



Internal Use Only

website:<http://biz.LGservice.com>

PLASMA TV

SERVICE MANUAL

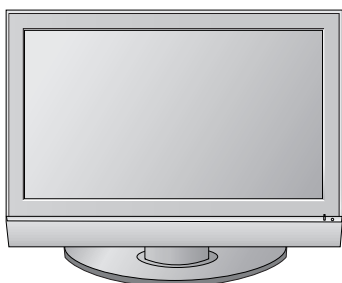
CHASSIS : PD73A

MODEL : 60PC45

60PC45-ZB

CAUTION

BEFORE SERVICING THE CHASSIS,
READ THE SAFETY PRECAUTIONS IN THIS MANUAL.



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SAFETY PRECAUTIONS

IMPORTANT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by \triangle in the Schematic Diagram and Replacement Parts List.

It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent X-RADIATION, Shock, Fire, or other Hazards.

Do not modify the original design without permission of manufacturer.

General Guidance

An **isolation Transformer should always be used** during the servicing of a receiver whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks.

It will also protect the receiver and its components from being damaged by accidental shorts of the circuitry that may be inadvertently introduced during the service operation.

If any fuse (or Fusible Resistor) in this monitor is blown, replace it with the specified.

When replacing a high wattage resistor (Oxide Metal Film Resistor, over 1W), keep the resistor 10mm away from PCB.

Keep wires away from high voltage or high temperature parts.

Due to high vacuum and large surface area of picture tube, extreme care should be used in **handling the Picture Tube**. Do not lift the Picture tube by its Neck.

Leakage Current Cold Check(Antenna Cold Check)

With the instrument AC plug removed from AC source, connect an electrical jumper across the two AC plug prongs. Place the AC switch in the on position, connect one lead of ohm-meter to the AC plug prongs tied together and touch other ohm-meter lead in turn to each exposed metallic parts such as antenna terminals, phone jacks, etc.

If the exposed metallic part has a return path to the chassis, the measured resistance should be between $1M\Omega$ and $5.2M\Omega$.

When the exposed metal has no return path to the chassis the reading must be infinite.

An other abnormality exists that must be corrected before the receiver is returned to the customer.

Leakage Current Hot Check (See below Figure)

Plug the AC cord directly into the AC outlet.

Do not use a line Isolation Transformer during this check.

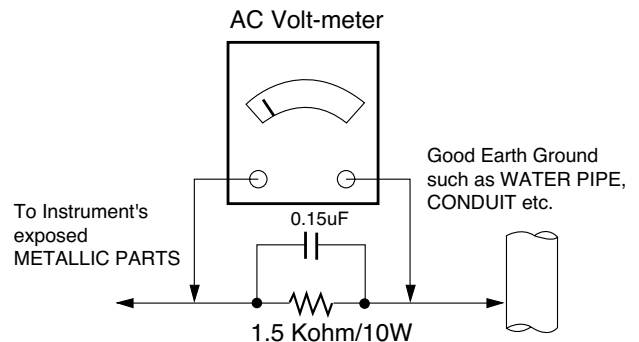
Connect 1.5K/10watt resistor in parallel with a 0.15uF capacitor between a known good earth ground (Water Pipe, Conduit, etc.) and the exposed metallic parts.

Measure the AC voltage across the resistor using AC voltmeter with 1000 ohms/volt or more sensitivity.

Reverse plug the AC cord into the AC outlet and repeat AC voltage measurements for each exposed metallic part. Any voltage measured must not exceed 0.75 volt RMS which corresponds to 0.5mA.

In case any measurement is out of the limits specified, there is possibility of shock hazard and the set must be checked and repaired before it is returned to the customer.

Leakage Current Hot Check circuit



SPECIFICATIONS

NOTE : Specifications and others are subject to change without notice for improvement.

■ Application Range

This spec is applied to the 60" PLASMA TV used PD73A Chassis.

Chassis	Model Name	Market	Brand	Remark
PD73A	60PC45-ZB	UK, German, Italy, France, Sweden, Finland, Spain, Netherlands, Belgium, Luxemburg, Greece, Denmark, Czech, Austria, Poland, Portugal, Norway, Rumania, Hungary , Bulgaria, Croatia, Serbia, Swiss, Slovenia, Russia	LG	

■ Specification

Each part is tested as below without special appointment.

- 1) Temperature : 25±5°C (77±9°F), CST : 40±5
- 2) Relative Humidity: 65±10%
- 3) Power Voltage: Standard Input voltage (100-240V~, 50/60Hz)
* Standard Voltage of each product is marked by models.
- 4) Specification and performance of each parts are followed each drawing and specification by part number in accordance with SBOM.
- 5) The receiver must be operated for about 20 minutes prior to the adjustment.

■ Test Method

- 1) Performance : LGE TV test method followed.
- 2) Demanded other specification
Safety : CE, IEC specification
EMC : CE, IEC

Model	Market	Appliance	Remark
60PC45	UK, German, Italy, France, Sweden, Finland, Spain, Netherlands, Belgium, Luxemburg, Greece, Denmark, Czech, Austria, Poland, Portugal, Norway, Rumania, Hungary , Bulgaria, Croatia, Serbia, Swiss, Slovenia, Russia	Safety : IEC/EN60065 EMI : EN55013 EMS : EN55020	TEST

■ General Specification

1. Module Specification (60" WXGA MODULE)

No	Item	Specification	Remark
1	Display Screen Device	60" Wide Color Display Module	Plasma Display Panel
2	Aspect Ratio	16:9	
3	PDP Module	PDP60X7, RGB Closed Type, Film Filter	
4	Operating Environment	1)Temp. : 0~40deg 2)Humidity : 20~80%	LGE SPEC.
5	Storage Environment	3)Temp. : -20~60deg 4)Humidity : 10~90%	
6	Input Voltage	100-240V~, 50/60Hz	Maker LG

2. Model General Specification

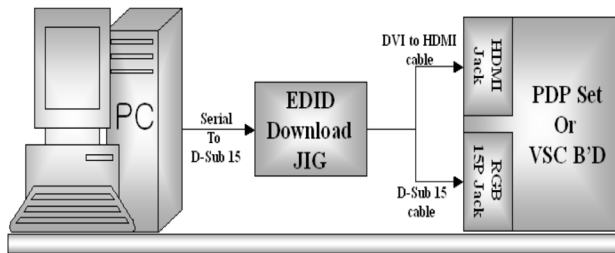
No	Item	Specification	Remark
1	Market	UK, German, Italy, France, Sweden, Finland, Spain, Netherlands, Belgium, Luxemburg, Greece, Denmark, Czech, Austria,	Analog Only
		Poland, Portugal, Norway, Rumania, Hungary , Bulgaria, Croatia, Serbia, Swiss, Slovenia, Russia	
2	roadcasting system	1) PAL-BG 2) PAL-DK 3) PAL-I,I' 4) DVB-T(ID TV) 5) SECAM-L/L'	
3	Receiving system	Analog : Upper Heterodyne Digital : COFDM	
4	Scart Jack (2EA)	PAL, SECAM	
5	Video Input (1EA)	PAL, SECAM, NTSC	4 System : PAL, SECAM, NTSC, PAL60
6	S-Video Input (1EA)	PAL, SECAM, NTSC	4 System : PAL, SECAM, NTSC, PAL60
7	Component Input (1EA)	Y/Cb/Cr, Y/Pb/Pr	
8	RGB Input(1EA)	RGB-PC	
9	HDMI Input(2EA)	HDMI-DTV & SOUND	
10	Audio Input (3EA	PC Audio, Component, AV	L/R Input

6. EDID (The Extended Display Identification Data)/ DDC (Display Data Channel) download

6-1. Required Test Equipment

- 1) Adjusting PC with S/W for writing EDID Data.(S/W : EDID TESTER Ver.2.5)
- 2) A Jig for EDID Download
- 3) Cable : Serial(9Pin or USB) to D-sub 15Pin cable, D-sub 15Pin cable, DVI to HDMI cable

6-2. Setting of device



(Fig. 2) Connection Diagram of DDC download

6-3. Preparation for Adjustment

- 1) As above Fig. 2, Connect the Set, EDID Download Jig, PC & Cable.
- 2) Turn on the PC & EDID Download Jig. And Execute the S/W : EDID TESTER Ver.2.5.
- 3) Set up S/W option.
Repeat Number : 5
Device Address : A0
PageByte : 8
- 4) Power on the Set.

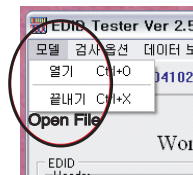


6-4. Sequence of Adjustment - EDID Download

- 1) Init the data.



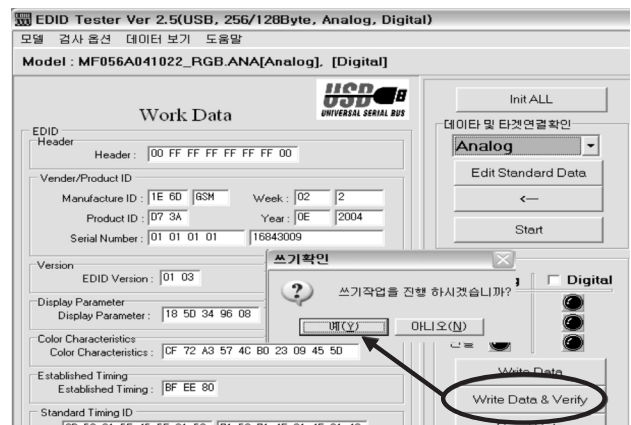
- 2) Load the EDID data.(Open File).



[Analog file] (for RGB)

[Digital file] (for HDMI)

- 3) Set the S/W as below.
- 4) Push the "Write Data & Verify" button. And confirm "Yes".
- 5) If the writing is finished, you will see the "OK" message.
- 6) If TV has two HDMI, you must download two times for each HDMI.



- EDID DATA

1) Analog RGB.

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	00	FF	FF	FF	FF	FF	FF	00	1E	6D	1			2		
10		3	01	03	01	46	27	78	EA	D9	B0	A3	57	49	9C	25
20	11	49	4B	A5	6E	00	31	40	45	40	61	40	D1	C0	01	01
30	01	01	01	01	01	01	1B	21	50	A0	51	00	1E	30	48	88
40	35	00	BC	86	21	00	00	1C	26	36	80	A0	70	38	1F	40
50	50	20	85	04	BC	86	21	00	00	18						
60						4							00	00	00	FD
70	00	3C	4B	1D	43	0E	00	0A	20	20	20	20	20	20	00	5

=> Detail EDID Options are below([1], [2], [3],[4], [5])

1. [1]-Product ID

Model Name	Product ID	Product ID	
		Hex	EDID table
60PC45	50029	C36D	6DC3

2. [2]-Serial No : Controlled on production line

3. [3]-Month, Year : Controlled on production line

ex) Week : '03' => '03'

Year : '2006' => '10'

4. [4]-Model Name(Hex):

Model Name	Hex Data
60PC45	00 00 00 FC 00 36 30 50 43 34 35 0A 20 20 20 20 20

5. [5]-Checksum : Changeable by total EDID data

2) HDMI1.

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	00	FF	FF	FF	FF	FF	FF	00	1E	6D	1			2		
10		3	01	03	80	46	27	78	EA	D9	B0	A3	57	49	9C	25
20	11	49	4B	A5	6E	00	31	40	45	40	61	40	D1	C0	01	01
30	01	01	01	01	01	01	02	3A	80	18	71	38	2D	40	58	2C
40	45	00	C4	8E	21	00	00	1E	1B	21	50	A0	51	00	1E	30
50	48	88	35	00	BC	86	21	00	00	1C						
60						4							00	00	00	FD
70	00	32	4B	1C	43	0F	00	0A	20	20	20	20	20	20	01	5

=> Detail EDID Options are below([1], [2], [3],[4], [5])

1. [1]-Product ID

Model Name	Product ID	Product ID	
		Hex	EDID table
60PC45	50030	C36E	6EC3

2. [2]-Serial No : Controlled on production line

3. [3]-Month, Year : Controlled on production line

ex) Week : '03' => '03'

Year : '2006' => '10'

4. [4]-Model Name(Hex):

Model Name	Hex Data
60PC45	00 00 00 FC 00 36 30 50 43 34 35 0A 20 20 20 20 20

5. [5]-Checksum : Changeable by total EDID data

3) HDMI2.

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	00	FF	FF	FF	FF	FF	FF	00	1E	6D	1			2		
10		3	01	03	80	46	27	78	EA	D9	B0	A3	57	49	9C	25
20	11	49	4B	A5	6E	00	31	40	45	40	61	40	D1	C0	01	01
30	01	01	01	01	01	01	02	3A	80	18	71	38	2D	40	58	2C
40	45	00	C4	8E	21	00	00	1E	1B	21	50	A0	51	00	1E	30
50	48	88	35	00	BC	86	21	00	00	1C						
60						4							00	00	00	FD
70	00	32	4B	1C	43	0F	00	0A	20	20	20	20	20	20	01	5

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	02	03	21	F1	4E	02	11	01	03	12	13	04	14	05	21	1F
10	20	22	10	23	09	07	07	83	01	00	00	65	03	0C	00	20
20	00	01	1D	00	BC	52	D0	1E	20	B8	28	55	40	C4	8E	21
30	00	00	1E	01	1D	00	72	51	D0	1E	20	6E	28	55	00	C4
40	8E	21	00	00	1E	01	1D	80	D0	72	1C	16	20	10	2C	25
50	80	C4	8E	21	00	00	9E	8C	0A	D0	90	20	40	31	20	0C
60	40	55	00	C4	8E	21	00	00	18	4E	1F	00	80	51	00	1E
70	30	40	80	37	00	BC	88	21	00	00	18	00	00	00	00	5

=> Detail EDID Options are below([1], [2], [3],[4], [5])

* Please refer HDMI1

7. ADC Calibration

ADC	RF/AV/S-VIDEO		Component	RGB-PC
MSPG925FS	PAL		Model:215(720P) Pattern : 65 * 720/50Hz 7 Color Bar	Model : 3
	INPUT SELECT	AV3		(1024*768 60Hz)
	Model : 202			Pattern : 65
	(PAL-BGDHI)			7 Color Bar
	Pattern : 65 * PAL 7 Color Bar			

- System control RS-232 Host should be "PC" for adjustment.
- Before AV ADC Calibration, execute the "Panel size selection"

8. Auto AV(CVBS) Color Balance

8-1. Requirement

- This AV color balance adjustment should be performed before white Balance Adjustment.

8-2. Required Equipment

- 1) Remote controller for adjustment.
- 2) MSPG-925FS Pattern Generator (Which has Video Signal: 7 Color Bar Pattern shown in Fig. 3).
- Model: 202 / Pattern: 65 EC and FC model use PAL-BGDHI. (composite signal)

8-3. Method of Auto AV(CVBS) Color Balance

- 1) Input the Video signal: 7 color Bar signal into AV3.
- 2) Set the PSM to Dynamic mode in the Picture menu.
- 3) Press IN-STAR key on R/C for adjustment.
- 4) Press the ►(Vol. +) key operate to set, then it becomes automatically.
- 5) Auto-RGB OK means completed adjustment.



(Fig. 3) Color Balance signal

9. Adjustment of Component

9-1. Requirement

- This AV color balance adjustment should be performed before white Balance Adjustment.

9-2. Required Equipment

- 1) Remote controller for adjustment.
- 2) MSPG-925FS Pattern Generator (Which has Video Signal: 7 Color Bar Pattern shown in Fig. 4).
- Model: 215 / Pattern: 65

9-3. Method of Auto Component Color Balance

- 1) Input the Component 720p/50Hz 7 Color Bar(MSPG-925FS model:215, pattern:65) signal into Component.
- 2) Set the PSM to Dynamic mode in the Picture menu.
- 3) Press IN-STAR key on R/C for adjustment.
- 4) Press the ►(Vol. +) key operate to set, then it becomes automatically.
- 5) Auto-RGB OK means completed adjustment.



(Fig. 4) Color bar Test Pattern

10. Adjustment of RGB

10-1. Requirement

- This AV color balance adjustment should be performed before white Balance Adjustment.

10-2. Required Equipment

- 1) Remote controller for adjustment.
- 2) MSPG-925FS Pattern Generator (Which has Video Signal: 7 Color Bar Pattern shown in Fig. 5).
- Model: 215 / Pattern: 65

10-3. Method of Auto RGB Color Balance

- 1) Input the PC 1024x768 @ 60Hz 7 color bar (MSPG-925FS, Model:3, Pattern: 65) into RGB. (using D-sub to D-sub cable)
- 2) Set the PSM to Dynamic mode in the Picture menu.
- 3) Press IN-STAR key on R/C for adjustment.
- 4) Press the ►(Vol. +) key operate to set, then it becomes automatically.
- 5) Auto-RGB OK means completed adjustment.



(Fig. 5) Color bar Test Pattern

11. Adjustment of White Balance

11-1. Requirement

- Before adjusting White-balance, the AV ADC should be done.

11-2. Required Equipment

- Remote controller for adjustment.
- Color Analyzer.(CA-1000,CA-100+,CA-200 or same product) : CH10(PDP)
- * Please adjust CA-210, CA-100+ by CS-1000 before measuring.**
- Auto W/B adjustment instrument.(only for Auto adjustment)
- AV Pattern Generator.

- Synchronization relation between PSM and CSM.

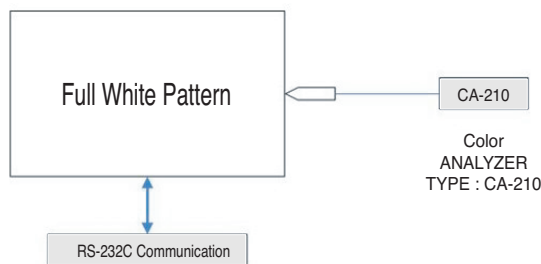
CSM	PLASMA	Remark
Cool	11000K	
Normal	9300K	
Warm	6500K	

- CS-1000/CA-100+/CA-210 White balance adjustment coordinate and color temperature.

Mode	Color Coordinate		Temp	Δuv
	x	y		
COOL	0.276±0.002	0.283±0.002	11000K	0.000
MEDIUM	0.285±0.002	0.293±0.002	9300K	0.000
WARM	0.313±0.002	0.329±0.002	6500K	0.003

11-3. Connection Picture of the Measuring Instrument(On Automatic control)

- Inside PATTERN is used when W/B is controlled. Connect to auto controller or push control R/C IN-START -> Enter the mode of White-Balance, the pattern will come out.



(Fig. 6) Auto AV(CVBS) Color Balance Test Pattern

- Auto-control interface and directions

- Adjust in the place where the influx of light like floodlight around is blocked.(illumination is less than 10ux)
- Measure and adjust after sticking the Color Analyzer(CA-100+, CA210) to the side of the module.
- Aging time : keep white pattern using inside pattern.

- Auto adjustment Map(RS-232C)

Type		PD73A/C				
Baud Rate		Data bit		Stop bit	Parity	
115200		8		1	NONE	
Protocol Setting	Index	Cmd1	Cmd2	Data	Min Value	Max Value
	R Gain	j	a		00(00)	128(80)
	G Gain	j	b		00(00)	128(80)
	B Gain	j	c		00(00)	128(80)
	R Offset	j	d		00(00)	128(80)
	G Offset	j	e		00(00)	128(80)
	B Offset	j	f		00(00)	128(80)

12. Adjustment of White Balance

(Manual white Balance)

- One of R Gain/ G Gain/ B Gain should be kept on 80, and others are controlled lowering from 80
- 'power on' of the control R/C, set heat run to white by pressing and heat run over 15 minutes. (Set: RS-232 Host: PC, Baud Rate: 115200bps, Download: Cortez)
- Zero Calibrate CA-100+, and stick the sensor to the center of PDP module surface when you adjust.
- Double click In-start key on Controlling R/C and get in 'white balance'.
- Set test-pattern on and display inside pattern. Control is carried out on three color temperature, COOL, MEDIUM, WARM. (Control is carried out three times.)
- When the R/G/B GAIN is 80 on OSD, it is the FULL DYNAMIC Range of the Module. In order to control white balance without the saturation of FULL DYNAMIC Range and DATA, one of R Gain / G Gain / B Gain should be kept on 80, and other two is controlled lowering from 80.

- * Color Temperature: Cool, Medium, Warm

- When R GAIN is set to 80
 - Control G GAIN and B GAIN by lowering from 80.
 - When B GAIN is set to 80
 - Control R GAIN and G GAIN by lowering from 80.
 - When G GAIN is set to 80
 - Control R GAIN and B GAIN by lowering from 80.
- One of R Gain / G Gain / B Gain should be kept on 80, and adjust other two lower than 80.
(When R/G/B GAIN are all 80, it is the FULL DYNAMIC Range of Module)

13. Default Value in Adjustment mode

13-1. Auto Color Balance

<Component>			<RGB>		
Auto Color Balance (Hex)			Auto Color Balance (Hex)		
Auto-RGB ▶ To Set			Auto-RGB ▶ To Set		
Source	MAIN		Source	MAIN	
Red	Offset1	022	Red	Offset1	0F8
Green	Offset1	024	Green	Offset1	0DA
Blue	Offset1	023	Blue	Offset1	0BC
Red	Offset2	45	Red	Offset2	01
Green	Offset2	43	Green	Offset2	01
Blue	Offset2	37	Blue	Offset2	01
Red	Gain	014	Red	Gain	1FE
Green	Gain	031	Green	Gain	1FE
Blue	Gain	011	Blue	Gain	1FE
Reset	▶ To Set		Reset	▶ To Set	

<AV>		
AutoColorBalance(Hex)		
Auto-RGB ▶ To Set		
Source	MAIN	
Red	Offset1	022
Green	Offset1	024
Blue	Offset1	023
Red	Offset2	45
Green	Offset2	43
Blue	Offset2	37
Red	Gain	014
Re Set	▶ To Set	

(Fig. 7) Default on OSD

13-2. Write Balance

White Balance (Hex)		
Red	Gain	80
Green	Gain	80
Blue	Gain	80
Red	Offset	80
Green	Offset	80
Blue	Offset	80
Reset	▶ To Set	

(Fig. 8) Default on OSD

14. EEPROM Data Write(Serial No D/L)

14-1. Signal TABLE

CMD	LENGTH	ADH	ADL	DATA_1	...	DATA_n	CS	DELAY
-----	--------	-----	-----	--------	-----	--------	----	-------

CMD : A0h
 LENGTH : 85~94h (1~16 bytes)
 ADH : E²PROM Sub Address high (00~1F)
 ADL : E²PROM Sub Address low (00~FF)
 Data : Write data
 CS : CMD + LENGTH + ADH + ADL + Data_1 + ... + Data_n
 Delay : 20ms

14-2. Command Set

No	Adjust mode	CMD(hex)	LENGTH(hex)	Description
1	EEPROM WRITE	A0h	84h+n	n-byted Write (n=1~16)

* Description

FOS Default write : <7mode data> write

Vtotal, V_Frequency, Sync_Polarity, Htotal, Hstart, Vstart, 0, Phase

Data write : Model Name and Serial Number write in EEPROM,.

14-3. Method & Notice

- (1) Serial number D/L is using of scan equipment.
- (2) Setting of scan equipment operated by Manufacturing Technology Group.
- (3) Serial number D/L must be conformed when it is produced in production line, because serial number D/L is mandatory by D-book 4.0.

15. Set Information(Serial No& Model name)

15-1. Setting up like bottom figure

(After setting white balance, this is set)

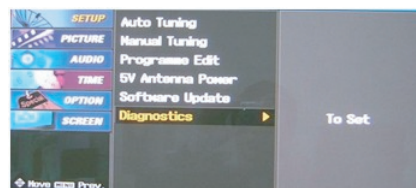
(Setting: Press ADJ Key in the Adjust remoon)


- (1) Select "System Control 2" by using ▲ / ▼ (CH+/-) key, and press ■ (ENTER) Using Adjust remoon, RS-232 Host & Baud Rate & Download value change)

Model Name	Tool Option1	Tool Option2	Area Option	Option1	Option2	Option3	Option4
60PC45	18698	1953	0	14	2	1	192

15-2. Push the menu button in DTV mode.

- (1) Select the STATION-> Diagnostics -> To set.



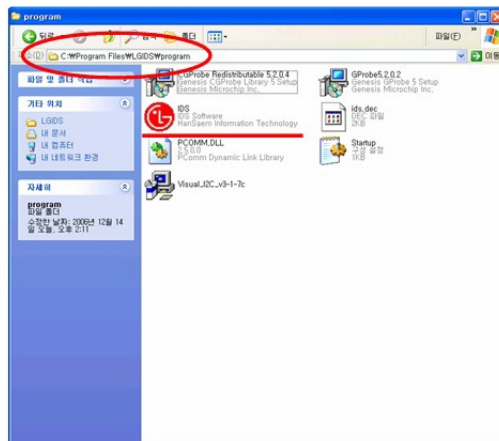


The screenshot shows the 'Engineering Diagnostics' screen. It displays the following information:

- Manufacturer : LG Electronics Inc.
- Model / Type : 26LC3D
- Serial No. : 601NACCAZ001
- Software Version: 0.1.0

Below this information is a large empty table with 5 columns and 10 rows. At the bottom left, there are two buttons: 'Menu' and 'Prev.'.

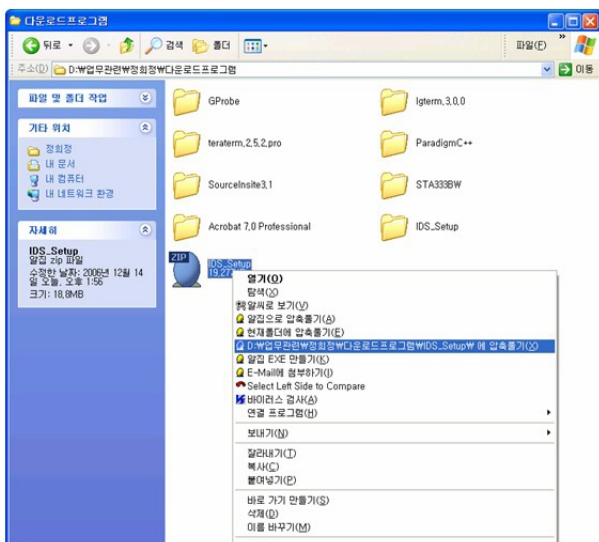
1. You can find the ICON on C:\Program Files\LGIDS.



- 1) Push the IN-START key in a Adjust Remocon.
- 2) Input the Option Number that was specified in the BOM, into the Shipping area.
- 3) The work is finished, Push ■ Key.

17-1. CORTEZ Download By LGIDS

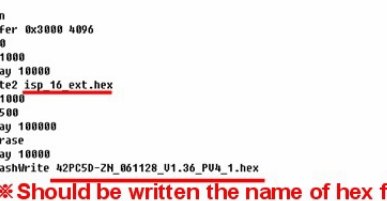
1) Extract to folder IDS_Setup.ZIP.



1. After Click the 'NEXT' icon, Installation is finished.



1) Prepare a Batch File(*.txt), RAM File(*.hex) on C:\Program Files\LGIDS\files.



CORTEX_A - 메모장

파일(F) 편집(E) 서식(O) 보기(V) 도움말(H)

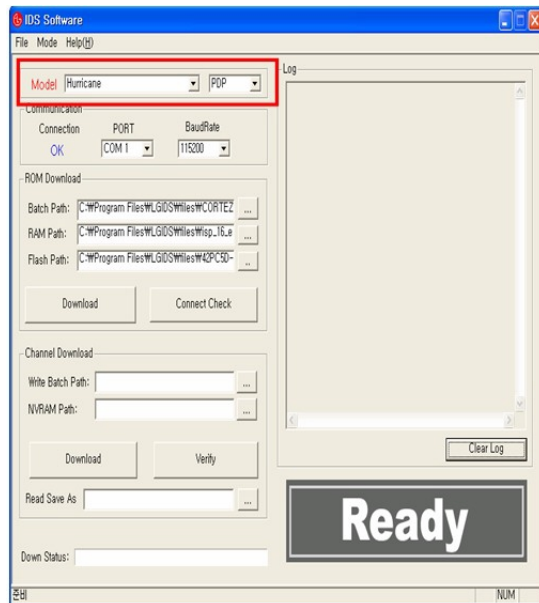
```
Echo
debugon
SetBuffer 0x3000 4096
Reset 0
delay 1000
setDelay 10000
RAMWrite2 isp 16 ext.hex
delay 1000
run 0x500
setDelay 100000
FlashErase
setDelay 10000
FastFlashWrite 42PC50-ZM_061128_U1.36_PU4_1.hex
```

* Should be written the name of hex file that you want to download

2) Connect RS232 cable and turn on the power.
(Use the general RS-232C Serial Cable)

3) Execute the LGIDS Program - 1

1. Check a 'PDP' & 'Hurricane' on the 'Model' MENU



* If your connection is 'NG', then set your PORT(COM1,2,3...) correctly.

4) SVC MENU Setting for CORTEZ DOWNLOAD.

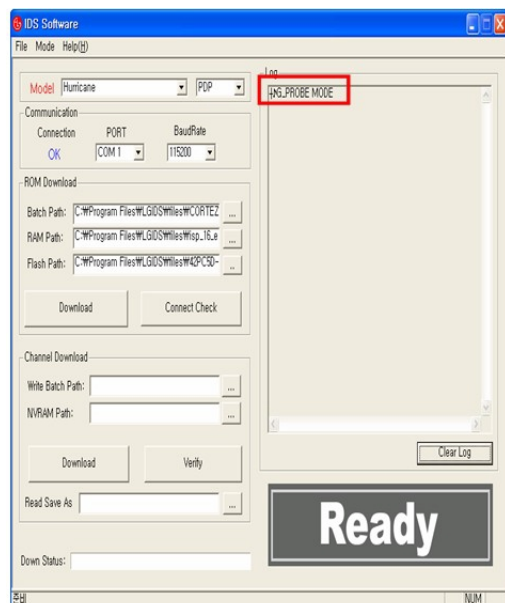
case 1. Press the 'tilt' button on the Adjustment Remote Control.

case 2. Press the 'ADJ' button

- 1) Press the 'System Control 2' menu
- 2) Enter the 'GProbe' on the 'RS-232Host menu'
- 3) Enter '115200bps' on the 'Baud Rate menu'
- 4) Enter the 'Cortez' on the 'Download menu'

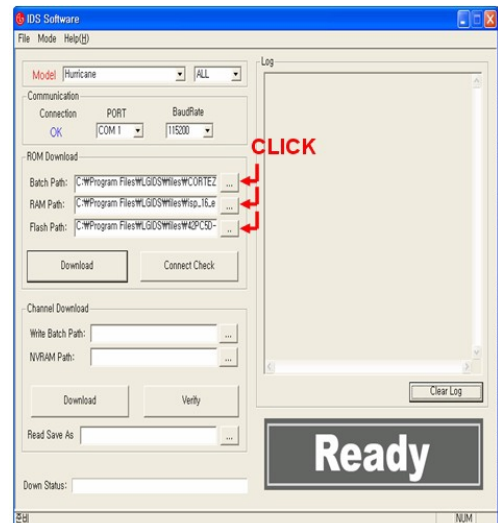
* If you don't have a Adjustment Remote Control 'Menu' button on the Remote Control + 'Menu' button on the Local Key during 7~8sec

After Change a mode, you can see 'GPROBE MODE'

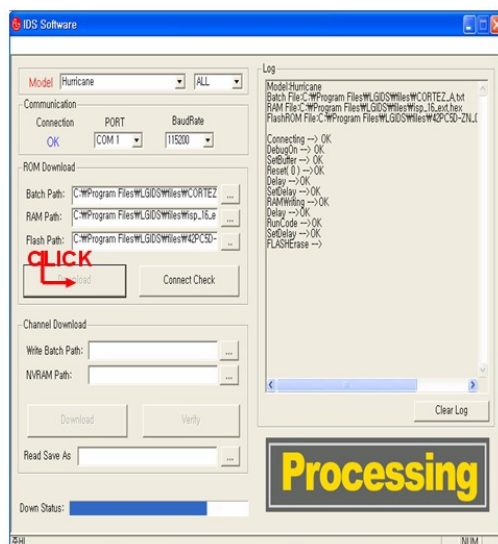


5) Execute the LGIDS Program - 2

1. Open a Batch file, RAM file and Flash file.

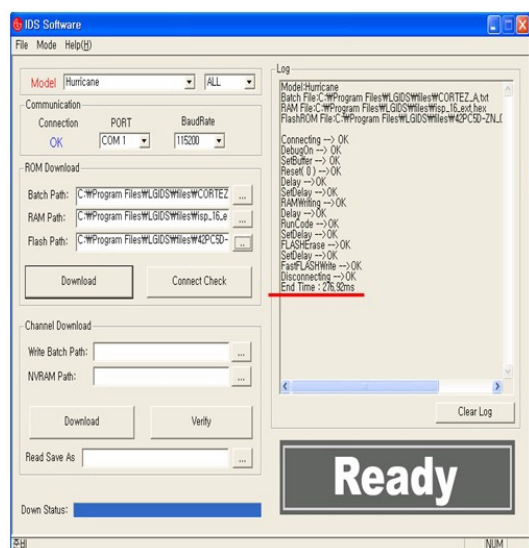


6) Execute the LGIDS Program - 3



7) Wait the final message.

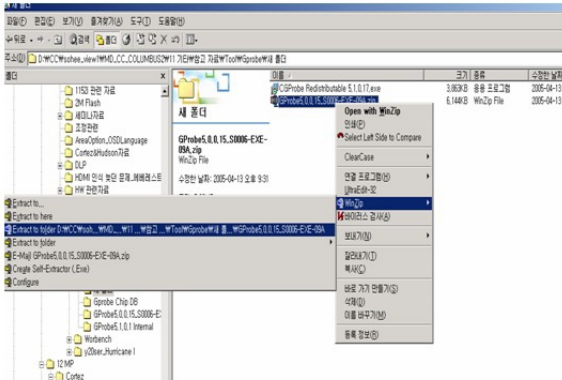
1. After DOWNLOAD, Turn off the TV after download -> Turn on.



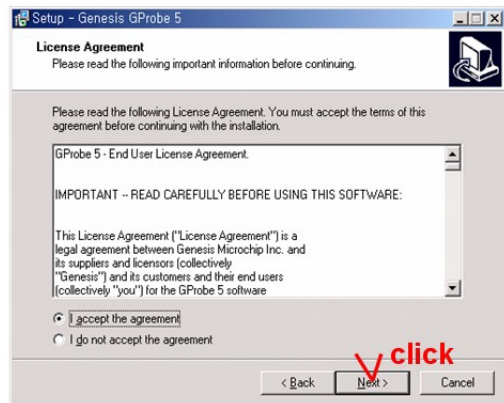
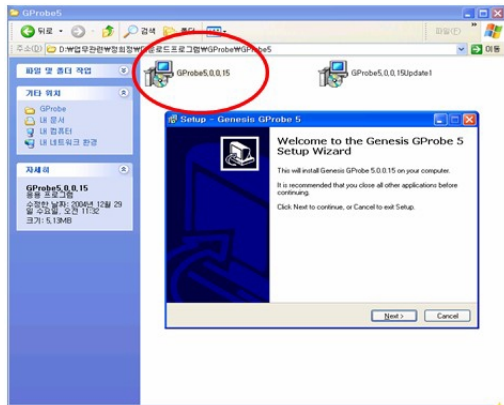
17-2. CORTEZ Download By GProbe 5

(1) Installation of the GProbe 5

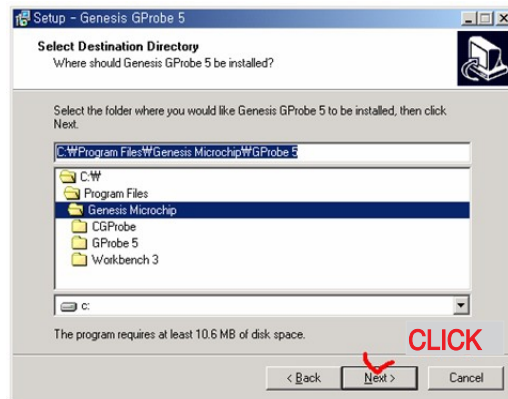
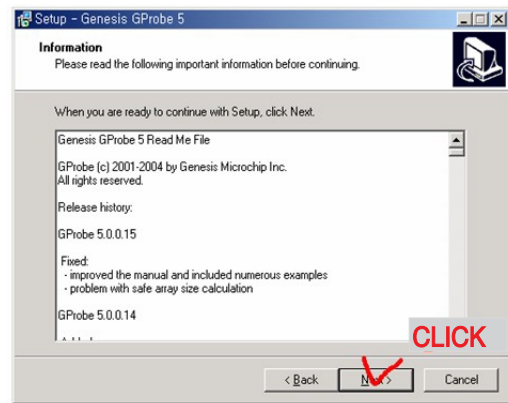
1) Extract to folder GProbe5.0.0.15_S0006_EXE_09A.ZIP.



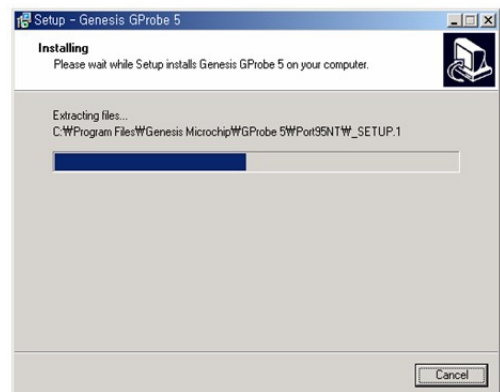
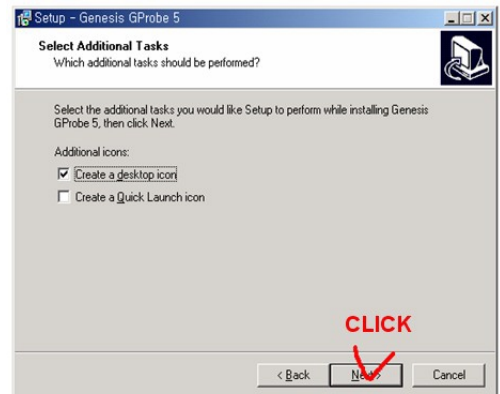
2) Install GProbe5.0.0.15.EXE - 1.



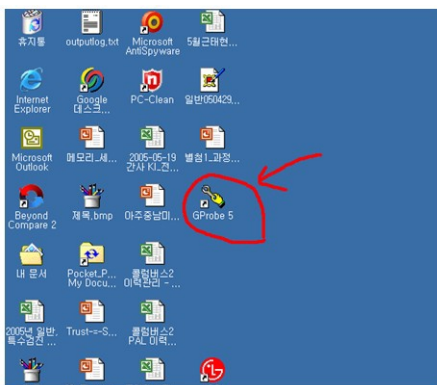
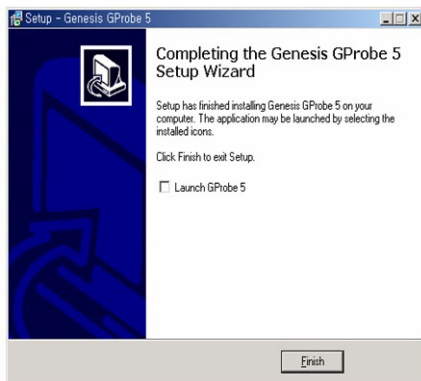
3) Install GProbe5.0.0.15.EXE - 2.



4) Install GProbe5.0.0.15.EXE - 3.

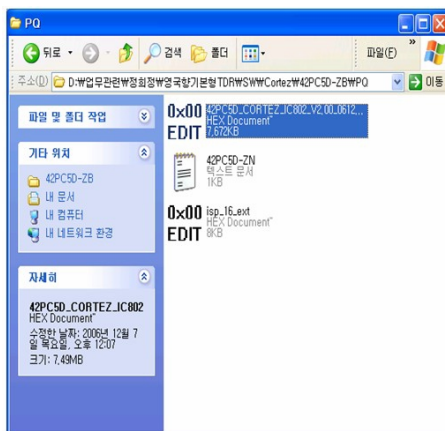


5) Install GProbe5.0.0.15.EXE - 4.

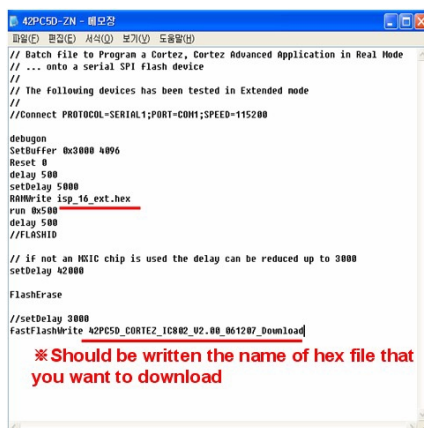


(2) Download hex file using GProbe

- 1) Prepare a '*.hex', 'isp_16_ext.hex', '*.txt' in the same folder.



* In the TEXT FILE



2) Connect TV set and PC by using RS232 cable.

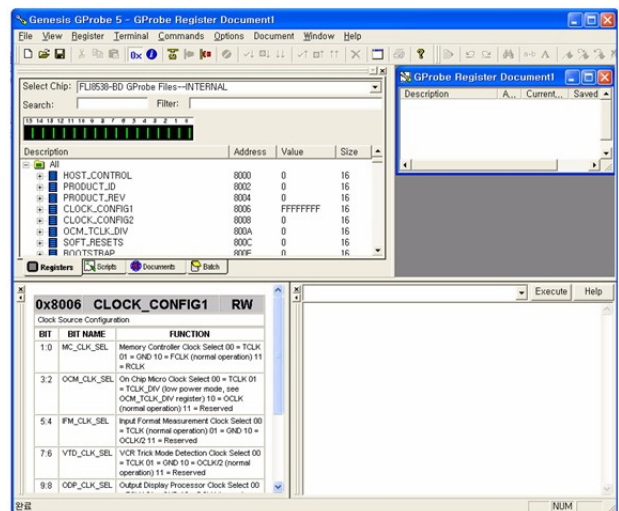
3) SVC MENU Setting for CORTEZ DOWNLOAD.

- case 1. Press the 'tilt' button on the Adjustment Remote Control.
- case 2. Press the 'ADJ' button.

- 1) Press the 'System Control 2' menu
- 2) Enter the 'GProbe' on the 'RS-232Host menu'
- 3) Enter '115200bps' on the 'Baud Rate menu'
- 4) Enter the 'Cortez' on the 'Download menu'

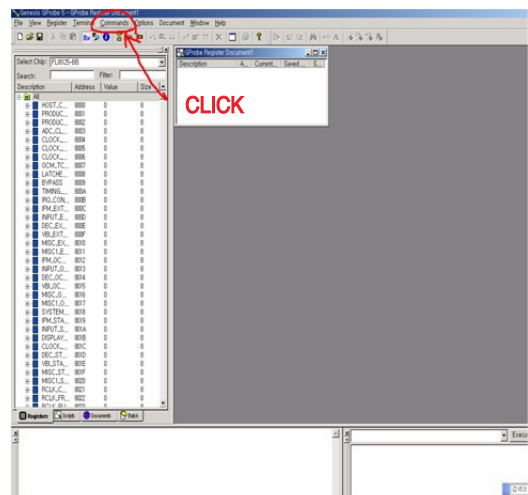
* If you don't have a Adjustment Remote Control 'Menu' button on the Remote Control + 'Menu' button on the Local Key during 7~8sec.

4) Execute the GProbe Program.



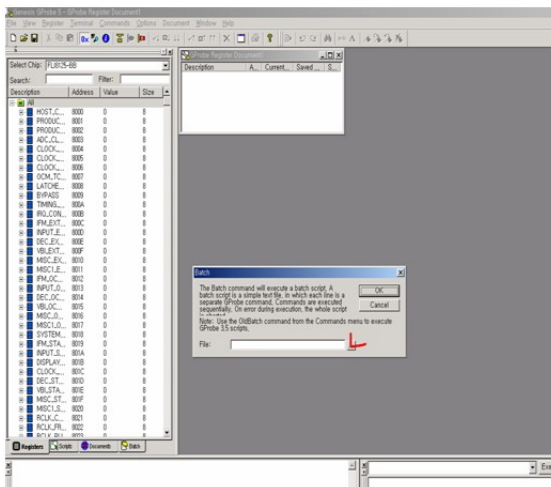
5) Open the batch file - 1.

1. Click the 'Commands'.



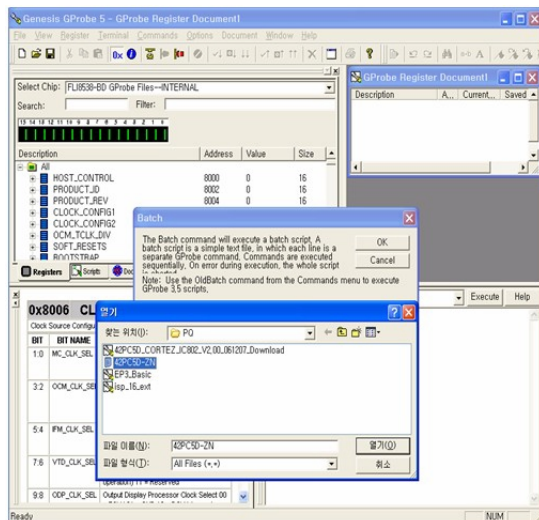
6) Open the batch file - 1.

1. Click the 'Commands'.



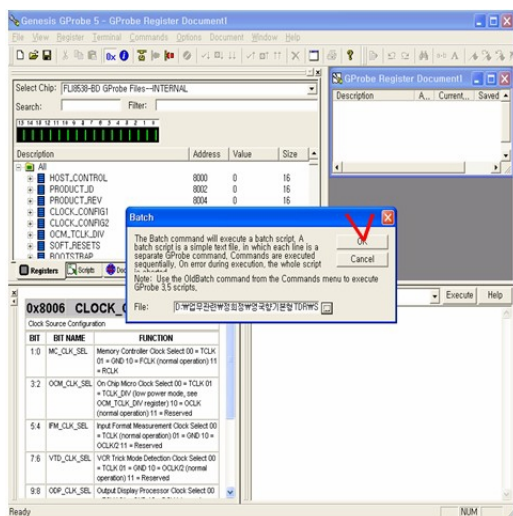
7) Open the batch file - 2

1. Click 'Batch' in the 'Commands' menu & express the '...' icon (It's marked by the red check).



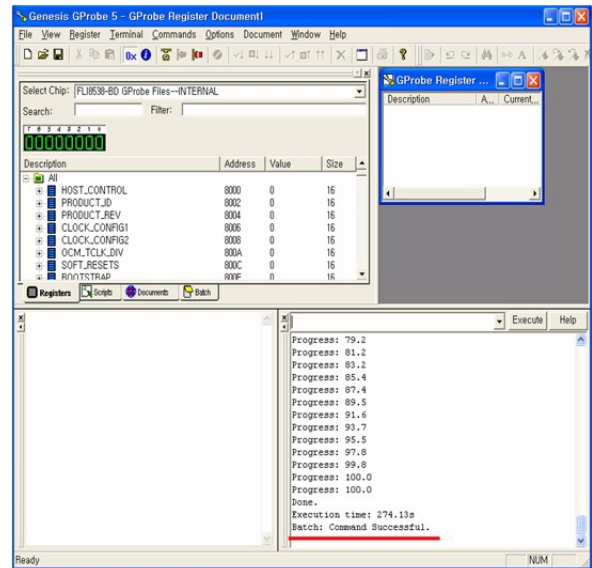
8) Open the batch file - 3.

1. Choose the text file.



9) It takes 300sec ~ 360sec, Wait the final message.

1. Turn off the TV after download -> Turn on.



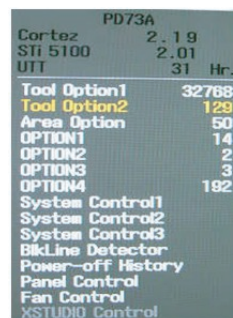
18. Insert the 'TOOL OPTION' & SERIAL NUMBER

- When you change a Main Ass'y, you should insert the TV SET's original Serial Number & MODEL NAME. It is the way how to insert original number.

18-1. Insert the 'Tool Option'

1) Insert '18698' on 'Tool Option1', '1953' on 'Tool Option2' for 60PC45-ZB Press the 'ENTER' Button.

- Before change the 'Tool Option', you should check the White Balance Value.
- Because change the 'Tool Option', the White Balance Value is reset.



18-2. Insert the 'SERIAL NUMBER' & 'MODEL NAME'

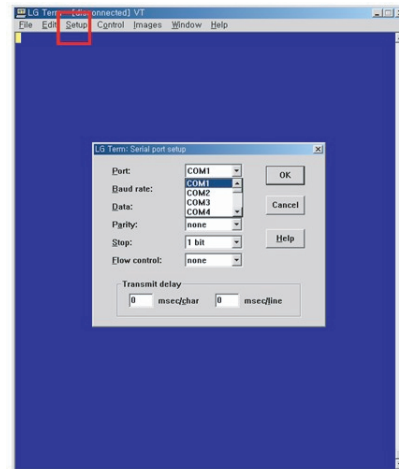
- 1) Check the original serial number.
(Check the Label on the Back Cover)
- 2) After change the Main Ass'y, Press the 'ADJ button on the Adjustment Remote control.
 1. Choose the 'OPTION4'
 2. Insert the 'MODEL NAME' by navigation key.
 3. Insert the original serial number on the 'SERIAL NUMBER' MENU by navigation key.

* After All Setting, Turn Off TV SET-> On



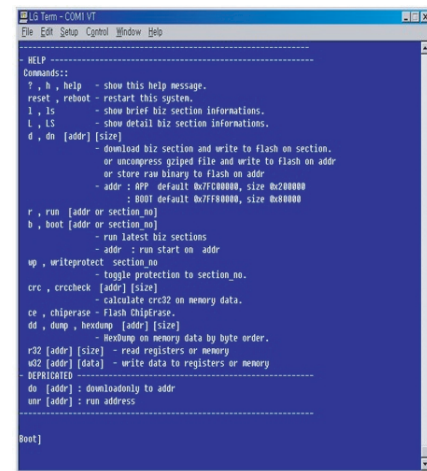
- 4) Execute 'lgterm.exe'.

1. Select 'Serial port' on 'Setup' Menu.
2. Port' should be connected with the TV SET by RS232.



- 5) TV SET DC Power OFF => ON.

1. Check the message like the Picture.



19. ST DOWN LOAD

19-1. ST ROM DOWN LOAD

(1) Installation the 'LG Term'

- 1) Extract to folder lgterm.zip.

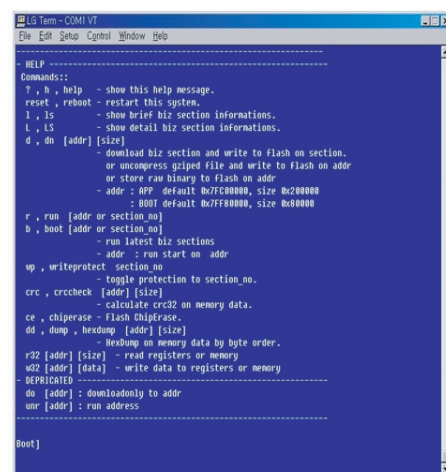
이름	크기	종류	수정날짜
log		파일 폴더	2004-06-18 오전 ...
macro		파일 폴더	2004-06-18 오전 ...
ascii.txt	3KB	텍스트 문서	2001-05-07 오후 ...
delpass.wtl	1KB	TTL 파일	1997-06-30 오후 ...
dialup.wtl	2KB	TTL 파일	2003-10-22 오후 ...
IBMKEYB	3KB	SpeedDial	1998-03-10 오전 ...
hw_stress.wtl	2KB	TTL 파일	2000-05-16 오후 ...
key.wtl	1KB	TTL 파일	2000-05-16 오후 ...
KEYBOARD	3KB	SpeedDial	1998-03-10 오전 ...
keycode.exe	32KB	응용 프로그램	2003-10-22 오후 ...
keycode.txt	14KB	텍스트 문서	1998-03-10 오전 ...
ldtv	4KB	SpeedDial	2001-11-27 오후 ...
lgterm.exe	232KB	응용 프로그램	2003-10-22 오후 ...
macro.hlp	70KB	도움말 파일	1998-03-10 오전 ...
macro.hlp	73KB	도움말 파일	1998-03-10 오전 ...
NT98KEYB	3KB	SpeedDial	1998-03-10 오전 ...
PC98KEYB	3KB	SpeedDial	1998-03-10 오전 ...
readme.txt	5KB	텍스트 문서	2004-07-21 오후 ...
TERATERM.INI	5KB	구성 설정	2004-07-21 오후 ...
term.hlp	81KB	도움말 파일	1998-03-10 오전 ...
term.hlp	107KB	도움말 파일	1998-03-10 오전 ...
tpcmn.dll	44KB	응용 프로그램 확장	2003-10-22 오후 ...
tpdlg.dll	80KB	응용 프로그램 확장	2003-10-22 오후 ...
tpfile.dll	100KB	응용 프로그램 확장	2003-10-22 오후 ...
tpmacro.exe	148KB	응용 프로그램	2003-10-22 오후 ...
tpset.dll	68KB	응용 프로그램 확장	2003-10-22 오후 ...
tpset.dll	72KB	응용 프로그램 확장	2003-10-22 오후 ...

(2) Download biz file using LG Term

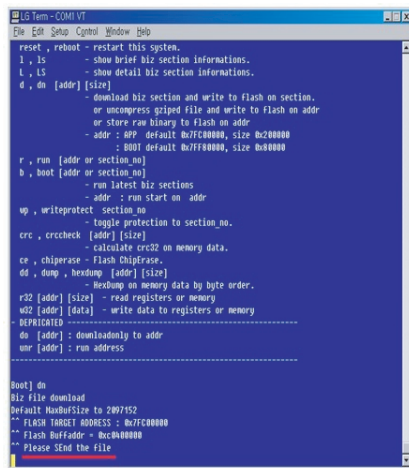
- 1) Prepare the '*.biz' that you want to download on ST.
- 2) Connect TV set and PC by using RS232 cable, Turn on the TV.
- 3) SVC MENU Setting.
 - case1. Press the 'Turbo Sound' button on the Adjustment Remote Control.
 - case 2. Press the 'ADJ' button.
 - 1) Press the 'System Control 2' menu
 - 2) Enter the 'GProbe' on the 'RS-232 Host'
 - 3) Enter '115200bps' on the 'Baud Rate'
 - 4) Enter the 'STi 5100' on the 'Download'

* If you don't have a Adjustment Remote Control.
'Menu' button on the Remote Control + 'Menu' button on the Local Key during 7~8sec.

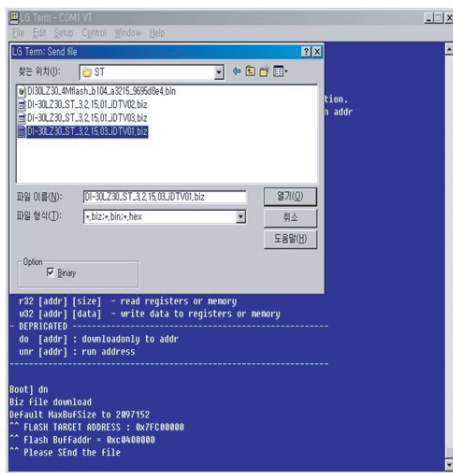
- 6) Insert 'dn' and Enter.



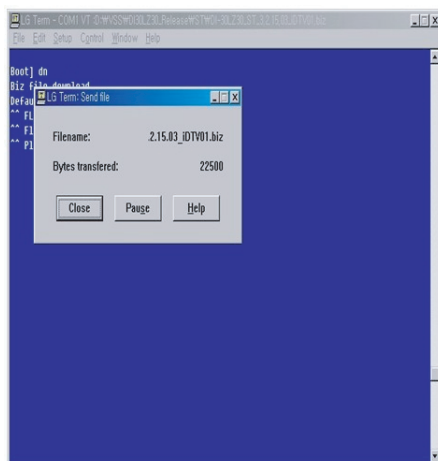
7) When 'Please Send the file' appears, Press 'ctrl' + 's'.



8) When 'Please Send the file' appears, Press 'ctrl' + 's'.

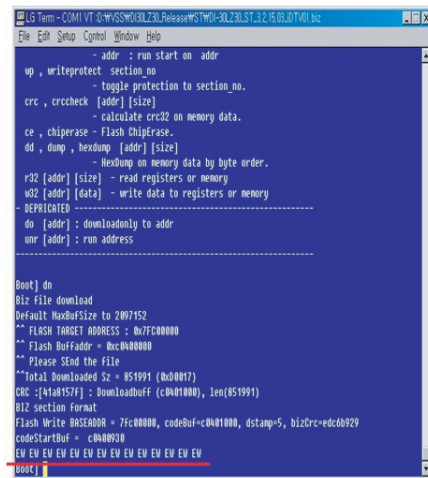


9) Download takes 60sec ~ 120sec.



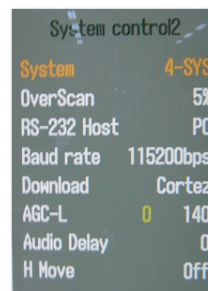
10) The End of DOWNLOAD

1. After Download successfully, you can see 'EW EW EW EW'.
2. You can remove RS232 Cable and TV Power SET OFF => ON



11) Change the mode.

1. Press the 'ADJ' button.
2. Press the 'System Control 2' menu.
3. Enter the 'PC' on the 'RS-232 Host'.
4. Enter '115200bps' on the 'Baud Rate'.
5. Enter the 'Cortez' on the 'Download'.



TROUBLE SHOOTING GUIDE

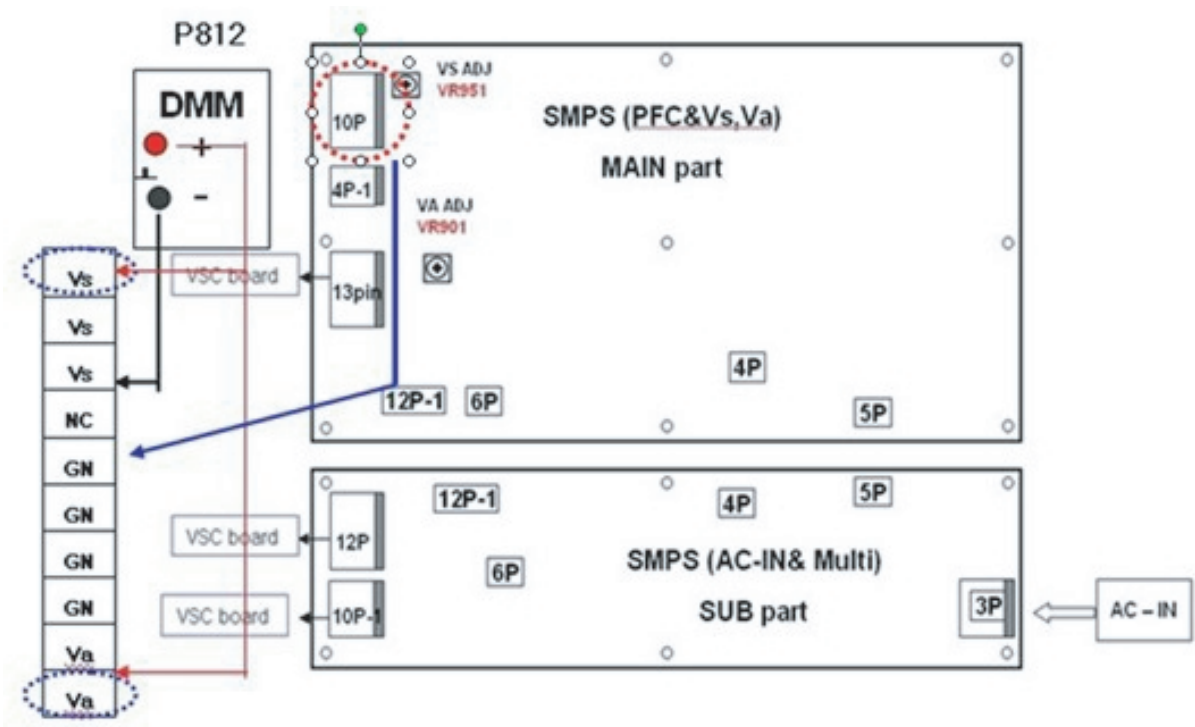
1. Power Board

1-1. The full flowchart for the voltage output



1-2. 60” Power Board Structure

(1) Pin Layout



(2) Pin Spec

PIN No	1	2	3	4	5	6	7	8	9	10	11	12	13
5P	L	L	NC	N	N								
10P-1	19V	19V	GND	GND	6V	GND	3.4V	GND	12V	GND			
13PIN	AC-ON	RL-ON	STB5V	GND	VS-ON	5Vmnt	M5V-ON	NC	GND	STB5V	6V	NC	3.4V-ON
10P	VA	VA	NC	GND	GND	GND	GND	VS	VS	VS			
12P	3.4V	3.4V	GND	GND	6V	6V	GND	GND	12V	12V	GND	GND	
4P-1	5V	5V	GND	GND									
3.4V-ON	12P-1,6P,5P,4P												

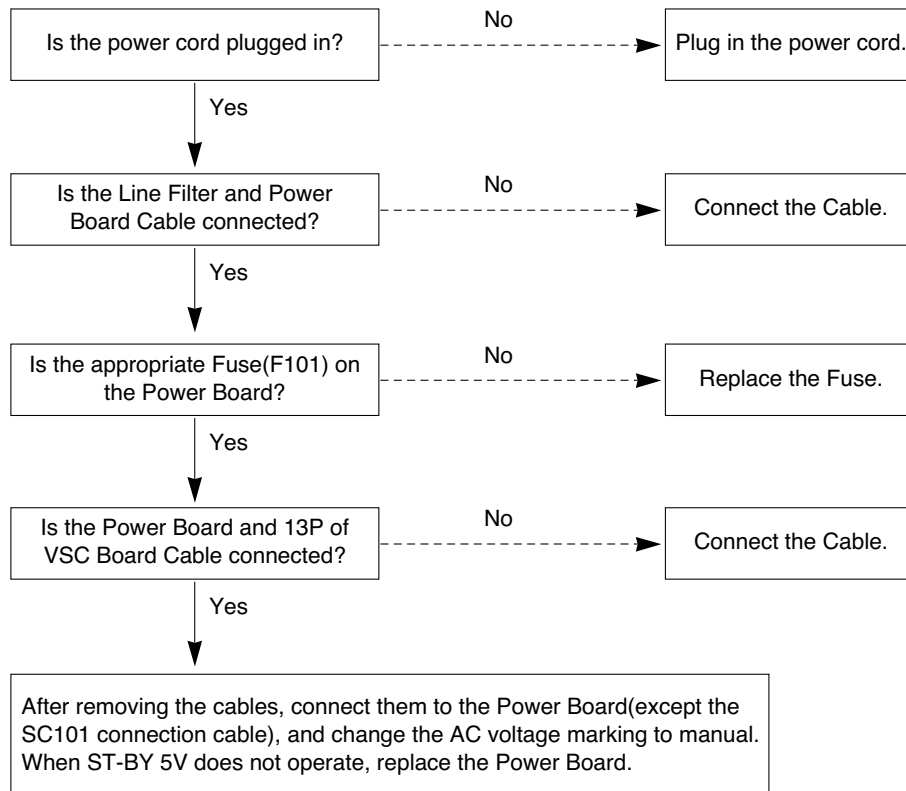
2. No Power

(1) Symptom

- 1) Does not minute discharge at module.
- 2) Non does not come into the front LED.



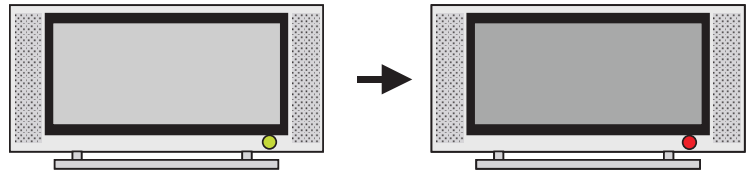
(2) Procedure check



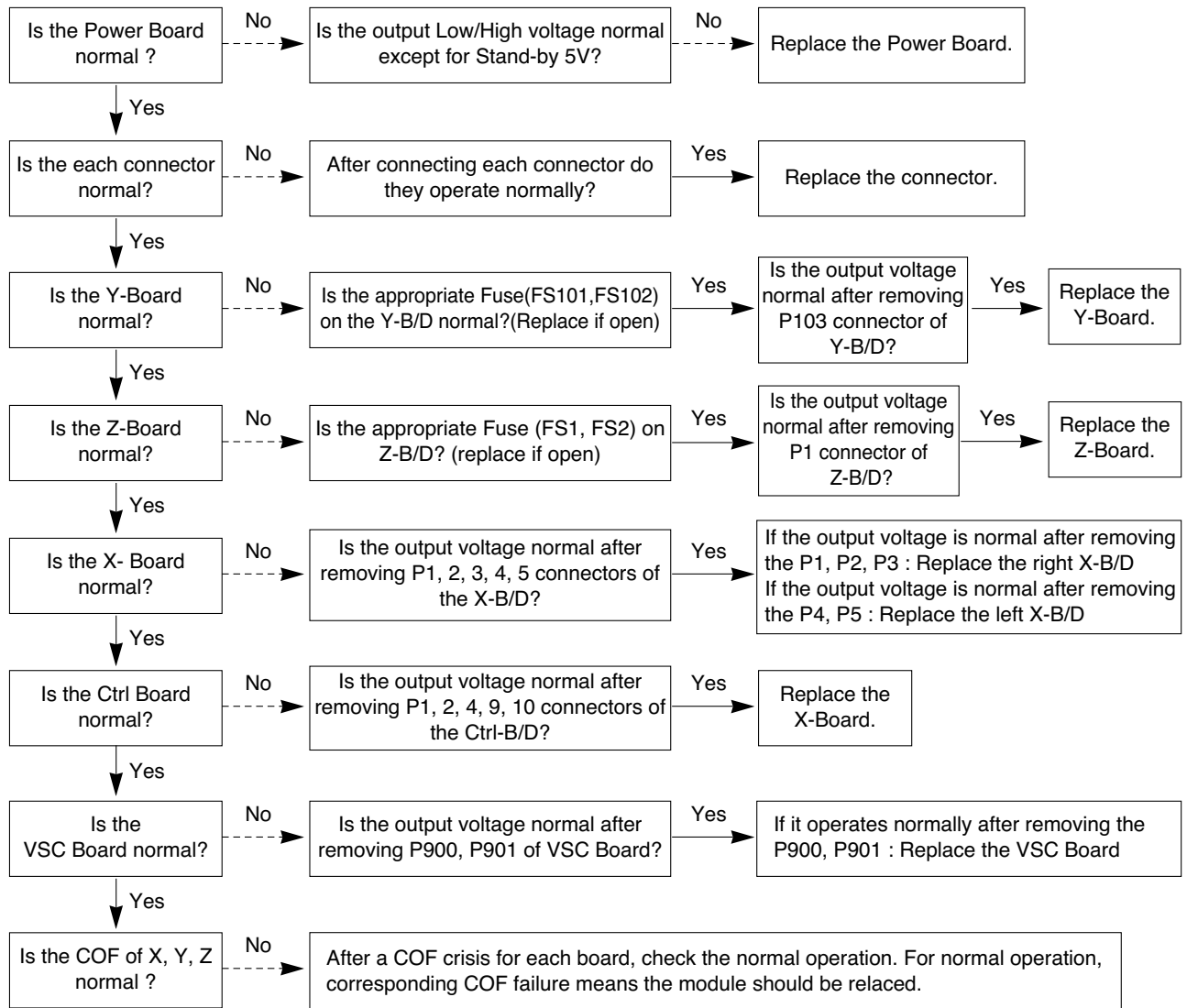
3. Protect Mode

(1) Symptom

- 1) After lighting up once, it does not discharge minutely from module.
- 2) The relay falls.(there is an audible "click")
- 3) The color of the front LED turns from green to red.



(2) Procedure check



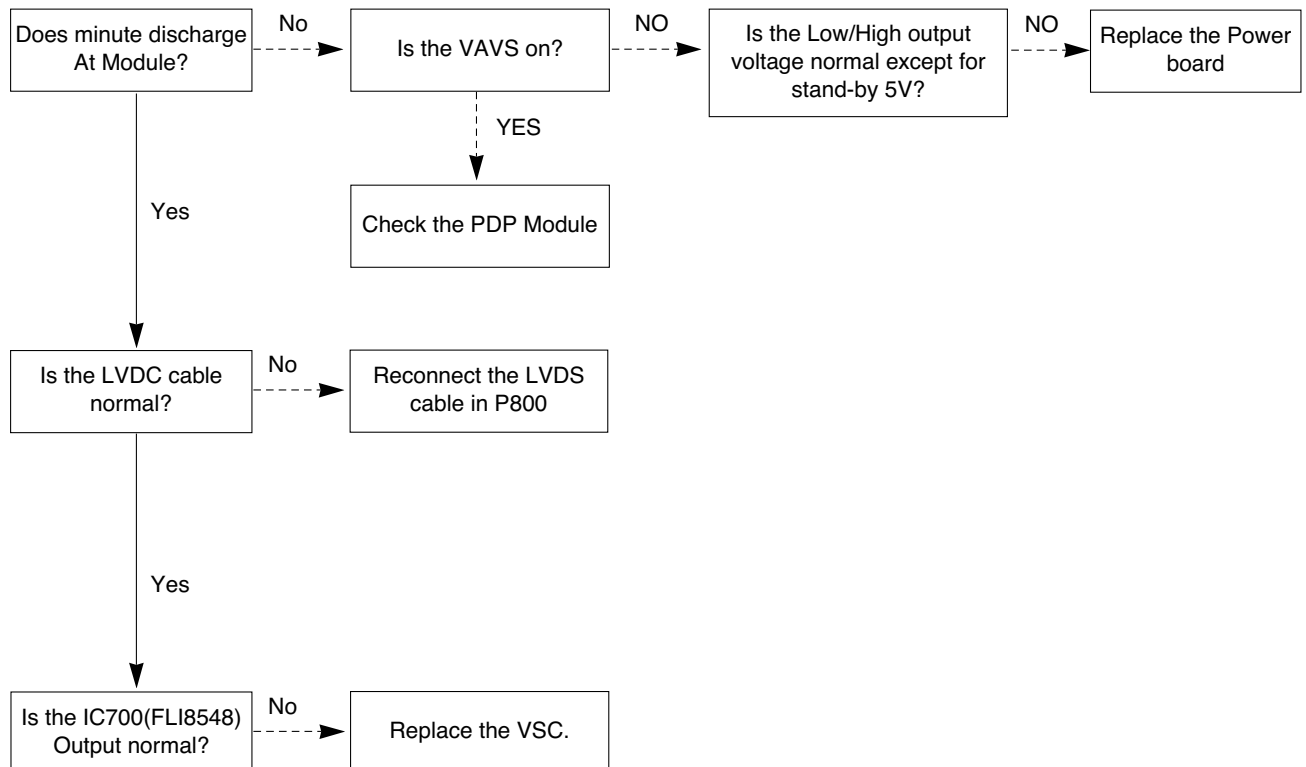
4. No Raster

(1) Symptom

- 1) No OSD and image occur at screen.
- 2) It maintains the condition where the front LED is green.



(2) Procedure check



5. In case of strange screen display in specific modes

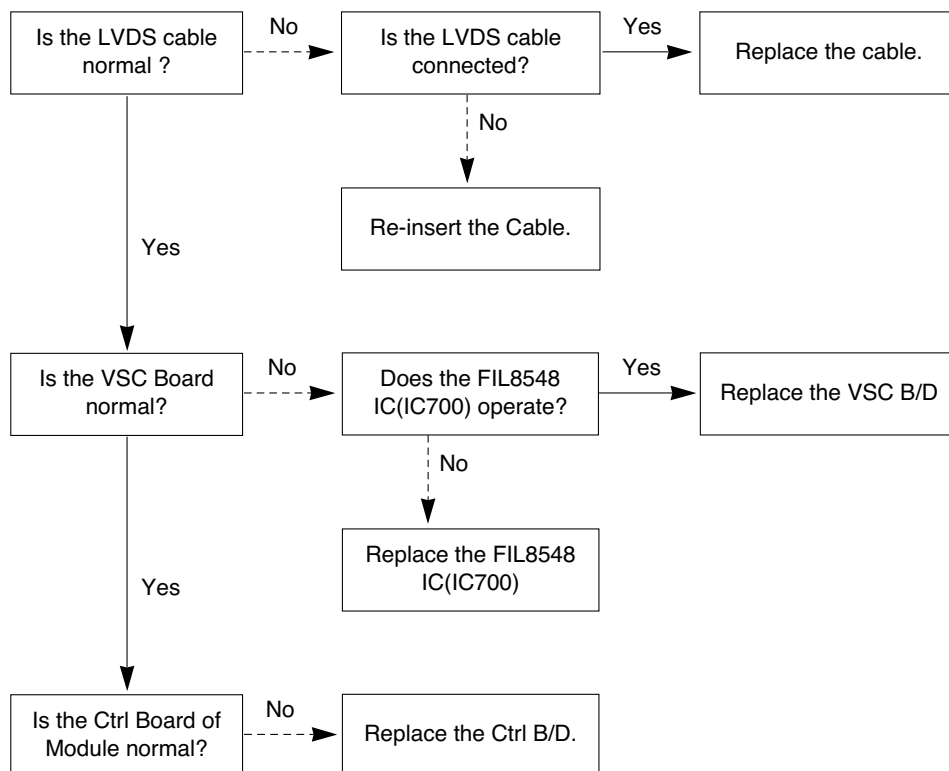
5-1. In case of no OSD display

(1) Symptom

- 1) LED is green.
- 2) The minute discharge is continuously accomplished from the module.



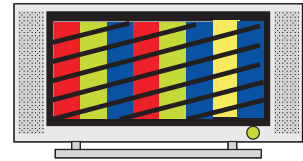
(2) Procedure check



5-2. In case there is no display on the screen in specific modes

(1) Symptom

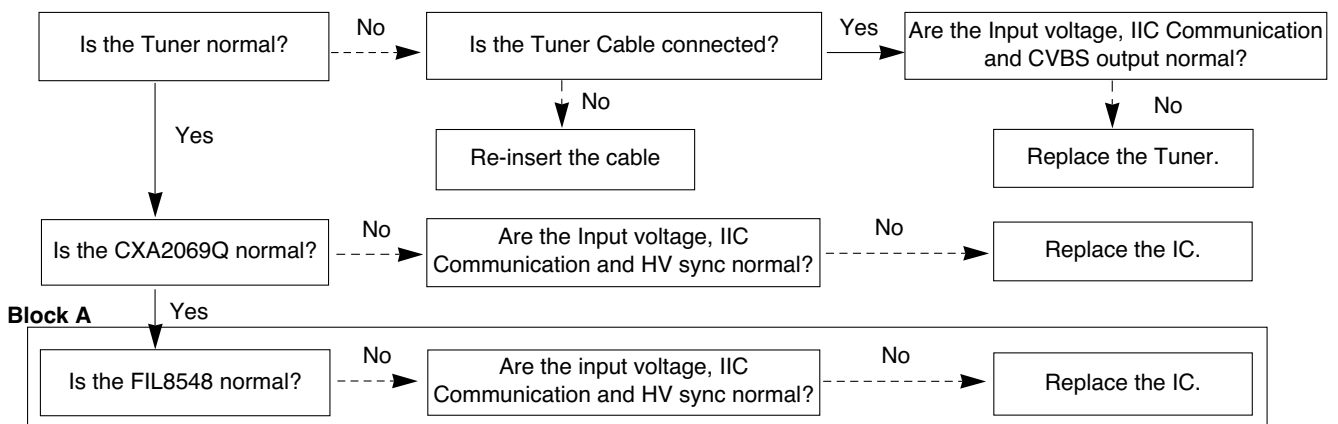
- 1) There is no screen display from a specific input mode (RF, AV, Component, RGB, DVI).



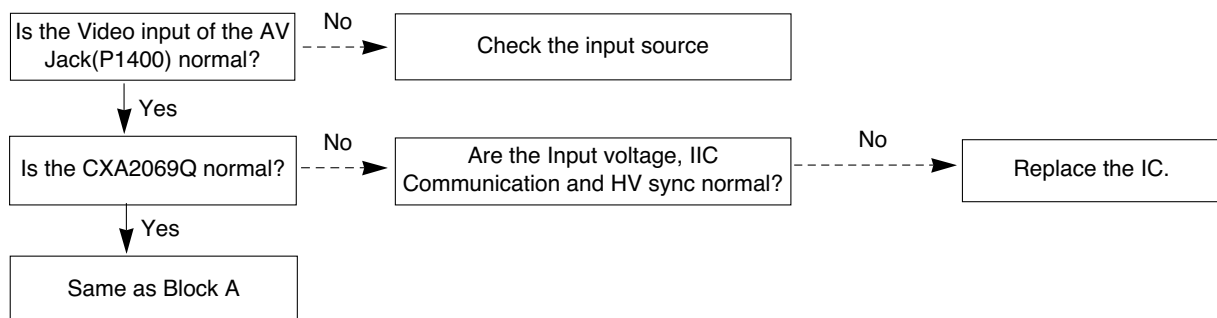
(2) Procedure check

- 1) Check the all input modes have normal display.
- 2) Check the video(main)/ data(sub), video(main)/ video(sub) have normal displays from the PIP mode or DW mode(re-check it/ swap).

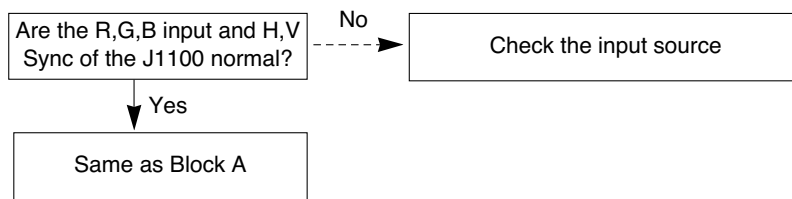
(3) In case of an unusual display in RF mode



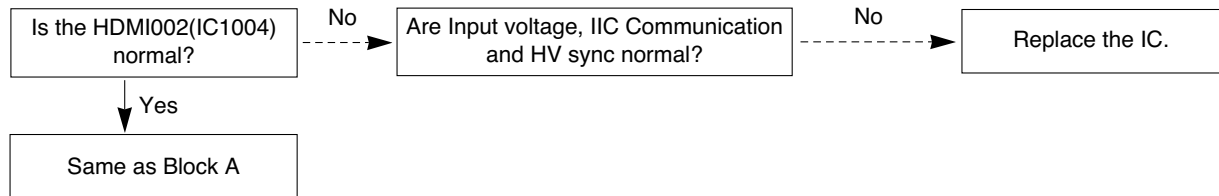
(4) In case of an unusual display in side S-video/ AV mode



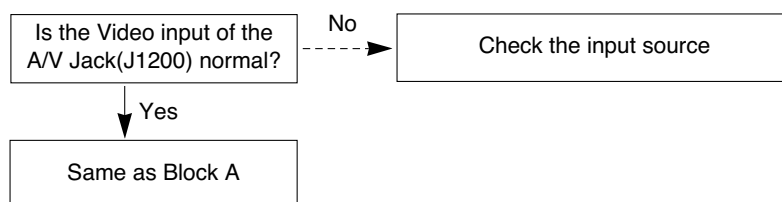
(5) In case of an unusual display in Component, RGB mode



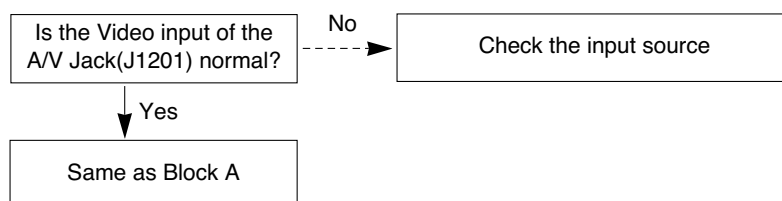
(6) In case of an unusual display in HDMI mode



(7) In case of an unusual display in SCART1 mode



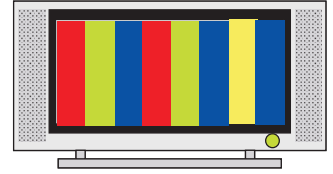
(8) In case of an unusual display in SCART2 mode



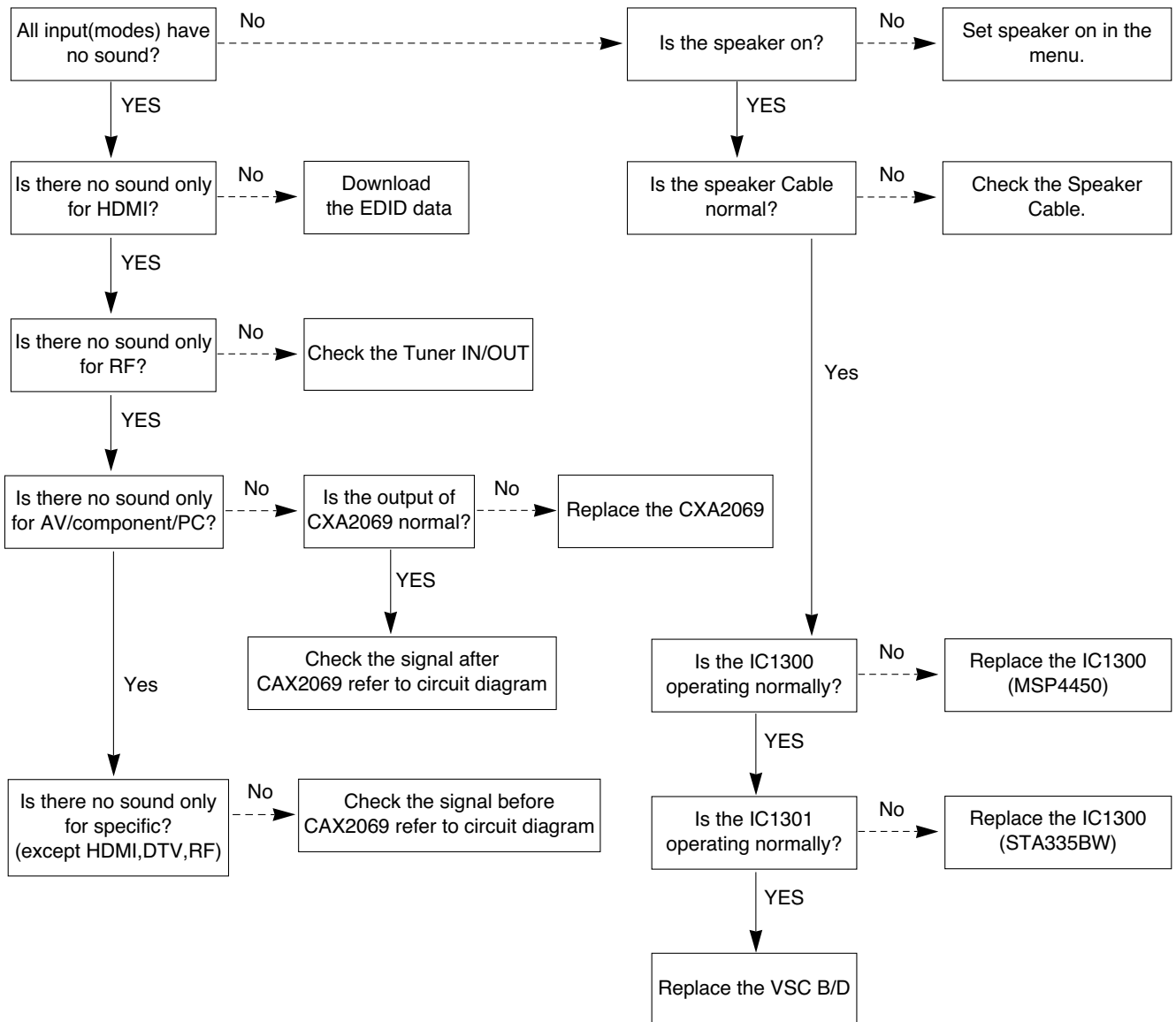
6. In case of no sound

(1) Symptom

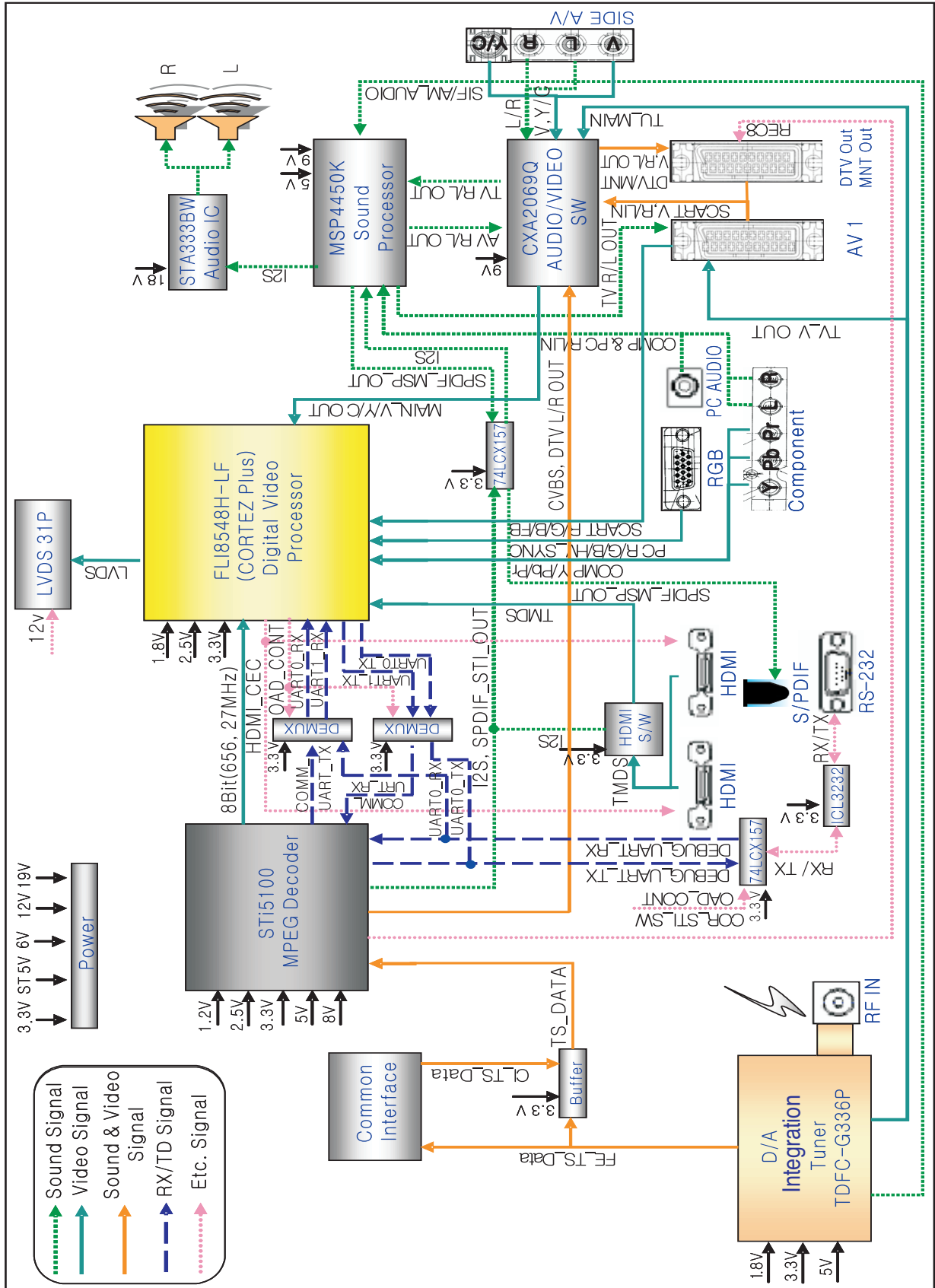
- 1) LED is Green.
- 2) Screen display appears but there is no sound.



(2) Procedure check

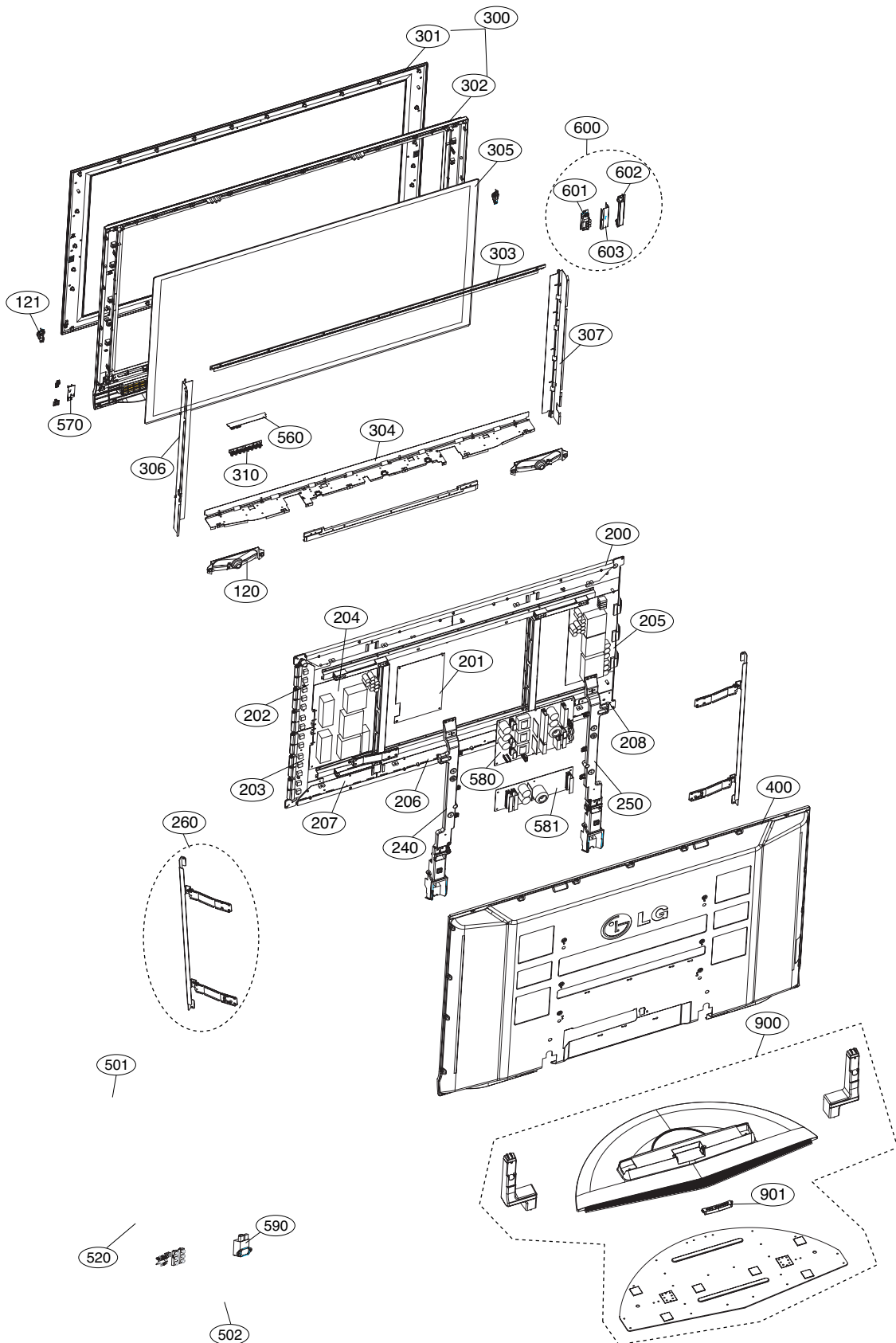


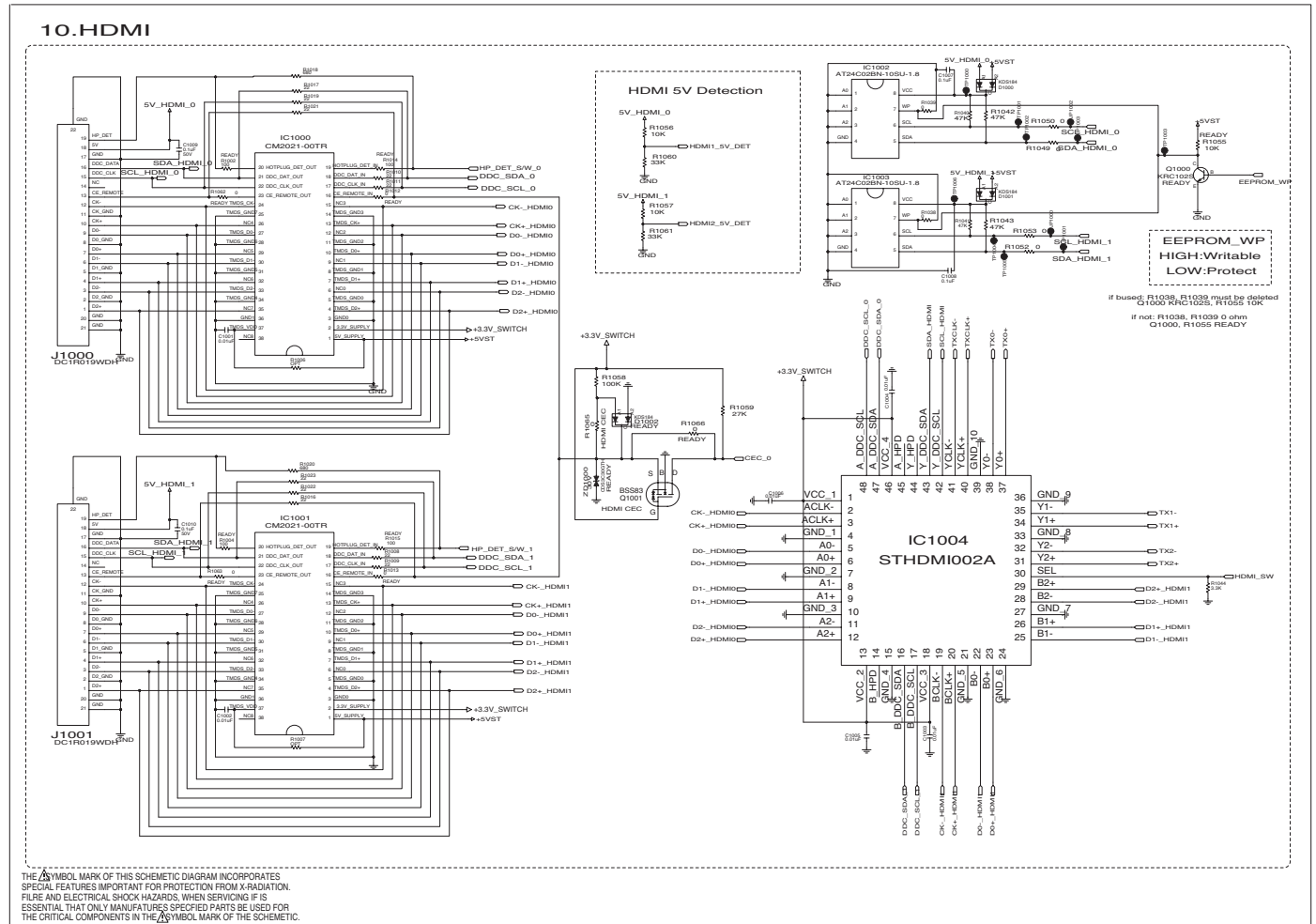
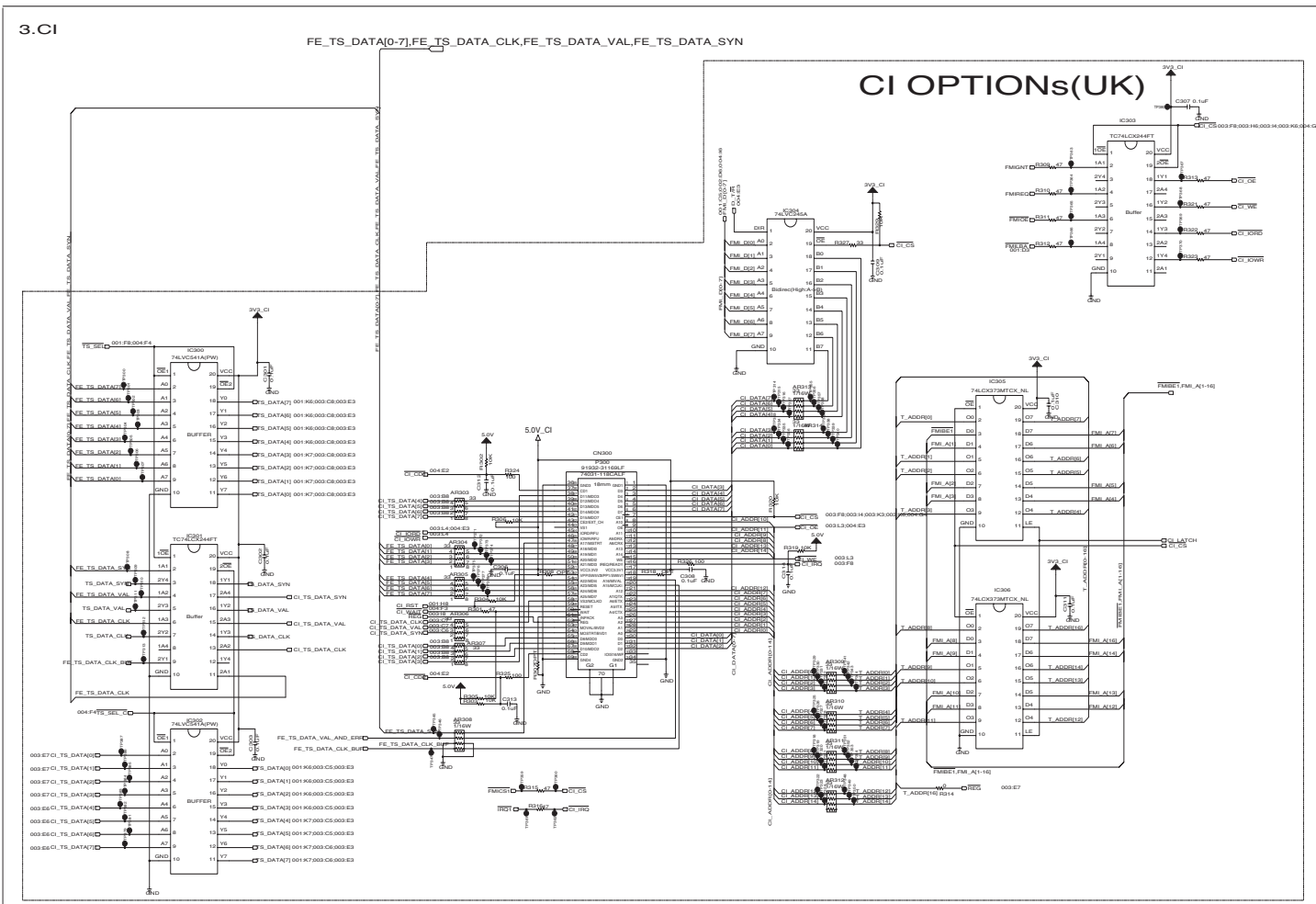
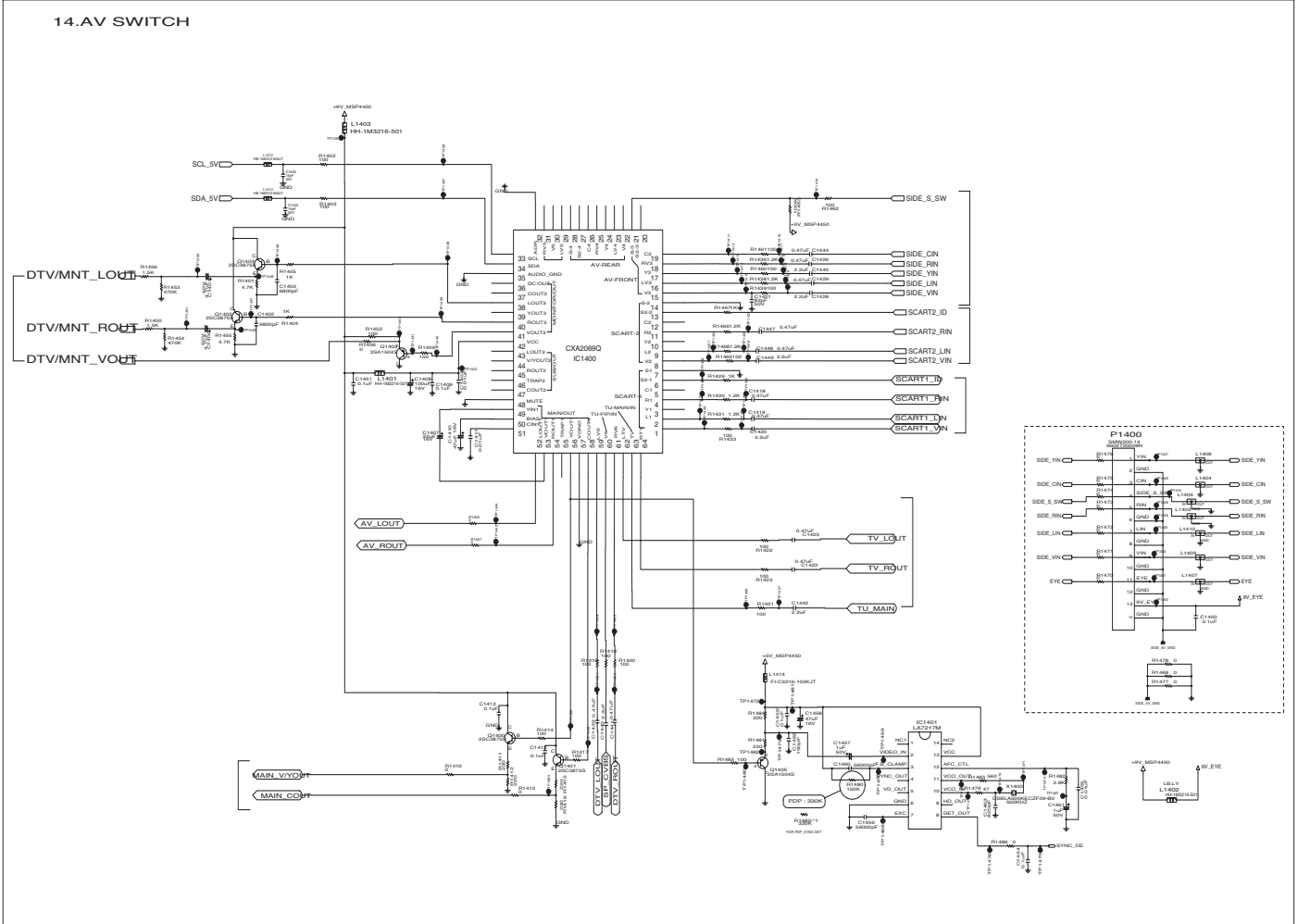
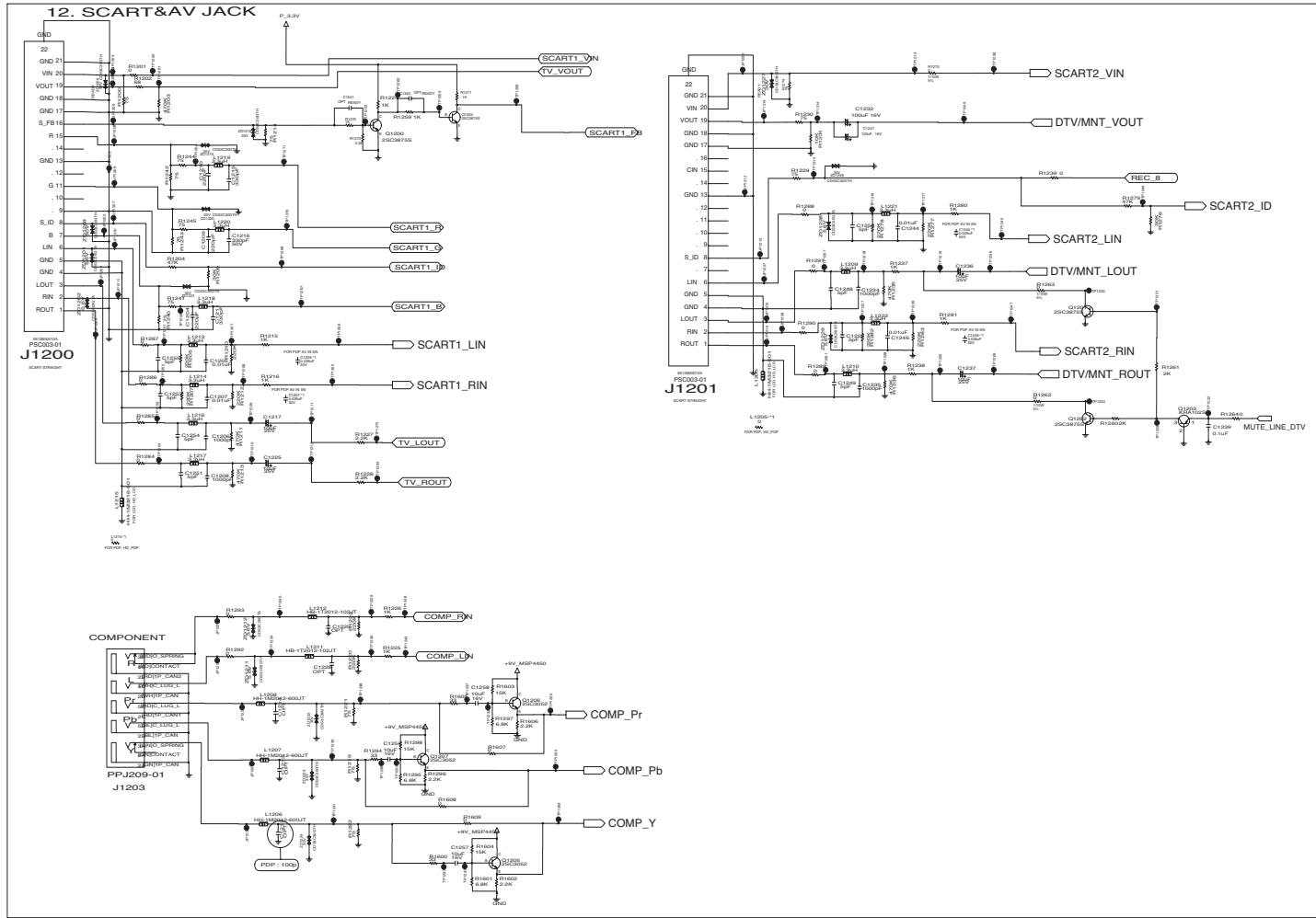
BLOCK DIAGRAM



MEMO

EXPLODED VIEW





[illegible]

2.5T DDR

DDR TERMINATION OPTIONS

DDR Termination Power

VTT Decoupling Capacitors

DDR Termination Resistors

DDR SDRAM 16MB/32MB/64MB

DDR Series Resistors

BOOT FLASH 4MB/8MB

The image displays a series of circuit diagrams for the PDP-11 computer system, organized into several sections:

- 11.RGB&232C**: This section shows the RGB and 232C interface circuitry. It includes a detailed schematic for the RGB output stage, featuring a J1100 connector, a 68152 driver, and various resistors and capacitors. A separate diagram shows the ROM download circuit for the PDP, involving a P1102 connector and a 68152 driver.
- PC SOUND**: This section shows the PC sound interface circuitry, featuring a J1101 connector and a 68152 driver.
- FOR PDP**: This section shows the PDP interface circuitry, including a P1101 connector and a 68152 driver.
- FOR LCD**: This section shows the LCD interface circuitry, including a P1103 connector and a 68152 driver.
- ROM DOWNLOAD FOR PDP**: This section shows the ROM download circuit for the PDP, involving a P1102 connector and a 68152 driver.
- PC SOUND**: This section shows the PC sound interface circuitry, featuring a J1101 connector and a 68152 driver.
- FOR PDP**: This section shows the PDP interface circuitry, including a P1101 connector and a 68152 driver.
- FOR LCD**: This section shows the LCD interface circuitry, including a P1103 connector and a 68152 driver.
- Soft touch key FOR 60" PDP**: This section shows the soft touch key interface circuitry for the 60-inch PDP, including a P1105 connector and a 68152 driver.
- VFD FOR 60" PDP**: This section shows the VFD interface circuitry for the 60-inch PDP, including a P1104 connector and a 68152 driver.
- COMM. STLSWITCH**: This section shows the communication switch interface circuitry, including a P1104 connector and a 68152 driver.
- UART**: This section shows the UART interface circuitry, including a P1104 connector and a 68152 driver.
- COMM. UART**: This section shows the communication UART interface circuitry, including a P1104 connector and a 68152 driver.

[illegible]

5. power2

[POWER BLOCK]

3.3 volt

5.0V For only C.I.
Over current protection can be operated

5.0 volt

3.3V TUNER

TUNER_3.3V_ON

Min of Vc:2V Ic:20uA

CPU(STi5100) core 1.25 volt

1.8V Regulator for TUNER
Locate close to the TUNER

DDR SDRAM 2.5 VOLT

% MUST BE PLACED NEAR IC100

OUT_LEFT_AMP

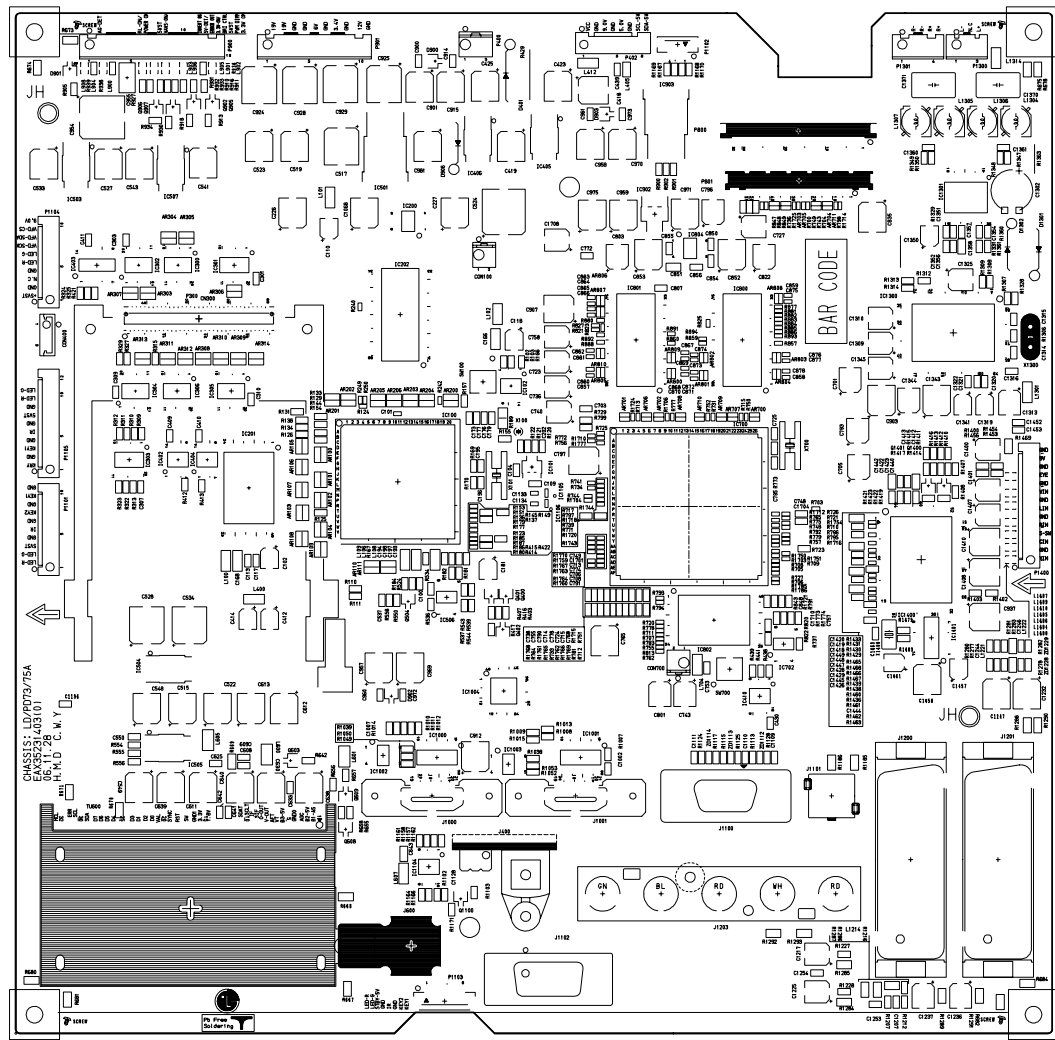
OUT_RIGHT_AMP

The image displays several circuit diagrams for optional features of the T9000 board:

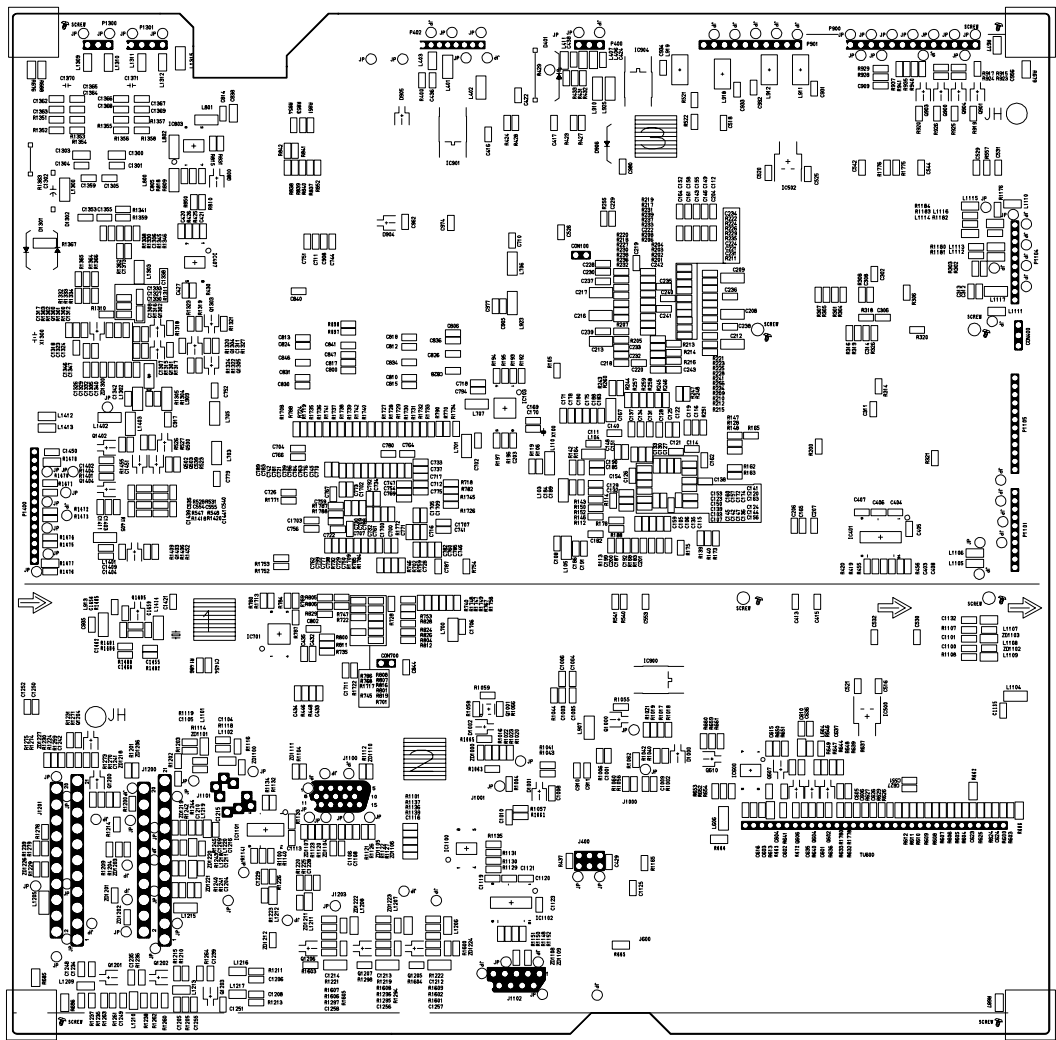
- 4. OPTION**: A general heading for the optional features.
- CI OPTIONS(UK)**: Two circuit diagrams for CI options, showing connections to a 200V AC source and various components like capacitors and resistors.
- [SCART PIN8]**: A circuit diagram for SCART PIN8, showing a connection to a 4.89V/9.89V/120ohm(Load) and a 5.19V/10.9V/16ohm(Load).
- OPTION ST UART FOR DEBUG**: A circuit diagram for an optional ST UART for debug, showing connections to a 3.3V source and various components like capacitors and resistors.
- SPDIF OPTIC JACK OPTION**: A circuit diagram for an optional SPDIF optic jack, showing connections to a 3.3V source and various components like capacitors and resistors.
- FAN OPTION**: A circuit diagram for a fan option, showing connections to a 3.3V source and various components like capacitors and resistors.
- I2S SWITCHING (DTV&HDMI)**: A circuit diagram for I2S switching, showing connections to a 3.3V source and various components like capacitors and resistors.
- 3_STATE_BUFFER**: A circuit diagram for a 3-state buffer, showing connections to a 3.3V source and various components like capacitors and resistors.

PRINTED CIRCUIT BOARD

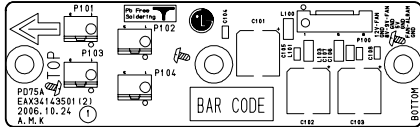
MAIN (TOP)



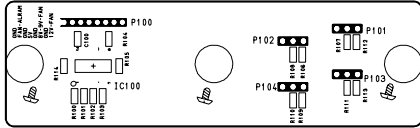
MAIN (BOTTOM)



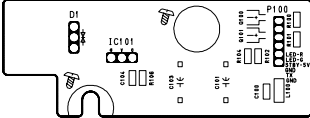
FAN B/D (TOP)



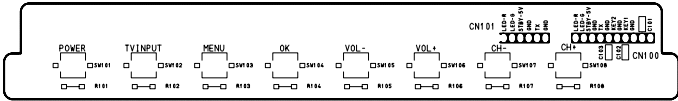
FAN B/D (BOTTOM)



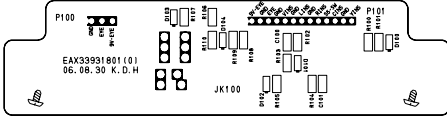
Pre-AMP



CONTROL B/D



SIDE AV





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