

SERVICE MANUAL

MODEL :LED1973W/LED2273FW/LED2473FW

SOLUTION:MST182VG+2IN1 POWER SUPPLY

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This manual is the latest at the time of printing, and does not include the modification which may be made after the printing, by the constant improvement of product.

IMPORTANT SAFETY INSTRUCTIONS



This symbol indicates " dangerous voltage " inside the product that presents a risk of electric shock or personal injury.

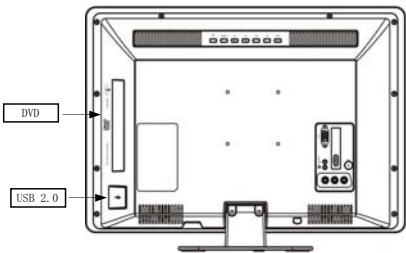
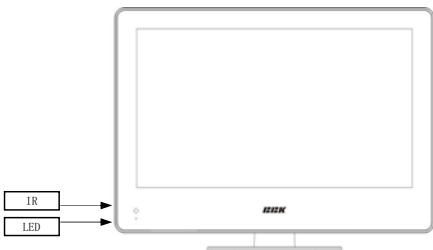
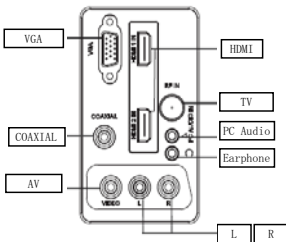


This symbol indicates important instructions accompanying the product.

Please read this manual carefully before using this product.

- Before connecting the AC power cord ,make sure the voltage designation of the LCD TV corresponds to the local electrical supply .
If you are unsure of your power supply , ask your local power company .
- Never insert anything metallic into the cabinet openings of the liquid crystal display LCD TV/monitor; otherwise it may create the danger of electric shock.
- To avoid electric shock, Never touch the inside of the LCD TV/monitor .
Only a qualified technician should open the case of the LCD TV/monitor.
- Never use your LCD TV/monitor if the power cord has been damaged .
Do not allow anything to rest on the power cord, and keep the cord away from place where people can trip over it .
- Be sure to hold the plug, not the cord, when disconnecting the power cord from an electric socket.
- Openings in the LCD TV/monitor cabinet are provided for ventilation.
To prevent overheating, these openings should not be blocked or covered. Also, avoid using the LCD TV/monitor on a bed ,sofa ,rug, or other soft surface. Doing so may block the ventilation openings in the bottom of the cabinet. If you put the LCD TV/monitor in a bookcase or some other enclosed space, be sure to provide adequate ventilation.
- Do not expose the LCD TV/monitor to extreme temperature conditions or to extreme humidity conditions.
- The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids.

Product Specification

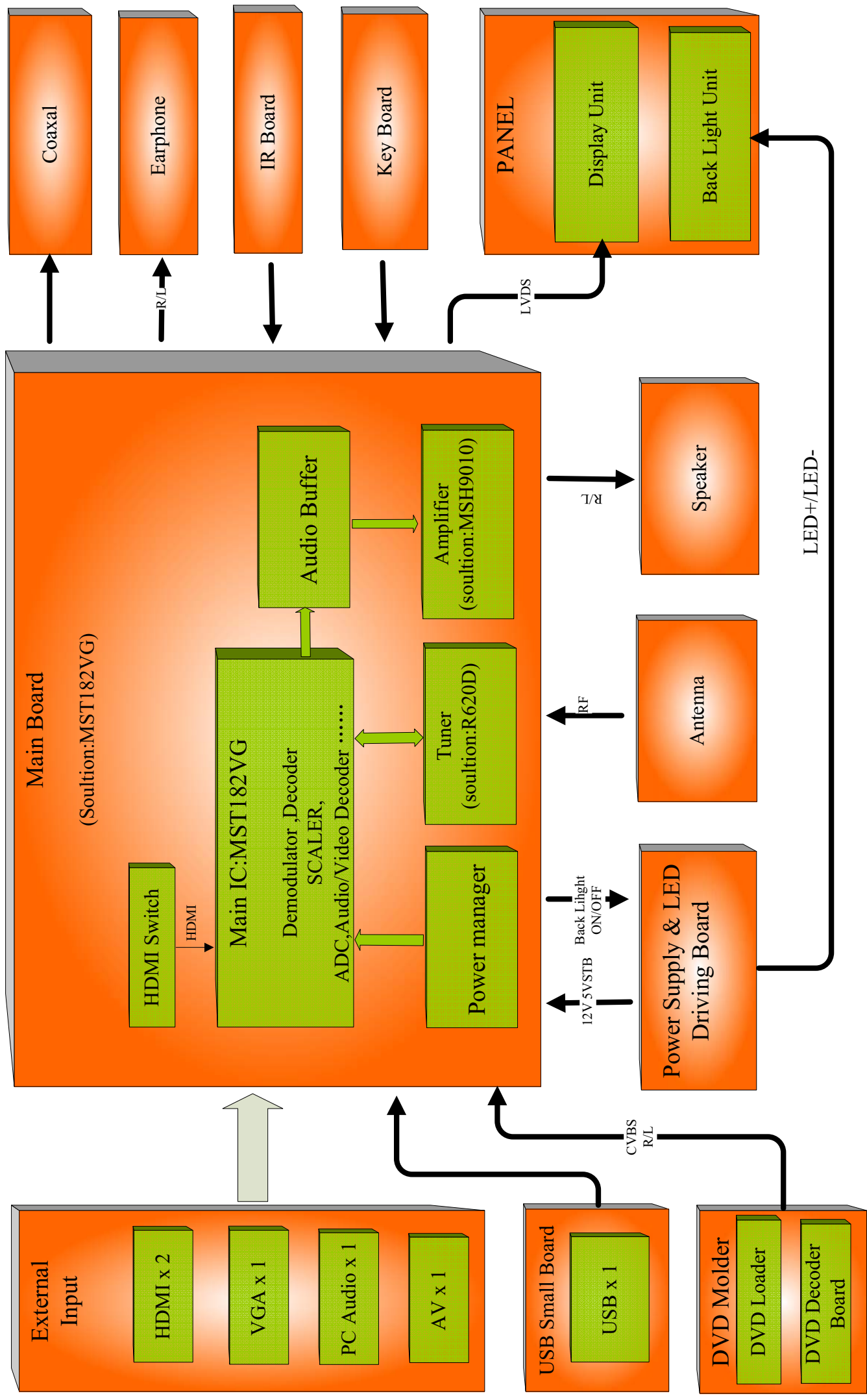
Model	LED1973W LED2273FW LED2473FW		
Solution	MST6M182VG		
ATV System	PAL BG/DK/ I SECAM BG/DK/L		
	48.25~863.25 MHz		
	Picture I.F.	38.90MHz (BG,DK,I)	
	Sound I.F.	33.40 (BG)	
		32.40MHz(DK,L)	
		32.90MHz(I)	
	Tuning System	FS With PLL	
	Tuner Band	Standard system with hyper band	
	Auto Channel Scanning	Yes	
Number Of Preset Channels	100		
Antenna Impedance	75 Ohm Unbalanced		
Power Supply	Power supply: AC 100V-240V, 50/60Hz		
Back Panel Viewing			
	TV KEY	STANDBY,SOURCE, MENU, CH+/CH-, VOL +/-	
	DVD KEY	EJECT(Shared with CH-), PLAY/PAUSE(Shared with CH+)	
	USB2.0 Socket		
	DVD disc notch		
Front Panel Viewing			
	LED Indicators (Red/Green)		Standby/On
Terminals			
	Image In	TV 75ohm Aerial	X 1
		HDMI Connector	X 2
		RCA Jack(CVBS) -Yellow	X 1
	Audio In	RCA Audio (L/R) Jack - White/Red	X 1
		φ3.5 Stereo Jack	X 1
	VGA In	D-sub 15 Pin VGA Connector	X 1
	USB	USB2.0 Host	
	COAX Output	RCA Jack (Black) optional	X 1
	Audio Output	φ3.5 Earphone Jack	X 1

DVD	DVD Loader		DL-10AH(FOR YOU)		
	Loading Type		Slot-in		
	Disc Format		DVD/CD/VCD/CDR/CDRW/DVD-R/DVD+R/		
			DVD-RW/DVD+RW/SVCD		
	Multimedia Format		MP3/WMA/JPEG/MPEG-1/MPEG-2/MPEG-4 DIVX3.XX-DIVX5.XX		
Audio	Output Power (1 KHz 10% THD)			2.5W	
	NICAM / STEREO			Yes	
	Bass			Yes	
	Treble			Yes	
	Balance			Yes	
OSD Language	Russian , English				
LCD Panel (Only For Reference, Parameters according to panel model)	LED1973	Brand		INNOLUX	
		Model		MT185GW01	
		Size		18.5"	
		Backlight		LED	
		Pixel Pitch		0.3mm (H) x 0.3mm(V)	
		Resolution	Horizontal (dots)	1366	
			Vertical (Lines)	768	
		LED2273	Brand		LG
	Model		LM215WF4		
	Size		21.6"		
	Backlight		LED		
	Pixel Pitch		0.248 mm x 0.248mm		
	Resolution		Horizontal (dots)	1920	
			Vertical (Lines)	1080	
	LED2473		Brand		LG
		Model		LM230WF5	
		Size		23.6"	
		Backlight		LED	
		Pixel Pitch		0.265 mm x 0.265mm	
		Resolution	Horizontal (dots)	1920	
			Vertical (Lines)	1080	
	Support Resolution(For PC)	Horizontal (dots) (Max)			1920
		Vertical (Lines) (Max)			1080
Speaker			4 Ohm /5W		
Power Consumption	On working			45W Max	
	Standby			≦ 1W	

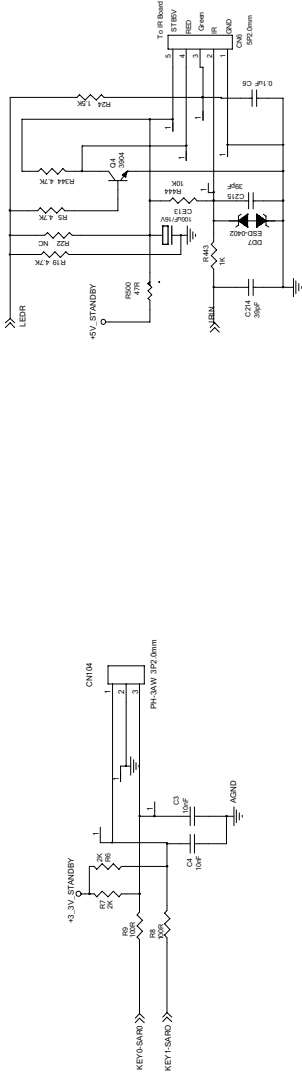
Remote Control		
	Color	Black
	Batteries	1.5V AAA X2
	Customer Code	09F6

Note: Specifications are subject to change without notice

Block Diagram

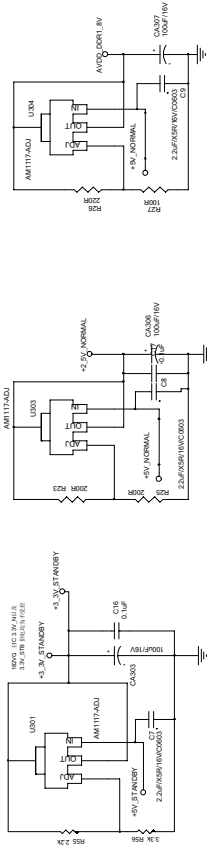


Circuit for Main Board



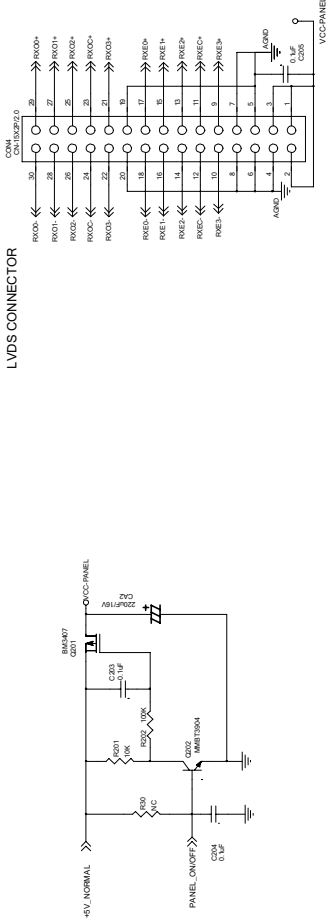
+5V供电，1.8V输出？那么耗散功率该多大？
U5为内存供电电源：
MST6M182V/G:内存类型为DDR2 U5上
要焊接AMS1117-1.8,输出为1.8V/L7不焊接。

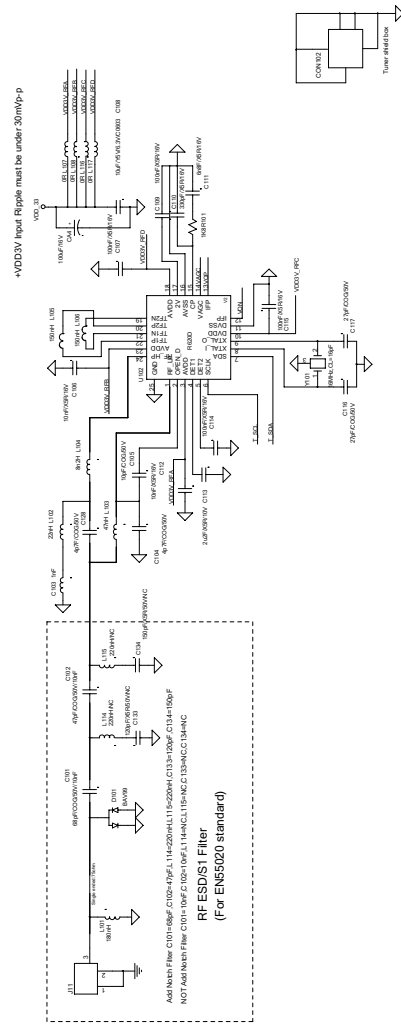
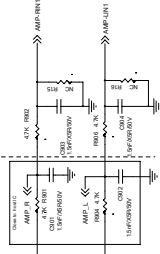
主IC为MST6M181VG、MST6M182VG，则L4、L7不焊接,但要焊接L5;



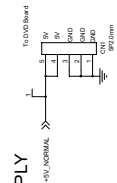
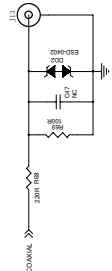
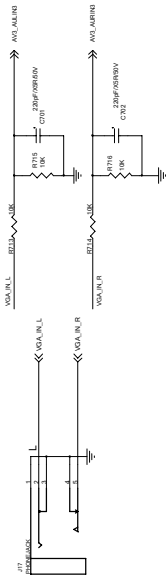
原供电

LVDS CONNECTOR

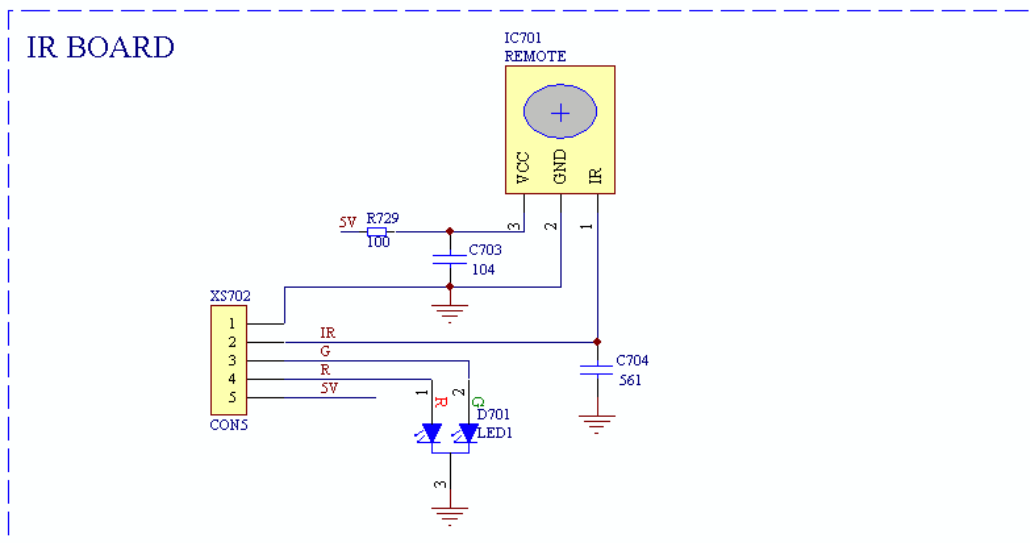




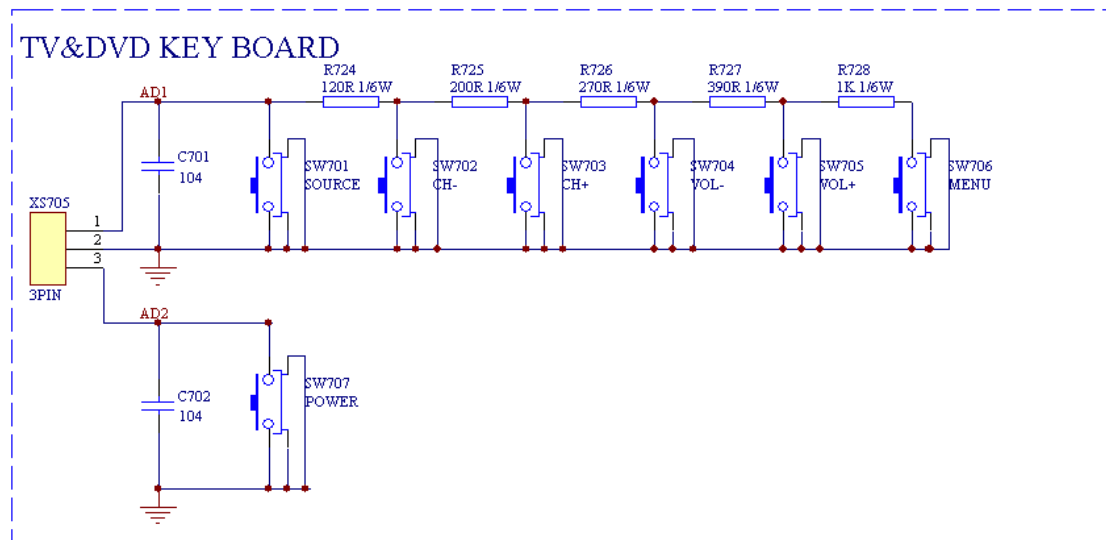
AGC 按照公板更改
2011-01-11



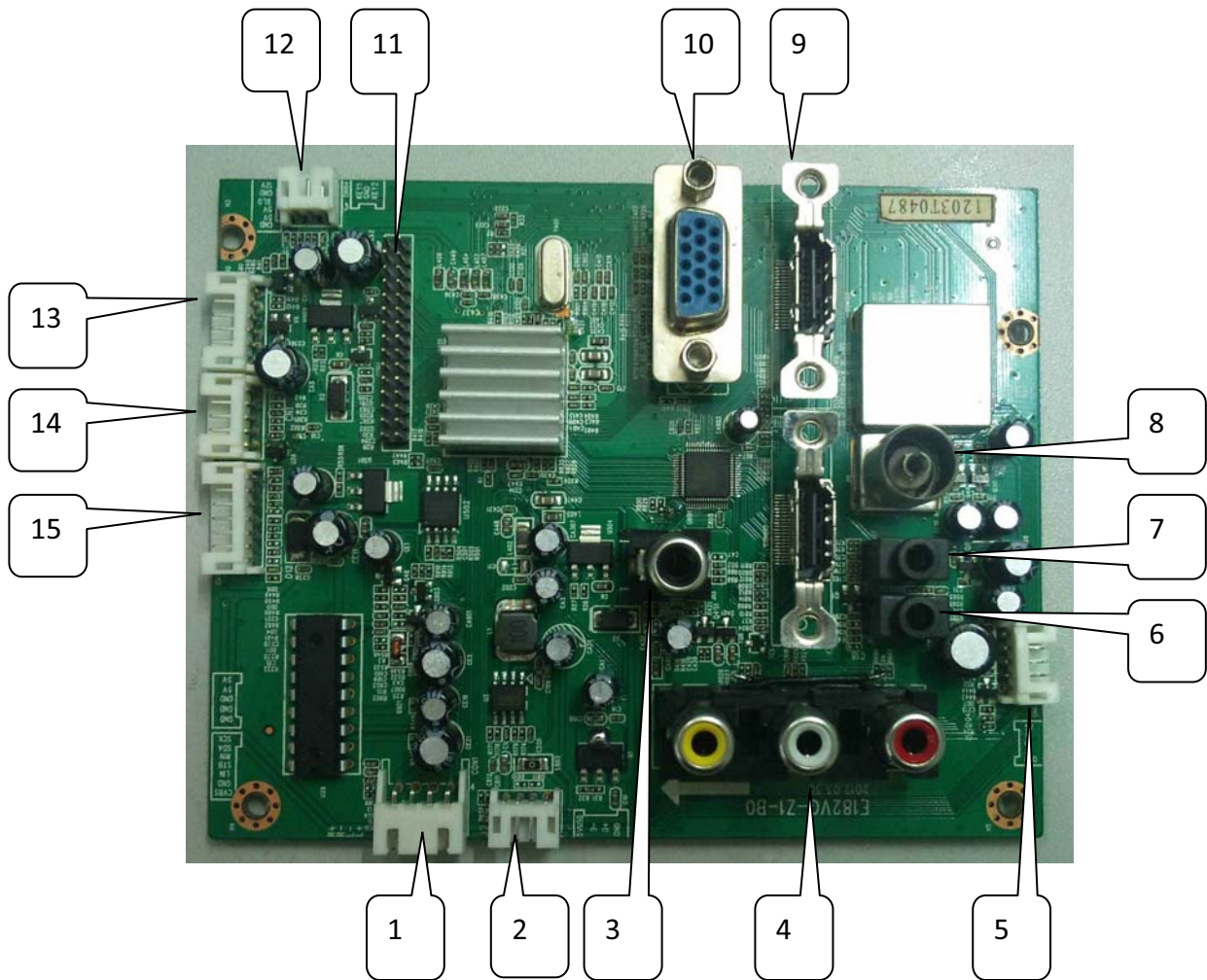
IR BOARD SCHEMATICS



TV&DVD KEY BOARD SCHEMATICS



Interface Description



N0	Ref	Description	N0	Ref	Description
1	CON1	Speaker Jack	9	CON801, CON802	HDMI Input
2	J2	USB 2.0 jack	10	CON702	VGA Input
3	J13	Coaxial Out put	11	CON4	LVDS Interface
4	J3	AV Input	12	CN104	Key Jack
5	CN6	IR Jack	13	CN2	power supply jack
6	J1	Headphone output	14	CN1	DVD power supply
7	J17	PC Audio Input	15	CN10	DVD Signal Interface
8	J11	RF Input			

★CN2(6PIN2.0) Power Supply jack

NO.	Definition	Description
1	12v	12V Power Supply
2	GND	Ground
3	BLO	Black-Light ON/OFF Control
4	5v	5V Power Supply
5	5v	5V Power Supply
6	GND	Ground

★CON1(4PIN2.54) Speaker jack

NO.	Definition	Description
1	R	Right Speaker Output
2	GND	GND
3	GND	GND
4	L	Left Speaker Output

★ CN104: (3PIN2.0) Key jack

NO.	Definition	Description
1	K1	Key 1 (ADC Input)
2	GND	GND
3	K2	Key 2 (ADC Input)

★CN10: (7PIN2.0) DVD INTERFACE

NO.	Definition	Description
1	SCK	SPI Communication Protocol SCL
2	SDA	SPI Communication Protocol SDA
3	DRIN	Right Channel of DVD Audio Input
4	STB	SPI Communication Protocol STB
5	DLIN	Left Channel of DVD Audio Input
6	CVBS	DVD Video Signal
7	GND	GND

★CN1: (5PIN2.0) DVD Power jack

NO.	Definition	Description
1	5V	DVD 5V Power Supply
2	5V	DVD 5V Power Supply
3	GND	GND
4	GND	GND
5	GND	GND

★CN6: IR&LED jack

NO.	Definition	Description
1	GND	GND
2	IR	Remote Receiver
3	LED-G	Green Indicator
4	LED-R	Red Indicator
5	5V	Power Supply

★J2: (4PIN2.0)

NO.	Definition	Description
1	5V	USB 5V Power Supply
2	D-	USB Negative Signal
3	D+	USB Positive Signal
4	GND	GND

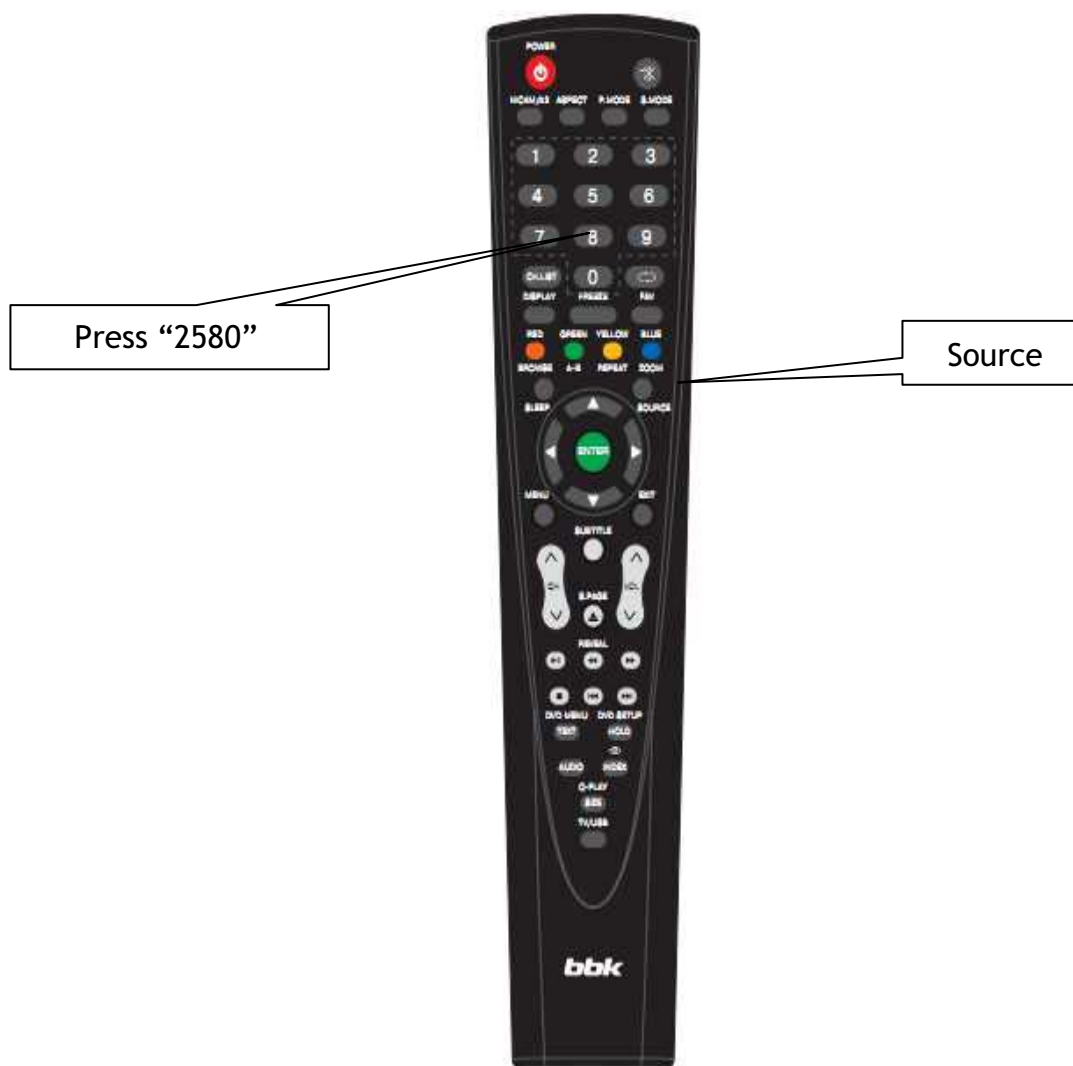
★CON4: LVDS Interface

NO.	Definition	Description
1	LCD-VDD	Power for Panel
2	LCD-VDD	Power for Panel
3	LCD-VDD	Power for Panel
4	GND	GND
5	GND	GND
6	GND	GND
7	GND	GND
8	GND	GND
9	EDA3+	LVDS EVEN3+ Signal
10	EDA3-	LVDS EVEN3+ Signal
11	ECK+	LVDS EVEN Clock + Signal
12	ECK-	LVDS EVEN Clock - Signal
13	EDA2+	LVDS EVEN2 + Signal
14	EDA2-	LVDS EVEN2 - Signal
15	EDA1+	LVDS EVEN1 + Signal
16	EDA1-	LVDS EVEN1 - Signal
17	EDA0+	LVDS EVEN0 + Signal
18	EDA0-	LVDS EVEN0 - Signal
19	GND	GND
20	GND	GND
21	ODA3+	LVDS ODD3 + Signal
22	ODA3-	LVDS ODD3 + Signal
23	OCK+	LVDS ODD Clock + Signal
24	OCK-	LVDS ODD Clock - Signal
25	ODA2+	LVDS ODD2 + Signal
26	ODA2-	LVDS ODD2 - Signal
27	ODA1+	LVDS ODD1 + Signal
28	ODA1-	LVDS ODD1 - Signal
29	ODA0+	LVDS ODD0 + Signal
30	ODA0-	LVDS ODD0 - Signal

FACTORY MODE AND ADJUSTMENT

1) How to enter service mode

Press “Source” button on the remote control, then press “2580”, the service menu will be displayed.



2) Service mode description

Color Temp: select a color temperature mode that you want to adjust;

R Gain: red gain for white balance adjusting;

G Gain: green gain for white balance adjusting;

B Gain: blue gain for white balance adjusting;

R Offset: red offset for white balance adjusting;

G Gain: green offset for white balance adjusting;

B Gain: blue offset for white balance adjusting;

Aging: to turn on or off aging mode, optional setting: On /Off;

Auto config: Auto adjust ADC channel difference, only available in VGA mode;

EEprom clear: reset EEPROM data to default value, all users' program and setting will be lost;

Panel: select different panel for factory;

TTX language: select Teletext language, optional setting: West East Russia;

DVD source set: to turn on or off DVD source in the user menu, optional setting: On/Off;

Hotel mode: to turn on or off hotel mode, optional setting: On/Off;

Key mode:to turn on or off local keyboard, optional setting: On/Off;

Power on: to setting the power on source, optional setting: TV Other;

Power mode: to setting the power on mode, optional setting: Force on Memory standby;

Volume:to setting the max sound volume when hotel mode is active;

AGC: to setting tuner's RF AGC value;

Notes:

1. color temperature adjusting:in different source the white balance can be adjust separated.the details as below:
 - 1) DVD&YpbPr source use same group color temperature value.
 - 2) TV&Scart source use same group color temperature value.
 - 3) VGA&HDMI source use separated color temperature value.
2. Auto Config:please change source to VGA mode and with grey scale pattern then enter service mode to do this item.

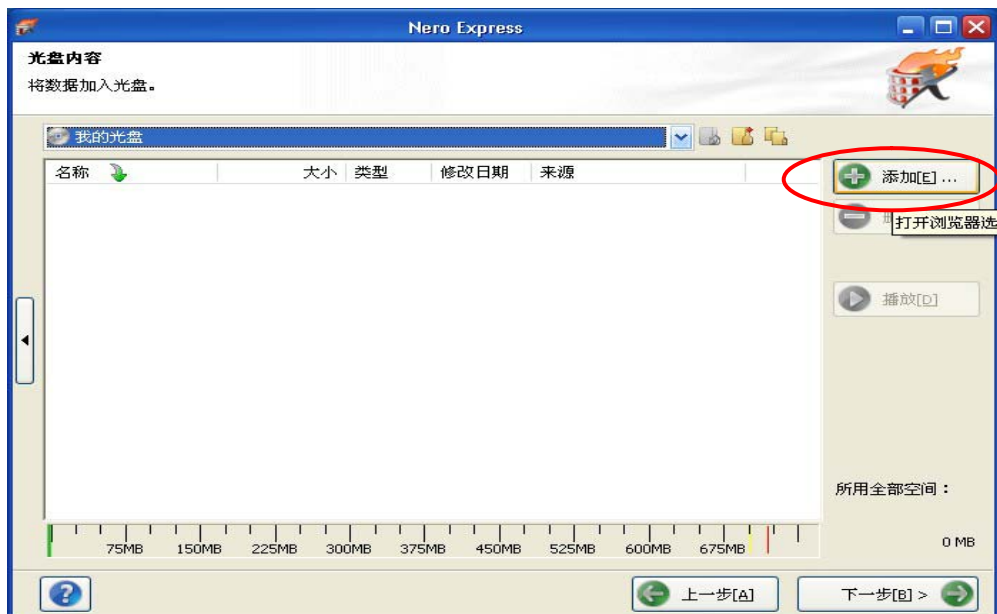
Software Upgrade

DVD Software upgrade

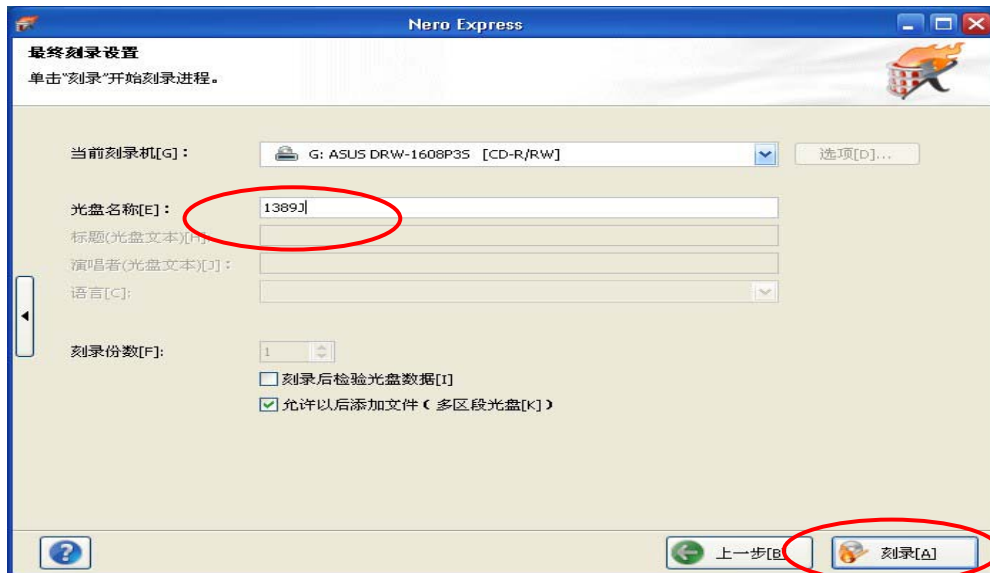
- 1) Please rename the upgrading file to “MTK.BIN”.
- 2) Run “Nero Express”, select burn format “ISO data disc”



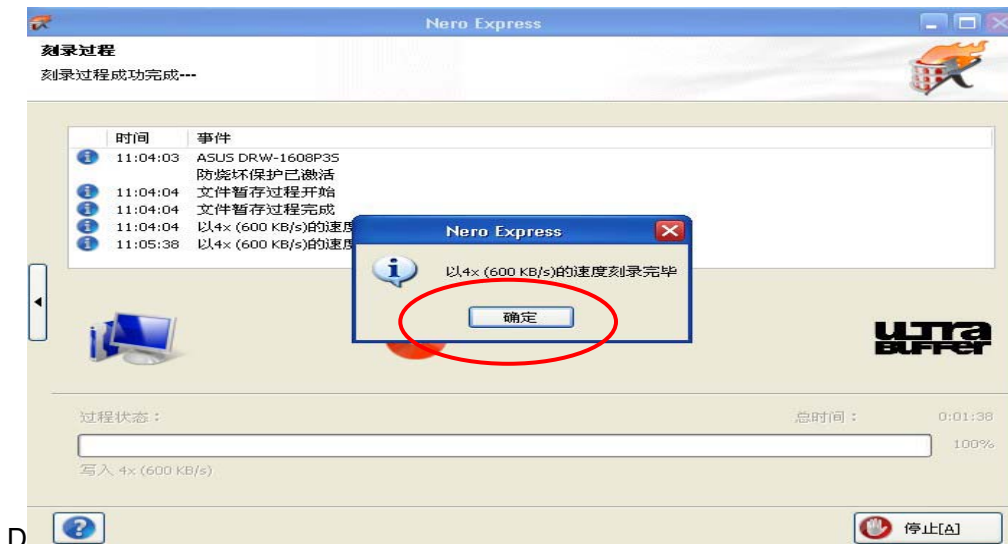
- 3) Add “MTK.BIN” file to burn list



4) Set disc name to “1389J” , then press ”burn” to start

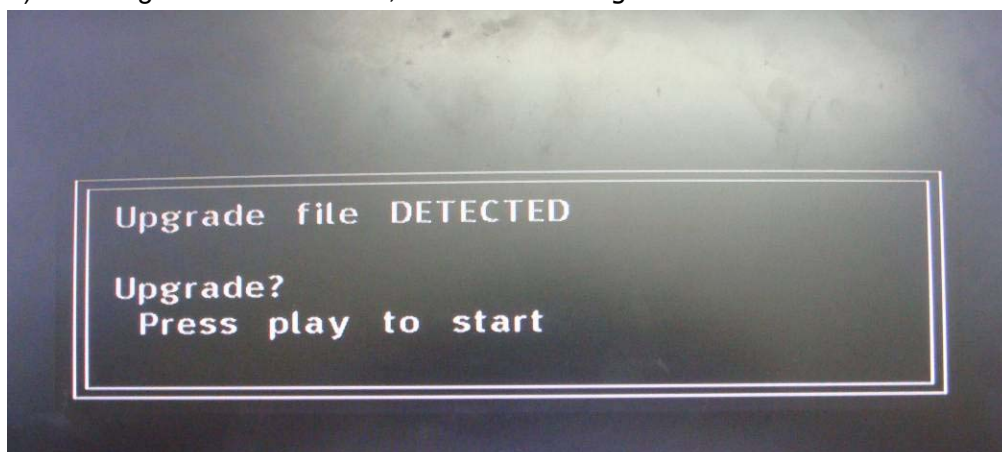


5) After several minutes, it will display the following picture. Press “ok” to finish.

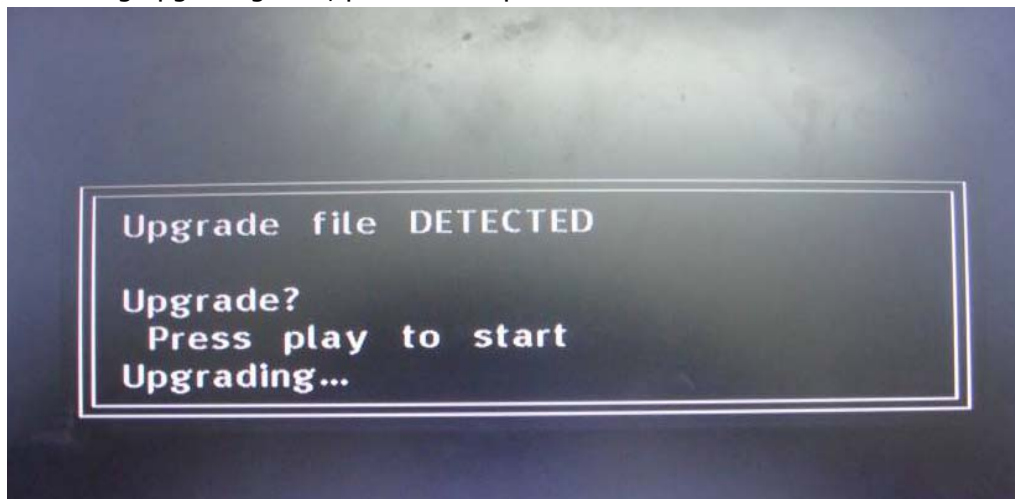


6) Enter DVD source and insert the upgrading disc to DVD loader.

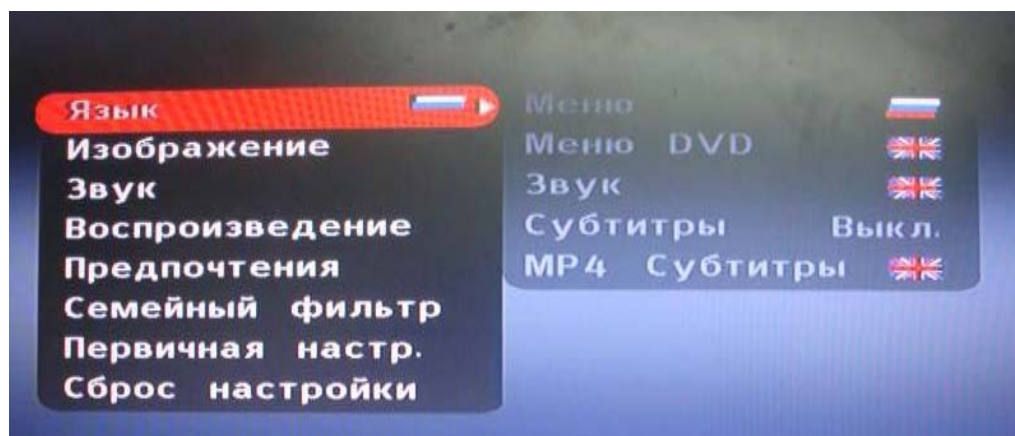
7) DVD begins to read the disc, Will show a dialog box as below.



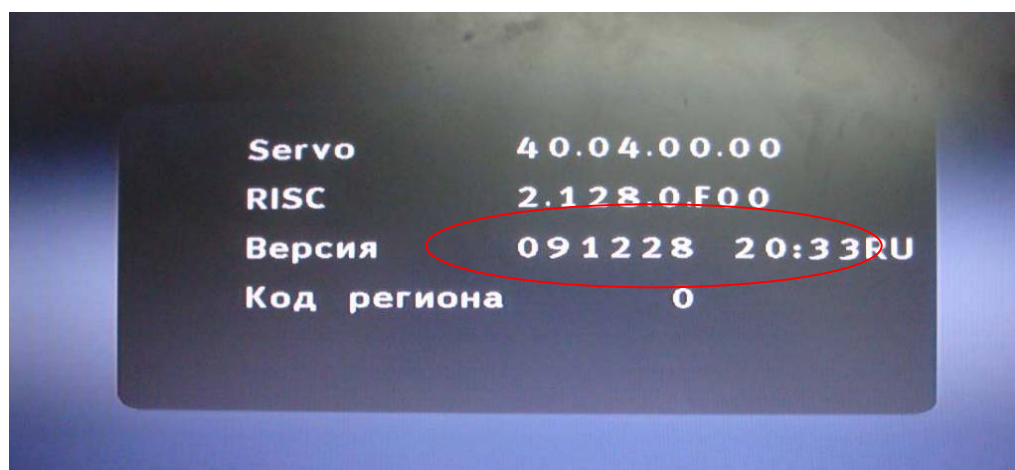
- 8) Press  button on remote control, Will shown a dialog box as below,
Please wait a few minutes(about 5 minutes) ,then DVD will restart auto .
During upgrading time, please don't power off TV.



- 9) After TV restart, Enter DVD setup menu to check the version number.



- 10) Press "9" "2" "1" "0" button, You will enter DVD factory menu.
A dialog box will be showed as below. Marked with red circle is the version number.

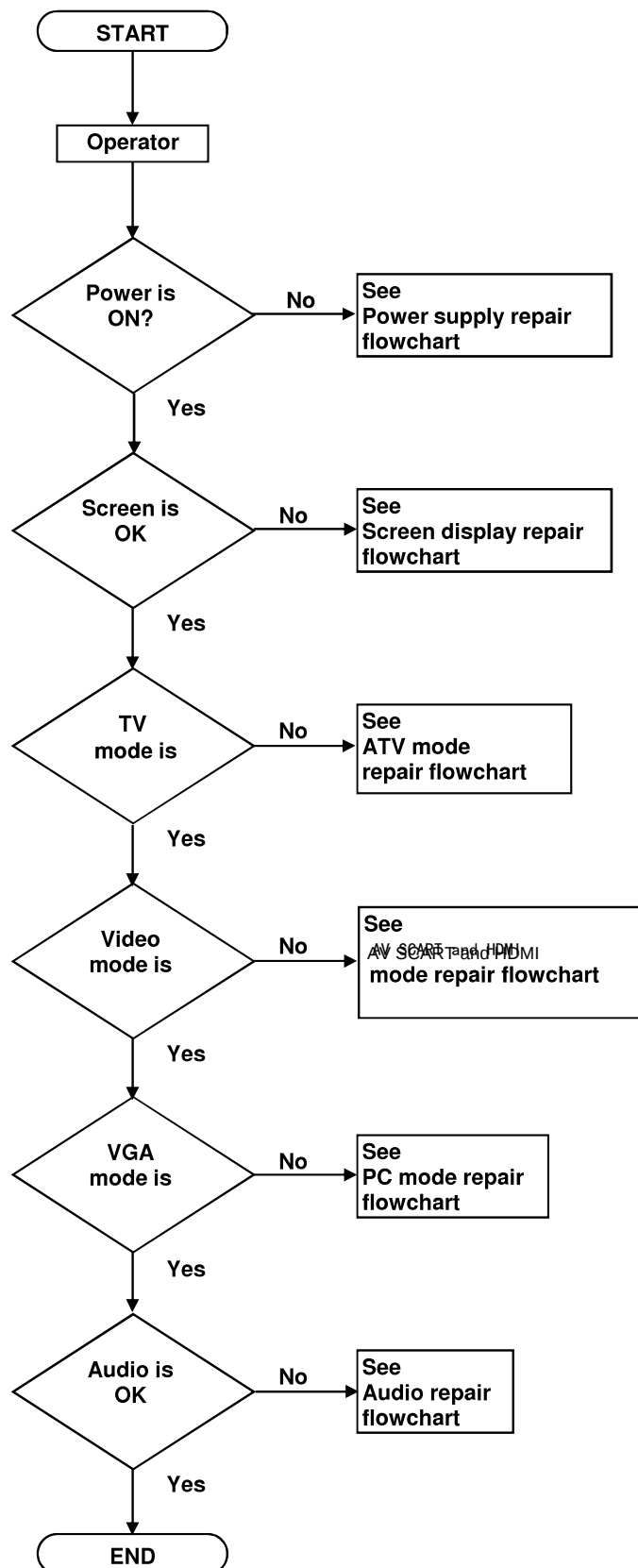


Main Board Software upgrade

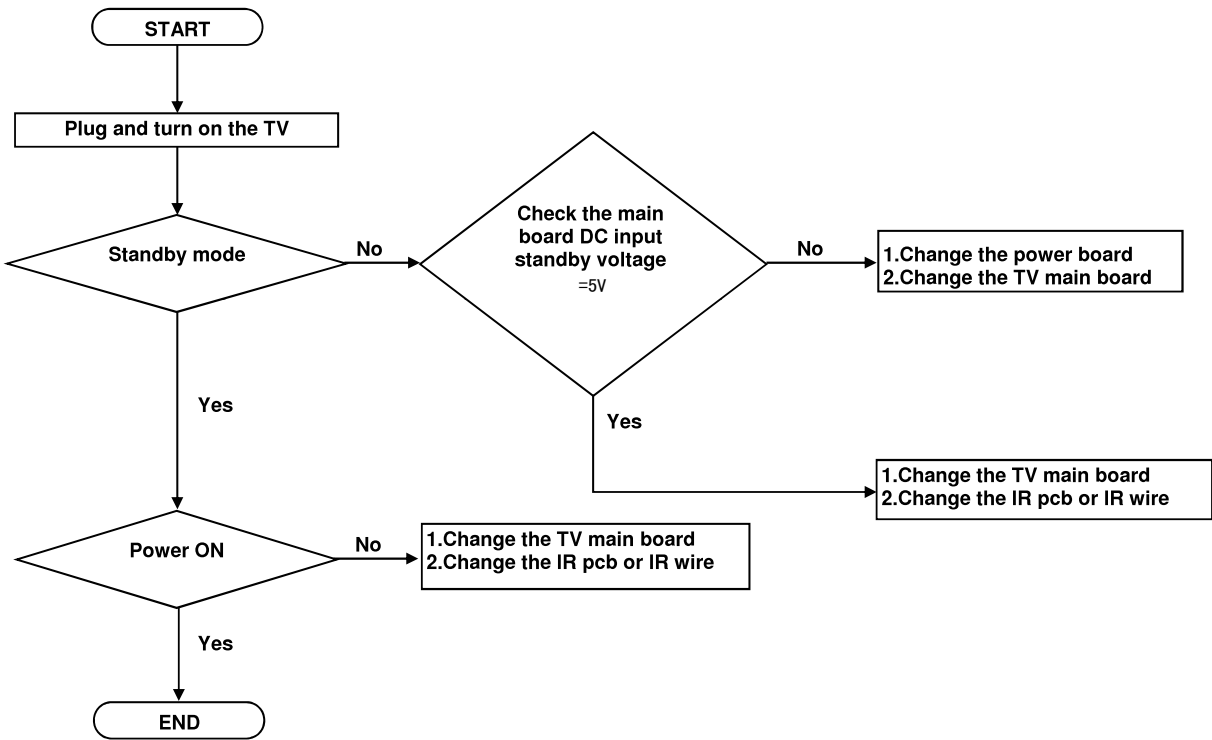
- 1 Please burn the software to USB device. Noted please, software name have to be MERGE182.bin.
- 2 Power on TV, and switch source to ATV.
- 3 Insert USB device to TV, then screen will display a message window to inform you upgrade TV or not. Press" LEFT" direction button to upgrade
- 4 It will cost 40 seconds to upgrade. In this process, please don't unplug USB device, don't power off TV.

TROUBLE SHOOTING

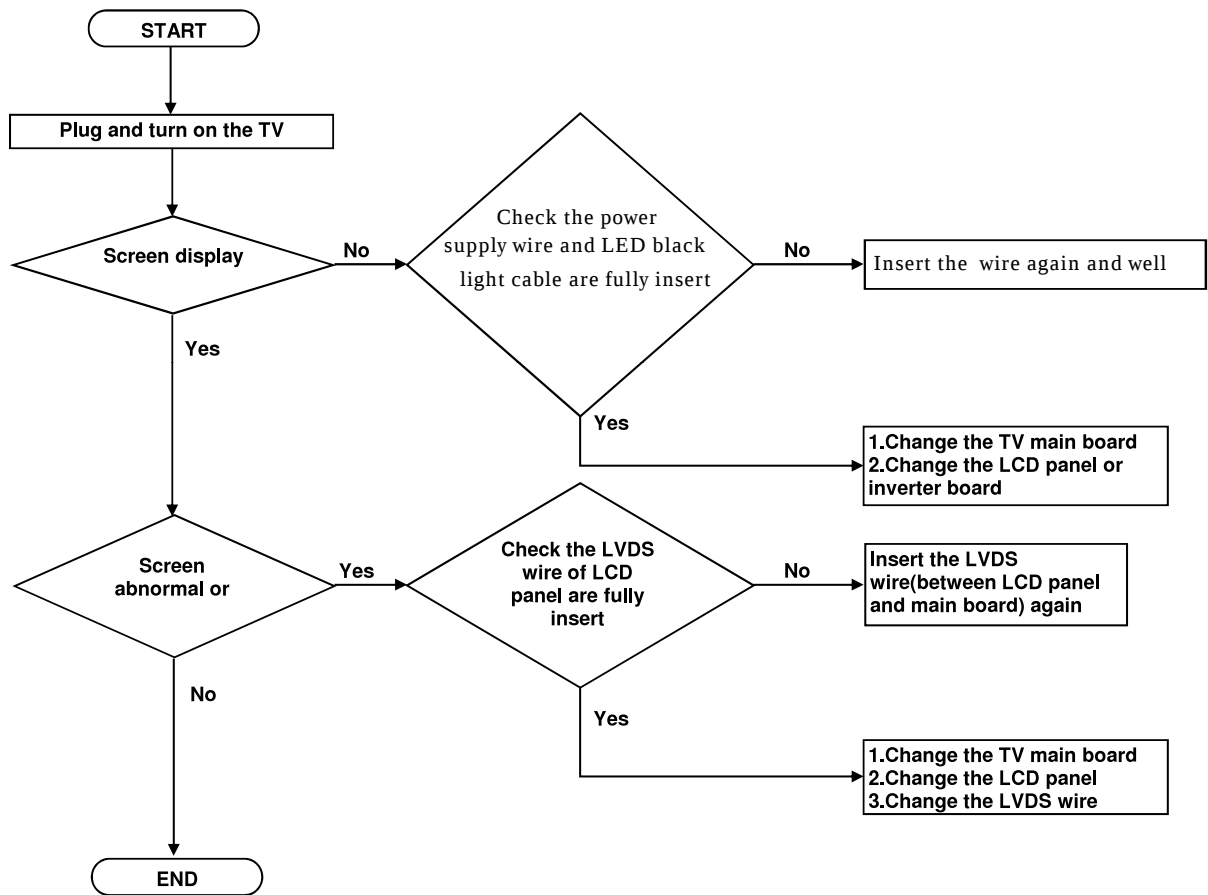
TV Fault finding tree



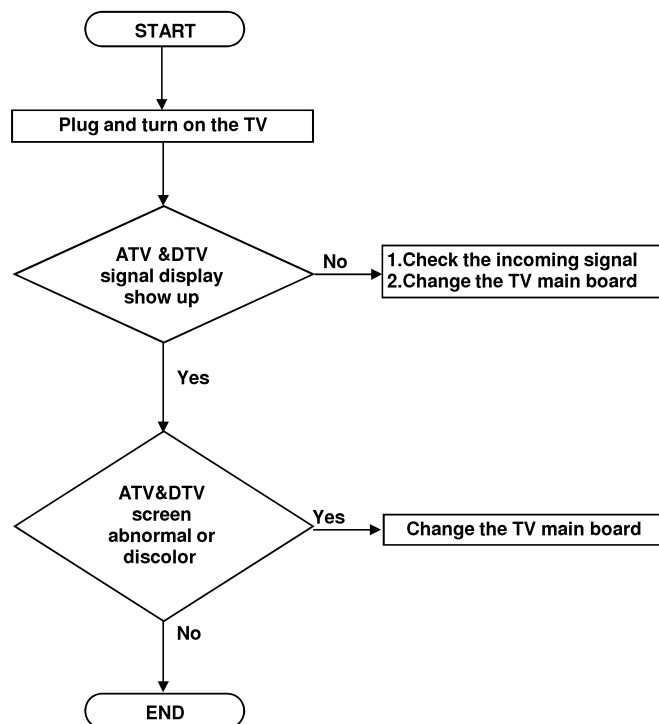
Power supply repair flowchart



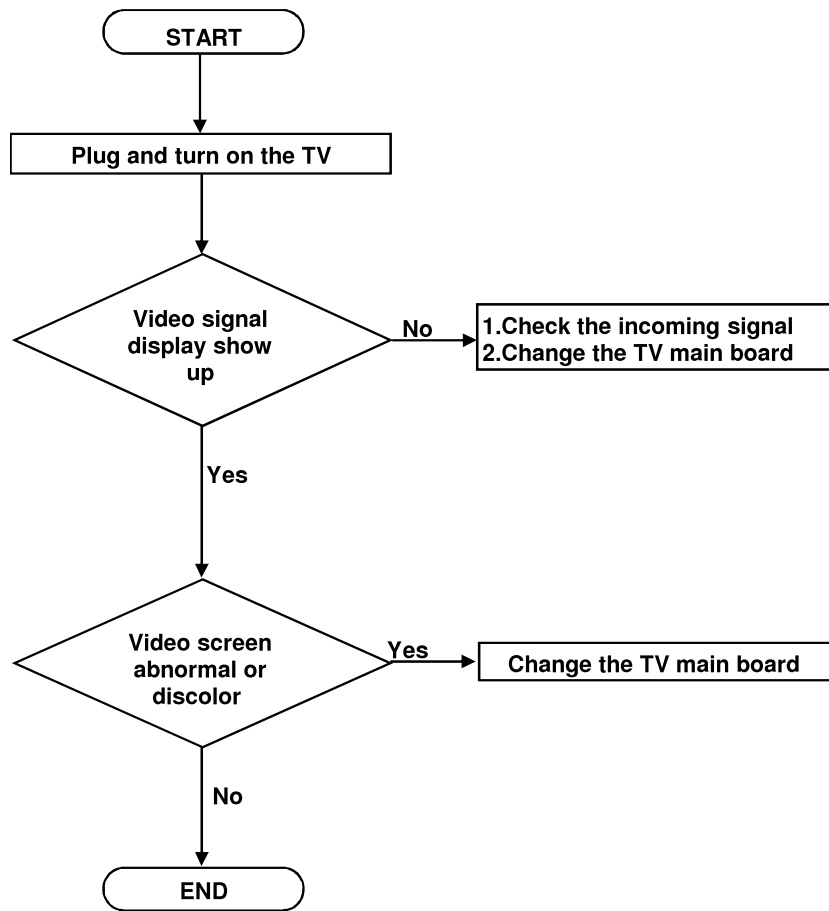
Screen Display repair flowchart



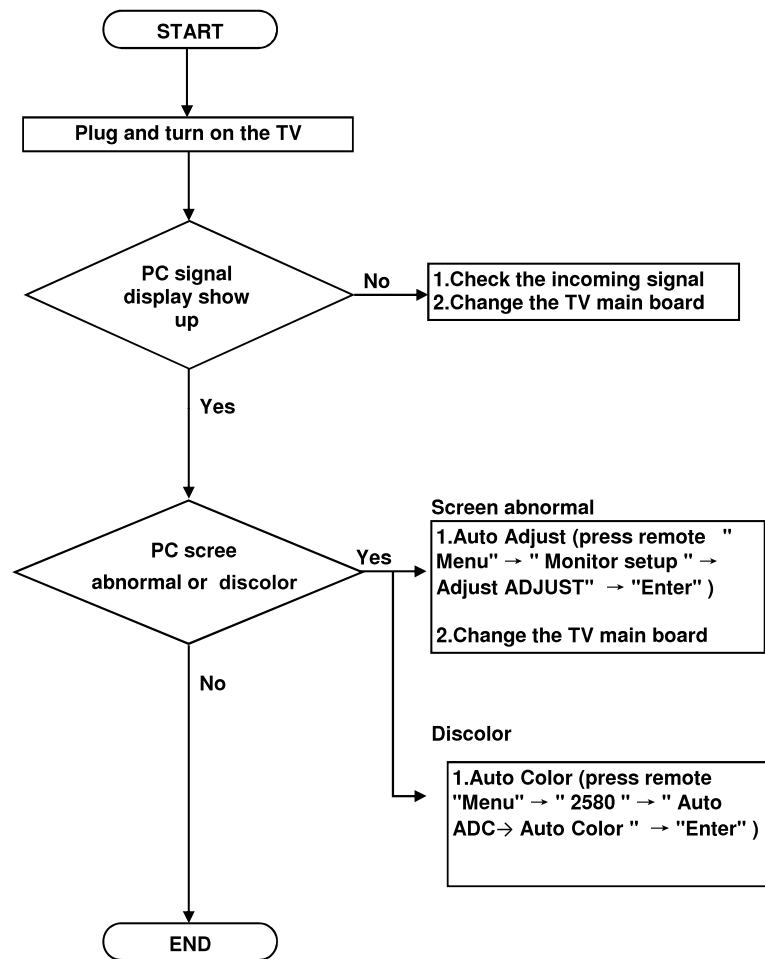
TV mode repair flowchart



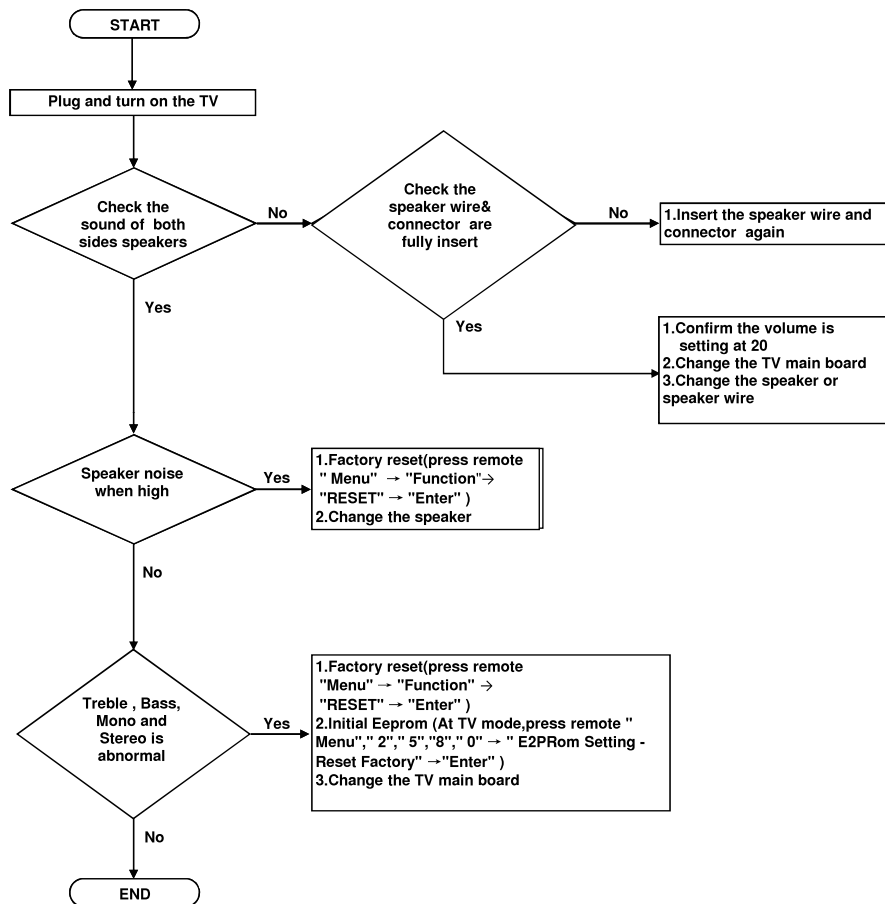
AV, Scart and HDMI mode repair flowchart



PC mode repair flowchart

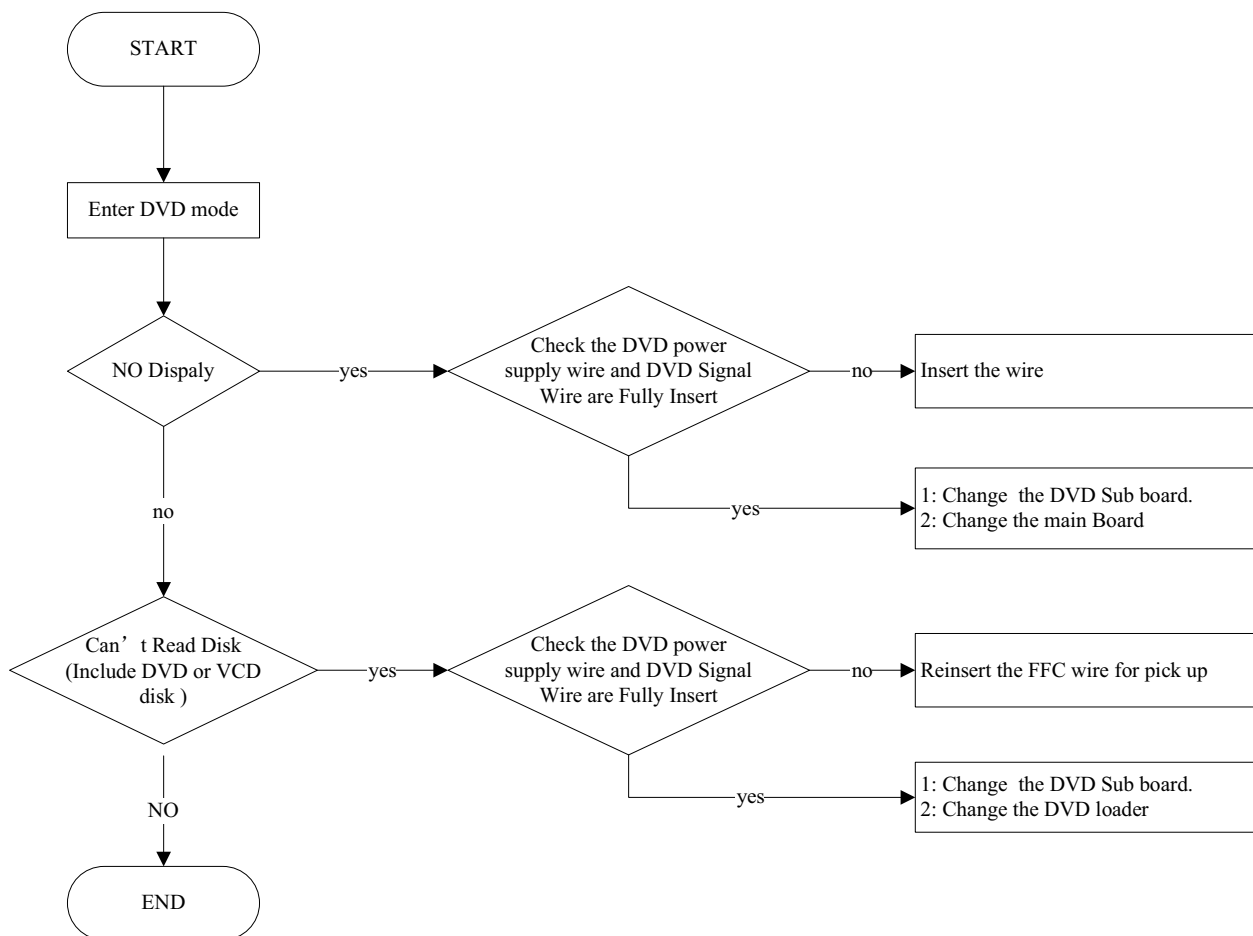


Audio repair flowchart

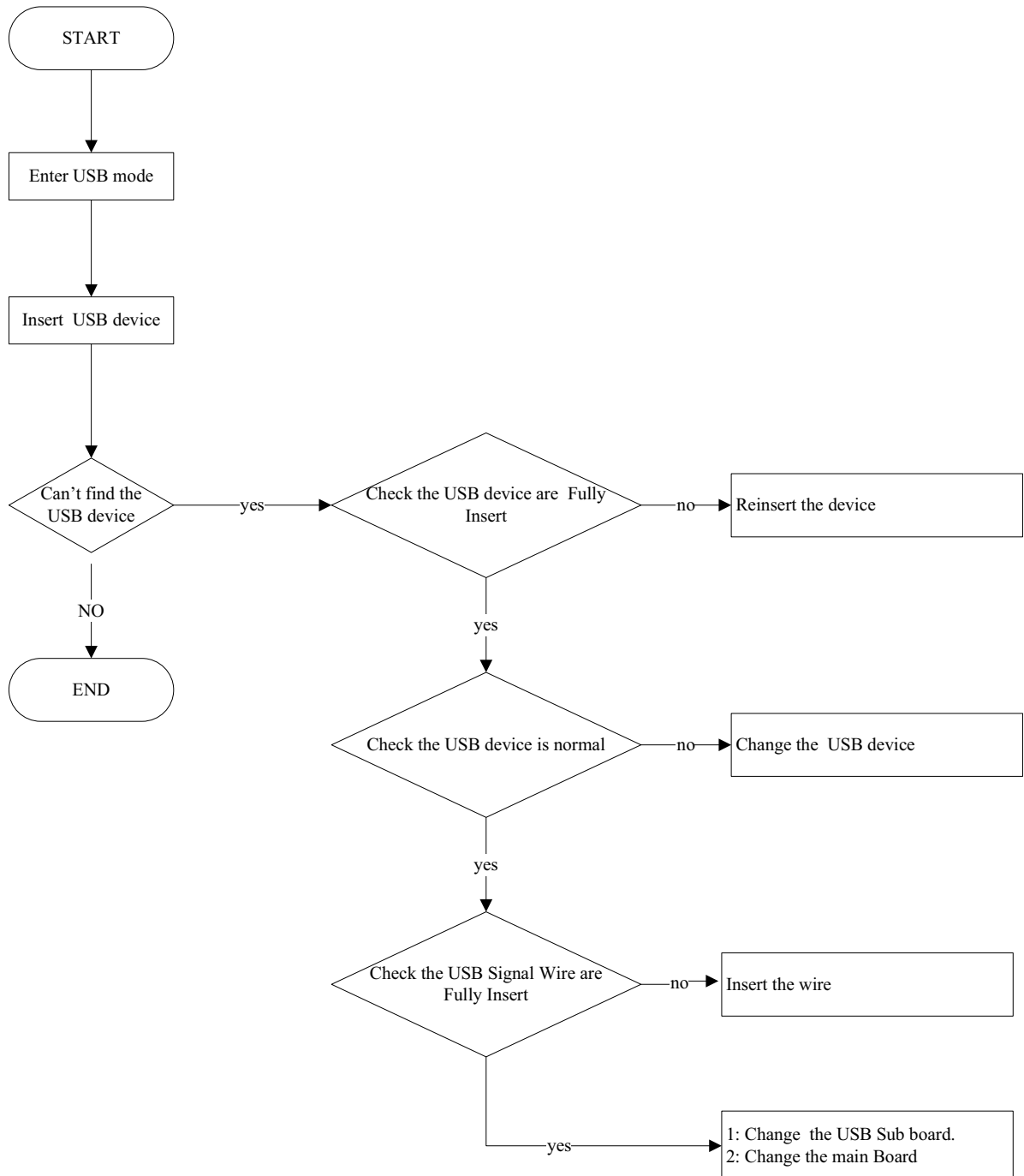


REMARK : After Default Setting , PC mode must " Auto Color"(press remote " Menu" → "2580" → "Auto ADC" → "Auto Color" → "Enter")

DVD Repair Flowchart

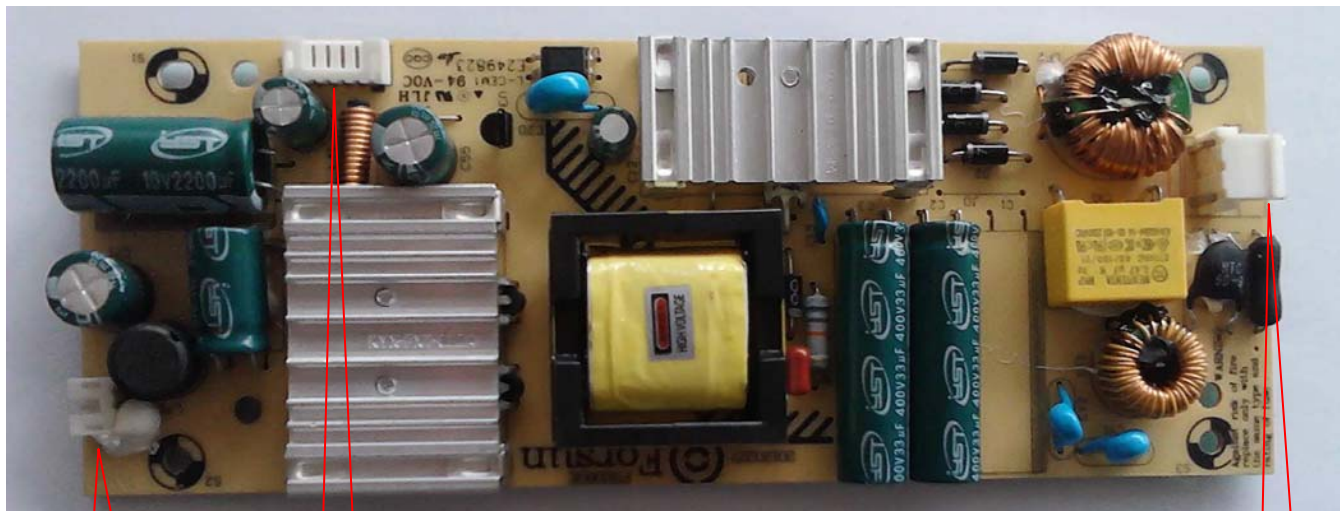


USB Repair Flowchart



Power Supply Board and Small Adaptor Board

FSE060E is a Power board+LED board ASS. Can supply 5V/3A and 12V/1.5A to system, and drive the LED backlight also.



CN3

CN2

CN1

CN1

NO.	Pin connection	Function
1	AC-L	AC input line
2	NC	
3	AC-N	AC input line

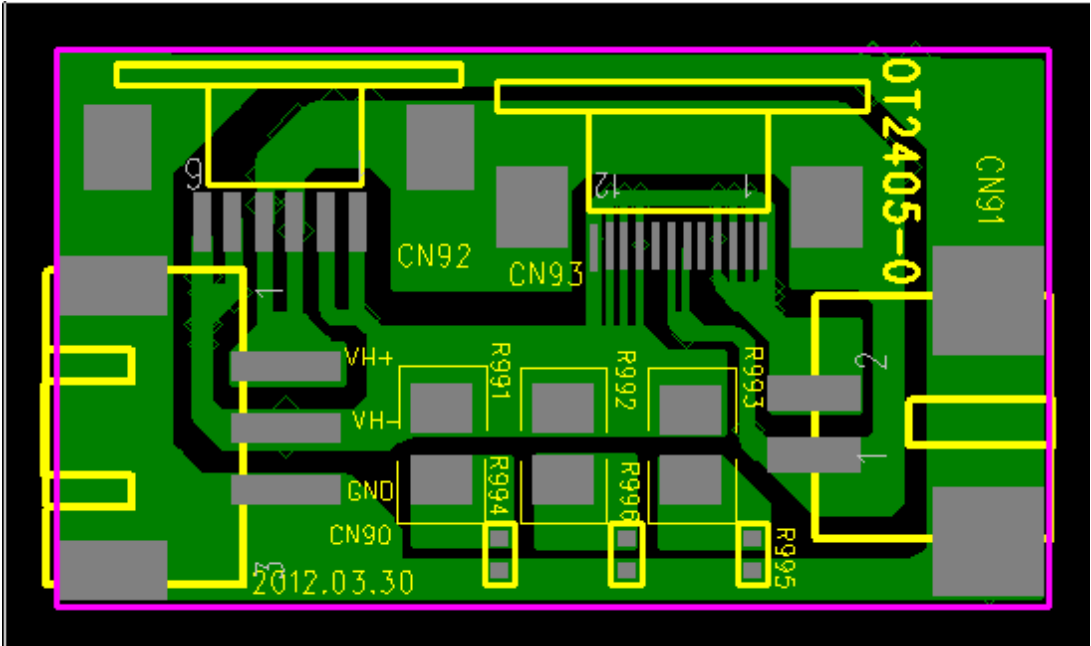
CN2

NO.	Pin connection	Function
1	12V DC OUT	Output 12V
2	GND	Output return
3	PCON	ON/OFF Control
4,5	5V DC OUT	Output 5V
6	GND	Output return

CN3

NO.	Pin connection	Function
1	LED+	LED anode
2	LED-	LED cathode
3	GND	Output return

OT2450 is a LED adaptor board, to work with FSE060E together. By configuring the circuit parameter for OT2450, so that the FSE060E output current value is used to meet the needs of a variety of panel's backlight current.



CN90: (3PIN2.0) Connect to Power Supply Board

NO.	Definition	Description
1	VH+	LED anode
2	VH-	LED cathode
3	GND	Ground

CN90: (6PIN1.0mm) Connect to Panel

Pin number	Output Name
1	IRLED(Current Out)
2	IRLED(Current Out)
3	VLED(Voltage in)
4	VLED(Voltage in)
5	IRLED(Current Out)
6	IRLED(Current Out)

CN92: (12PIN0.5mm) Connect to panel

Pin number	Output Name
1	IRLED(Current Out)
2	IRLED(Current Out)
3	IRLED(Current Out)
4	IRLED(Current Out)
5	NC
6	VLED(Voltage in)
7	VLED(Voltage in)
8	NC
9	IRLED(Current Out)
10	IRLED(Current Out)
11	IRLED(Current Out)
12	IRLED(Current Out)

CN91: (2PIN2.0) Connect to panel

Pin number	Output Name
1	VLED(Voltage in)
2	IRLED(Current Out)

How to configure the circuit parameter

PANEL REF	CNO V185B1-LE1 (160mA)	SKY E185SG01 (160mA)	ODT M215BD1WU3 (220mA)	CNO V215H1-LE1 (240mA)	L230WF5-TLD1 (240mA)
CN90	SMD 3P-2.0mm	SMD 3P-2.0mm	SMD 3P-2.0mm	SMD 3P-2.0mm	SMD 3P-2.0mm
CN91	NC	SMD 2P-2.0mm	SMD 2P-2.0mm	NC	
CN92	NC	NC	NC	NC	SMD 6P-1.0mm
CN93	SMD 12P-0.5mm	NC	NC	SMD 12P-0.5mm	NC
R993	NC	NC	3R	2.4R	2.4R
R995	NC	NC	0R	0R	0R

