



**Color TFT-LCD TV Monitor**

# **SERVICE MANUAL**

**MODEL : EN-7500**

Caution : Before going into repairing, please read the safety precaution carefully.

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# Safety Precaution

## Precaution for the parts related to safety

- The characteristics of some parts are related to safety of the product. Such parts are marked with  $\triangle$  on the circuit diagram and part list in this manual. Using parts different from the list may be dangerous.
- Not allow to modify the design without any permission from Newcommworld.

## When dealing with LCD panel...

- Must use the screw holes in each corner of the LCD panel to hold it tight.
- To avoid the damage, do not press hard on the center of the panel or apply electrical shock.
- Protect the panel from static electricity to avoid the damage of its circuit. Must use wrist band to prevent the static electricity.
- Do not leave the panel for long period under high temperature and humidity.
- Avoid exposing the panel to direct sunlight for hours.
- Prevent from getting wet which is the cause of short life and defect of circuits
- Clean the surface of the panel with a soft cloth. Do not press hard when cleaning. (Dirty or coarse cloth will damage the surface of the panel.)
- If the panel got wet, wipe out the water with a dry cloth and use it after it's completely dried.

## When disassembling the product...

- Place the product on a soft cloth or sponge to avoid scratches on it.
- Disassembling the panel
  - ① Unscrew the screws on the four corners of the panel.
  - ② Lift up the panel slowly and disconnect the panel I/F cable.
- Disassembling the board
  - ① Disconnect the cables from the board. Be careful not to damage the connector pins
  - ② Unscrew the screws that holds the board.

## When re-assembling the product...

- When re-assembling the product, use a motor driver with under 2K torque and screw the bolt tight. Assemble the panel after checking the connection of cables. If the torque of the motor driver exceed 2K, the screw may skid and damage the cover.
- When assembling the panel, be careful with the cables. Improper handling of the cables may result in the failure of the board and panel.

## Safety Precaution

### $\triangle$ BE CAREFUL WITH ELECTRICAL SHOCK!

- Must unplug the AC power when dealing with back light or inverter. The inverter has high voltage level(650Vrms)
- Be careful not to damage the covering of the wire which is connected to the inverter. If the cover is stripped off, it may cause a fire or electrical shock.

# Product Specification

## 1. LCD Specification

Type : Color TFT  
Screen Size : 17.0" (43.2Cm) Diagonal  
Pixel Pitch : 0.264mm x 0.264mm  
I/F : LVDC 2 channel  
Color Depth : 8-bits / color  
Active Display : 337.92mm(H) x 270.336mm(V)  
Surface Treatment : Anti-glare, Hard coating 3H  
Backlight Unit : 4 CCFL

## 2. Optical Characteristics

### 2.1 Viewing Angle

C/R ≥ 10

L : 70° Typ.

R : 70° Typ.

U : 45° Typ.

D : 65° Typ.

2.2 Brightness : 250cd/m<sup>2</sup> (typ)

2.3 Contrast Ratio : 350:1 (typ)

## 3. Input Signal

### 3.1 Analog RGB

(Refer to "Analog RGB Mode" Chart)

Sync. Signal Voltage : Low=0~0.8V

High=2.4~5V

Sync. Signal Type : Separate

Sync. Signal Polarity : Positive or Negative

Hor. Frequency : 30~80KHz

Ver. Frequency : 56~75Hz

Video Signal Voltage : 0.7Vpp

Input Impedance : 75 Ohm

Sound : Stereo

### 3.2 Composite Video

Signal Type : Composite, NTSC/PAL

Input Signal Voltage : 0.7Vpp

Input Impedance : 75 Ohm

Sound : Stereo

### 3.3 S-VHS

Signal Type : Y/C, NTSC/PAL

Input Signal Voltage : 0.7Vpp

Input Impedance : 75 Ohm

Sound : Stereo

### 3.4 TV

Signal System : NTSC M

Channel System : Air/Cable/HRC/IRC

IF Frequency

PIF : 45.75MHz

CIF : 42.17MHz

SIF : 41.25MHz

Input Impedance : 75 Ohm

Output Type : CVBS

Sound : MONO

## 4. Power

### 4.1 Range of Power Input Voltage(Adaptor)

Input : AC 100~240V, 50/60Hz, 1.5A

Output : DC 12V, 5A

### 4.2 Power Consumption

Operation Mode	Power Consumption	LED Color
Normal	≤ 45W	Green
No Signal	≤ 3W	Orange
Power OFF	≤ 3W	OFF

## 5. Outline Dimension (Product Set)

Width (W) : 480mm

Height(H) : 424mm

Depth (D) : 180mm (Including Stand)

## 6. Weight : 6.8Kg (Product Set)

8.8Kg (Packed, including accessory)

## Analog RGB Mode List

VESA MODES							
Mode	Resolution	Total	Horizontal		Vertical		Pixel
			Freq. (KHz)	Sync Polarity	Freq. (Hz)	Sync Polarity	Freq. (MHz)
VGA	640x480@60Hz	800 x 525	31.469	N	59.940	N	25.175
	640x480@72Hz	832 x 520	37.861	N	72.809	N	31.500
	640x480@75Hz	840 x 500	37.500	N	75.000	N	31.500
SVGA	800x600@56Hz	1024 x 625	35.156	N/P	56.250	N/P	36.000
	800x600@60Hz	1056 x 628	37.879	P	60.317	P	40.000
	800x600@72Hz	1040 x 666	48.077	P	72.188	P	50.000
	800x600@75Hz	1056 x 625	46.875	P	75.000	P	49.500
XGA	1024x768@60Hz	1344 x 806	48.363	N	60.004	N	65.000
	1024x768@70Hz	1328 x 806	56.476	N	70.069	N	75.000
	1024x768@75Hz	1312 x 800	60.023	P	75.029	P	78.750
SXGA	1280x1024@60Hz	1688 x 1066	63.981	P	60.020	P	108.000
	1280x1024@75Hz	1688 x 1066	79.976	P	75.025	P	135.000

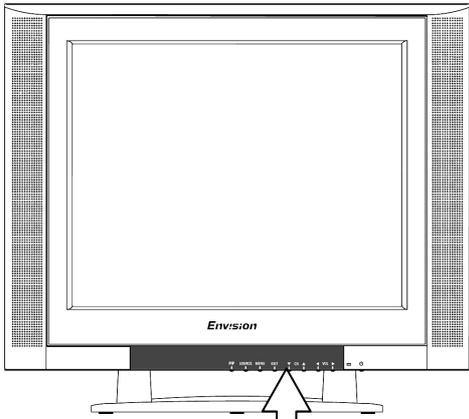
IBM MODES							
Mode	Resolution	Total	Horizontal		Vertical		Pixel
			Freq. (KHz)	Sync Polarity	Freq. (Hz)	Sync Polarity	Freq. (MHz)
DOS	720x400@70Hz	900 x 449	31.469	N	70.087	P	28.322
DOS	640x350@70Hz	800 x 449	31.469	P	70.087	N	25.175
XGA	1024x768@72Hz	1304 x 798	57.515	P	72.1	P	75.000

MAC MODES							
Mode	Resolution	Total	Horizontal		Vertical		Pixel
			Freq. (KHz)	Sync Polarity	Freq. (Hz)	Sync Polarity	Freq. (MHz)
VGA	640x480@67Hz	864 x 525	35.000	N	66.667	N	30.240
SVGA	832x624@75Hz	1152 x 667	49.725	N	74.551	N	57.2832
XGA	1024x768@60Hz	1312 x 813	48.780	N	60.001	N	64.000
	1024x768@75Hz	1328 x 804	60.241	N	74.927	N	80.000

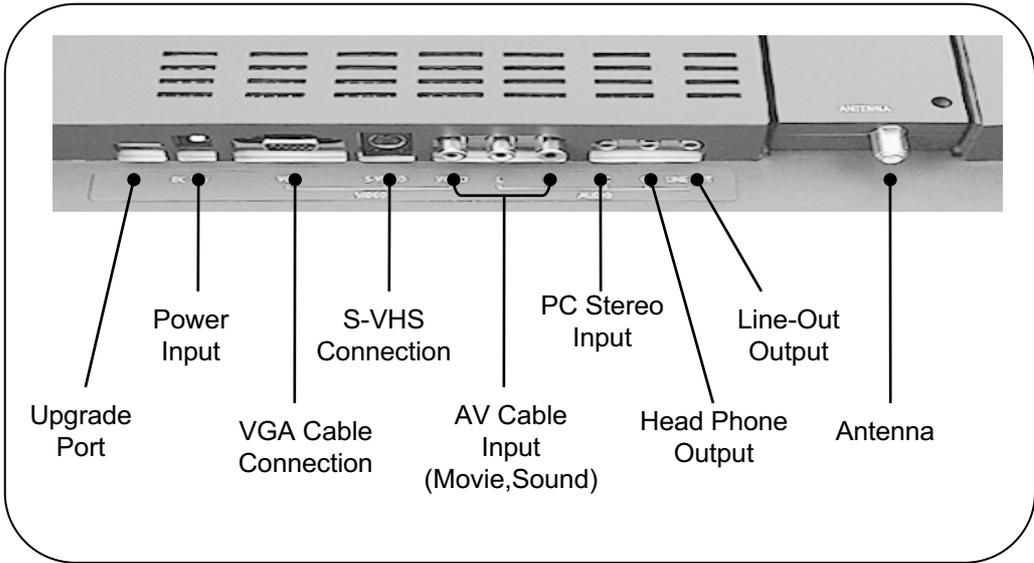
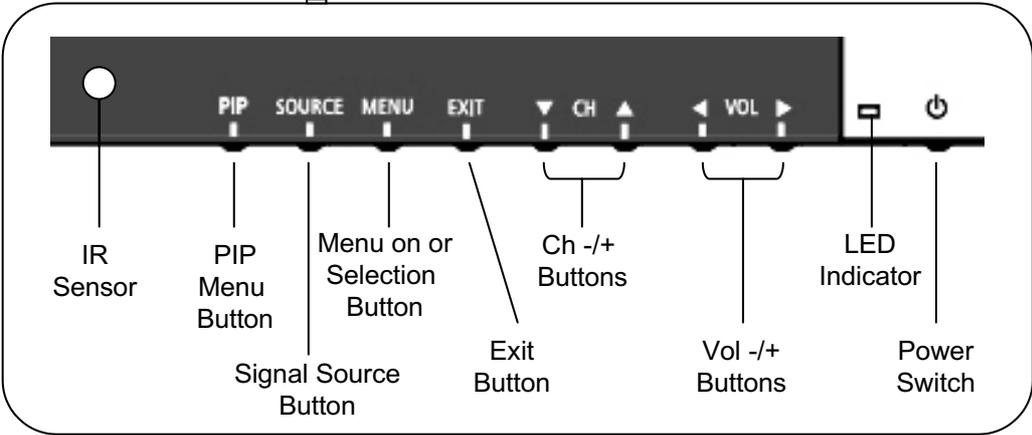
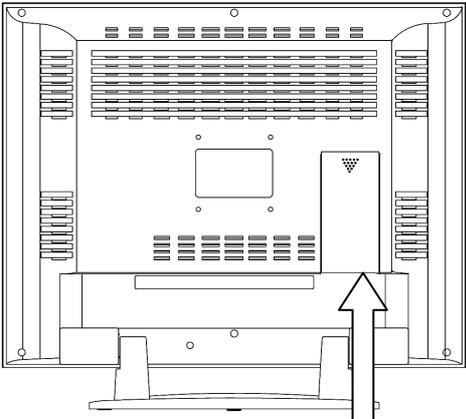
DTV (SMPTE) MODES							
Mode	Resolution	Total	Horizontal		Vertical		Pixel
			Freq. (KHz)	Sync Polarity	Freq. (Hz)	Sync Polarity	Freq. (MHz)
VGA	720x480@60Hz	858 x 525	31.469	-	59.940	-	25.175
296M	1280x720@60Hz	1650 x 750	45.000	-	60.000	-	74.250
274M	1920x1080@30Hz	2200 x 1102	33.750	-	30.000	-	74.250

# Description of Each Part

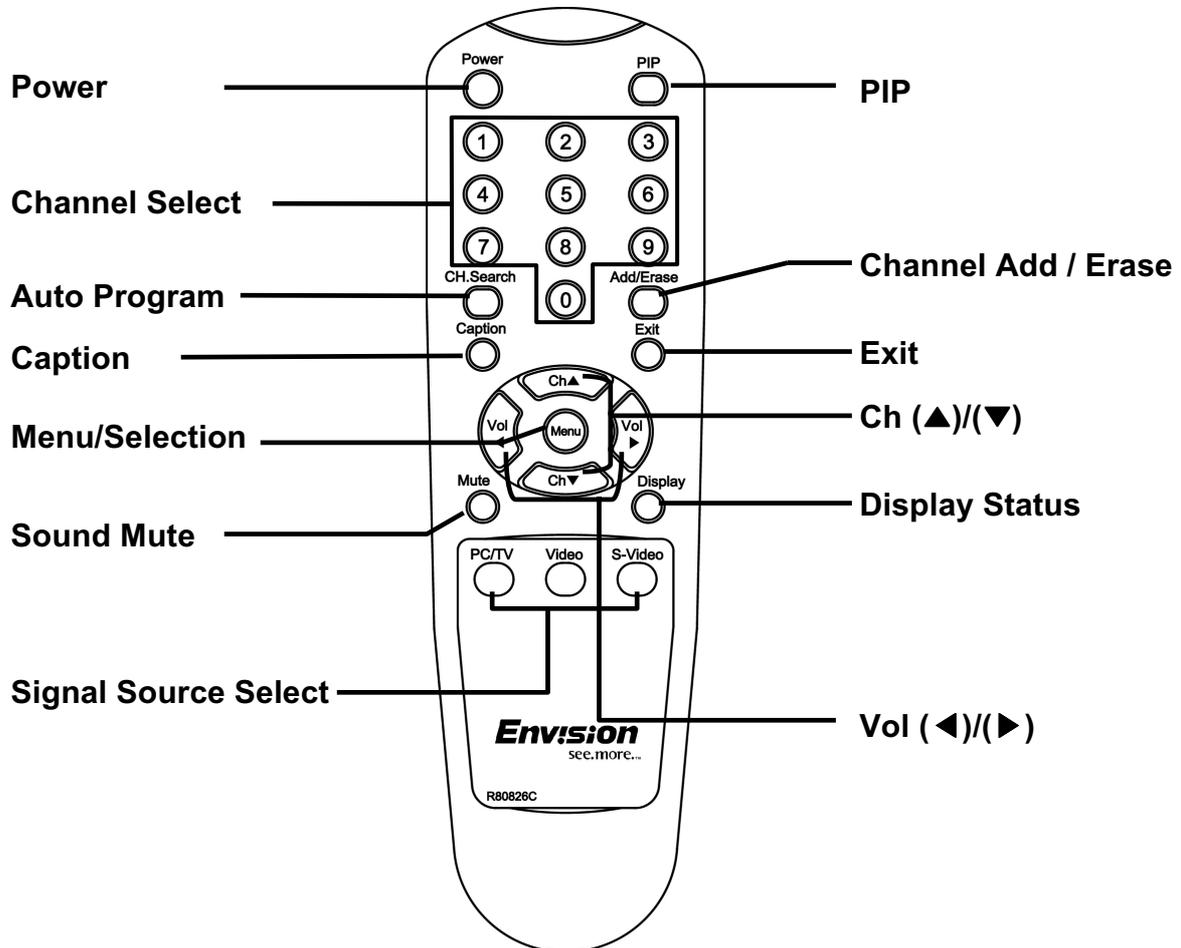
**Front**



**Rear**



## Description of Remote Control



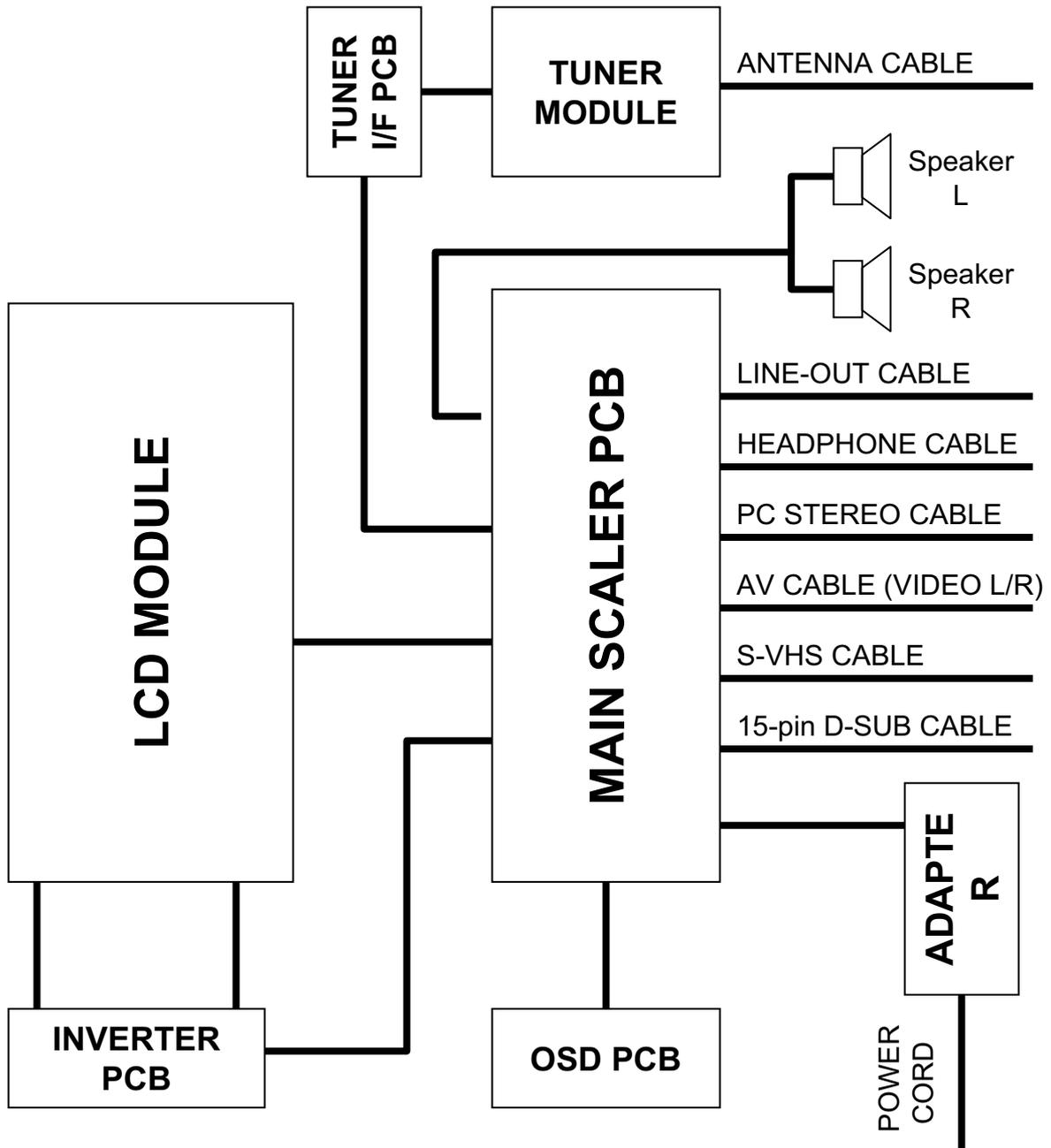
## Description of Main Buttons

- CH.Search** : When press, "Yes/No" selection menu appears. Select "Yes" to perform auto channel searching, "No" to cancel.
- Caption** : When press, Caption menu appears.
- PC/TV** : PC ↔ TV source selection.
- PIP** : Activate PIP menu.
- Add/Erase** : Activate channel "Add/Erase" menu.
- Display** : Display current signal source on the upper right corner. It disappears when press again.



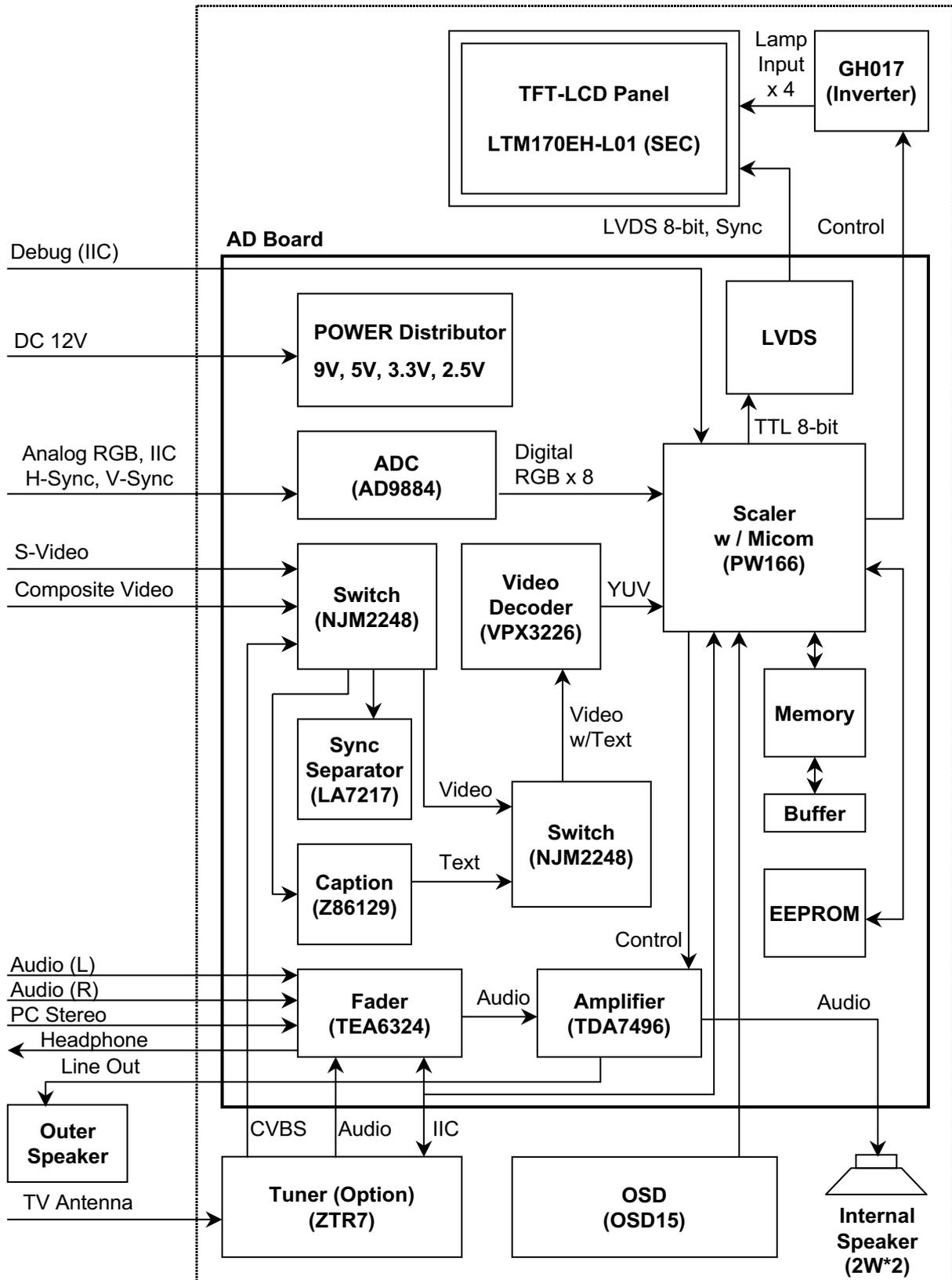
# Circuit Schematic Diagram

## System Block Diagram



# Circuit Schematic Diagram

## Main Scalar PCB Block Diagram



# Circuit Operation Manual

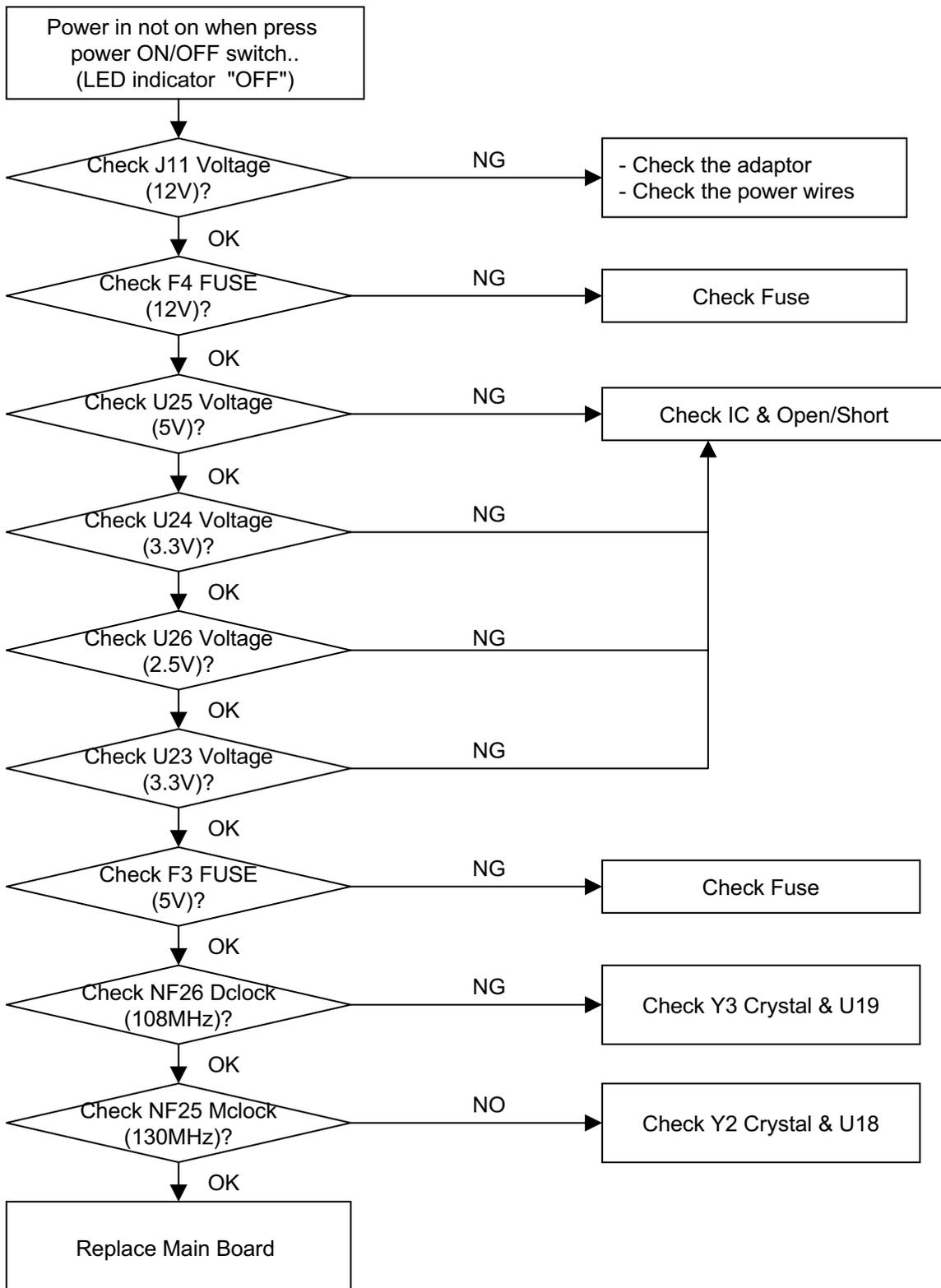
- 1) The circuit consists of main board, OSD board, inverter, tuner board, and tuner interface board and the main board controls those.
- 2) All of external input signal is transmitted to video decoder, ADC, and AMP of the main board. The main function of the main board is to control each IC with I<sup>2</sup>C for all of input signal and give video and sound as outputs to LCD panel and speakers, respectively.
- 3) Sound part consists of Fader IC and AMP IC. The power is controlled by TV\_EN and sound mute is controlled by AUDIO\_MUTE control port. Total input/output consist of 3 IN and 1 OUT.
- 4) Sound is transmitted to the speakers through AUDIO jack(U31). If the AUDIO jack is connected to the external audio system, the sound doesn't come out through the internal speakers.
- 5) TV tuner board is also controlled by I<sup>2</sup>C of PW166. CVBS and Audio signals are outputted from the tuner and they are inputted to VPX3226 TV port through tuner I/F. Audio is inputted to TV AUDIO input port of TDA6324.
- 6) The method of scanning TV channel is FS tuning and it can detect NTSC M source.
- 7) Video decoder can receive Video, S-Video, and TV source. It can process PAL and NTSC type.
- 8) Video decoder is controlled by I<sup>2</sup>C of PW166 and ON/OFF is controlled by I<sup>2</sup>C port.
- 9) Video decoder digitalizes analog signal to YUV and SYNC, and it's inputted to video input port of PW166. This signal is scaled and displayed on the screen.
- 10) OSD board controls the power control and OSD menu. Power is on when "High" is applied to DPMS\_EN port of Si9934. When PW166 recognizes the "LO" signal from TACT switch, OSD font appears.
- 11) The main board consists of ADC, PLL, POWER, LVDS,ROM, DECODER, AUDIO, and PW166. Every control is done by communication between PW166 and ROM through I<sup>2</sup>C and I/O port.
- 12) ADC(SG9884) controls the data to be outputted appropriately for each mode by controlling MCOAST, AD\_EN port from PC which are recognized by PW166.
- 13) The function of ADC is to transform the RGB signal from PC to 2 channel 8 bit digital signal so that the signal can be processed by PW166. The quality of the video depends on this IC.
- 14) The power part supplies 5V(Max 3A) to ROM and video decoder, 3.3V(Max 3A) to PW166, SG9884, LVDS and the panel, and 2.5V to PW166.

## Circuit Operation Manual (continued)

- 15) The outputs for PLL are MCLK and DCLK.
  - MCLK : Operates PW166 and ROM at 130MHz
  - DCLK : Operates I/O port and panel at 108MHz
- 16) LVDS(Low Voltage Differential Signaling) is one of the methods to transmit data to the panel. 24 bit(RGB) sync is converted to low voltage/high frequency data and then the data is divided into even/odd for transmission. It's the method used in TL-400M.
- 17) The SYNC's from PW166 are CLK : 54MHz, H-SYNC : 64.0KHz, and V-SYN 60Hz.  
It is inputted to the panel constantly, not depending on the signal mode.
- 18) The password for V-Chip can be reset from Factory Setup that can be activated by pressing Mute-Display-Exit-Power in sequence from power off state.

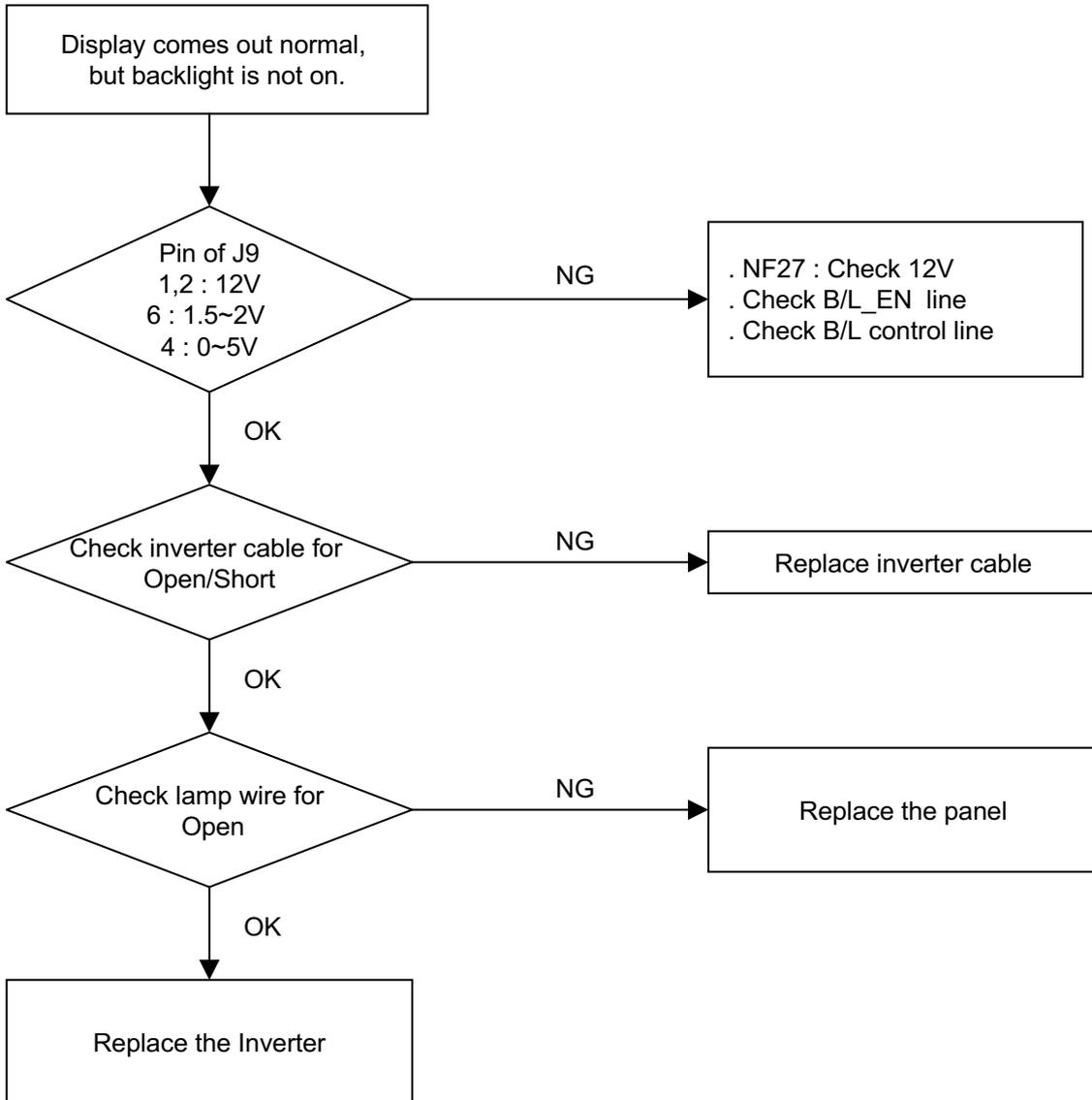
# Repair Flow Chart

## 1. Power on failure



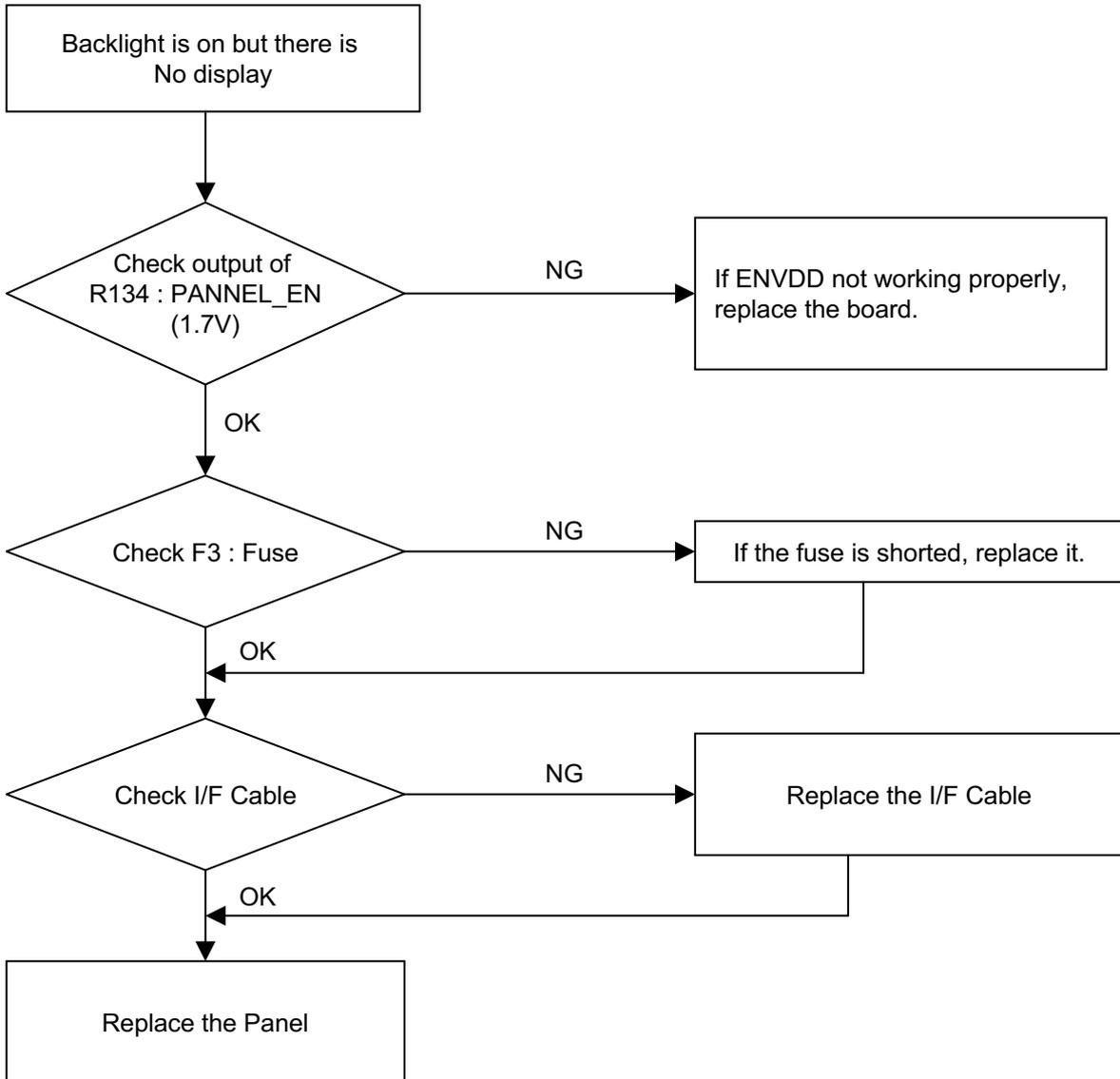
# Repair Flow Chart

## 2. Normal display but backlight is not on



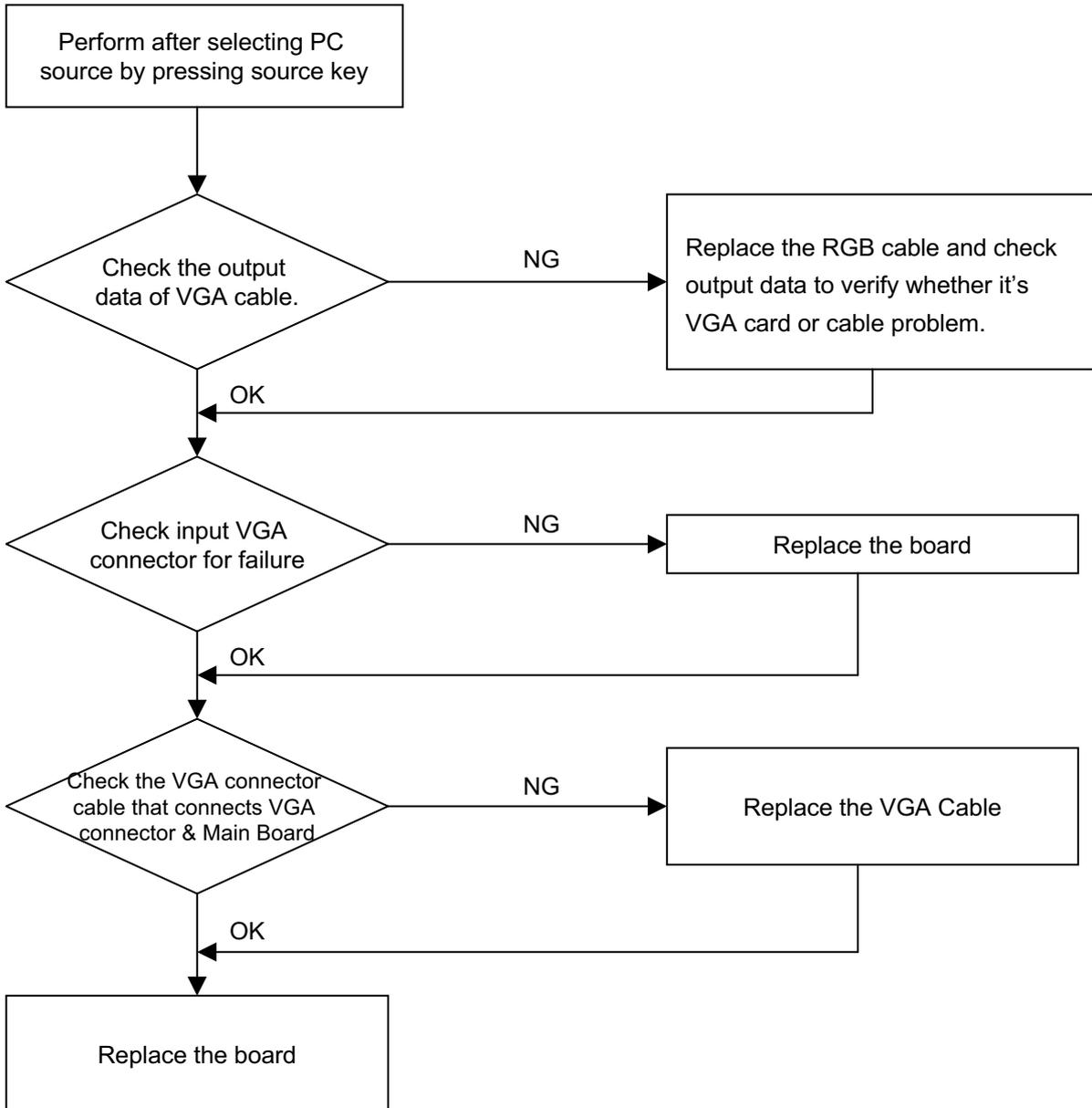
# Repair Flow Chart

## 3. Backlight normal, but no display



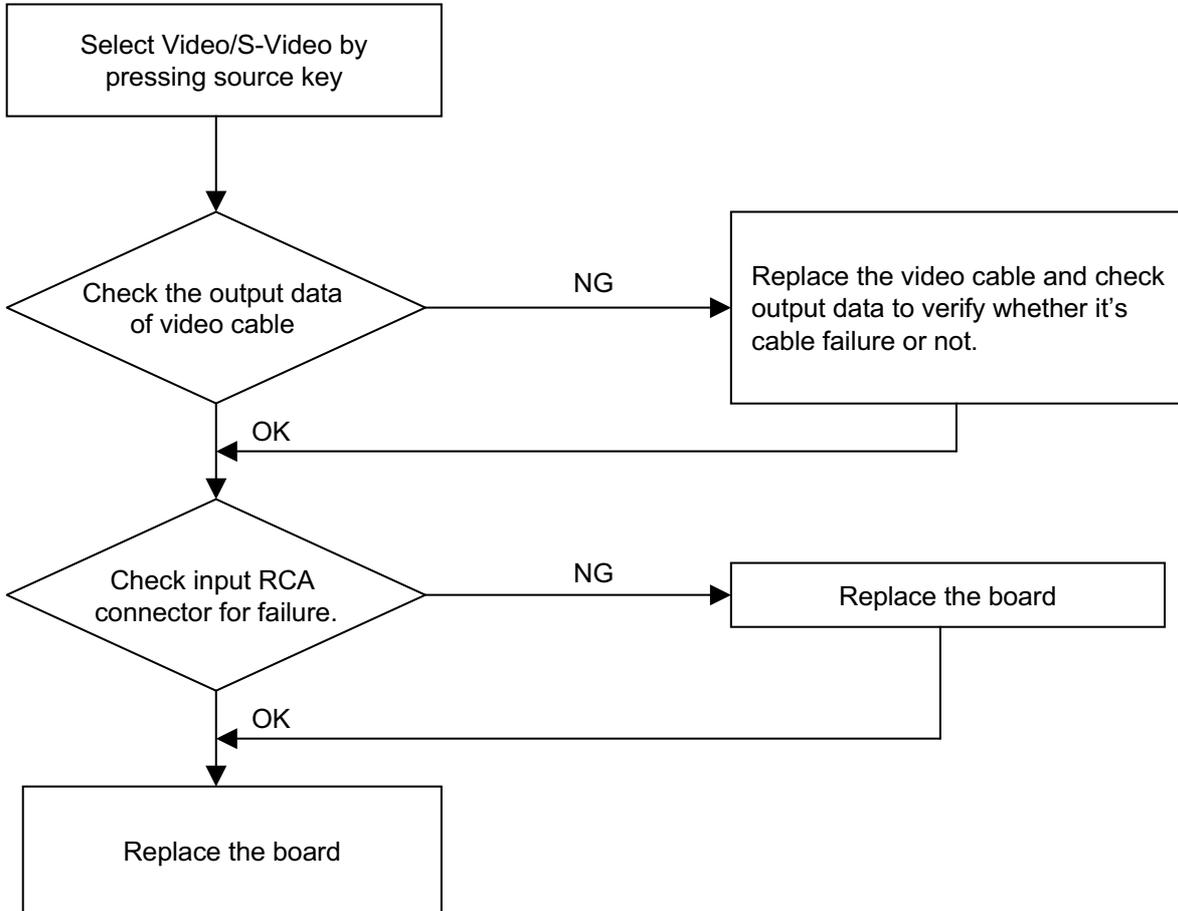
# Repair Flow Chart

## 4. No video in PC mode



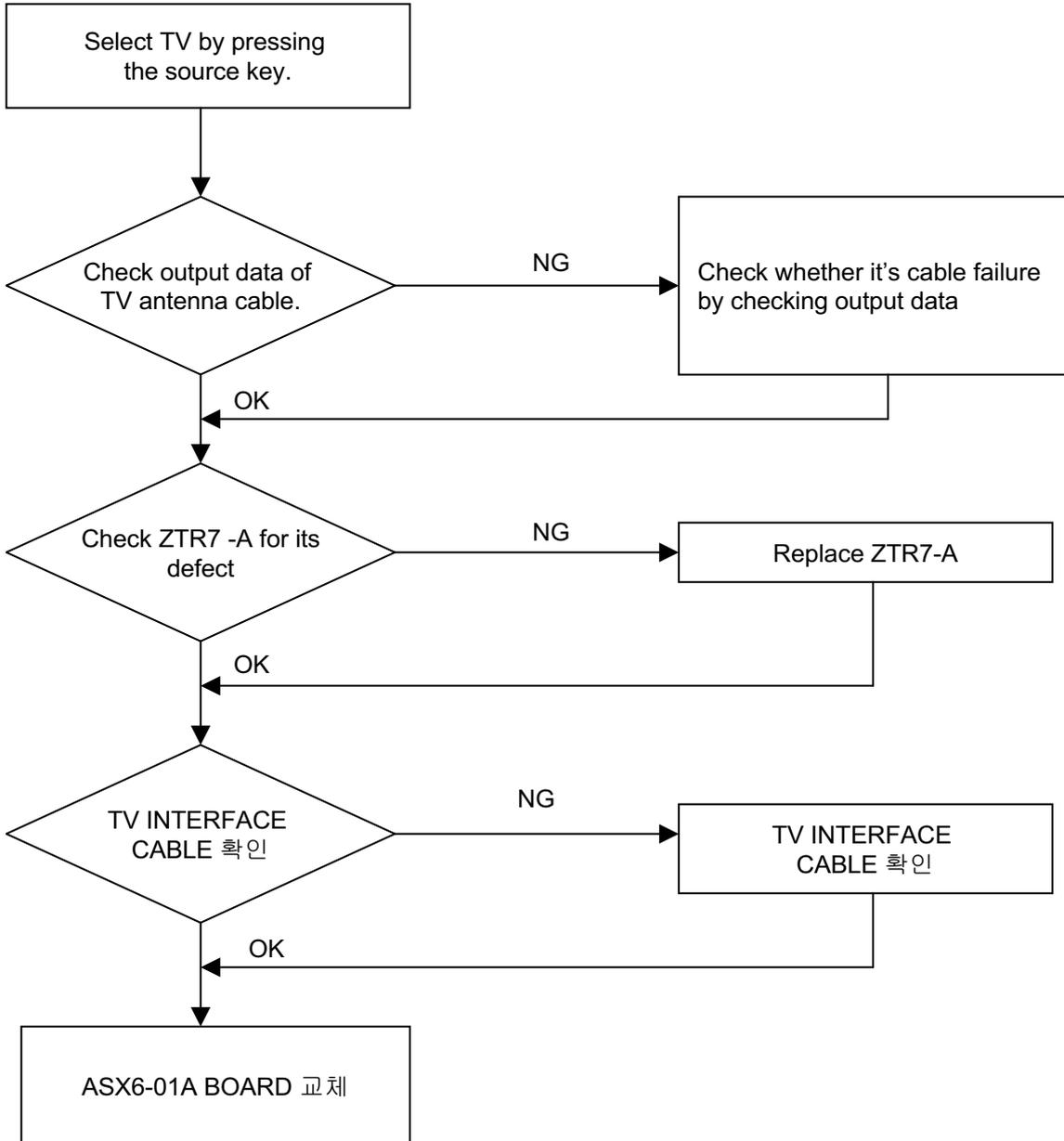
# Repair Flow Chart

## 5. No video in video and S-video mode



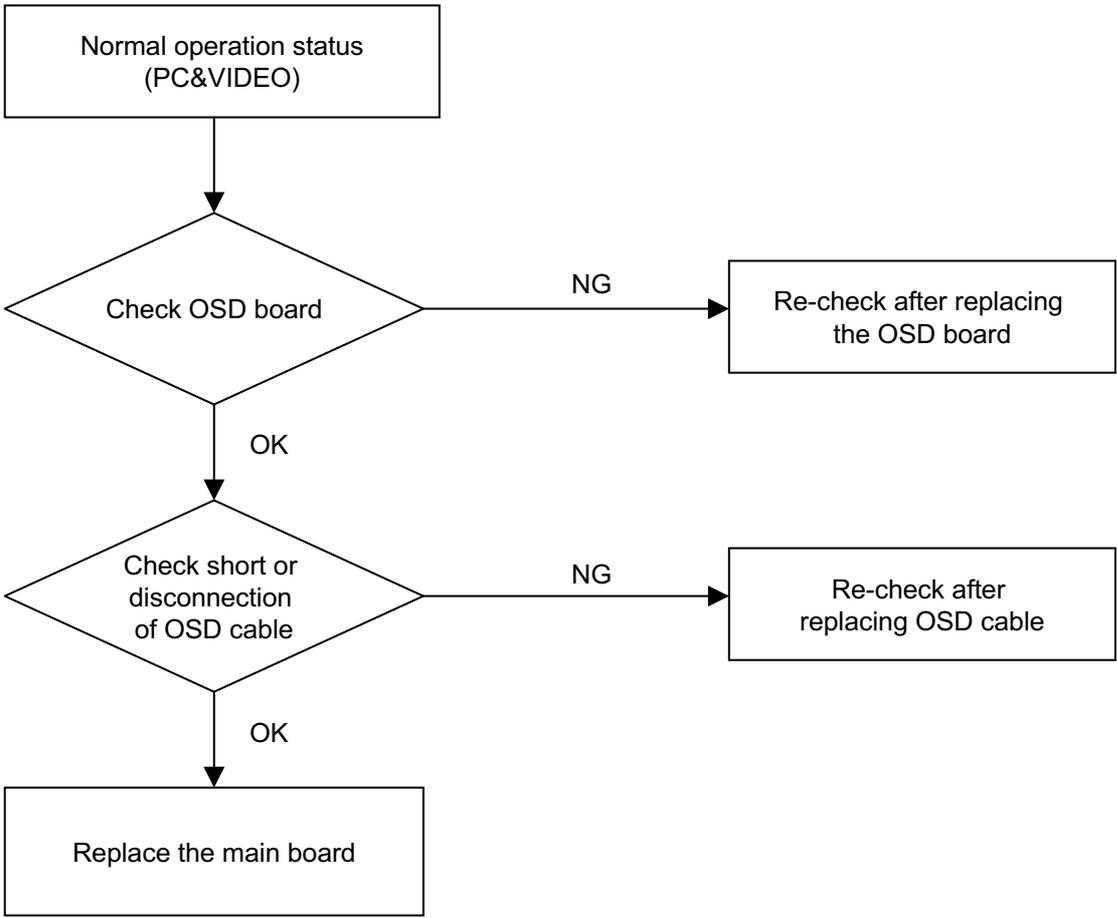
# Repair Flow Chart

## 6. No video in TV mode



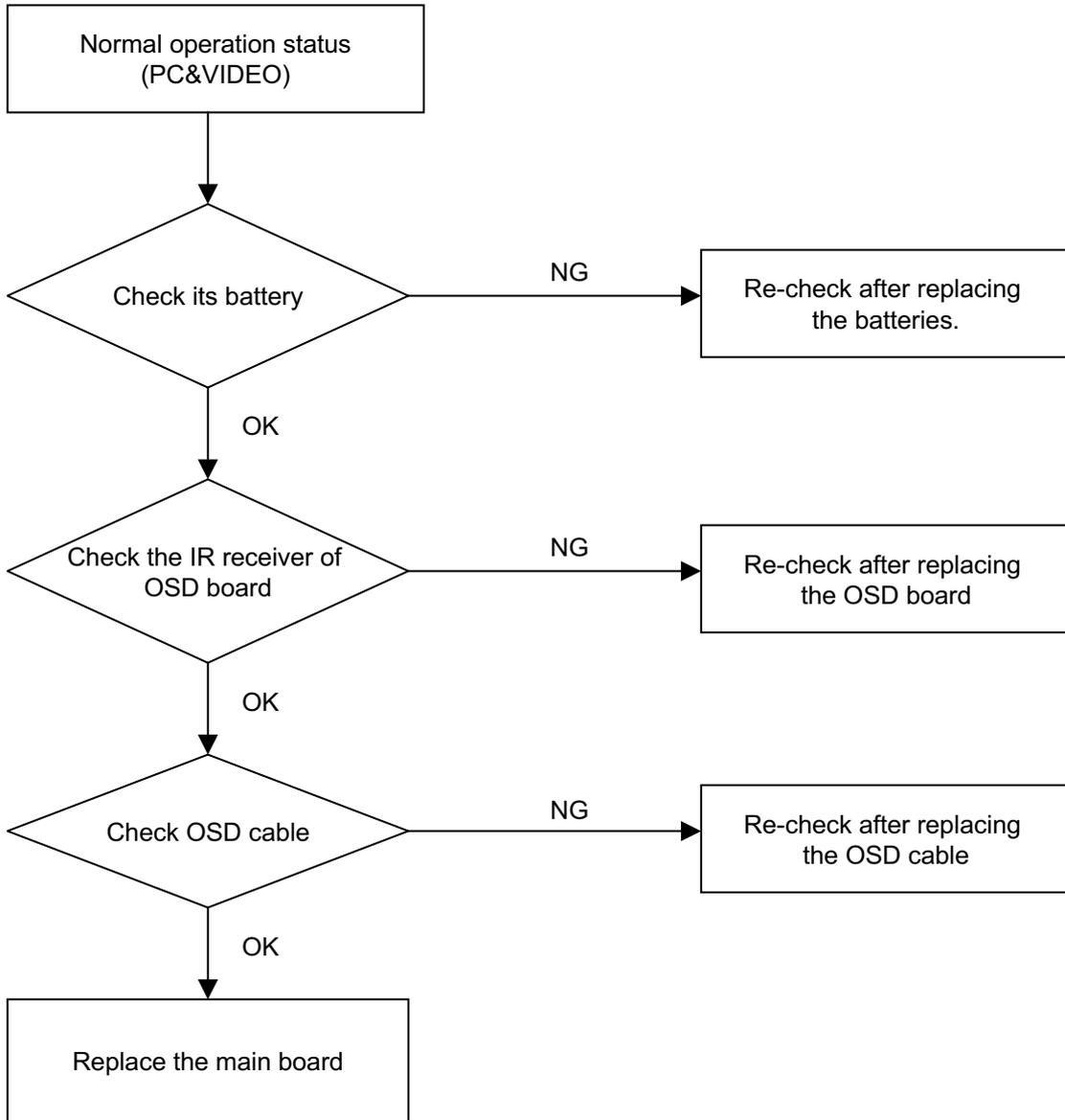
# Repair Flow Chart

## 7. OSD button failure



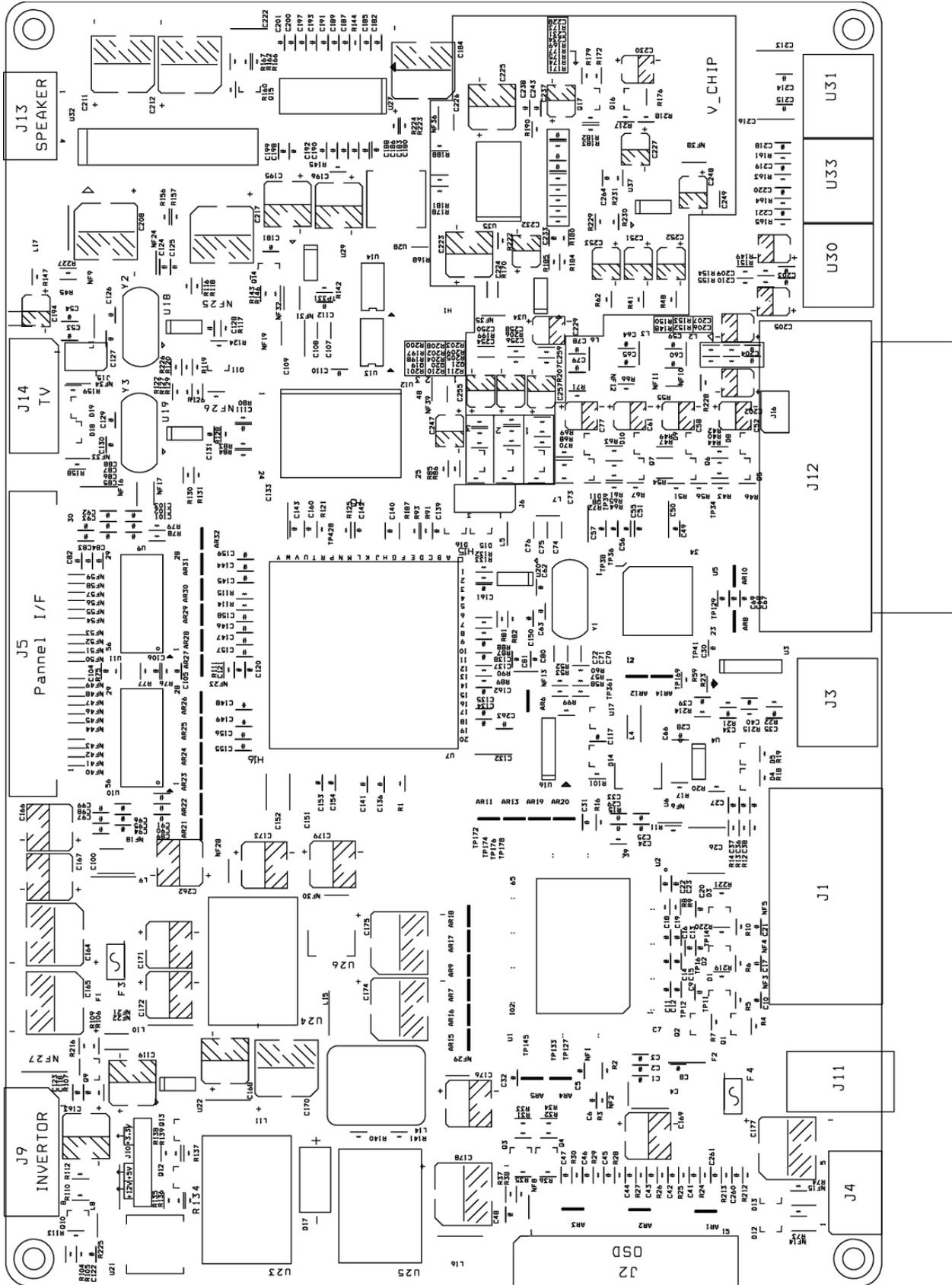
# Repair Flow Chart

## 8. Remote control failure



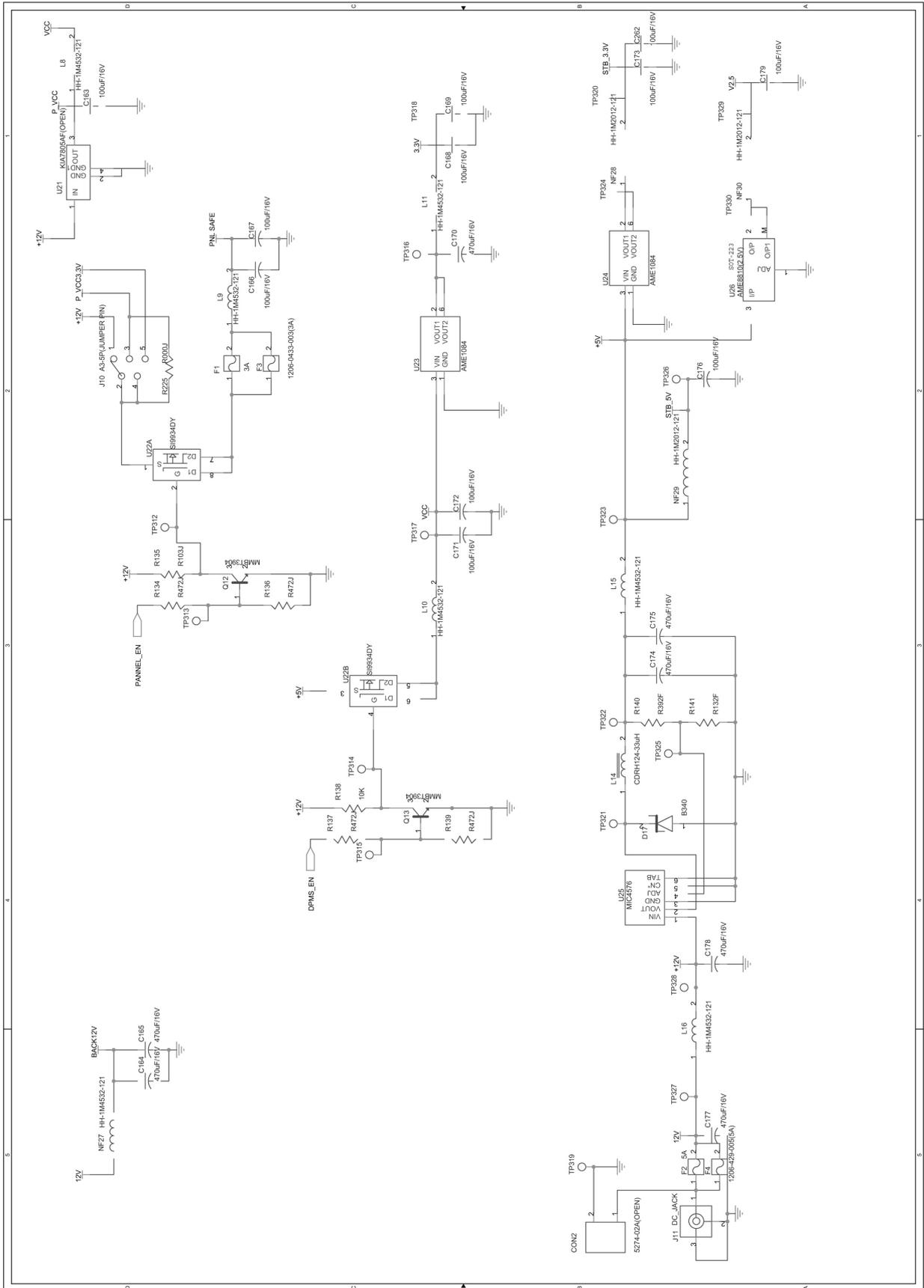
# Circuit Board

## Main Circuit Board (Component Side)



# Circuit Diagram

## POWER





# Connectors & Jacks

## Input Ports

### Debug :

No.	Symbol
1	TX
2	GND
3	RX
4	5V
5	NC

Reference No : J4  
Product Code : 53014-0510

### S-Video :

No.	Symbol
1	GND
2	GND
3	SCHROMA
4	SLUMA
5	GND

Reference No : J3  
Product Code : S-VIDEO Jack

### PC Sound :

No.	Symbol
1	GND
2	SUB_L
3	GND
4	GND
5	SUB_R

Reference No : U30  
Product Code : Audio Jack

### DC Power :

No.	Symbol
1	12 Vdc
2	GND
3	GND

Reference No : J11  
Product Code : DC Jack

### AV :

No	Symbol
1	VIDEO-IN
2	GND
3	SOUND-L
4	GND
5	SOUND-R
6	GND
7	SOUND-L

Reference No : J12  
Product Code : RCA Jack

### Head Phone :

No.	Symbol
1	GND
2	OUT_L
3	GND
4	GND
5	OUT_R

Reference No : U33  
Product Code : Audio Jack

### Analog RGB :

No.	Symbol
1	Red
2	Green
3	Blue
4	IC2
5	GND
6	RGND
7	GGND
8	BGND
9	NC
10	GND
11	IC0 (NC)
12	IC1
13	HSYNC
14	VSYNC
15	IC3

Reference No : J1  
Product Code : D-Sub 15 Pin

### Line Out :

No.	Symbol
1	GND
2	OUT_L
3	GND
4	GND
5	OUT_R

Reference No : U31  
Product Code : Audio Jack

## Connectors & Jacks

### Connectors

#### OSD :

No.	Symbol
1	3.3V
2	IRRCVR
3	GND
4	LED2
5	LED1
6	GND
7	PIP
8	SOURCE
9	MENU
10	EXIT
11	CH_DOWN
12	CH_UP
13	VOL_DOWN
14	VOL_UP
15	POWER

Reference No : J2  
Product Code : 53014-1510

#### Invertor :

No.	Symbol
1	12V
2	12V
3	GND
4	B/L CONTROL
5	GND
6	B/L_EN
7	GND
8	5V

Reference No : J9  
Product Code : 53014-0810

#### Panel I/F :

No.	Symbol
1	TXE0M
2	TXE0P
3	TXE1M
4	TXE1P
5	GND
6	TXE2M
7	TXE2P
8	TXECKM
9	TXECKP
10	TXE3M
11	TXE3P
12	GND
13	TXO0M
14	TXO0P
15	TXO1M
16	TXO1P
17	GND
18	TXO2M
19	TXO2P
20	TXOCKM
21	TXOCKP
22	TXO3M
23	TXO3P
24	GND
25	NC
26	GND
27	5V(PNL_SAFE)
28	5V(PNL_SAFE)
29	5V(PNL_SAFE)
30	5V(PNL_SAFE)

Reference No : J5  
Product Code : DF14-30S-1.25C

#### Tuner :

No.	Symbol
1	TUNER_AUDIO
2	GND
3	TV_CVBS
4	SCL
5	SDA
6	5V
7	5V

Reference No : J14  
Product Code : 53014-0710

## Part List

### Main Board : Capacitor

Loc.No.	Part No.	Description/Specification
C1	331041608EXKA	0.1uF,1608,25V,X7R,K
C2	331021608EXKA	1nF,1608,25V,X7R,K
C3	331001608HCDA	10pF,1608,50V,C0G,D
C4	331063225CYZA	10uF,3225,16V,Y5V,Z
C5	331001608HCDA	10pF,1608,50V,C0G,D
C6	331001608HCDA	10pF,1608,50V,C0G,D
C7	331063225CYZA	10uF,3225,16V,Y5V,Z
C8	331041608EXKA	0.1uF,1608,25V,X7R,K
C9	332721608EXKA	2.7nF,1608,25V,X7R,K
C11	331041608EXKA	0.1uF,1608,25V,X7R,K
C12	331021608EXKA	1nF,1608,25V,X7R,K
C14	331041608EXKA	0.1uF,1608,25V,X7R,K
C15	331021608EXKA	1nF,1608,25V,X7R,K
C16	332721608EXKA	2.7nF,1608,25V,X7R,K
C18	331041608EXKA	0.1uF,1608,25V,X7R,K
C19	331021608EXKA	1nF,1608,25V,X7R,K
C20	332721608EXKA	2.7nF,1608,25V,X7R,K
C22	331041608EXKA	0.1uF,1608,25V,X7R,K
C23	331021608EXKA	1nF,1608,25V,X7R,K
C24	331041608EXKA	0.1uF,1608,25V,X7R,K
C25	331021608EXKA	1nF,1608,25V,X7R,K
C26	331063225CYZA	10uF,3225,16V,Y5V,Z
C27	331063225CYZA	10uF,3225,16V,Y5V,Z
C28	331041608EXKA	0.1uF,1608,25V,X7R,K
C29	333931608EXKA	39nF,1608,25V,X7R,K
C30	331041608EXKA	0.1uF,1608,25V,X7R,K
C31	331041608EXKA	0.1uF,1608,25V,X7R,K
C32	331041608EXKA	0.1uF,1608,25V,X7R,K
C33	333921608EXKA	3.9nF,1608,25V,X7R,K
C34	331001608HCDA	10pF,1608,50V,C0G,D
C35	331001608HCDA	10pF,1608,50V,C0G,D
C36	331001608HCDA	10pF,1608,50V,C0G,D
C37	331001608HCDA	10pF,1608,50V,C0G,D
C38	331001608HCDA	10pF,1608,50V,C0G,D
C39	331511608HCJA	150pF,1608,50V,C0G,J
C40	331001608HCDA	10pF,1608,50V,C0G,D
C41	331051608CZMA	1uF,1608,16V,Z5U,M
C42	331051608CZMA	1uF,1608,16V,Z5U,M
C43	331051608CZMA	1uF,1608,16V,Z5U,M
C44	331051608CZMA	1uF,1608,16V,Z5U,M
C45	331051608CZMA	1uF,1608,16V,Z5U,M
C46	331051608CZMA	1uF,1608,16V,Z5U,M
C47	331051608CZMA	1uF,1608,16V,Z5U,M
C48	331051608CZMA	1uF,1608,16V,Z5U,M
C49	334731608EXKA	47nF,1608,25V,X7R,K
C50	331063225CYZA	10uF,3225,16V,Y5V,Z
C51	336841608EXKA	680nF,1608,25V,X7R,K
C52	33106S055COMA	10uF,16V,M,SMD,4Ptx5.5L
C53	333311608HCJA	330pF,1608,50V,C0G,J
C54	333311608HCJA	330pF,1608,50V,C0G,J
C55	336841608EXKA	680nF,1608,25V,X7R,K
C56	336841608EXKA	680nF,1608,25V,X7R,K
C57	331021608EXKA	1nF,1608,25V,X7R,K
C58	33106S055COMA	10uF,16V,M,SMD,4Ptx5.5L
C59	333311608HCJA	330pF,1608,50V,C0G,J
C60	333311608HCJA	330pF,1608,50V,C0G,J
C61	33106S055COMA	10uF,16V,M,SMD,4Ptx5.5L
C62	334C71608HCDA	4.7pF,1608,50V,C0G,D
C63	334C71608HCDA	4.7pF,1608,50V,C0G,D
C64	333311608HCJA	330pF,1608,50V,C0G,J
C65	333311608HCJA	330pF,1608,50V,C0G,J
C66	331063225CYZA	10uF,3225,16V,Y5V,Z
C67	331041608EXKA	0.1uF,1608,25V,X7R,K
C68	331021608EXKA	1nF,1608,25V,X7R,K
C69	331001608HCDA	10pF,1608,50V,C0G,D
C70	331041608EXKA	0.1uF,1608,25V,X7R,K
C71	331021608EXKA	1nF,1608,25V,X7R,K
C72	331001608HCDA	10pF,1608,50V,C0G,D
C73	331063225CYZA	10uF,3225,16V,Y5V,Z
C74	331041608EXKA	0.1uF,1608,25V,X7R,K
C75	331021608EXKA	1nF,1608,25V,X7R,K
C76	331001608HCDA	10pF,1608,50V,C0G,D
C77	33106S055COMA	10uF,16V,M,SMD,4Ptx5.5L
C78	333311608HCJA	330pF,1608,50V,C0G,J
C79	333311608HCJA	330pF,1608,50V,C0G,J
C80	331001608HCDA	10pF,1608,50V,C0G,D
C81	331001608HCDA	10pF,1608,50V,C0G,D
C82	331041608EXKA	0.1uF,1608,25V,X7R,K
C83	331021608EXKA	1nF,1608,25V,X7R,K
C84	331001608HCDA	10pF,1608,50V,C0G,D
C85	331041608EXKA	0.1uF,1608,25V,X7R,K
C86	331021608EXKA	1nF,1608,25V,X7R,K
C87	331001608HCDA	10pF,1608,50V,C0G,D
C88	331063225CYZA	10uF,3225,16V,Y5V,Z
C89	331041608EXKA	0.1uF,1608,25V,X7R,K
C90	331021608EXKA	1nF,1608,25V,X7R,K
C91	331001608HCDA	10pF,1608,50V,C0G,D
C92	331001608HCDA	10pF,1608,50V,C0G,D
C93	331021608EXKA	1nF,1608,25V,X7R,K
C94	331041608EXKA	0.1uF,1608,25V,X7R,K
C95	331021608EXKA	1nF,1608,25V,X7R,K
C96	331001608HCDA	10pF,1608,50V,C0G,D
C97	331041608EXKA	0.1uF,1608,25V,X7R,K
C98	331021608EXKA	1nF,1608,25V,X7R,K
C99	331001608HCDA	10pF,1608,50V,C0G,D
C100	331063225CYZA	10uF,3225,16V,Y5V,Z
C101	331041608EXKA	0.1uF,1608,25V,X7R,K
C102	331021608EXKA	1nF,1608,25V,X7R,K
C103	331001608HCDA	10pF,1608,50V,C0G,D
C104	331001608HCDA	10pF,1608,50V,C0G,D
C105	331001608HCDA	10pF,1608,50V,C0G,D
C106	331001608HCDA	10pF,1608,50V,C0G,D
C107	331041608EXKA	0.1uF,1608,25V,X7R,K
C108	331041608EXKA	0.1uF,1608,25V,X7R,K
C109	331063225CYZA	10uF,3225,16V,Y5V,Z
C110	331041608EXKA	0.1uF,1608,25V,X7R,K
C111	331041608EXKA	0.1uF,1608,25V,X7R,K
C112	331041608EXKA	0.1uF,1608,25V,X7R,K

## Part List

C117	331051608CZMA	1uF,1608,16V,Z5U,M	C177	30477R105C0MA	470uF,Radial,16V,M,SMD,8Ptx10.5L
C118	331041608EXKA	0.1uF,1608,25V,X7R,K	C178	30477R105C0MA	470uF,Radial,16V,M,SMD,8Ptx10.5L
C119	30107R055COMA	100uF,16V,M,SMD,6.3Ptx5.5L	C179	30107R055COMA	100uF,Radial,16V,M,SMD,6.3Ptx5.5L
C120	331001608HCDA	10pF,1608,50V,C0G,D	C180	331041608EXKA	0.1uF,1608,25V,X7R,K
C121	331001608HCDA	10pF,1608,50V,C0G,D	C181	331041608EXKA	0.1uF,1608,25V,X7R,K
C122	331041608EXKA	0.1uF,1608,25V,X7R,K	C182	331051608CZMA	1uF,1608,16V,Z5U,M
C123	331041608EXKA	0.1uF,1608,25V,X7R,K	C183	331051608CZMA	1uF,1608,16V,Z5U,M
C124	331041608EXKA	0.1uF,1608,25V,X7R,K	C184	30477R105C0MA	470uF,Radial,16V,M,SMD,8Ptx10.5L
C125	331041608EXKA	0.1uF,1608,25V,X7R,K	C185	335621608EXKA	5.6nF,1608,25V,X7R,K
C126	333301608HCJA	33pF,1608,50V,C0G,J	C186	335621608EXKA	5.6nF,1608,25V,X7R,K
C127	333301608HCJA	33pF,1608,50V,C0G,J	C187	332742012CXJA	270nF,2012,16V,X7R,J
C128	331001608HCDA	10pF,1608,50V,C0G,D	C188	332742012CXJA	270nF,2012,16V,X7R,J
C129	333301608HCJA	33pF,1608,50V,C0G,J	C189	332742012CXJA	270nF,2012,16V,X7R,J
C130	333301608HCJA	33pF,1608,50V,C0G,J	C190	332742012CXJA	270nF,2012,16V,X7R,J
C132	331063225CYZA	10uF,3225,16V,Y5V,Z	C191	332241608EXKA	220nF,1608,25V,X7R,K
C133	331063225CYZA	10uF,3225,16V,Y5V,Z	C192	332241608EXKA	220nF,1608,25V,X7R,K
C134	331041608EXKA	0.1uF,1608,25V,X7R,K	C193	332241608EXKA	220nF,1608,25V,X7R,K
C135	331041608EXKA	0.1uF,1608,25V,X7R,K	C194	33106S055COMA	10uF,16V,M,SMD,4Ptx5.5L
C136	331041608EXKA	0.1uF,1608,25V,X7R,K	C195	30476R055C0MA	47uF,Radial,16V,M,SMD,6.3Ptx5.5L
C137	331041608EXKA	0.1uF,1608,25V,X7R,K	C196	30107R055COMA	100uF,Radial,16V,M,SMD,6.3Ptx5.5L
C138	331041608EXKA	0.1uF,1608,25V,X7R,K	C197	331031608EXKA	10nF,1608,25V,X7R,K
C139	331041608EXKA	0.1uF,1608,25V,X7R,K	C198	331011608HCJA	100pF,1608,50V,C0G,J
C140	331041608EXKA	0.1uF,1608,25V,X7R,K	C199	331011608HCJA	100pF,1608,50V,C0G,J
C141	331041608EXKA	0.1uF,1608,25V,X7R,K	C200	331011608HCJA	100pF,1608,50V,C0G,J
C142	331041608EXKA	0.1uF,1608,25V,X7R,K	C201	331011608HCJA	100pF,1608,50V,C0G,J
C143	331041608EXKA	0.1uF,1608,25V,X7R,K	C202	33106S055COMA	10uF,16V,M,SMD,4Ptx5.5L
C144	331041608EXKA	0.1uF,1608,25V,X7R,K	C203	33106S055COMA	10uF,16V,M,SMD,4Ptx5.5L
C145	331041608EXKA	0.1uF,1608,25V,X7R,K	C204	33106S055COMA	10uF,16V,M,SMD,4Ptx5.5L
C146	331041608EXKA	0.1uF,1608,25V,X7R,K	C205	33106S055COMA	10uF,16V,M,SMD,4Ptx5.5L
C147	331041608EXKA	0.1uF,1608,25V,X7R,K	C206	331001608HCDA	10pF,1608,50V,C0G,D
C148	331041608EXKA	0.1uF,1608,25V,X7R,K	C207	331001608HCDA	10pF,1608,50V,C0G,D
C149	331041608EXKA	0.1uF,1608,25V,X7R,K	C208	30477R105C0MA	470uF,Radial,16V,M,SMD,8Ptx10.5L
C150	331041608EXKA	0.1uF,1608,25V,X7R,K	C209	331001608HCDA	10pF,1608,50V,C0G,D
C151	331063225CYZA	10uF,3225,16V,Y5V,Z	C210	331001608HCDA	10pF,1608,50V,C0G,D
C152	331063225CYZA	10uF,3225,16V,Y5V,Z	C211	30477R105C0MA	470uF,Radial,16V,M,SMD,8Ptx10.5L
C153	331041608EXKA	0.1uF,1608,25V,X7R,K	C212	30477R105C0MA	470uF,Radial,16V,M,SMD,8Ptx10.5L
C154	331041608EXKA	0.1uF,1608,25V,X7R,K	C214	331001608HCDA	10pF,1608,50V,C0G,D
C155	331041608EXKA	0.1uF,1608,25V,X7R,K	C215	331001608HCDA	10pF,1608,50V,C0G,D
C156	331041608EXKA	0.1uF,1608,25V,X7R,K	C217	30477R105C0MA	470uF,Radial,16V,M,SMD,8Ptx10.5L
C157	331041608EXKA	0.1uF,1608,25V,X7R,K	C218	331001608HCDA	10pF,1608,50V,C0G,D
C158	331041608EXKA	0.1uF,1608,25V,X7R,K	C219	331001608HCDA	10pF,1608,50V,C0G,D
C159	331041608EXKA	0.1uF,1608,25V,X7R,K	C220	331001608HCDA	10pF,1608,50V,C0G,D
C160	331041608EXKA	0.1uF,1608,25V,X7R,K	C221	331001608HCDA	10pF,1608,50V,C0G,D
C161	331041608EXKA	0.1uF,1608,25V,X7R,K	C222	331063225CYZA	10uF,3225,16V,Y5V,Z
C162	331041608EXKA	0.1uF,1608,25V,X7R,K	C223	30107R055COMA	100uF,Radial,16V,M,SMD,6.3Ptx5.5L
C163	30107R055COMA	100uF,Radial,16V,M,SMD,6.3Ptx5.5L	C224	331041608EXKA	0.1uF,1608,25V,X7R,K
C164	30477R105C0MA	470uF,Radial,16V,M,SMD,8Ptx10.5L	C225	30107R055COMA	100uF,Radial,16V,M,SMD,6.3Ptx5.5L
C165	30477R105C0MA	470uF,Radial,16V,M,SMD,8Ptx10.5L	C226	331041608EXKA	0.1uF,1608,25V,X7R,K
C166	30107R055COMA	100uF,Radial,16V,M,SMD,6.3Ptx5.5L	C227	33106S055COMA	10uF,16V,M,SMD,4Ptx5.5L
C167	30107R055COMA	100uF,Radial,16V,M,SMD,6.3Ptx5.5L	C228	331041608EXKA	0.1uF,1608,25V,X7R,K
C168	30107R055COMA	100uF,Radial,16V,M,SMD,6.3Ptx5.5L	C229	33106S055COMA	10uF,16V,M,SMD,4Ptx5.5L
C169	30107R055COMA	100uF,Radial,16V,M,SMD,6.3Ptx5.5L	C230	33106S055COMA	10uF,16V,M,SMD,4Ptx5.5L
C170	30477R105C0MA	470uF,Radial,16V,M,SMD,8Ptx10.5L	C232	33106S055COMA	10uF,16V,M,SMD,4Ptx5.5L
C171	30107R055COMA	100uF,Radial,16V,M,SMD,6.3Ptx5.5L	C233	336811608HCJA	680pF,1608,50V,C0G,J
C172	30107R055COMA	100uF,Radial,16V,M,SMD,6.3Ptx5.5L	C234	331041608EXKA	0.1uF,1608,25V,X7R,K
C173	30107R055COMA	100uF,Radial,16V,M,SMD,6.3Ptx5.5L	C237	33106S055COMA	10uF,16V,M,SMD,4Ptx5.5L
C174	30477R105C0MA	470uF,Radial,16V,M,SMD,8Ptx10.5L	C238	336821608EXKA	6.8nF,1608,25V,X7R,K
C175	30477R105C0MA	470uF,Radial,16V,M,SMD,8Ptx10.5L	C243	336831608EXKA	68nF,1608,25V,X7R,K
C176	30107R055COMA	100uF,Radial,16V,M,SMD,6.3Ptx5.5L	C247	33106S055COMA	10uF,16V,M,SMD,4Ptx5.5L
			C248	33106S055COMA	10uF,16V,M,SMD,4Ptx5.5L

## Part List

C249	331041608EXKA	0.1uF,1608,25V,X7R,K
C251	33106S055COMA	10uF,16V,M,SMD,4P1x5.5L
C252	33106S055COMA	10uF,16V,M,SMD,4P1x5.5L
C253	33106S055COMA	10uF,16V,M,SMD,4P1x5.5L
C254	33106S055COMA	10uF,16V,M,SMD,4P1x5.5L
C255	331041608EXKA	0.1uF,1608,25V,X7R,K
C256	33106S055COMA	10uF,16V,M,SMD,4P1x5.5L
C257	33106S055COMA	10uF,16V,M,SMD,4P1x5.5L
C260	331051608CZMA	1uF,1608,16V,Z5U,M
C261	331051608CZMA	1uF,1608,16V,Z5U,M
C262	30107R055COMA	100uF,Radial,16V,M,SMD,6.3P1x5.5L
C263	331001608HCDA	10pF,1608,50V,COG,D
C264	332001608HCJA	20pF,1608,50V,COG,J

### Main Board : Resister

Loc.No.	Part No.	Description/Specification
R1	204701608J00A	47ohm,1608,J,0.063W
R2	201031608J001	10Kohm,1608,J,0.063W
R3	202011608J001	200ohm,1608,J,0.063W
R5	207501608J001	75ohm,1608,J,0.063W
R6	207501608J001	75ohm,1608,J,0.063W
R8	204721608J001	4.7Kohm,1608,J,0.063W
R9	204721608J001	4.7Kohm,1608,J,0.063W
R10	207501608J001	75ohm,1608,J,0.063W
R11	203041608J001	300Kohm,1608,J,0.063W
R12	201011608J001	100ohm,1608,J,0.063W
R13	201011608J001	100ohm,1608,J,0.063W
R14	201011608J001	100ohm,1608,J,0.063W
R15	201031608J001	10Kohm,1608,J,0.063W
R16	203321608J001	3.3Kohm,1608,J,0.063W
R17	201031608J001	10Kohm,1608,J,0.063W
R18	201031608J001	10Kohm,1608,J,0.063W
R19	201031608J001	10Kohm,1608,J,0.063W
R21	201011608J001	100ohm,1608,J,0.063W
R22	201011608J001	100ohm,1608,J,0.063W
R23	202011608J001	200ohm,1608,J,0.063W
R24	202021608J001	2Kohm,1608,J,0.063W
R25	202021608J001	2Kohm,1608,J,0.063W
R26	202021608J001	2Kohm,1608,J,0.063W
R27	202021608J001	2Kohm,1608,J,0.063W
R28	202021608J001	2Kohm,1608,J,0.063W
R29	202021608J001	2Kohm,1608,J,0.063W
R30	202021608J001	2Kohm,1608,J,0.063W
R31	201011608J001	100ohm,1608,J,0.063W
R32	202021608J001	2Kohm,1608,J,0.063W
R33	201011608J001	100ohm,1608,J,0.063W
R34	201011608J001	100ohm,1608,J,0.063W
R35	204721608J001	4.7Kohm,1608,J,0.063W
R36	204721608J001	4.7Kohm,1608,J,0.063W
R38	200001608J001	0ohm,1608J
R40	202231608J001	22Kohm,1608,J,0.063W
R41	201001608J001	10ohm,1608,J,0.063W
R42	201011608J001	100ohm,1608,J,0.063W
R45	201511608J001	150ohm,1608,J,0.063W
R46	204711608J001	470ohm,1608,J,0.063W
R47	202231608J001	22Kohm,1608,J,0.063W
R48	201001608J001	10ohm,1608,J,0.063W

R49	201011608J001	100ohm,1608,J,0.063W
R52	201031608J001	10Kohm,1608,J,0.063W
R53	201031608J001	10Kohm,1608,J,0.063W
R54	202231608J001	22Kohm,1608,J,0.063W
R55	207501608J001	75ohm,1608,J,0.063W
R56	204711608J001	470ohm,1608,J,0.063W
R57	201011608J001	100ohm,1608,J,0.063W
R58	201011608J001	100ohm,1608,J,0.063W
R59	204721608J001	4.7Kohm,1608,J,0.063W
R60	201031608J001	10Kohm,1608,J,0.063W
R61	202231608J001	22Kohm,1608,J,0.063W
R62	201001608J001	10ohm,1608,J,0.063W
R63	201011608J001	100ohm,1608,J,0.063W
R65	202231608J001	22Kohm,1608,J,0.063W
R66	207501608J001	75ohm,1608,J,0.063W
R67	204711608J001	470ohm,1608,J,0.063W
R68	201031608J001	10Kohm,1608,J,0.063W
R69	201001608J001	10ohm,1608,J,0.063W
R70	202231608J001	22Kohm,1608,J,0.063W
R71	207501608J001	75ohm,1608,J,0.063W
R72	204711608J001	470ohm,1608,J,0.063W
R74	201031608J001	10Kohm,1608,J,0.063W
R75	201011608J001	100ohm,1608,J,0.063W
R76	201011608J001	100ohm,1608,J,0.063W
R77	201011608J001	100ohm,1608,J,0.063W
R78	201011608J001	100ohm,1608,J,0.063W
R80	201031608J001	10Kohm,1608,J,0.063W
R81	202021608J001	2Kohm,1608,J,0.063W
R82	202021608J001	2Kohm,1608,J,0.063W
R83	201031608J001	10Kohm,1608,J,0.063W
R84	201031608J001	10Kohm,1608,J,0.063W
R85	203321608J001	3.3Kohm,1608,J,0.063W
R86	200001608J001	0ohm,1608J
R93	202021608J001	2Kohm,1608,J,0.063W
R99	200001608J001	0ohm,1608J
R101	201621608J001	1.6Kohm,1608,J,0.063W
R104	200001608J001	0ohm,1608J
R106	202221608J001	2.2Kohm,1608,J,0.063W
R107	201001608J001	10ohm,1608,J,0.063W
R109	201221608J001	1.2Kohm,1608,J,0.063W
R110	204721608J001	4.7Kohm,1608,J,0.063W
R111	202011608J001	200ohm,1608,J,0.063W
R112	204721608J001	4.7Kohm,1608,J,0.063W
R113	201021608J001	1Kohm,1608,J,0.063W
R115	201521608J001	1.5Kohm,1608,J,0.063W
R121	200001608J001	0ohm,1608J
R122	201011608J001	100ohm,1608,J,0.063W
R124	202011608J001	200ohm,1608,J,0.063W
R125	200001608J001	0ohm,1608J
R126	201031608J001	10Kohm,1608,J,0.063W
R129	202011608J001	200ohm,1608,J,0.063W
R130	202011608J001	200ohm,1608,J,0.063W
R132	203321608J001	3.3Kohm,1608,J,0.063W
R133	203321608J001	3.3Kohm,1608,J,0.063W
R134	204721608J001	4.7Kohm,1608,J,0.063W
R135	201031608J001	10Kohm,1608,J,0.063W
R136	204721608J001	4.7Kohm,1608,J,0.063W

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R137	204721608J001	4.7Kohm,1608,J,0.063W
R138	201031608J001	10Kohm,1608,J,0.063W
R139	204721608J001	4.7Kohm,1608,J,0.063W
R140	203921608F001	3.9Kohm,1608,F,0.063W
R141	201321608F001	1.3Kohm,1608,F,0.063W
R142	201031608J001	10Kohm,1608,J,0.063W
R143	204721608J001	4.7Kohm,1608,J,0.063W
R144	203321608J001	3.3Kohm,1608,J,0.063W
R145	203321608J001	3.3Kohm,1608,J,0.063W
R146	204721608J001	4.7Kohm,1608,J,0.063W
R147	201041608J001	100Kohm,1608,J,0.063W
R148	201041608J001	100Kohm,1608,J,0.063W
R149	201841608J001	180Kohm,1608,J,0.063W
R150	201041608J001	100Kohm,1608,J,0.063W
R151	201841608J001	180Kohm,1608,J,0.063W
R156	205131608J001	51Kohm,1608,J,0.063W
R157	203331608J001	33Kohm,1608,J,0.063W
R160	204721608J001	4.7Kohm,1608,J,0.063W
R161	201011608J001	100ohm,1608,J,0.063W
R162	204721608J001	4.7Kohm,1608,J,0.063W
R162	204721608J001	4.7Kohm,1608,J,0.063W
R163	201031608J001	10Kohm,1608,J,0.063W
R164	201031608J001	10Kohm,1608,J,0.063W
R165	201011608J001	100ohm,1608,J,0.063W
R166	204721608J001	4.7Kohm,1608,J,0.063W
R167	203311608J001	330ohm,1608,J,0.063W
R168	203311608J001	330ohm,1608,J,0.063W
R169	203311608J001	330ohm,1608,J,0.063W
R170	205621608J001	5.6Kohm,1608,J,0.063W
R171	201021608J001	1Kohm,1608,J,0.063W
R172	202231608J001	22Kohm,1608,J,0.063W
R173	204711608J001	470ohm,1608,J,0.063W
R174	201021608J001	1Kohm,1608,J,0.063W
R175	201021608J001	1Kohm,1608,J,0.063W
R176	204711608J001	470ohm,1608,J,0.063W
R177	201011608J001	100ohm,1608,J,0.063W
R178	201011608J001	100ohm,1608,J,0.063W
R179	202231608J001	22Kohm,1608,J,0.063W
R180	201211608J001	120ohm,1608,J,0.063W
R181	201011608J001	100ohm,1608,J,0.063W
R182	200001608J001	0ohm,1608J
R183	207501608J001	75ohm,1608,J,0.063W
R184	201131608J001	11Kohm,1608,J,0.063W
R185	201031608J001	10Kohm,1608,J,0.063W
R187	201011608J001	100ohm,1608,J,0.063W
R188	201031608F001	10Kohm,1608,F,0.063W
R190	206821608J001	6.8Kohm,1608,J,0.063W
R197	201531608J001	15Kohm,1608,J,0.063W
R198	201001608J001	10ohm,1608,J,0.063W
R199	201011608J001	100ohm,1608,J,0.063W
R200	201031608J001	10Kohm,1608,J,0.063W
R201	201021608J001	1Kohm,1608,J,0.063W
R202	201531608J001	15Kohm,1608,J,0.063W
R203	201531608J001	15Kohm,1608,J,0.063W
R204	201001608J001	10ohm,1608,J,0.063W
R205	201001608J001	10ohm,1608,J,0.063W
R206	201011608J001	100ohm,1608,J,0.063W
R207	201011608J001	100ohm,1608,J,0.063W
R208	201031608J001	10Kohm,1608,J,0.063W

R209	201031608J001	10Kohm,1608,J,0.063W
R210	201021608J001	1Kohm,1608,J,0.063W
R211	201021608J001	1Kohm,1608,J,0.063W
R212	202021608J001	2Kohm,1608,J,0.063W
R213	202021608J001	2Kohm,1608,J,0.063W
R214	201011608J001	100ohm,1608,J,0.063W
R215	201011608J001	100ohm,1608,J,0.063W
R216	203911608J001	390ohm,1608,J,0.063W
R217	202231608J001	22Kohm,1608,J,0.063W
R218	202231608J001	22Kohm,1608,J,0.063W
R219	201011608J001	100ohm,1608,J,0.063W
R220	201011608J001	100ohm,1608,J,0.063W
R221	201011608J001	100ohm,1608,J,0.063W
R222	201011608J001	100ohm,1608,J,0.063W
R223	201011608J001	100ohm,1608,J,0.063W
R224	201011608J001	100ohm,1608,J,0.063W
R225	200002012J001	0ohm,2012J
R226	202011608J001	200ohm,1608,J,0.063W
R227	200001608J001	0ohm,1608J
R228	200001608J001	0ohm,1608J
R229	204721608J001	4.7Kohm,1608,J,0.063W
R230	204721608J001	4.7Kohm,1608,J,0.063W
R231	201001608J001	10ohm,1608,J,0.063W
AR6	201213216J401	120 Ohm,1608x4,J,0.063W
AR8	201213216J401	120 Ohm,1608x4,J,0.063W
AR10	201213216J401	120 Ohm,1608x4,J,0.063W
AR12	201213216J401	120 Ohm,1608x4,J,0.063W
AR14	201213216J401	120 Ohm,1608x4,J,0.063W
J16	21151W25J001	150ohm,DIP

# Part List

## Main Board : Inductor

Loc.No.	Part No.	Description/Specification
L1	41335N2116001	NL252016T-3R3J,3.3uH,5%,201614,SMD,TDK
L2	41335N2116001	NL252016T-3R3J,3.3uH,5%,201614,SMD,TDK
L3	41225N2116001	NL252016T-2R2J,2.2uH,5%,201614,SMD,TDK
L4	40121R2012001	HH-1M2012-121,120ohm,2012,Ceratech
L5	40121R2012001	HH-1M2012-121,120ohm,2012,Ceratech
L6	41225N2116001	NL252016T-2R2J,2.2uH,5%,201614,SMD,TDK
L7	40090R2012001	SY-2012-090,9ohm,2012
L8	40121R4532001	HH-1M4532-121,120ohm,4532,Ceratech
L9	40121R4532001	HH-1M4532-121,120ohm,4532,Ceratech
L10	40121R4532001	HH-1M4532-121,120ohm,4532,Ceratech
L11	40121R4532001	HH-1M4532-121,120ohm,4532,Ceratech
L14	41336N1206001	ATR126-330,L33uH,20%,2.5A,SMD,AUTORO
L15	40121R4532001	HH-1M4532-121,120ohm,4532,Ceratech
L16	40121R4532001	HH-1M4532-121,120ohm,4532,Ceratech
L17	40121R4532001	HH-1M4532-121,120ohm,4532,Ceratech
NF1	40121R2012002	HB-1M2012-121,120ohm,2012
NF2	40121R2012001	HH-1M2012-121,120ohm,2012,Ceratech
NF3	40150R2012001	HB-1H2012-150JT,15ohm,2012
NF4	40150R2012001	HB-1H2012-150JT,15ohm,2012
NF5	40150R2012001	HB-1H2012-150JT,15ohm,2012
NF6	40121R2012001	HH-1M2012-121,120ohm,2012,Ceratech
NF8	40260R2012002	HB-1M2012-260,26ohm,2012
NF9	42220P2012001	STS220B,22pF,20x12x10,SEL,MAC
NF10	42220P2012001	STS220B,22pF,20x12x10,SEL,MAC
NF11	42220P2012001	STS220B,22pF,20x12x10,SEL,MAC
NF12	42220P2012001	STS220B,22pF,20x12x10,SEL,MAC
NF13	40121R2012002	HB-1M2012-121,120ohm,2012
NF14	40260R2012002	HB-1M2012-260,26ohm,2012
NF15	40260R2012002	HB-1M2012-260,26ohm,2012
NF16	40121R2012001	HH-1M2012-121,120ohm,2012,Ceratech
NF17	40121R2012001	HH-1M2012-121,120ohm,2012,Ceratech
NF18	40121R2012001	HH-1M2012-121,120ohm,2012,Ceratech
NF19	40121R2012001	HH-1M2012-121,120ohm,2012,Ceratech
NF21	40121R2012001	HH-1M2012-121,120ohm,2012,Ceratech
NF23	42000R2012001	MEM2012T50R0,0ohm,2012
NF24	40121R2012001	HH-1M2012-121,120ohm,2012,Ceratech
NF25	40260R2012002	HB-1M2012-260,26ohm,2012
NF26	40121R2012002	HB-1M2012-121,120ohm,2012
NF27	40121R4532001	HH-1M4532-121,120ohm,4532,Ceratech
NF28	40121R2012001	HH-1M2012-121,120ohm,2012,Ceratech
NF29	40121R2012001	HH-1M2012-121,120ohm,2012,Ceratech
NF30	40121R2012001	HH-1M2012-121,120ohm,2012,Ceratech
NF32	40121R2012001	HH-1M2012-121,120ohm,2012,Ceratech
NF33	40260R2012002	HB-1M2012-260,26ohm,2012
NF34	40260R2012002	HB-1M2012-260,26ohm,2012
NF35	40121R2012001	HH-1M2012-121,120ohm,2012,Ceratech
NF36	40121R2012001	HH-1M2012-121,120ohm,2012,Ceratech
NF38	40121R2012001	HH-1M2012-121,120ohm,2012,Ceratech
NF39	40121R2012001	HH-1M2012-121,120ohm,2012,Ceratech
NF40	40121R1608001	HB-1M1608-121,120ohm,1608
NF41	40121R1608001	HB-1M1608-121,120ohm,1608
NF42	40121R1608001	HB-1M1608-121,120ohm,1608
NF43	40121R1608001	HB-1M1608-121,120ohm,1608
NF44	40121R1608001	HB-1M1608-121,120ohm,1608
NF45	40121R1608001	HB-1M1608-121,120ohm,1608
NF46	40121R1608001	HB-1M1608-121,120ohm,1608
NF47	40121R1608001	HB-1M1608-121,120ohm,1608
NF48	40121R1608001	HB-1M1608-121,120ohm,1608
NF49	40121R1608001	HB-1M1608-121,120ohm,1608

NF50	40121R1608001	HB-1M1608-121,120ohm,1608
NF51	40121R1608001	HB-1M1608-121,120ohm,1608
NF52	40121R1608001	HB-1M1608-121,120ohm,1608
NF53	40121R1608001	HB-1M1608-121,120ohm,1608
NF54	40121R1608001	HB-1M1608-121,120ohm,1608
NF55	40121R1608001	HB-1M1608-121,120ohm,1608
NF56	40121R1608001	HB-1M1608-121,120ohm,1608
NF57	40121R1608001	HB-1M1608-121,120ohm,1608
NF58	40121R1608001	HB-1M1608-121,120ohm,1608
NF59	40121R1608001	HB-1M1608-121,120ohm,1608
AR1	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR2	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR3	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR4	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR5	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR7	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR9	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR11	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR13	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR15	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR16	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR17	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR18	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR19	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR20	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR21	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR22	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR23	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR24	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR25	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR26	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR27	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR28	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR29	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR30	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR31	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech
AR32	40121R3216400	HB-4T3216-121,120ohm,3.2*1.6, Ceratech

## Main Board : Diode

Loc. No.	Part No.	Description/Specification
D1	12KES2260000A	KDS226,Dual,SOT-23,KEC
D2	12KES2260000A	KDS226,Dual,SOT-23,KEC
D3	12KES2260000A	KDS226,Dual,SOT-23,KEC
D4	12KES2260000A	KDS226,Dual,SOT-23,KEC
D5	12KES2260000A	KDS226,Dual,SOT-23,KEC
D8	12KES2260000A	KDS226,Dual,SOT-23,KEC
D9	12KES2260000A	KDS226,Dual,SOT-23,KEC
D10	12KES2260000A	KDS226,Dual,SOT-23,KEC
D11	12KES2260000A	KDS226,Dual,SOT-23,KEC
D12	12KES2260000A	KDS226,Dual,SOT-23,KEC
D13	12KES2260000A	KDS226,Dual,SOT-23,KEC
D14	12LNS4148000A	MMBD4148,Single,SOT-23,Liton
D15	12KES2260000A	KDS226,Dual,SOT-23,KEC
D16	12KES2260000A	KDS226,Dual,SOT-23,KEC
D17	1200D5821000A	B340B,Liteon
D18	12KES2260000A	KDS226,Dual,SOT-23,KEC
D19	12KES2260000A	KDS226,Dual,SOT-23,KEC

# Part List

## Main Board : Transistor

Loc. No.	Part No.	Description/Specification
Q3	12INS3904000A	MMBT3904,BJT,NPN,hFE=100-300, SOT-23,Infineon
Q4	12INS3904000A	MMBT3904,BJT,NPN,hFE=100-300, SOT-23,Infineon
Q5	12FCS1623000A	KSC1623_G,NPN,Hfe=200-400,SOT-23
Q6	12FCS1623000A	KSC1623_G,NPN,Hfe=200-400,SOT-23
Q7	12FCS1623000A	KSC1623_G,NPN,Hfe=200-400,SOT-23
Q8	12FCS1623000A	KSC1623_G,NPN,Hfe=200-400,SOT-23
Q9	12INS3904000A	MMBT3904,BJT,NPN,hFE=100-300, SOT-23,Infineon
Q10	12INS3904000A	MMBT3904,BJT,NPN,hFE=100-300, SOT-23,Infineon
Q11	12INS3904000A	MMBT3904,BJT,NPN,hFE=100-300, SOT-23,Infineon
Q12	12INS3904000A	MMBT3904,BJT,NPN,hFE=100-300, SOT-23,Infineon
Q13	12INS3904000A	MMBT3904,BJT,NPN,hFE=100-300, SOT-23,Infineon
Q14	12INS3904000A	MMBT3904,BJT,NPN,hFE=100-300, SOT-23,Infineon
Q15	12INS3904000A	MMBT3904,BJT,NPN,hFE=100-300, SOT-23,Infineon
Q16	12FCS1623000A	KSC1623_G,NPN,Hfe=200-400,SOT-23
Q17	12FCS1623000A	KSC1623_G,NPN,Hfe=200-400,SOT-23
Q19	12FCS1623000A	KSC1623_G,NPN,Hfe=200-400,SOT-23
Q20	12FCS1623000A	KSC1623_G,NPN,Hfe=200-400,SOT-23
Q21	12FCS1623000A	KSC1623_G,NPN,Hfe=200-400,SOT-23

## Main Board : IC

Loc. No.	Part No.	Description/Specification
F3	46125S3020001	1206,125V,3A,300%/02sec,Making:P,Littelfuse
F4	46125S5020001	1206,125V,5A,300%/02sec,Making:FT,Littelfuse
U1	10SGS9884AKSA	SG9884A-110,110MSPS,PLL,8bit,PQFP128,System General
U2	11ADD3300000A	ADP3300,3.3V,50mA,SOT23-6,Analog Device
U3	13TXS7412600A	SN74LVC126D,BUS-Buffer Gates,SO14,Texas Instrument
U4	10SMS24FW210A	24C21,1Kb(x8),2-wire Serial,VESA2.0,S08,ATMEL
U5	10MIS3226000A	VPX3226E,QFP44,Micronas
U6	11AMS1117000A	AME1117,3.3V,1A,TO263.3P,AME
U7	10PWS166B10TA	PW166B-10T,,SXGA,TBGA256,Pixel Works
U9	10THS63LVDM8A	THC63LVDM383R,TSSOP 56P,24BIT,Thine
U10	10THS63LVDM8A	THC63LVDM383R,TSSOP 56P,24BIT,Thine
U12	10MXS29F800TA	MX29F800TMC,8Mbit CMOS,90ns,TSOP48,Macronix
U13	13TXS74LVC54A	SN74LVC541,Octal Buffers/Drivers,TSSOP20,Texas Instrument
U14	13TIS74LV273A	74LV273A,5V,TSSOP20P,Texas Instrument
U16	13TXS74LS040A	SN74LS04,Inverter,SO14,Texas Instrument
U18	14CSS5010000A	ICS501,Clock Multiplier,Max 160MHz,S08,ICS
U19	14CSS5010000A	ICS501,Clock Multiplier,Max 160MHz,S08,ICS
U20	10ATS24C1600A	AT24C16,2-WIRE Serial,16K(2048x8),S08,ATMEL
U22	12SXS9934DY0A	Si9934DY,Dual P-channel, 2.5Vgs,-12Vds,S08,Siliconix
U23	11AOS1084000A	AME1085,TO-263,AME
U24	11AOS1084000A	AME1085,TO-263,AME
U25	11MLS4576ADJA	MC4576-ADJ,ADJ,3A,TO-263,Micrel
U26	11AOS8810000A	AME8810-2.5V,SOT-223,AME
U27	10PHS6324T00A	TEA6324T,I2C,SO32,Phillips
U28	11KES7809000A	KIA7809AF,9V,1A,Positive,DPAK,SMD,KEC
U29	12SXS9934DY0A	Si9934DY,Dual P-channel, 2.5Vgs,-12Vds,S08,Siliconix
U32	10STDTDA7496A	TDA7496L,2Wx2,DIP20,ST Microelectronics
U34	10JCSNJM2248A	NJM2248M,3Input-1Out,SOP8,13V,JRC
U35	10ZLSZ861290A	Z86129,12MHz,Caption,V-chip,SOIC18,Zilog
U37	10JCSNJM2248A	NJM2248M,3Input-1Out,SOP8,13V,JRC
Y1	14SYDX20M250A	20.250000MHz,DIP2,ATS-49/U,Sunny-EMI
Y2	14SYDX16M257A	16.257000MHz,DIP2,ATS-49/U,Sunny-EMI
Y3	14SYDX18M000A	18.000MHz,DIP2,ATS-49/U,Sunny-EMI

## Tuner Board

Loc. No.	Part No.	Description/Specification
U1	15SSD82DA27CA	TCPN9082DA27C,NTSC-M,DIP10, F-TYPE
R3	21101W250K001	100Ohm,0.25W,K,Axial
R4	21101W250K001	100Ohm,0.25W,K,Axial
C1	32104R040EYKA	0.1uF,Radial,P12.5,25V,Y5R,K
C5	30477R125E0MC	470uF,Radial,P8xH12.5,25V,M
J2	52SZ009254A0A	DIP9, MALE,SHEN ZHEN

## OSD Board

Loc.No.	Part No.	Description/Specification
U1	12TED1U60000A	IS1U60,38KHz,5V,Teric
D1	12RHD356MUW5A	SPR-356MUW5F,P3,Tw o Color LED
J1	52MER015200SA	53015-1510,DIP15,P2.0,Single,Male,MOLEX
SW1	67MDDTT000001	MT1102VA,DC12V,50mA,80g,Tact
SW2	67MDDTT000001	MT1102VA,DC12V,50mA,80g,Tact
SW3	67MDDTT000001	MT1102VA,DC12V,50mA,80g,Tact
SW4	67MDDTT000001	MT1102VA,DC12V,50mA,80g,Tact
SW5	67MDDTT000001	MT1102VA,DC12V,50mA,80g,Tact
SW6	67MDDTT000001	MT1102VA,DC12V,50mA,80g,Tact
SW7	67MDDTT000001	MT1102VA,DC12V,50mA,80g,Tact
SW8	67MDDTT000001	MT1102VA,DC12V,50mA,80g,Tact
SW9	67MDDTT000001	MT1102VA,DC12V,50mA,80g,Tact

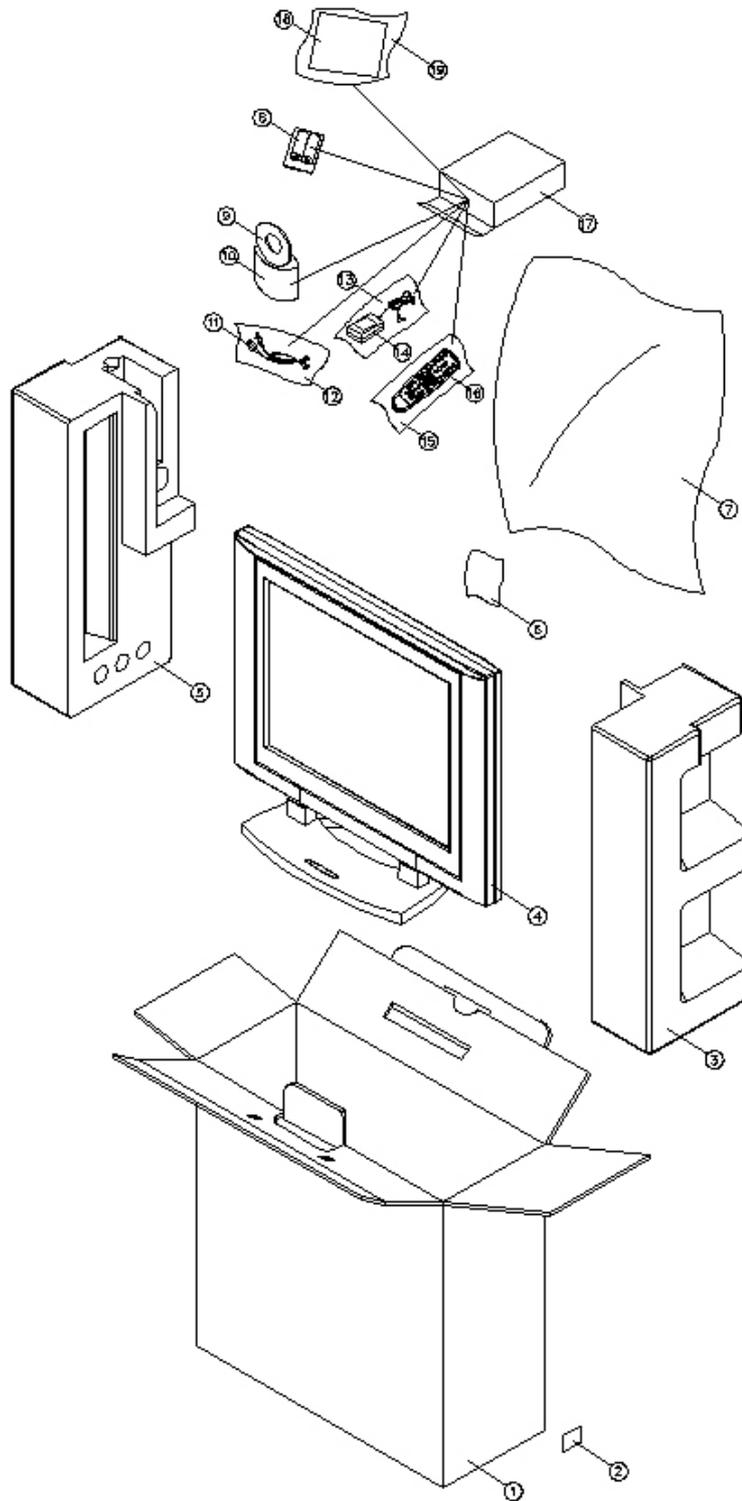
## Interface Board

Loc.No.	Part No.	Description/Specification
J2	52SZ009254A0B	DIP9, MALE,SHEN ZHEN
J2	52MER008200SA	53015-0810,DIP8,P2.0,Molex

## Miscellaneous

Loc. No.	Part No.	Description/Specification
LCD	60SS170EHL1SA	LTM170EHL01,17inch,1280x1024,8Bit,LVDS,SAMSUNG
Inverter	62GC126A5524A	GH017(A5V),12V,6.5mArms,52kHz,4Lamp,GCCT
Adapter	61IL30125A0JA	LSE901B1260,3 terminal,100-240V,12V,5A,Inner+P2.5,
VGA Cable	64CV18200001A	15P D-SUB,15P D-SUB/1.8M,Semyung
AC Cord	64CP20200002A	AC CORD, 3 terminal,1.8M,Sunvic
Speaker	47ETSPO00002A	MAX 2W,78.5Hz31V,ESTec
Remote Control	6600R80826C0A	R80826C,Envision,DC 3V,Osung
Battery	683000000001A	1.5V AAA SIZE
LCD I/F Harness	64HS19100001A	FI-X30S-HF, DF14-30S-1.25,EN-7500
OSD Harness	64HS17100001A	51004-1500,51004-1500,EN-7500
Inverter Harness	64HN09000001A	51004-0800,51021-1200,EN-7500
TV Harness	64HS13100001A	51004-0700,51004-0800,EN-7500
Speaker harness	64HN58100001A	5263-04A PBT,EN-7500

# Packing and Accessory



NO	DESCRIPTION	Q'TY	REMARK
1	CARTON BOX	1	
2	BAR CODE	1	
3	CUSHION(R)	1	
4	SET	1	
5	CUSHION(L)	1	
6	SILICA GEL (25g)	1	
7	POLY BAG(SET)	1	
8	BATTERY(AAA)	2	
9	CD	1	
10	CD CASE	1	
11	AC CORD	1	
12	POLY BAG(AC CORD)	1	
13	POLY BAG(ADAPTER)	1	
14	ADAPTER	1	
15	POLYBAG(REMOTE CONTROL)	1	
16	REMOTE CONTROL(SET)	1	
17	ACCESSORY BOX	1	
18	QUICK START GUIDE	1	
19	POLY BAG(MANUAL)	1	

REV	DESCRIPTION	DATE	BY	CHK	DATE	BY	CHK
01	EXPLODED-VIEW(PACKING)						
EN-7000							