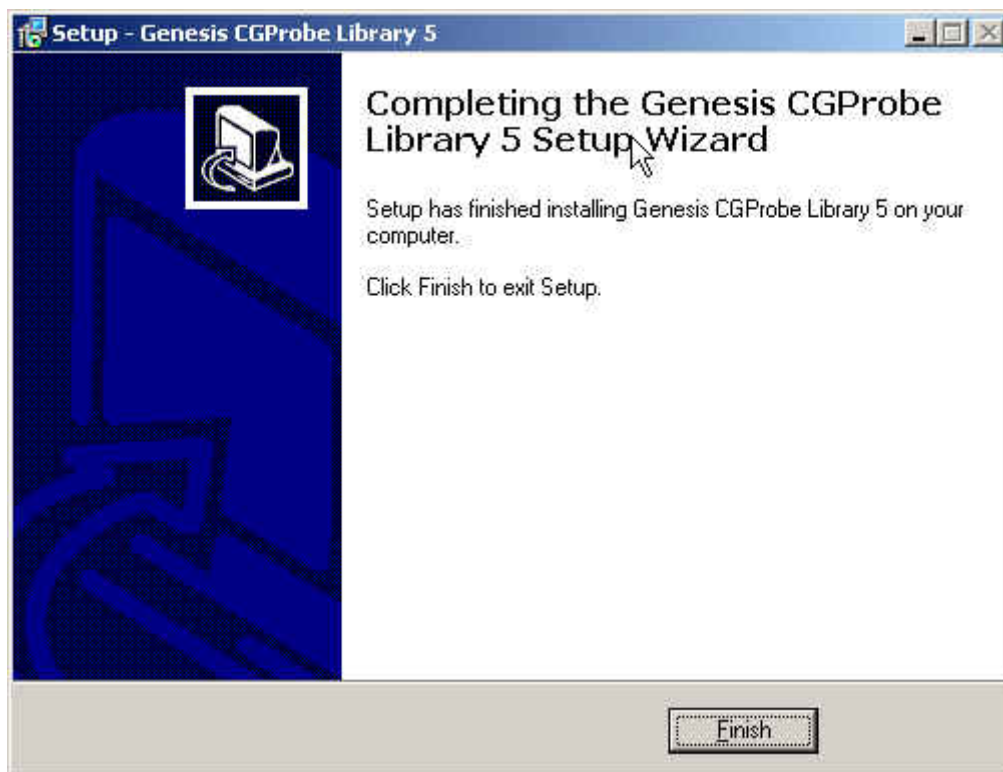
Click next



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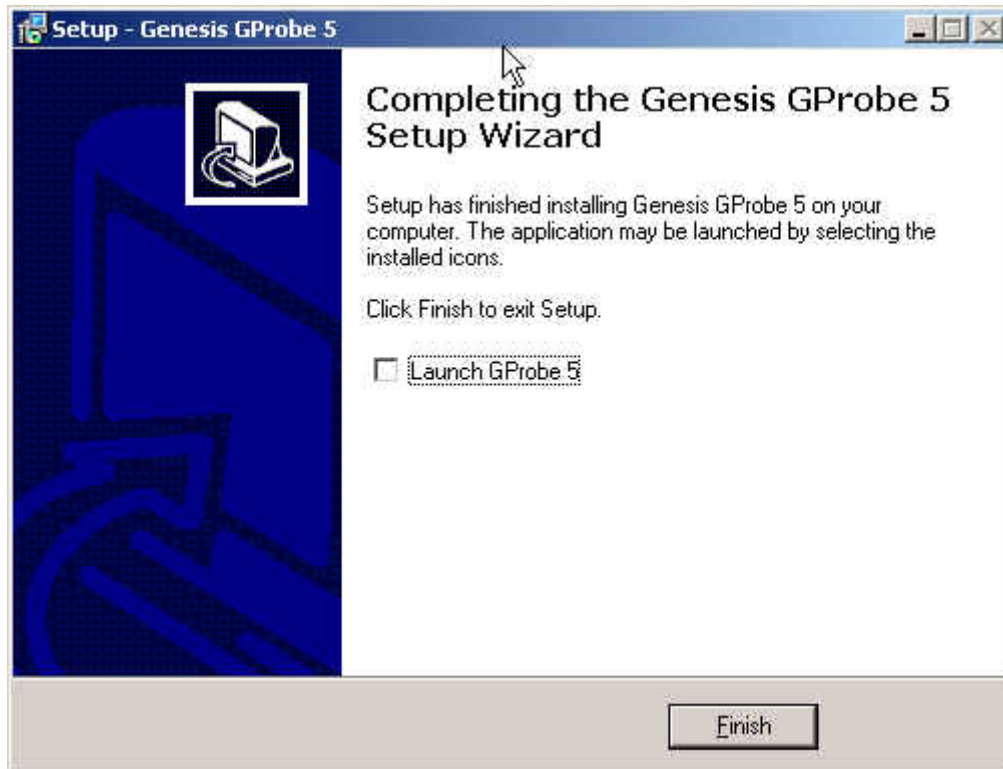


Click finish



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Click Finish to complete the setup of Gprobe.



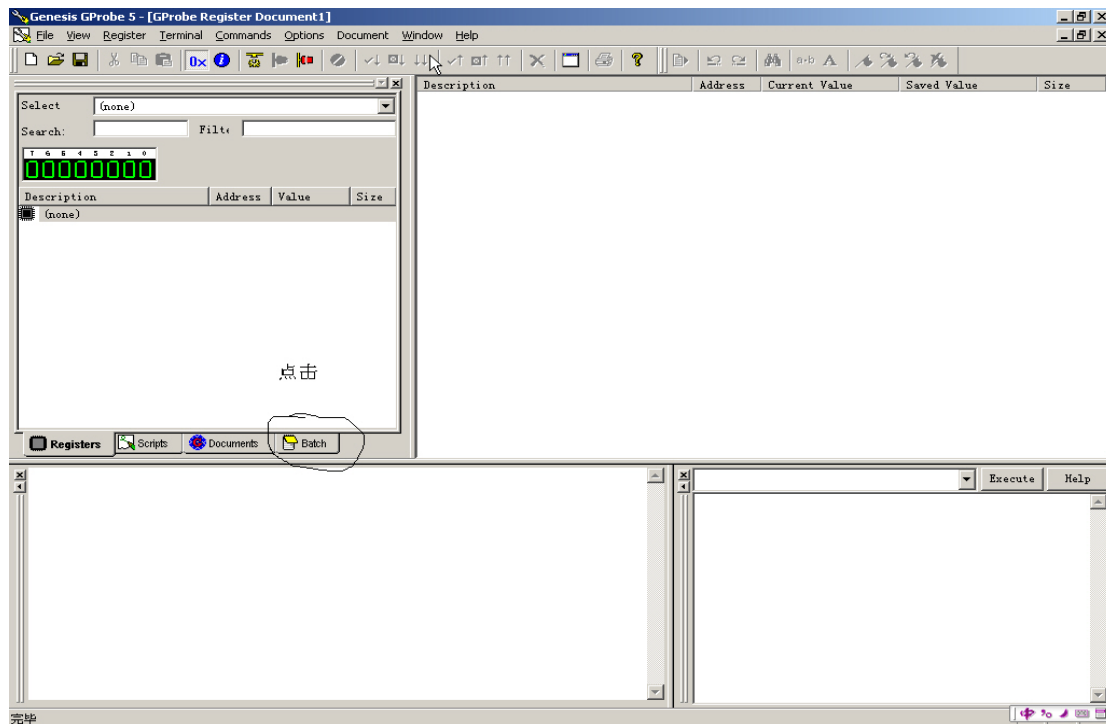
6-2-2 Copy the software files to the disk(the path should not be named in chinese).Edit the “bat” file to modify the path names of boot file and burn file,shown as the picture below.after modifying,save and close the window.



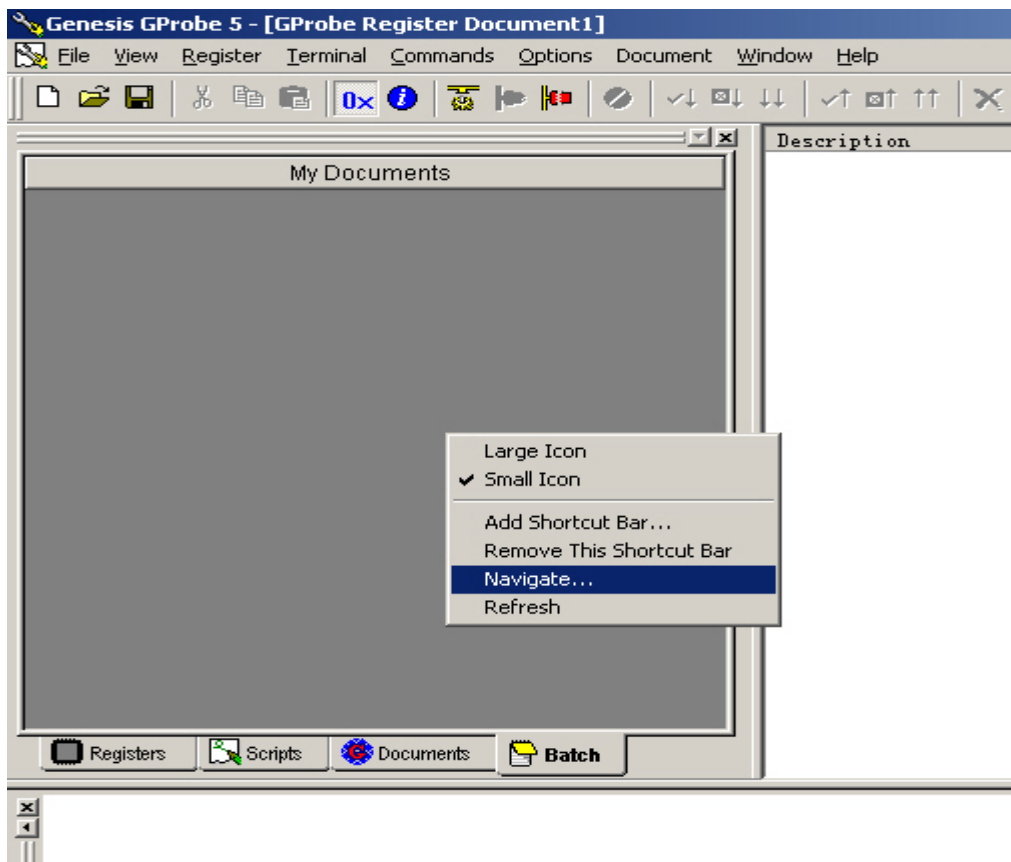
6-2-3 burning

Open Gprobe software, click Batch:

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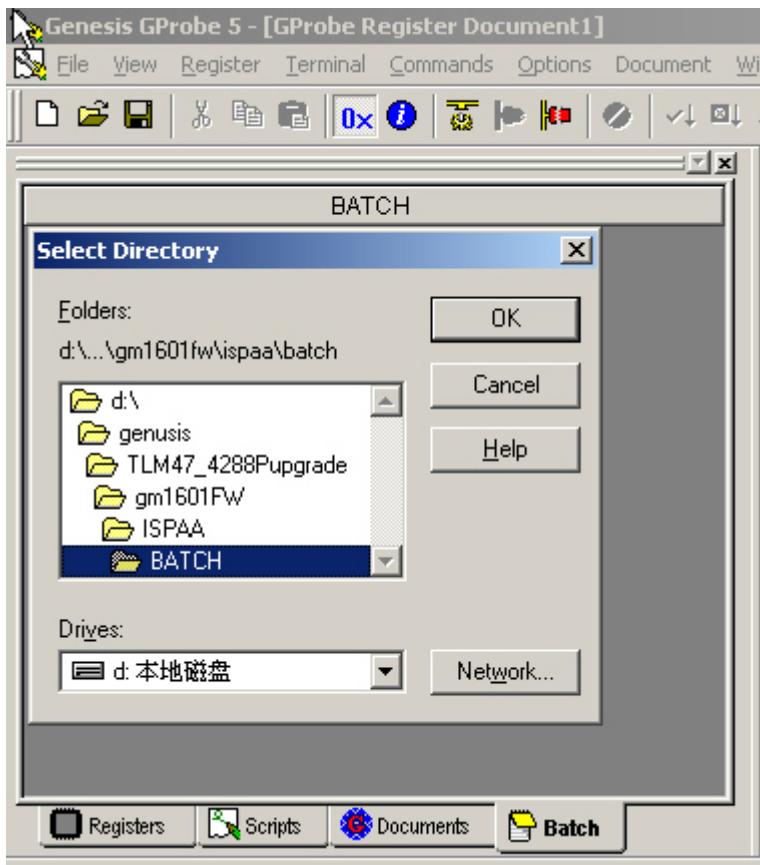


Right click the blank under “My Documents”, and choose “Navigate...”

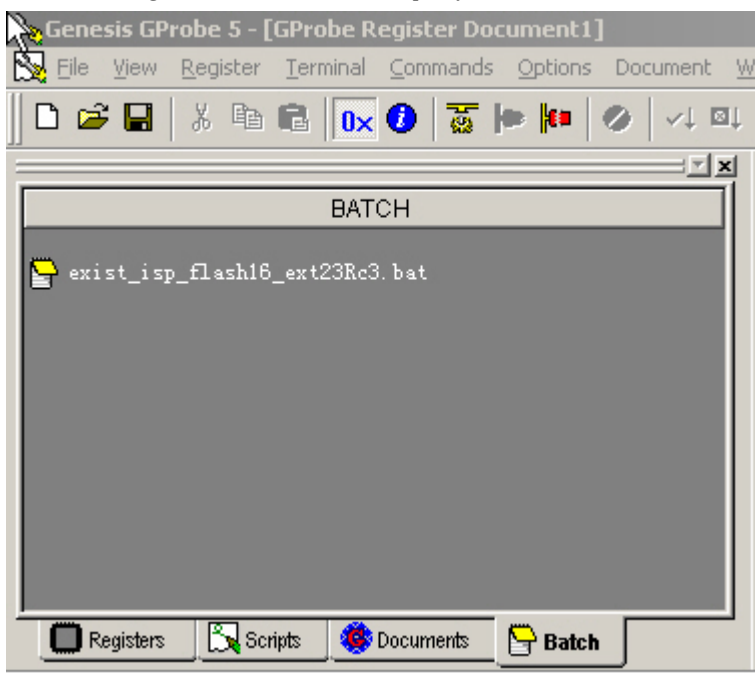


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Choose the path of “bat” file in the pop-up window.



After being chosen, it is displayed in the window as below:

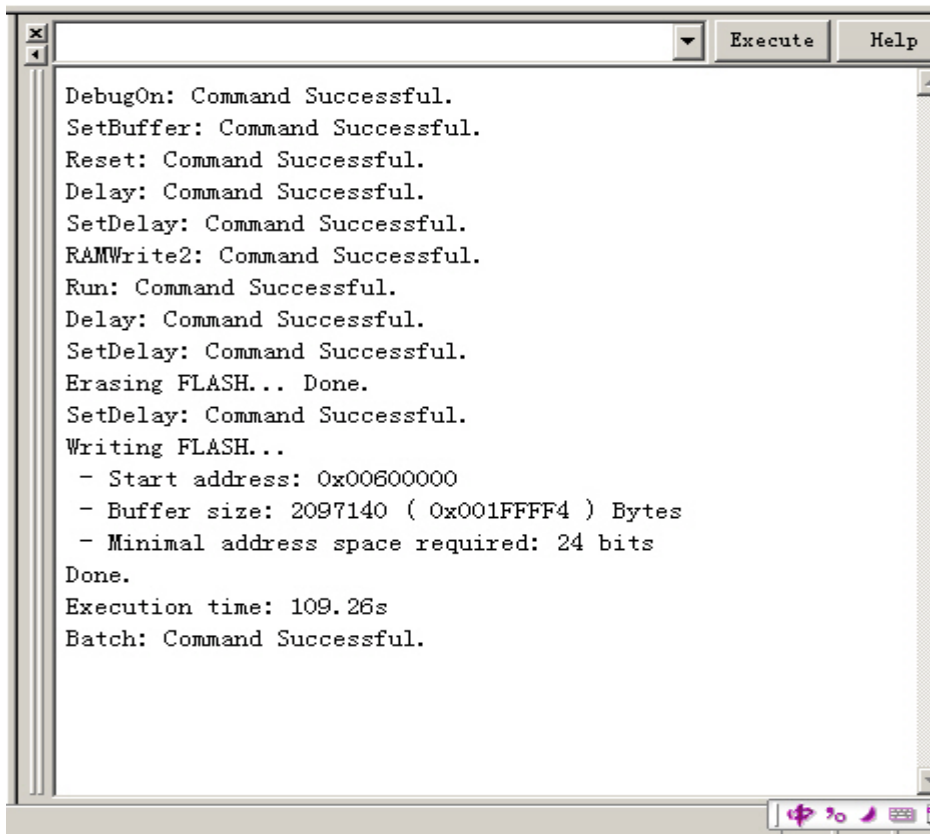


LCD TV Service Manual

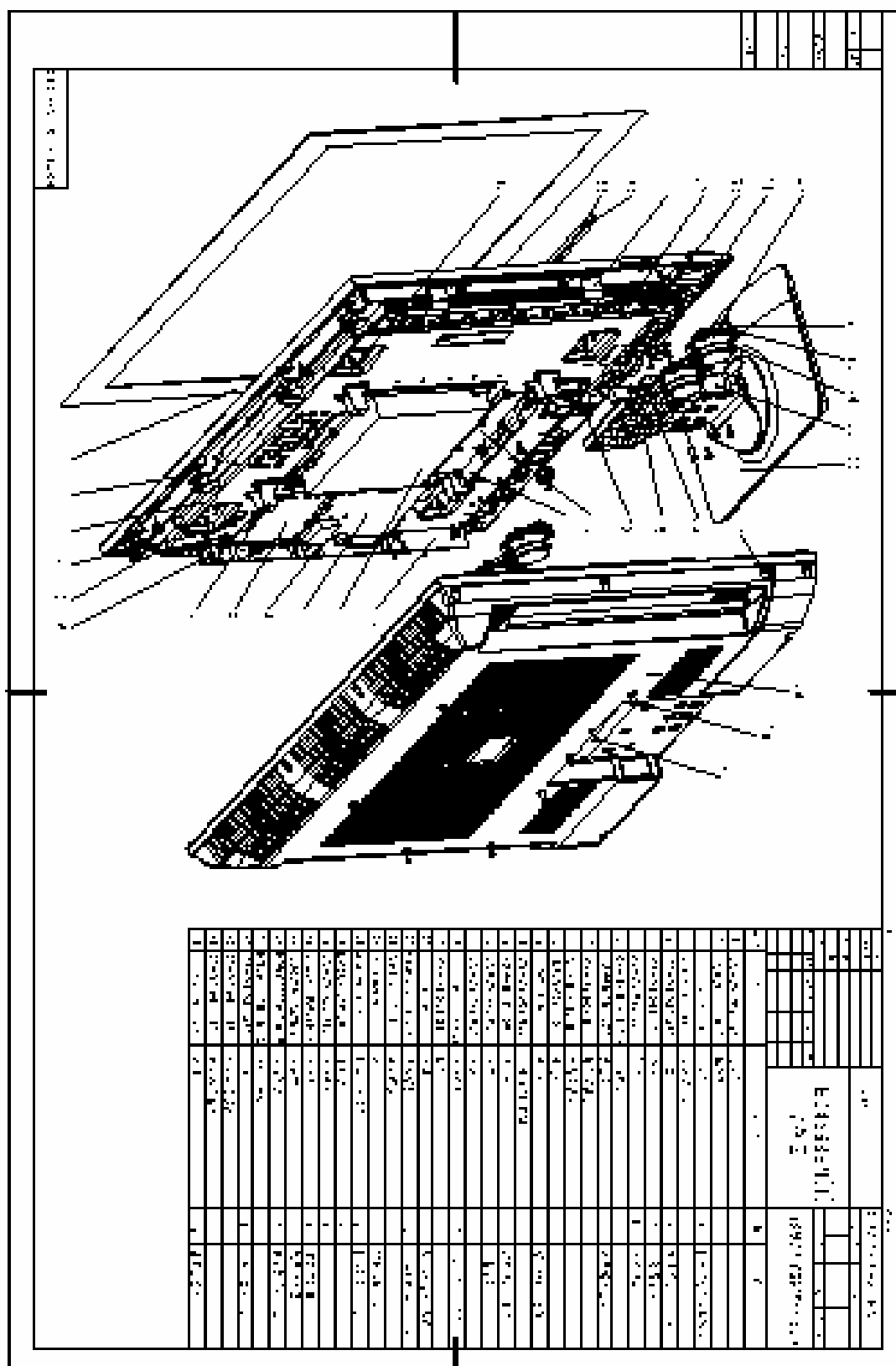
Click the icon then go installing.



If burn successfully, the execution time will be displayed on the window. If not, please turn off the TV set and return.



7. LFD4288EU Explode View And Bom



8. Spare Parts List

NAME	PART NUMBER	SAP NO.	REMARK
Main Board	RSAG2.908.957-3\ROH	112749	
Tunner Board	RSAG2.908.959\ROH	111559	
Power Board	WT2.908.1190\ROH	109702	
Carton BOX	E/RSR8.865.2594	1040510	
Front Cover	RSAG6.179.085\V7	111399	
Back Cover	RSAG8.074.348	1039087	
Remote Cotrol	EN-21610A	1039234	
Pedestal Groupware	WG6.121.041\V7	1039665	
Lcd Panel	LC420WU2-SLB1	1040910	
Power Wire	PHP-206+PHS-301	1028553	

9. Troubleshooting

Symptoms	Possible Solutions
TV will not turn on	• Make sure the power cord is plugged in, then press [Power]. • The remote control batteries may be dead. Replace the batteries.
No picture, no sound	• Check if you have set the off timer. • Check the antenna/cable connections. • Press [Display] to see if you have select the right signal source.
No sound, picture OK	• The sound may be muted. Press [VOL+] on the remote control or . • The station may have broadcast difficulties. Try another channel. • Check the speakers cable connections.
Poor sound, picture OK	• The station may have broadcast difficulties. Try another channel • Check the speakers cable connections.
Poor picture, sound OK	• Check the antenna connections. • The station may have broadcast difficulties. Try another channel. • Adjust the picture from the menu.
Unable to select a certain channel	• The channel may be skipped. See SKIP on page 11.
Poor colour or no colour	• The station may have broadcast difficulties. Try another channel. • Adjust the HUE and COLOUR in the menu.
The remote control does not operate	• There may be an obstruction between the remote control and the remote control sensor. • The batteries may be installed with a wrong polarity. • The remote control batteries may be dead. Replace the batteries. • Check if you have entered Teletext mode. Press [TT] to quit.
Disorder display at power on	• This may be caused by too short interval between power off and on. Unplug the power and restart.

10. Circuit Diagram

Cortez + Hudson RD2 Reference Board Design
FLI8532 Cortez and FLI8125 Hudson

CONTENTS

SCHEMATIC Name	SHEET
01. Contents, Revision History	1
02. Top Level	2
03. Inputs	3
04. HDMI I/F	4
05. FLI8125 Hudson	5
06. FLI8532 Cortez	6
07. Frame Store	7
08. CORTEZ Memory I/F	8
09. Outputs	9
10. Power	10

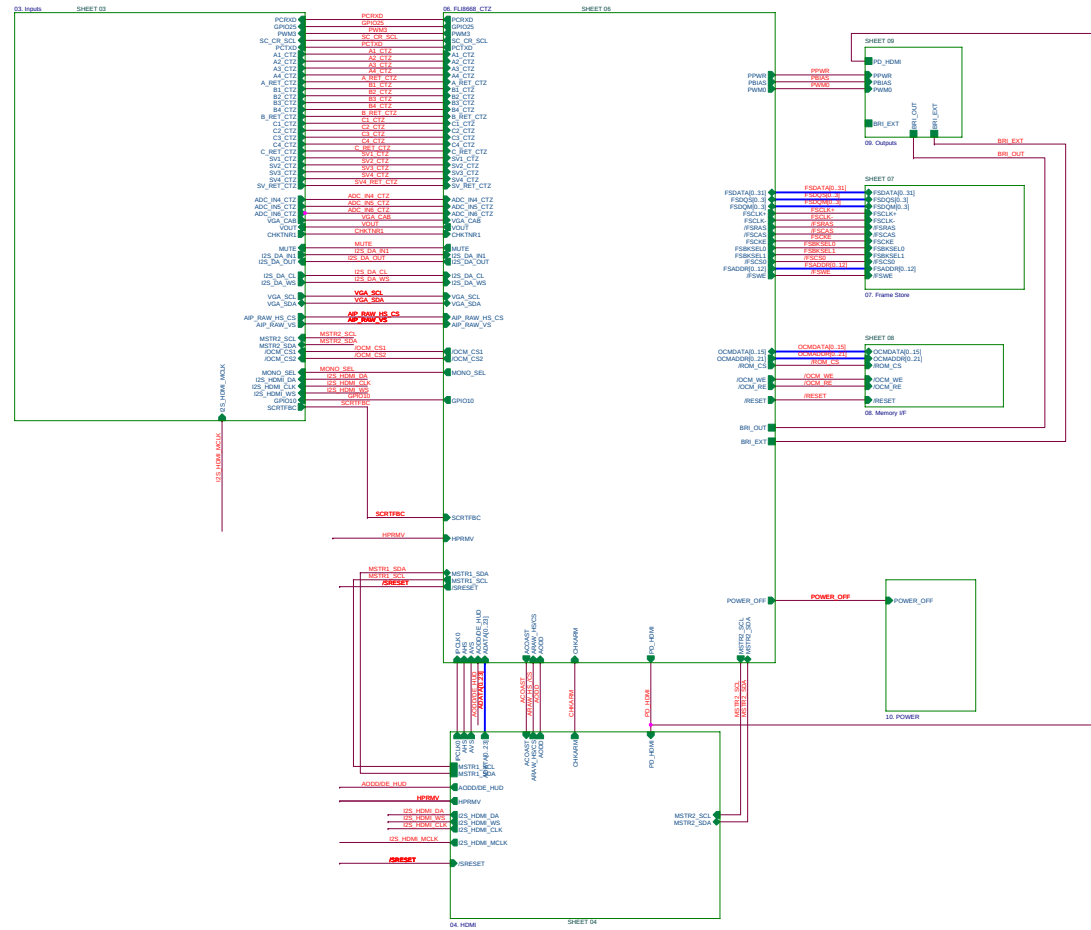
REVISION HISTORY

Date	Author	Ver	Comments
June 2004	Abdul Aziz	1	Draft Release PCB# 400-243 Rev 1
Aug 9, 2004	Max Tang	2	PCB# 400-243 Rev 2 Added jumpers to select b/w NTSC/SCART input modules; Added option to connect FSEL from SCART3 connector; Added switches for reducing stubs from external DIP connector, Fixed Hudson Pin-out errors and IROM bootstrap, Added jumper option for new keypad interface, Changed U1011 regulator to LDO, Hudson Bootstrap
Aug 9, 2004	Max Tang	3	PCB# 400-243 Rev 3 Add more Option for AFE signal.

Approval	Position	Signature	Date
Abdul Aziz	Genesis		
Waqar Hyder	Genesis		

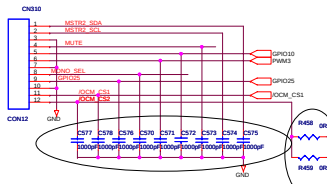
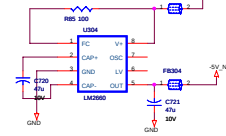
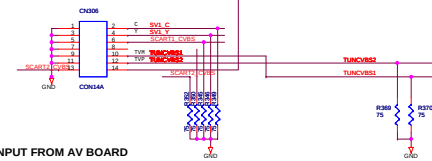
<Variant Name>

		Genesis Microchip Inc.	
		Title 01. Contents	
Size B	Document Number B0253-SCH-01		Rev 3
Date:		Monday, January 23, 2006	Sheet 1 of 10

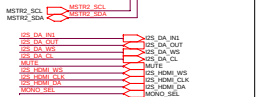
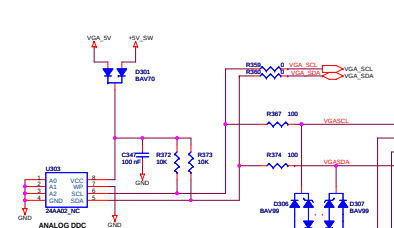
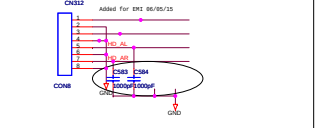




VIDEO INPUT FROM AV BOARD



VGA INPUT

[illegible]

AUDIO OUTPUT TO AV BOARD



	1	2	3	4
A	VGA-B	COMP-2_Pb	COMP_1_Pb	RET
B	VGA-G	COM2A	COMP_1_Y	RET
C	VGA-R	COMP-2_Y	COMP_1_Pr	RET
SV	COM1A	COMP-2_Pr	COM1B	COM2B
RET				

