Content Index

1. About This Manual

This Service Manual is issued by engineer of TPV customer service according to the structure and capability of various models. The purpose of Service Manual is to provide a guide line to engineers to repair different models. The appearance and capability is introduced in this Service Manual. It is better for repair engineer to have a rough idea of this model through reading the Service Manual. Please do pay attention to the item part of THE DISASSEMBLY when repair the machine and also do the protection of Panel any time. When repairing the circuit board, please follow the requirement of RoHS and refer to the circuit diagram and repairing process that attached in the Service Manual. The method of firmware updated, the way of using the menu and some information that may be used when repairing are also attached in the Service Manual that provide repair engineer various choice.

If you have any questions, please contact with the engineers of TPV customer service.

Service Manual

COLOR MONITOR

MODEL ID G900WA (EU)

1st Edition

July 2007

2. Introduction

2.1 RoHS requirement

Overview

-Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) Directive 2002/95/EC is published in the Official Journal 13 February 2003 (OJ L37, 13.2.2003, p.19).

-Purpose: Reduction of the environmental and health risks posed by hazardous materials in EEE.

-It is complementary to & running in parallel with the WEEE Directive.

-Transposed into national law by 13 August 2004. And comes into effect 1 July 2006.It is similar to the WEEE Directive, except:

Applies to new EEE placed on the market after 1 July 2006.

Includes household filament light bulbs & luminaries.

Excludes: Medical devices or monitoring & control equipment (WEEE categories 8 & 9);Spare parts for the repair of EEE placed on the market before 1 July 2006; Re-used EEE originally placed on the market before 1 July 2006.

2.2 Safety Notice

FCC Notice

FCC Class B Radio Frequency Interference Statement WARNING: (FOR FCC CERTIFIED MODELS)

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

NOTICE :

1. The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
2. Shielded interface cables and AC power cord, if any, must be used in order to comply with the emission limits.
3. The manufacturer is not responsible for any radio or TV interference caused by unauthorized modification to this equipment. It is the responsibilities of the user to correct such interference.

Power Safety

1.The AC plug isolates this equipment from the AC supply.
2.The power supply cord serves as a power disconnect device for pluggable equipment. The socket outlet should be installed near the equipment and be easily accessible.
3.This product should be operated from the type of power indicated on the marked label. If you are not sure of the type of power available, consult your dealer or local power company.

2.3 General Description

This new LCD (Liquid Crystal Display) monitor BenQ G900WA offers numerous features and functions, for example:

● TFT display (Thin Film Transistor; active matrix)
● minimal space requirements thanks to slim casing
● optimum ergonomic characteristics (totally distortion-free, excellent picture definition and colour purity right into the corners)
● high degree of brightness and good contrast
● high resolution (1440 x 900)
● presentation of up to 16.7 million colours (in conjunction with an appropriate graphics card)
● automatic scanning of horizontal frequencies from 31 to 83 kHz and refresh rates (vertical frequencies) from 56 to 76 Hz (absolutely flicker-free)
● digital screen controller with microprocessor for storing 20 different display modes
● freely adjustable colour alignment for matching the screen colours to the colours of various input and output devices
● convenient operation via integrated OSD (On-Screen-display) menu
● VESA-DDC compatibility
● plug&play capability
● power management for reducing power consumption when the computer is not in use
● compliance with the recommendations in accordance with TCO’03

This operating manual contains important information you require to start up and run your LCD monitor.

A graphics card (screen controller) with VGA interface is required to control the BenQ G900WA LCD monitor. The monitor processes the data supplied to it by the screen controller. The screen controller or the associated driver software is responsible for setting the modes (resolution and refresh rate).

Additional information

Due to the nature of liquid crystal display (LCD) technology, the picture resolution is always fixed. For the best display performance, please set the display resolution to 1440 x 900 pixels with an aspect ratio of 16:10. This is called “Native Resolution” or maximal resolution – that is, the clearest picture. Lower resolutions are displayed on a full screen through an interpolation circuit. Image blurring across pixel boundaries can occur with the interpolated resolution depending upon the image type and its initial resolution.

2.4 Related service information

- Do not use the monitor near water, e.g. near a bathtub, washbowl, kitchen sink, laundry tub, swimming pool or in a wet basement.
- Do not place the monitor on an unstable cart, stand, or table. If the monitor falls, it can injure a person and cause serious damage to the appliance. Use only a cart or stand recommended by the manufacturer or sold with the monitor. If you mount the monitor on a wall or shelf, use a mounting kit approved by the manufacturer and follow the kit instructions.
- Slots and openings in the back and bottom of the cabinet are provided for ventilation. To ensure reliable operation of the monitor and to protect it from overheating, be sure these openings are not blocked or covered. Do not place the monitor on a bed, sofa, rug, or similar surface. Do not place the monitor near or over a radiator or heat register. Do not place the monitor in a bookcase or cabinet unless proper ventilation is provided.
- The monitor should be operated only from the type of power source indicated on the label. If you are not sure of the type of power supplied to your home, consult your dealer or local power company.
- The monitor is equipped with a three-pronged grounded plug, a plug with a third (grounding) pin. This plug will fit only into a grounded power outlet as a safety feature. If your outlet does not accommodate the three-wire plug, have an electrician install the correct outlet, or use an adapter to ground the appliance safely. Do not defeat the safety purpose of the grounded plug.
- Unplug the unit during a lightning storm or when it will not be used for long periods of time. This will protect the monitor from damage due to power surges.
- Do not overload power strips and extension cords. Overloading can result in fire or electric shock.
- Never push any object into the slot on the monitor cabinet. It could short circuit parts causing a fire or electric shock. Never spill liquids on the monitor.
- Do not attempt to service the monitor yourself; opening or removing covers can expose you to dangerous voltages and other hazards. Please refer all servicing to qualified service personnel.
- To ensure satisfactory operation, use the monitor only with UL listed computers which have appropriate configured receptacles marked between 100 - 240V AC, Min. 5A.

- The wall socket shall be installed near the equipment and shall be easily accessible.
- For use only with the attached power adapter (Output 12Vdc) which have **UL,CSA** listed license(Only for monitors with power adapter).

Since the equipment is compatible with RoHS Directive, use components in which the use of specific chemically noxious substances is restricted; use only designated spare parts when it is necessary to replace such parts with new parts.

Use lead-free solder for the equipment compatible with ones with substrates on which lead-free components are mounted. For the details, refer to “Caution for Lead-Free Soldering Work” given in the next page.
It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment.

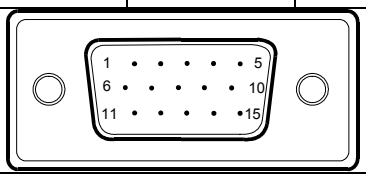
3. Product Overview

3.1 Monitor Specifications

LCD Panel	Driving system	TFT Color LCD
	Size	48cm(19")
	Pixel pitch	0.285mm(H) × 0.285mm(V)
	Viewable angle	160, 160 (CR>10)
	Contrast	800:1
	Brightness	300 cd/m2
	Response time	5ms(typical)
Input	Video	R, G, B Analog Interface
	Separate Sync.	H/V TTL
	H-Frequency	31 - 83 kHz Multi- frequency monitor
	V-Frequency	55 - 76 Hz modes within these parameters
Display Colors		16.7M Colors
Max. Resolution		1440 x 900
Plug & Play		VESA DDC2B™
EPA ENERGY STAR®	ON Mode	≤40W
	saving mode	< 1 Watt, 120 V < 2 Watt, 240 V
Input Connector		15-pin D-Sub
Input Video Signal		Analog: 0. 7Vp-p(standard), 75 OHM, Positive
Power Source		100~240VAC,50~60Hz
Environmental Considerations		Operating Temp: 0° to 40°C Operating Humidity: 10% to 90%
Dimension		441.3 x 365.7 x 165 mm
Weight (N. W.)		3.73 kg
Certifications		TCO 03/99, TÜV/Ergonomics, TÜV/ GS, FCC Class B, VCCI, CB Report, CE, C-Tick, Fimko, GOST, MIC, EPA, CCC, BSMI, CSA, SASO, PSB, NOM, TUV-Argentina

3.2 Input Signal Connector

Pin No.	Description	Pin No.	Description
1.	Red	9.	+5V
2.	Green	10.	Detect Cable
3.	Blue	11.	Ground
4.	Ground	12.	DDC-Serial Data
5.	VGA_CON	13.	H-Sync
6.	R-Ground	14.	V-Sync
7.	G-Ground	15.	DDC-Serial Clock
8.	B-Ground		



3.3 Factory Preset Display Modes

Incoming display mode (Input timing)			
Resolution	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Pixel Frequency (MHz)
640x350	31.47	70.09	25.180
640x480	31.47	59.94	25.175
640x480	37.50	75.00	31.500
720x400	31.47	70.08	28.321
800x600	37.88	60.32	40.000
800x600	46.88	75.00	49.500
832x624	49.72	74.55	57.283
1024x768	48.36	60.00	65.000
1024x768	60.02	75.03	78.750
1152x720	44.86	60.00	66.750
1152x870	68.68	75.06	100.000
1152x900	61.80	65.96	92.978
1280x768	47.396	60.00	68.250
1280x960	60.00	60.00	108.000
1280x1024	63.98	60.02	108.000
1280x1024	79.98	75.02	135.000
1360x768	47.70	60.01	85.500
1440x900	55.94	59.89	106.500
1440x900	55.94	59.89	88.750
1440x900	75.00	70.60	136.750

3.4 Panel Specification

M190A1-L07

OVERVIEW

M190A1-L07 is a 19” wide TFT Liquid Crystal Display module with 4 CCFL Backlight unit and 30 pins 2ch-LVDS interface. This module supports 1440 x 900 WXGA+ mode and can display 16.7M colors. The inverter module for Backlight is not built in.

General Specifications

Item	Specification	Unit	Note
Diagonal Size	483.96 (19.05” diagonal)	mm	
Active Area	410.4 (H) x 256.5 (V)	mm	(1)
Bezel Opening Area	414.36 x 260.45	mm	
Driver Element	a-si TFT active matrix	-	-
Pixel Number	1440 x R.G.B. x 900	pixel	-
Pixel Pitch	0.285 (H) x 0.285 (V)	mm	-
Pixel Arrangement	RGB vertical stripe	-	-
Display Colors	16.7M	color	-
Transmissive Mode	Normally White	-	-
Color saturation	72%NTSC (typ.)	-	-
Surface Treatment	Hard coating (3H), Anti-glare (Haze 25)	-	-

Mechanical Specifications

Item		Min.	Typ.	Max.	Unit	Note
Module Size	Horizontal(H)	426.7	427.2	427.7	mm	(1)
	Vertical(V)	276.9	277.4	277.9	mm	
	Depth(D)	-	16.0	16.5	mm	
Weight		-	1830	1900	g	-

Electrical Characteristics

Parameter		Symbol	Value			Unit	Note
			Min.	Typ.	Max.		
Power Supply Voltage		Vcc	4.5	5.0	5.5	V	-
Ripple Voltage		V_{RP}	-	-	100	mV	-
Rush Current		I_{RUSH}	-	1.6	3	A	(2)
Power Supply Current	White	Icc	-	0.5	0.7	A	(3)a
	Black		-	0.7	1.0	A	(3)b
	Vertical Stripe		-	0.7	1.0	A	(3)c
LVDS differential input voltage		Vid	100	-	600	mV	
LVDS common input voltage		Vic	-	1.2	-	V	
Logic “L” input voltage		Vil	Vss	-	0.8	V	

Optical Characteristics

Item		Symbol	Condition	Min.	Typ.	Max.	Unit
Color Chromaticity	Red	Rx	θ_X=0°, θ_Y =0° CS-1000T	Typ – 0.03	0.647	Typ + 0.03	
		Ry			0.334		
	Green	Gx			0.284		
		Gy			0.607		
	Blue	Bx			0.151		
		By			0.071		
	White	Wx			0.313		
		Wy			0.329		
Center Luminance of White		L_C		300	380	---	cd/m^2
Contrast Ratio		CR		630	1000	---	-
Response Time		T_R	θ_X=0°, θ_Y =0°	---	1.5	6.5	ms
		T_F		---	3.5	8.5	ms
White Variation		δW	θ_X=0°, θ_Y =0°	---	1.25	1.32	-
Viewing Angle	Horizontal	θ_X+	CR ≧ 10	75	85	---	Deg.
		θ_X-		75	85	---	
	Vertical	θ_Y+		70	80	---	
		θ_Y-		70	80	---	

LTM190M2-L31

OVERVIEW

LTM190M2-L31 is a color active matrix liquid crystal display (LCD) that uses amorphous silicon TFT(Thin Film Transistor) as switching components. This model is composed of a TFT LCD panel, a driver circuit and a back light unit. The resolution of a 19.0” is 1440 x 900 and this model can display up to 16.7 millions colors.

General Specifications

Items	Specification	Unit	Note
Pixel Pitch	0.2835(H) x 0.2835(W)	mm	
Active Display Area	408.24(H) x 255.15(V)	mm	
Surface Treatment	Haze 25% , Hard-coating (3H)		
Display Colors	16.7M (Hi-FRC)	colors	
Number of Pixels	1440 x 900	pixel	
Pixel Arrangement	RGB vertical stripe		
Display Mode	Normally White		
Luminance of White	300(Typ.)	cd/㎡	

Mechanical Specifications

Item		Min.	Typ.	Max.	Unit	Note
Module size	Horizontal (H)	427.5	428.0	428.5	mm	w/o inverter ass’y
	Vertical (V)	277.5	278.0	278.5	mm	
	Depth (D)	-	-	18.5	mm	
Weight		-	-	2,550	g	LCD module only

Electrical Characteristics

Item		Symbol	Min.	Typ.	Max.	Unit
Voltage of Power Supply		V_{DD}	4.5	5.0	5.5	V
LVDS Input Characteristics	Differential Input Voltage for LVDS Receiver Threshold	High	-	-	+100	mV
		Low	-100	-	-	mV
	LVDS skew	t_{SKEW}	-300	-	300	ps
	Differential input voltage	$\|V_{ID}\|$	200	-	600	mV
	Input voltage range (single-ended)	V_{IN}	0	-	2.4	V
	Common mode voltage	V_{CM}	0+ $\|V_{ID}\|/2$	1.2	2.4- $\|V_{ID}\|/2$	V
Current of Power Supply	(a) Black	I_{DD}	-	750	-	mA
	(b) White		-	650	-	mA
	(c) Dot		-	850	950	mA
Vsync Frequency		f_V	56	60	76	Hz
Hsync Frequency		f_H	52.6	56.4	71.4	kHz
Main Frequency		f_{DCLK}	48.4	51.9	65.7	MHz
Rush Current		I_{RUSH}	-	-	3	A

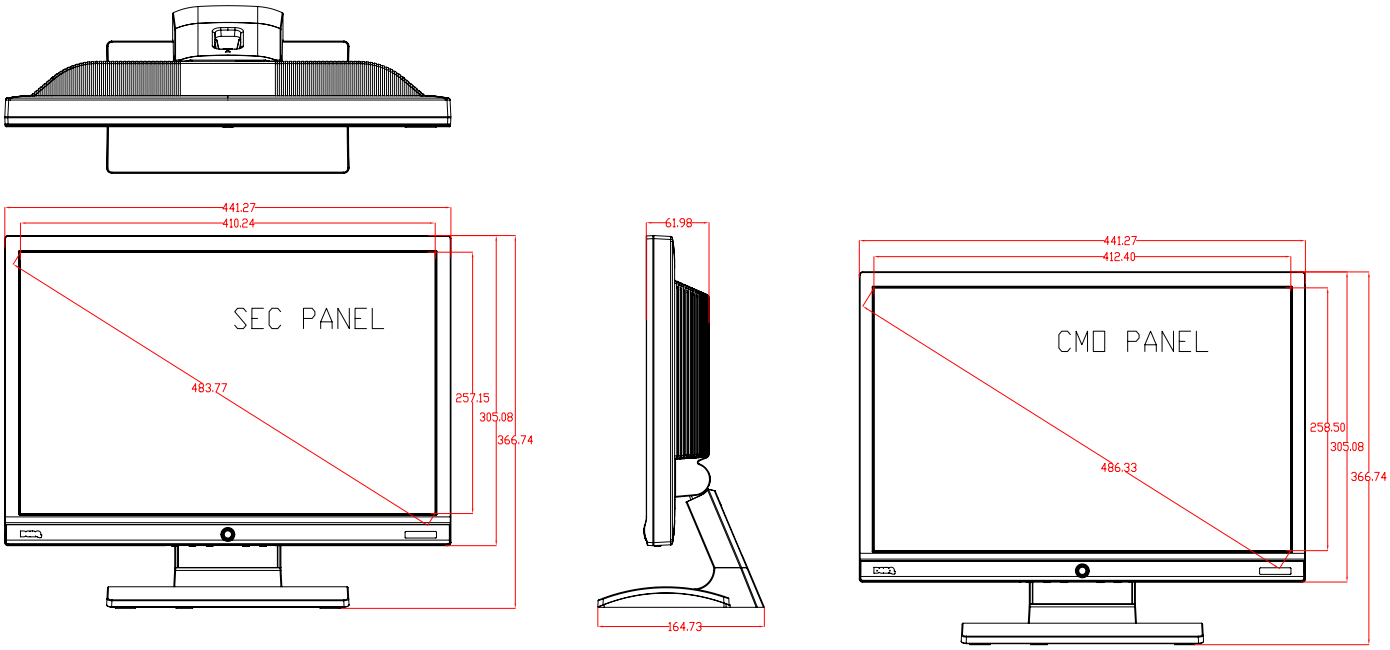
Optical Characteristics

(Ta = 25 ± 2°C, VDD=5V, fv= 60Hz, fDCLK=51.9MHz, IL = 6.5mArms)

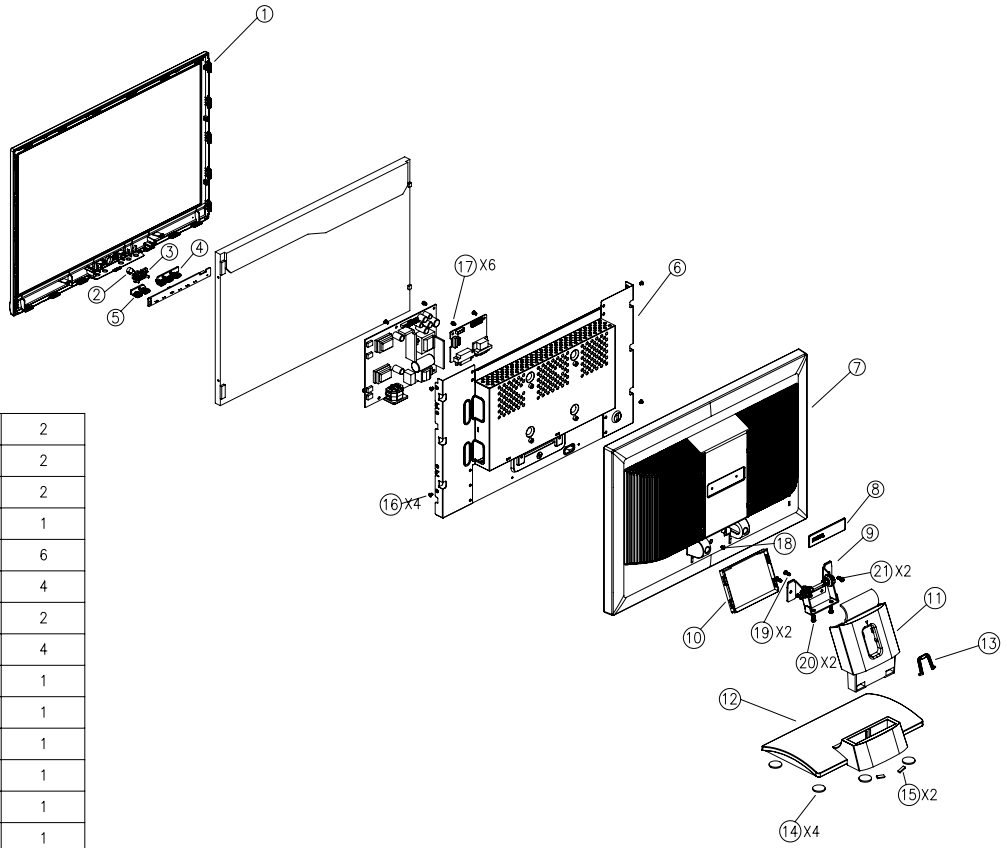
Item		Symbol	Condition	Min.	Typ.	Max.	Unit	Note
Contrast Ratio (Center of screen)		C/R		600	1000	-		(3) SR-3
Response Time	Rising	Tr		-	1.3	4	msec	(5) RD-850S
	Falling	Tf		-	3.7	6	msec	
Luminance of White (Center of screen)		Y_L		250	300	-	cd/m2	(6) SR-3
Color Chromaticity (CIE 1931)	Red	Rx	Normal $\theta_{L,R}=0$ $\theta_{U,D}=0$ Viewing Angle	0.610	0.640	0.670		(7),(8) SR-3
		Ry		0.300	0.329	0.360		
	Green	Gx		0.270	0.300	0.330		
		Gy		0.570	0.600	0.630		
	Blue	Bx		0.120	0.150	0.180		
		By		0.030	0.060	0.090		
	White	Wx		0.283	0.313	0.343		
		Wy		0.299	0.329	0.359		
Color Chromaticity (CIE 1976)	Red	Ru'		-	0.451	-		
		Rv'		-	0.523	-		
	Green	Gu'		-	0.125	-		
		Gv'		-	0.563	-		
	Blue	Bu'		-	0.175	-		
		Bv'		-	0.158	-		
	White	Wu'		-	0.198	-		
		Wv'		-	0.468	-		
C.G.L	White	△u'v'		-	0.011	0.02		(9)

4 Disassembly /Assembly

4.1 Three angles’ view



4.2 Exploded View



ITEM	PART NO.	DESCRIPTION	QUANTITY
21	M1G1740-10-120	SCREW (M4*10)	2
20	AM1G1740-10-47-CR3	SCREW (M4*10)	2
19	Q1G1740-10-120	SCREW (T4*10)	2
18	M1G130-5-47-CR3	SCREW (M3*5)	1
17	M1G1730-6-120	SCREW (M3*6)	6
16	M1G130-5-120	SCREW (M3*5)	4
15	Q12G6600-17	FOOT RUBBER	2
14	Q12G6600-8	FOOT RUBBER	4
13	A33G0251-11-01A	CABLE CLIP	1
12	A34G0452-11-01A	BASE	1
11	A34G0453-11-01A	STAND_BACK	1
10	A33G0247-11-01A	STAND_FRONT	1
9	A34G0051-1	HINGE	1
8	A33G0258-11-01A	LOGO COVER	1
7	A34G0451-1*-01A	REAR COVER	1
6	A15G0205-B*-*	MAINFRAME	1
5	A33G0248-12-01A	FUNCTION BUTTON 2 KEY	1
4	A33G0248-11-01A	FUNCTION BUTTON 3 KEY	1
3	A33G0250-11-01A	LENS	1
2	A33G0249-11-01A	POWER BUTTON	1
1	A34G045*-11-01A	BEZEL	1

REVISION LIST

ITEM	ECN/FN NO.	POSITION	DESCRIPTION WAS	DESCRIPTION IS	DATE	UPDATED BY	APPROVED BY

TOLERANCE UNLESS OTHERWISE SPECIFIED (mm)

RANGE OF DIM.	METAL & PLASTIC	POLYFORM	CARTON
0~30	±0.10	+0/-2.0	+2.0/-0
30~60	±0.15		
60~120	±0.20		
120~300	±0.25		
300~600	±0.30		
600~1200	±0.40	+0/-3.0	
1200~UPON	±0.50	+0/-4.0	

ANGLE (SHEET METAL) ±0.5°

MODEL: L19W-7benq | PROE | PROE 2D:

UNIT: mm | TOLERANCES UNLESS OTHERWISE STATED | DIMENSIONS ANGLE | MATERIAL

SCALE: 1.000 | 3rd PROJ. | TREATMENT

Ass'y

DRAWN: Y.C Lan | DATE: 2007-04-23

CHECK | DATE

TPVTechnology Ltd.

1-1 | A1 | CL

4.3 Disassembly

Note: Only the monitor G900W has both D-SUB and DVI connectors. The Monitor G900WA dose not have DVI Connector.

1). Back View as Fig1

Place the monitor face down on a smooth surface as Fig 1. Be careful to avoid scratch and injury during the uninstall.

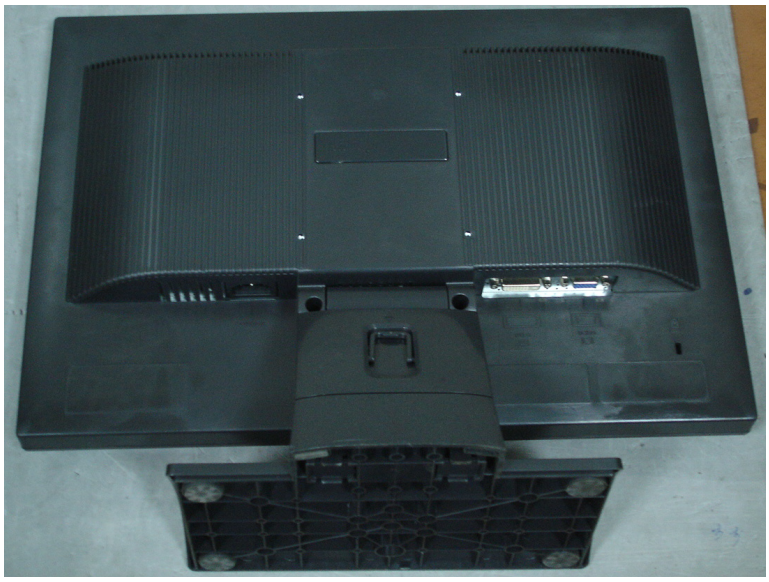


Fig1

2).Remove the STAND-BASE ASS'Y

Remove the two screws in red to remove the STAND-BASE ASS'Y as Fig2.

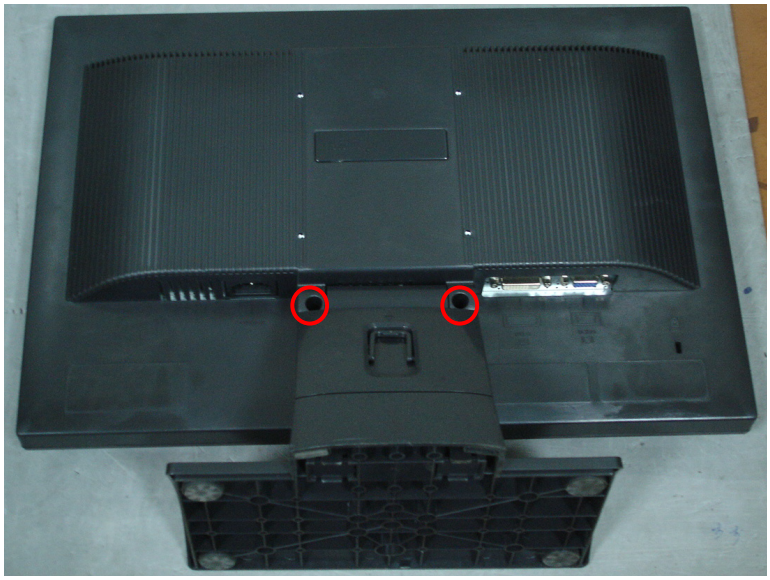


Fig2

3).Remove the Rear Cover and Bezel

The arrows in blue are the hook that we should put attention to when remove the rear cover. Use plastic putty knife to release the 6 hooks on the bottom,6 hooks on the top,5 hooks on the left,5 hooks on the right and remove the only one screw in red as Fig3 on the rear cover , then you can easily remove the rear cover and bezel.

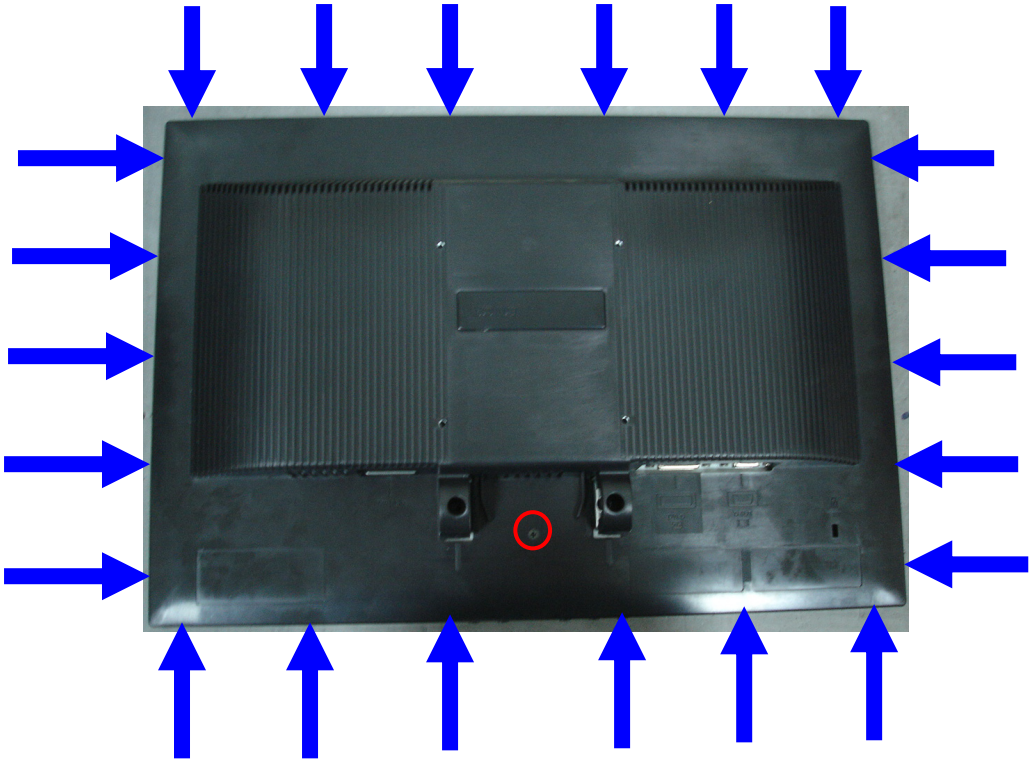
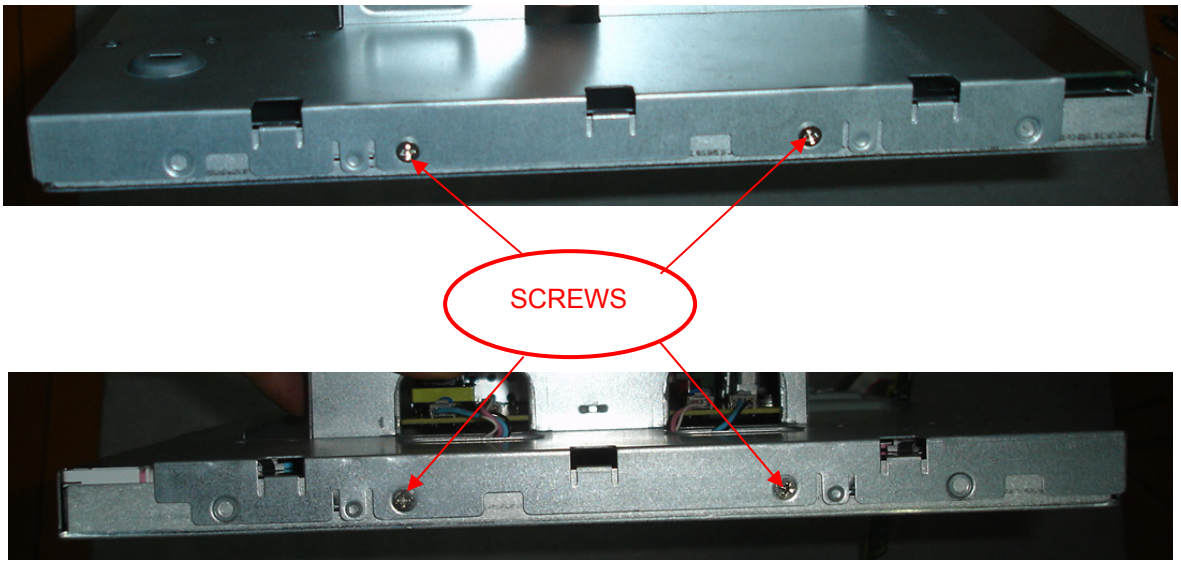
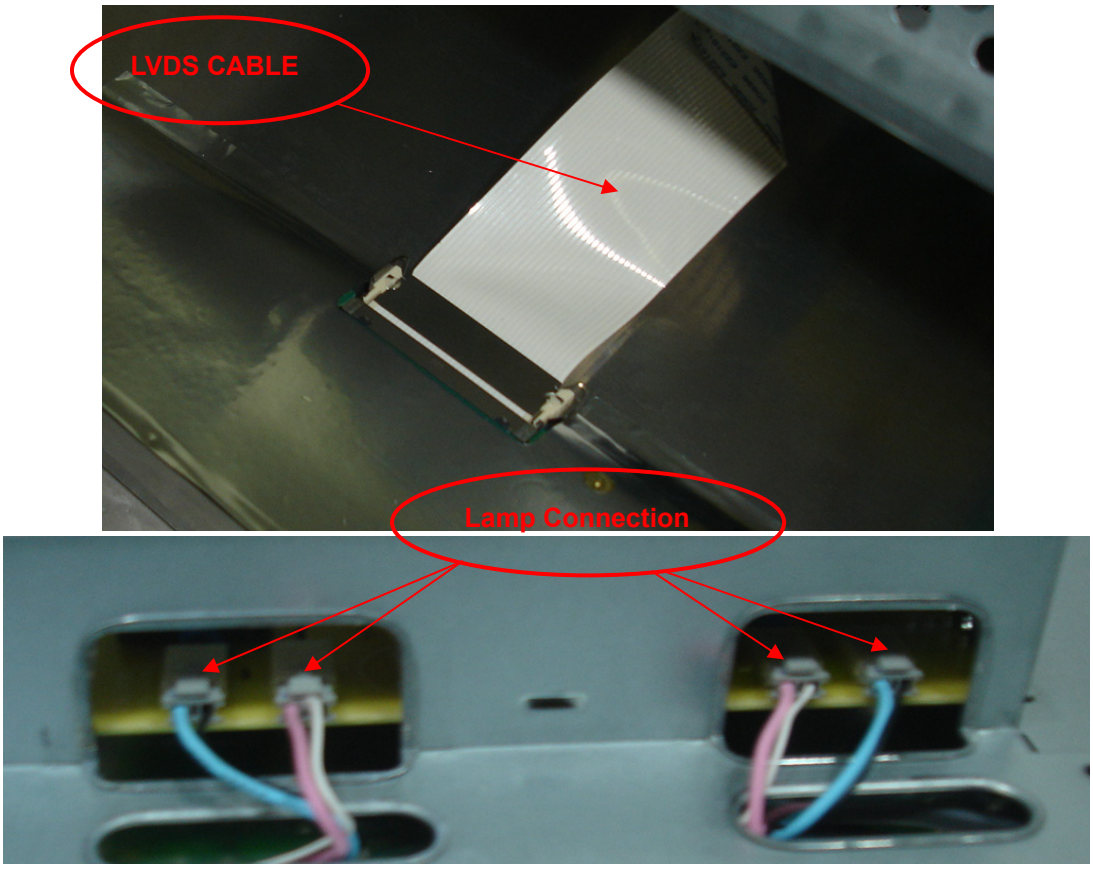


Fig3

4).Remove the Panel

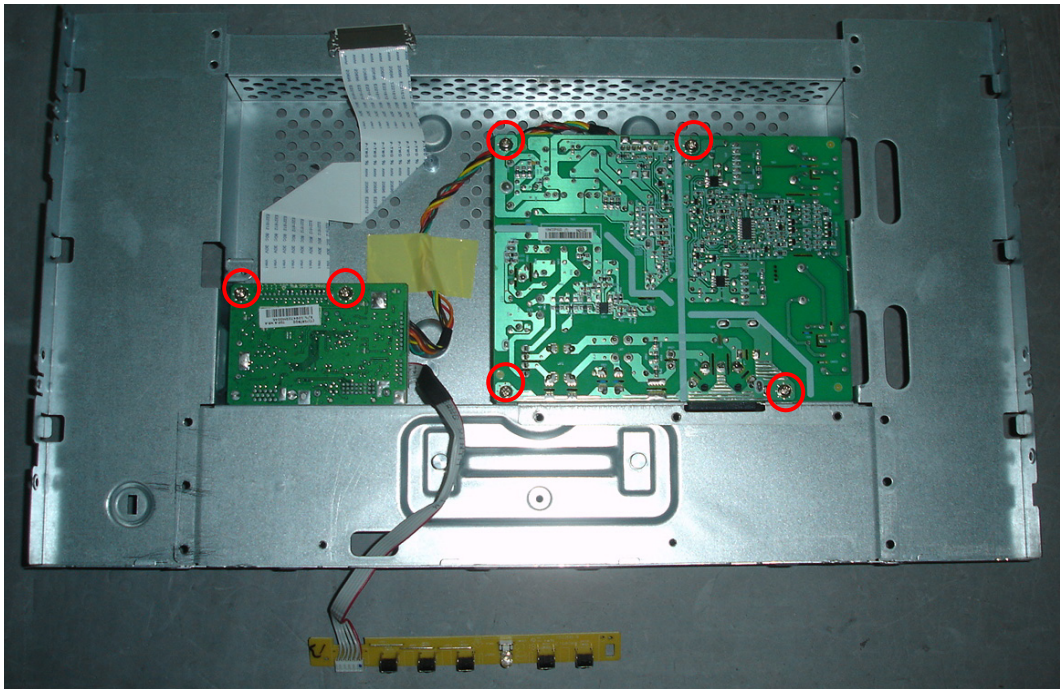
Remove the 4 screws on the side of main frame first, and then disconnect the Lamp Connections and LVDS Cable connection.

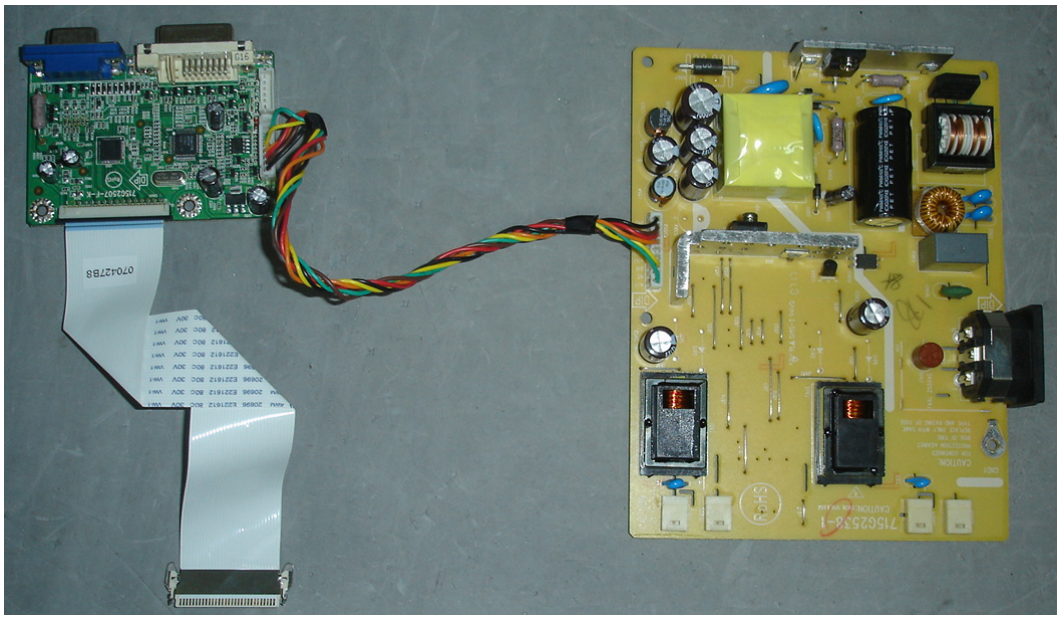




5).Remove the Main Board and Power Board

Remove the screws in red and disconnect the all connections, at last you can get the Main Board and Power Board as follow.



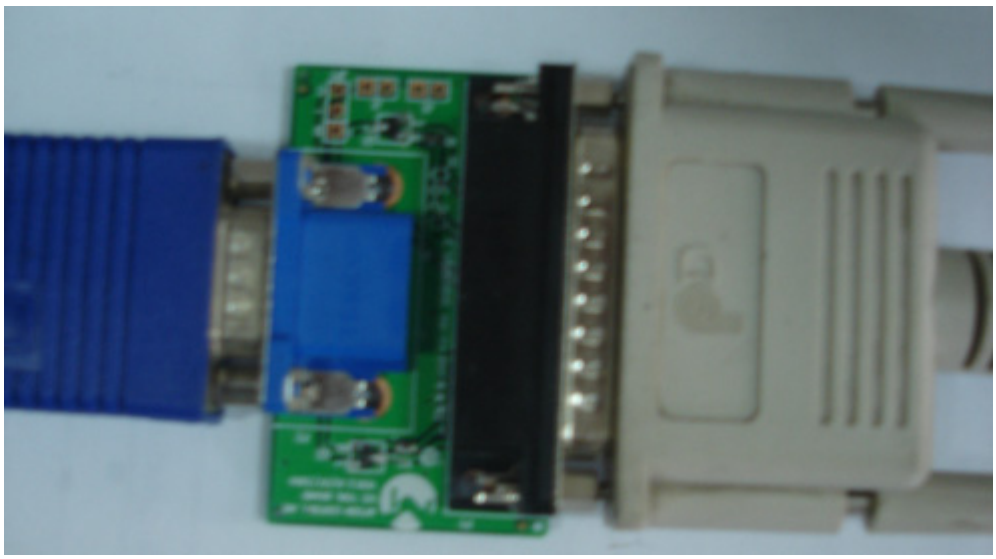


5. Cosmetic / Appearance / Alignment Service

5.1 Software/Firmware Upgrade Process

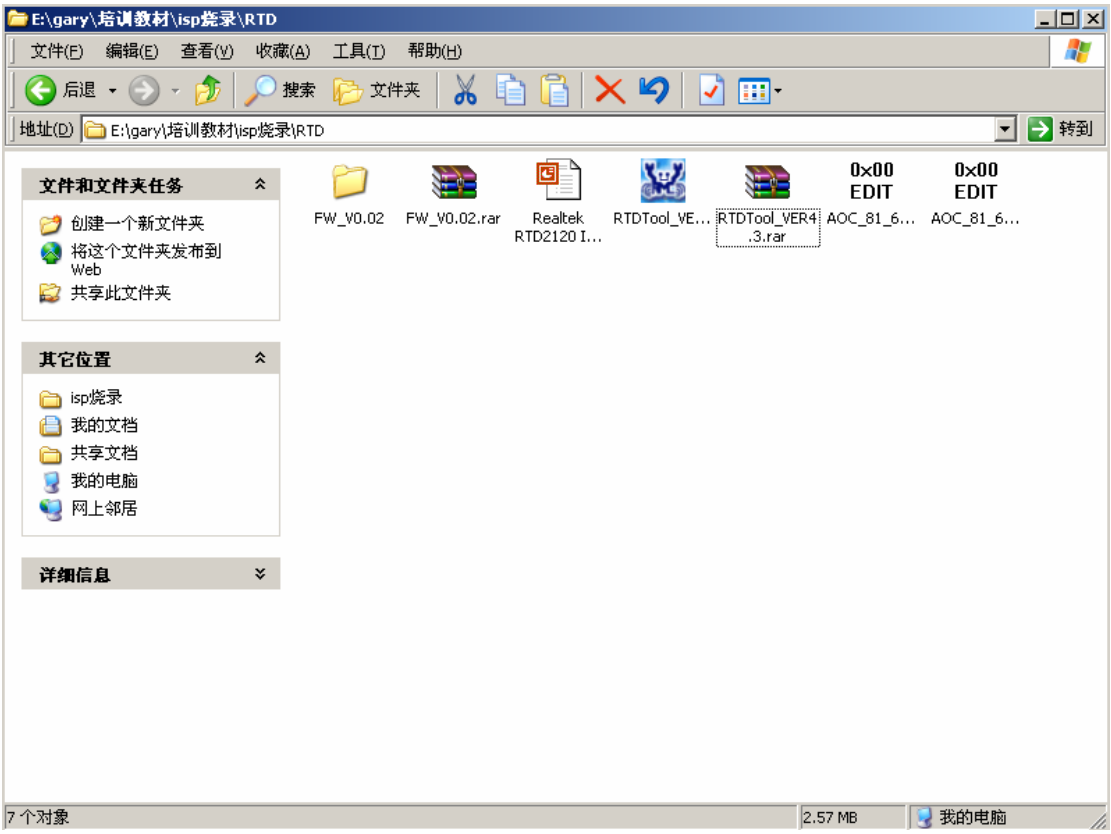
Note: here we will take a AOC monitor for example.

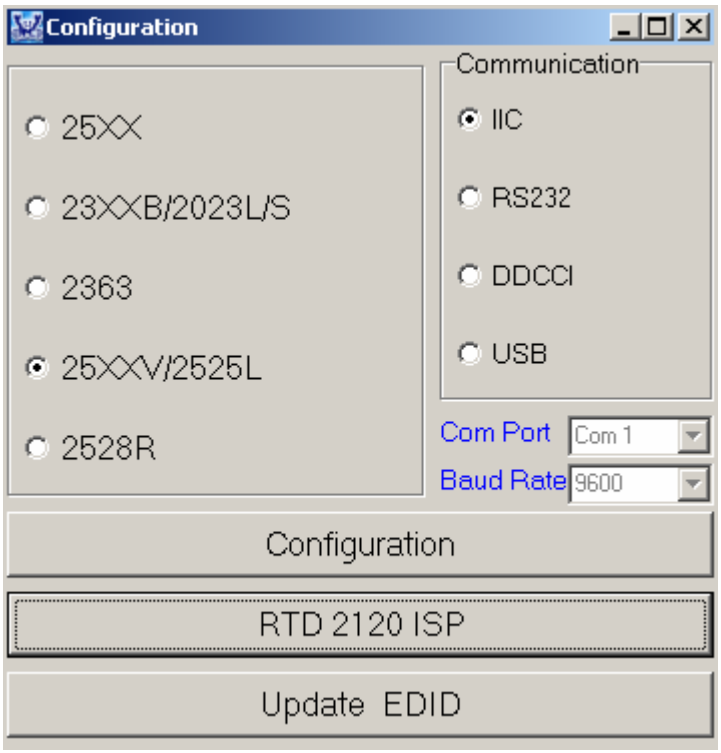
1) Connect the ISP board as follow:



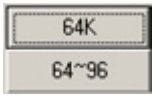
2) Double-click 

，running the program as follows:

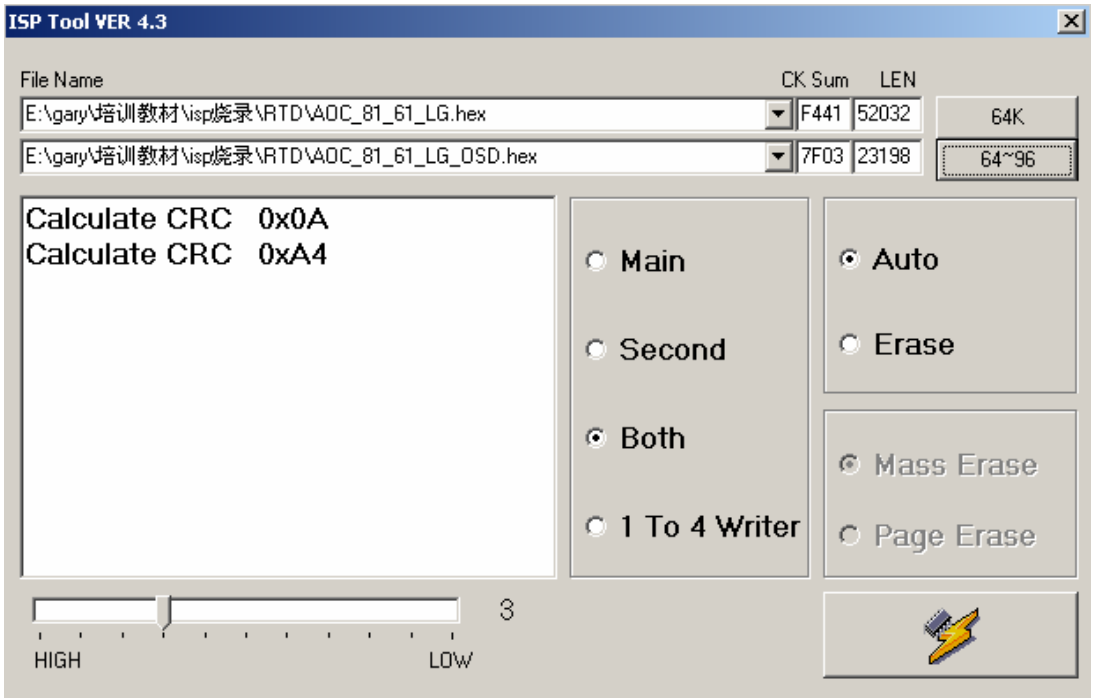




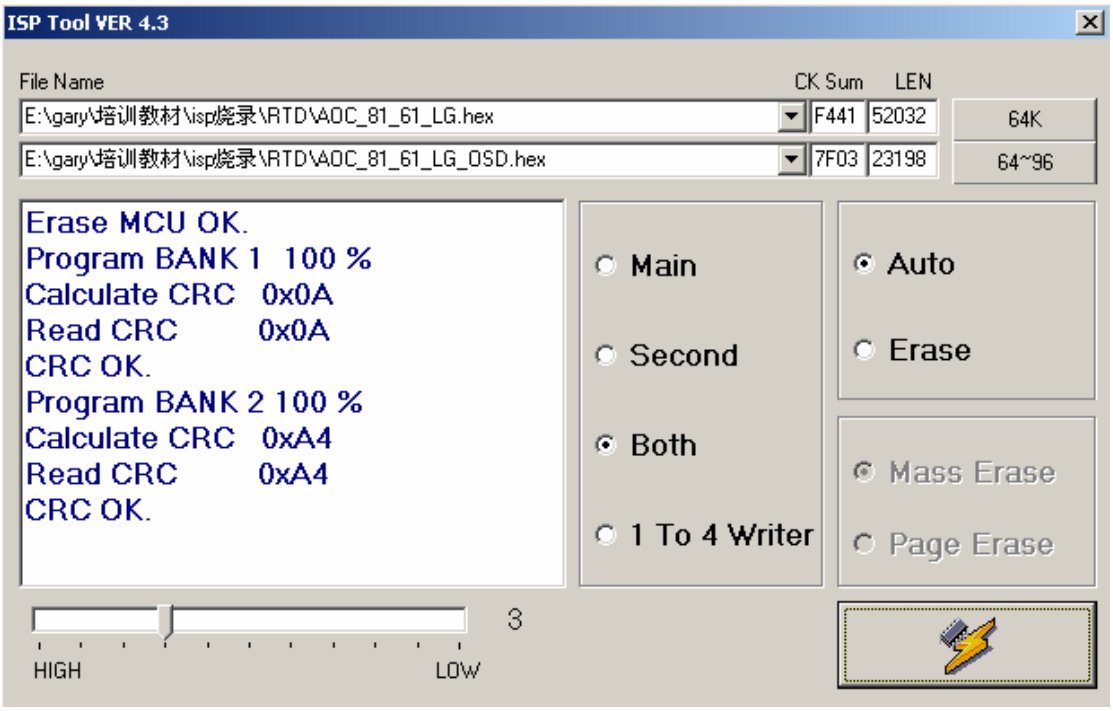
3) Click the 

icon, when the screen as shown below appears, please click the 

icon to load the software program. If there are two programs please select the option of “Both”, or select “Main”.



4) Until appears the follow Fig, writer completed.



5.2 Adjustment / Alignment Procedure

Adjusting the Picture

You can use the OSD (On Screen Display) menu to adjust all the settings on your monitor.

Press the MENU key to display the following main OSD menu.

There are four main OSD menus:

1. Display
2. Picture
3. Picture Advanced
4. System

Use the ◀ (left) or ▶ (right) keys to highlight a menu item, and press the ENTER key to enter the Menu item settings.

Display menu

1. Press the MENU key to display the main menu.

2. Press the ◀ (left) or ▶ (right) keys to select DISPLAY and then press the ENTER key to enter the menu.

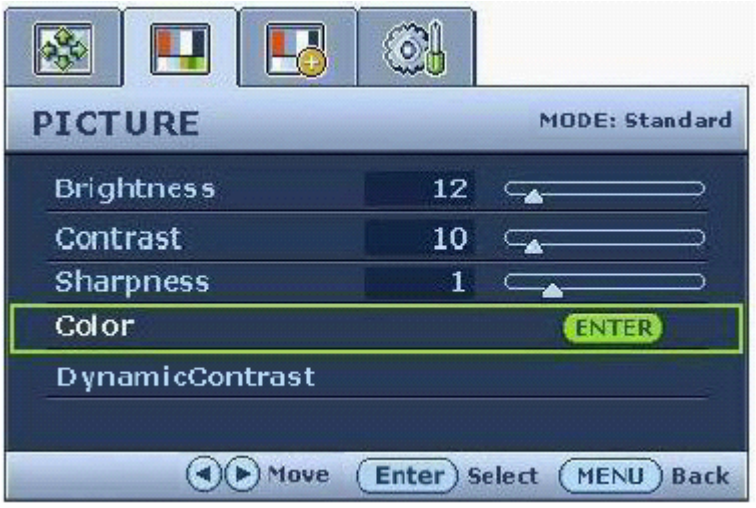
3. Press the ◀ (left) or ▶ (right) keys to move the highlight to a menu item and then press the ENTER key to select that item.

4. Press the ◀ (left) or ▶ (right) keys to make adjustments or selections.

5. To return to the previous menu, press the MENU button.

Item	Function	Operation	Range
Auto Adjustment	Optimizes and adjusts the screen settings automatically for you. The AUTO key is a ‘hot-key’ for this function.	Press the ENTER key to select this option and make adjustment.	
H. Position	Adjusts the horizontal position of the screen image.	Press the ◀ (left) or ▶ (right) keys to adjust the value.	0 to 100
V. Position	Adjusts the vertical position of the screen image.		0 to 100
Pixel Clock	Adjusts the pixel clock frequency timing to synchronize with the analog input video signal. Not applicable to a digital input signal.		0 to 100
Phase	Adjusts the pixel clock phase timing to synchronize with the analog input video signal. Not applicable to a digital input signal.		0 to 63

Picture menu



1. Press the MENU key to display the main menu.

2. Press the ◀ (left) or ▶ (right) keys to select PICTURE and then press the ENTER key to enter the menu.

3. Press the ◀ (left) or ▶ (right) keys to move the highlight to a menu item and then press the ENTER key to select that item.

4. Press the ◀ (left) or ▶ (right) keys to make adjustments or selections.

5. To return to the previous menu, press the MENU button.

Item	Function	Operation	Range
Brightness	Adjusts the balance between light and dark shades. The function is not available for use when Dynamic Contrast is on	Press the ▶ key to increase the brightness and press the ◀ key to decrease the brightness.	0 to 100
Contrast	Adjusts the degree of difference between darkness and lightness. The function is not available for use when Dynamic Contrast is on.	Press the ▶ key to increase the contrast and press the ◀ key to decrease the contrast.	0 to 100
Sharpness	Adjusts the clarity and visibility of the edges of the subjects in the image.	Press the ▶ key to improve the crispness of the display and press the ◀ key to have softness effect on the display.	1 to 5

<table>
<tr><td colspan="4">Color - Press ENTER to enter the Color menu.</td></tr>
<tr><td>Normal</td><td>Allows video and still photographs to be viewed with natural coloring. This is the factory default color.</td><td rowspan="3">Press the ◀ (left) or ▶ (right) keys to select this option.</td><td>0 to 100</td></tr>
<tr><td>Bluish</td><td>Applies a cool tint to the image and is factory pre-set to the PC industry standard white color.</td><td>0 to 63</td></tr>
<tr><td>Reddish</td><td>Applies a warm tint to the image and is factory pre-set to the news print standard white color.</td><td></td></tr>
<tr><td>User Mode</td><td>Tailors the image color tint. The blend of the Red, Green and Blue primary colors can be altered to change the color tint of the image. The default start setting is 50. Decreasing one or more of the colors will reduce their respective influence on the color tint of the image. e.g. if you reduce the Blue level the image will gradually take on a yellowish tint. If you reduce Green, the image will become a magenta tint.</td><td>Press the ◀ (left) or ▶ (right) keys and the ENTER key to select Red, Green, or Blue. Then use Press the ◀ (left) or ▶ (right) keys to make the color adjustments.</td><td>• Red
(0 to 100)
• Green
(0 to 100)
• Blue
(0 to 100)</td></tr>
<tr><td>Reset Color</td><td>Resets the User Mode custom color settings to the factory defaults.</td><td>Press the ◀ (left) or ▶ (right) keys to change the settings.</td><td>• YES
• NO</td></tr>
<tr><td colspan="4">Press MENU to leave the Color menu.</td></tr>
<tr><td>Dynamic Contrast</td><td>The function will increase the level of contrast to provide sharper and more detailed image quality. Activating Dynamic Contrast will disable Brightness and Contrast controls.</td><td>Press the ENTER key to select this option. Press the ◀ (left) or ▶ (right) keys to change the settings.</td><td>• ON
• OFF</td></tr>
</table>

Picture Advanced menu

1. Press the MENU key to display the main menu.

2. Press the ◀ (left) or ▶ (right) keys to select PICTURE ADVANCED and then press the ENTER key to enter the menu.

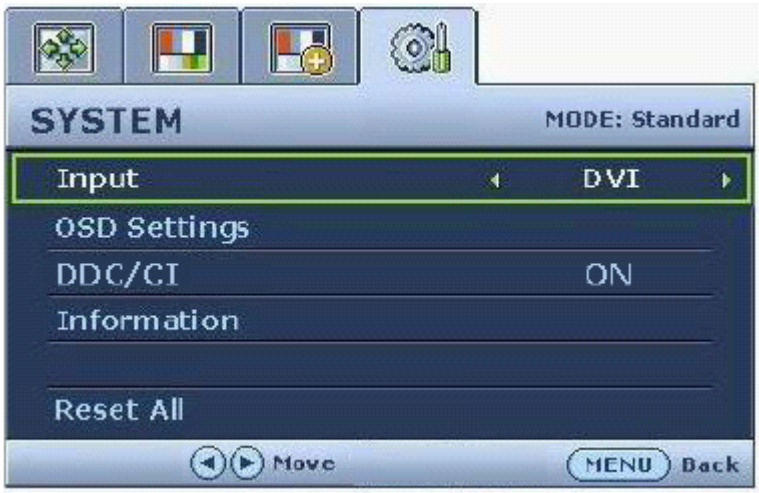
3. Press the ◀ (left) or ▶ (right) keys to move the highlight to a menu item and then press the ENTER key to select that item.

4. Press the ◀ (left) or ▶ (right) keys to make adjustments or selections.

5. To return to the previous menu, press the MENU button.

Item	Function	Operation	Range
Picture Mode	Selects a picture mode that best suits the type of images shown on the screen. • Standard - for basic PC application. • Movie - for viewing videos. • Dynamics - for viewing landscape-specific videos and playing games. • Photo - for viewing still images. • sRGB - for better color matching representation with the peripheral devices, such as printers, DSCs, etc.	Press the ◀ (left) or ▶ (right) keys to change the settings.	• ON • OFF
Display Mode	This feature is provided to allow aspect ratio’s other than 16:10 to be displayed without geometric distortion. • Full - Scales the input image to fill the screen. Ideal for 16:10 aspect images. • Aspect - The input image is displayed without geometric distortion filling as much of the display as possible. 16:9 images will fill the screen horizontally while 4:3 images will fill the screen vertically. • 1:1- Displays the input image in its native resolution without scaling. Display Mode is only available for wide-screen models, and "1:1" is specially available for 24’’ wide-screen models.	Press the ◀ (left) or ▶ (right) keys to change the settings.	• Full • Aspect • 1:1 (only for 24’’ wide-screen models.

System menu



1. Press the MENU key to display the main menu.

2. Press the ◀ (left) or ▶ (right) keys to select SYSTEM and then press the ENTER key to enter the menu.

3. Press the ◀ (left) or ▶ (right) keys to move the highlight to a menu item and then press the ENTER key to select that item.

4. Press the ◀ (left) or ▶ (right) keys to make adjustments or selections.

5. To return to the previous menu, press the MENU button.

Item	Function	Operation	Range
Input	Selects the D-sub (analog) or DVI (digital) input. Use this to change the input to that appropriate to your video cable connection type. Analog-only models do not have the Input function.	Press the ◀ (left) or ▶ (right) keys to change the settings.	• DVI • D-sub
OSD Settings - Press ENTER to enter the OSD Settings menu.			
Language	Sets the OSD menu Language.	Press the ◀ (left) or ▶ (right) keys to adjust the value. The language options displayed on your OSD may differ from those shown on the right, depending on the product supplied in your	• English • French • German • Italian • Spanish • Polish/ Japanese • Czech/ Traditional Chinese • Hungarian/ Simplified

		region.	Chinese • Serbo-Croatian • Romanian • Dutch • Russian • Swedish • Portuguese
H. Position	Adjusts the horizontal position of the OSD menu.	Press the ◀ (left) or ▶ (right) keys to change the settings.	0 to 100
V. Position	Adjusts the vertical position of the OSD menu.		0 to 100
Display Time	Adjusts the display the OSD menu.		• 5 Sec. • 10 Sec. • 15 Sec. • 20 Sec. • 25 Sec. • 30 Sec.
OSD Lock	Prevents all the monitor settings from being accidentally changed. When this function is activated, the OSD controls and hotkey operations will be disabled.	Press the ◀ (left) or ▶ (right) keys to change the settings. To unlock the OSD controls when the OSD is preset to be locked, press and hold the ’MENU' key for 15 seconds to enter the 'OSD Lock' option and make changes. Alternatively, you may use the ◀ (left) or ▶ (right) keys to select ’OFF’ in the 'OSD Lock' submenu from the ’OSD Settings’ menu, and all OSD controls will	• ON • OFF

		be accessible.	
Press MENU to leave the OSD Settings menu.			
DDC/CI*	Allows the monitor settings to be set through the software on the PC.	Press the ENTER key to select this option. Press the ◀ (left) or ▶ (right) keys to change the settings.	• ON • OFF
Information	Displays the current monitor property settings.	Press the ENTER key to select this option.	
Reset All	Resets all mode, color and geometry settings to the factory default values.	Press the ◀ (left) or ▶ (right) keys to change the settings.	• YES • NO

5.3 White-Balance, Luminance Adjustment

Approximately 30 minutes should be allowed for warm up before proceeding white balance adjustment.

Before started adjust white balance , please set the Chroma-7120 MEM Channel 3 to Reddish (5800K) color, MEM Channel 4 to Normal (6500K) color, MEM Channel 9 to Bluish (9300K) color , and MEM Channel 10 to sRGB color (our Reddish color parameter is x = 326 ±15, y = 342 ±15, Y≥200±20cd/m^2; Normal color parameter is x = 313±30, y = 329 ±20, Y≥220±20cd/m^2; Bluish color parameter is x = 283 ±30, y = 297 ±30, Y≥180±20cd/m^2 ; sRGB color parameter is x = 313 ±30, y = 329 ±30, Y≥200±20cd/m^2)

How to setting MEM channel you can reference to chroma 7120 user guide or simple use “ SC” key and “ NEXT” Key to modify xyY value and use “ID” key to modify the TEXT description Following is the procedure to do white-balance adjust .

2. Setting the color temp. you want

A. MEM.CHANNEL 3 (Reddish color):

Reddish color temp. parameter is x = 326 ±15, y = 342 ±15, Y≥200±20cd/m^2

B. MEM.CHANNEL 4 (Normal color):

Normal color temp. parameter is x = 313±30, y = 329 ±20, Y≥220±20cd/m^2

C. MEM.CHANNEL 9 (Bluish color):

Bluish color temp. parameter is x = 283 ±30, y = 297 ±30, Y≥180±20cd/m^2

D. MEM.CHANNEL 10 (sRGB color):

sRGB color temp. parameter is x = 313 ±30, y = 329 ±30, Y≥200±20cd/m^2

3. Into Factory mode of BENQ G900WA:

Turn off the monitor, keep pressing the ENTER button, and turn on the monitor , then when we press the AUTO button, the factory OSD will be at the left top of the panel.

4. Bias adjustment:

Set the **Contrast** to 50; Adjust the **Brightness** to 100.

5. Gain adjustment:

Move cursor to “-F-” and press MENU key

A. Adjust Reddish (5800K) color-temperature

1. Switch the chroma-7120 to **RGB-Mode** (with press “MODE” button)
2. Switch the MEM. channel to Channel 3 (with up or down arrow on chroma 7120)
3. The LCD-indicator on chroma 7120 will show x = 326 ±15, y = 342 ±15, Y≥200±20cd/m^2
4. Adjust the RED of color3 on factory window until chroma 7120 indicator reached the value R=100
5. Adjust the GREEN of color3 on factory window until chroma 7120 indicator reachedthe value G=100
6. Adjust the BLUE of color3 on factory window until chroma 7120 indicator reached the value B=100
7. Repeat above procedure (item 4,5,6) until chroma 7120 RGB value meet the tolerance =100±2

B. Adjust Normal (6500K) color-temperature

1. Switch the chroma-7120 to **RGB-Mode** (with press “MODE” button)
2. Switch the MEM. channel to Channel 4(with up or down arrow on chroma 7120)
3. The LCD-indicator on chroma 7120 will show x = 313±30, y = 329 ±20, Y≥220±20cd/m^2
4. Adjust the RED of color3 on factory window until chroma 7120 indicator reached the value R=100

5. Adjust the GREEN of color3 on factory window until chroma 7120 indicator reachedthe value G=100
6. Adjust the BLUE of color3 on factory window until chroma 7120 indicator reached the value B=100
7. Repeat above procedure (item 4,5,6) until chroma 7120 RGB value meet the tolerance =100±2

C. Adjust Bluish (9300K) color-temperature

1. Switch the Chroma-7120 to **RGB-Mode** (with press “MODE” button)
2. Switch the MEM. Channel to Channel 9 (with up or down arrow on chroma 7120)
3. The LCD-indicator on chroma 7120 will show x = 283 ±30, y = 297 ±30, Y≥180±20cd/m^2
4. Adjust the RED of color1 on factory window until chroma 7120 indicator reached the value R=100
5. Adjust the GREEN of color1 on factory window until chroma 7120 indicator reached the value G=100
6. Adjust the BLUE of color1 on factory window until chroma 7120 indicator reached the value B=100
7. Repeat above procedure (item 4,5,6) until chroma 7120 RGB value meet the tolerance =100±2

D. Adjust sRGB color-temperature

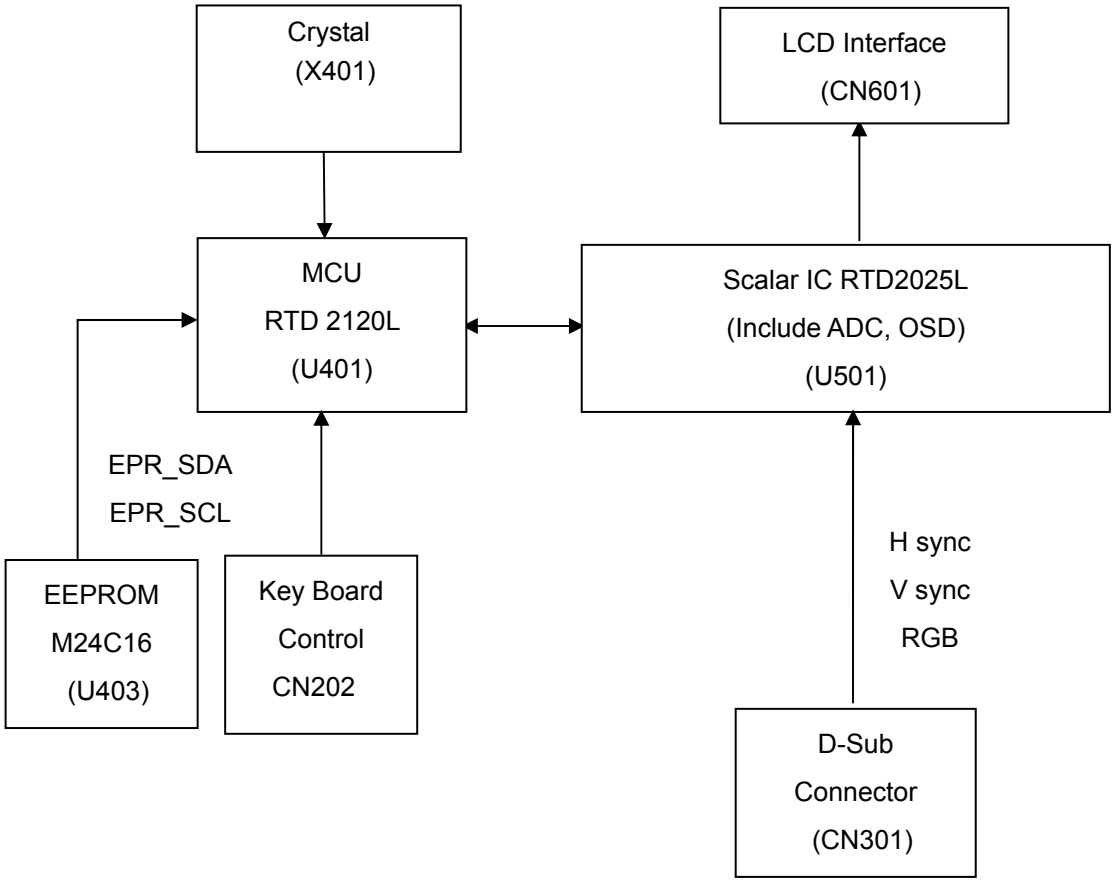
1. Switch the chroma-7120 to **RGB-Mode** (with press “MODE” button)
2. Switch the MEM. channel to Channel 10 (with up or down arrow on chroma 7120)
3. The LCD-indicator on chroma 7120 will show x = 313 ±30, y = 329 ±30, Y≥200±20cd/m^2
4. Adjust the RED of color3 on factory window until chroma 7120 indicator reached the value R=100
5. Adjust the GREEN of color3 on factory window until chroma 7120 indicator reachedthe value G=100
6. Adjust the BLUE of color3 on factory window until chroma 7120 indicator reached the value B=100
7. Repeat above procedure (item 4,5,6) until chroma 7120 RGB value meet the tolerance =100±2

E. Turn the Power-button off to quit from factory mode.

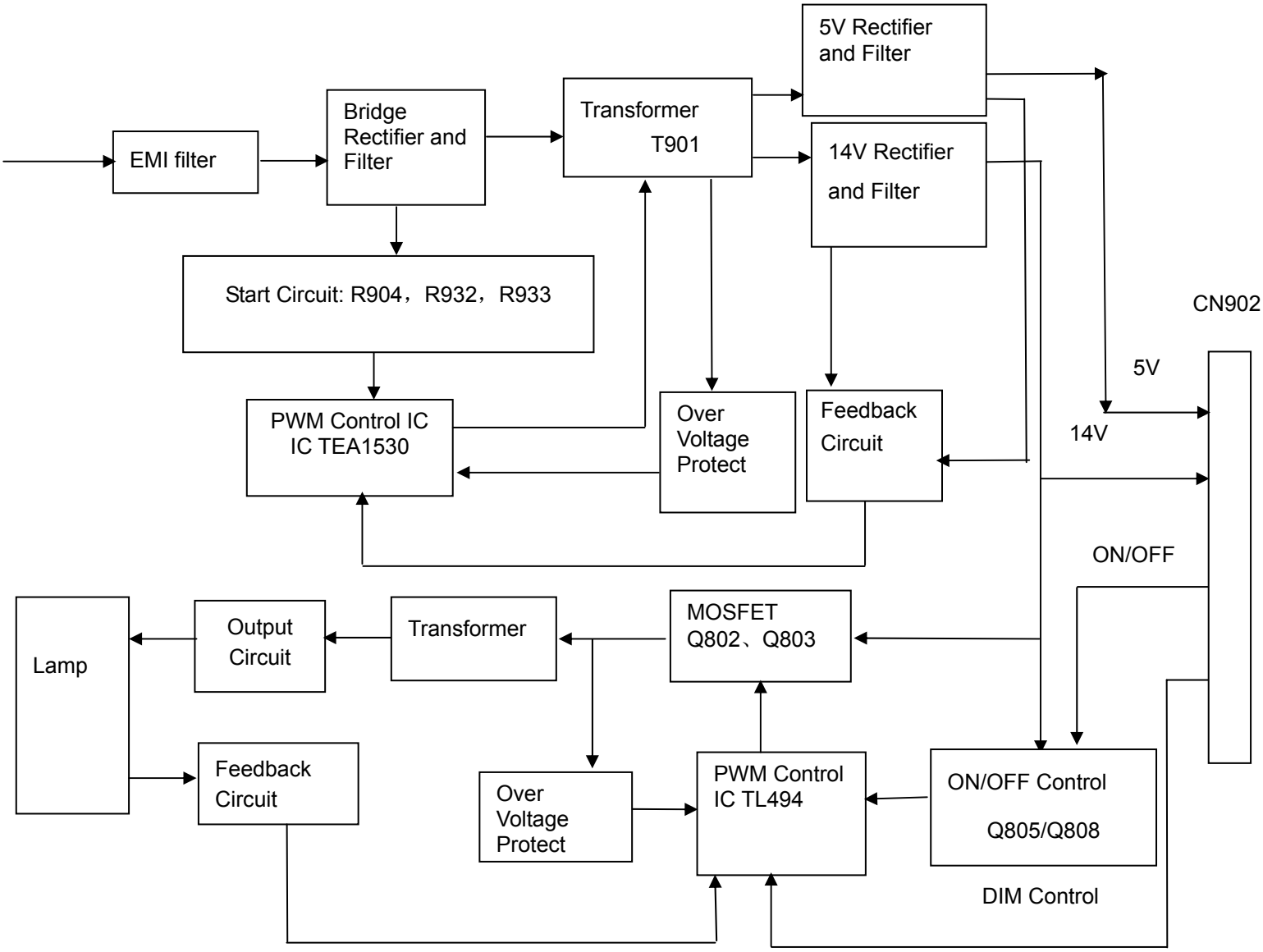
6 Circuit Board and Standard Parts Replacement

6.1 Electrical Block Diagram

Main Board



Inverter/Power Board



6.2 Troubleshooting Guide

Equipments and Tools Requirement

1. Voltmeter.
2. Oscilloscope.
3. Pattern Generator.
4. DDC Tool with and Compatible Computer.
5. Alignment Tool.
6. LCD Color Analyzer.
7. Service Manual.
8. User Manual.

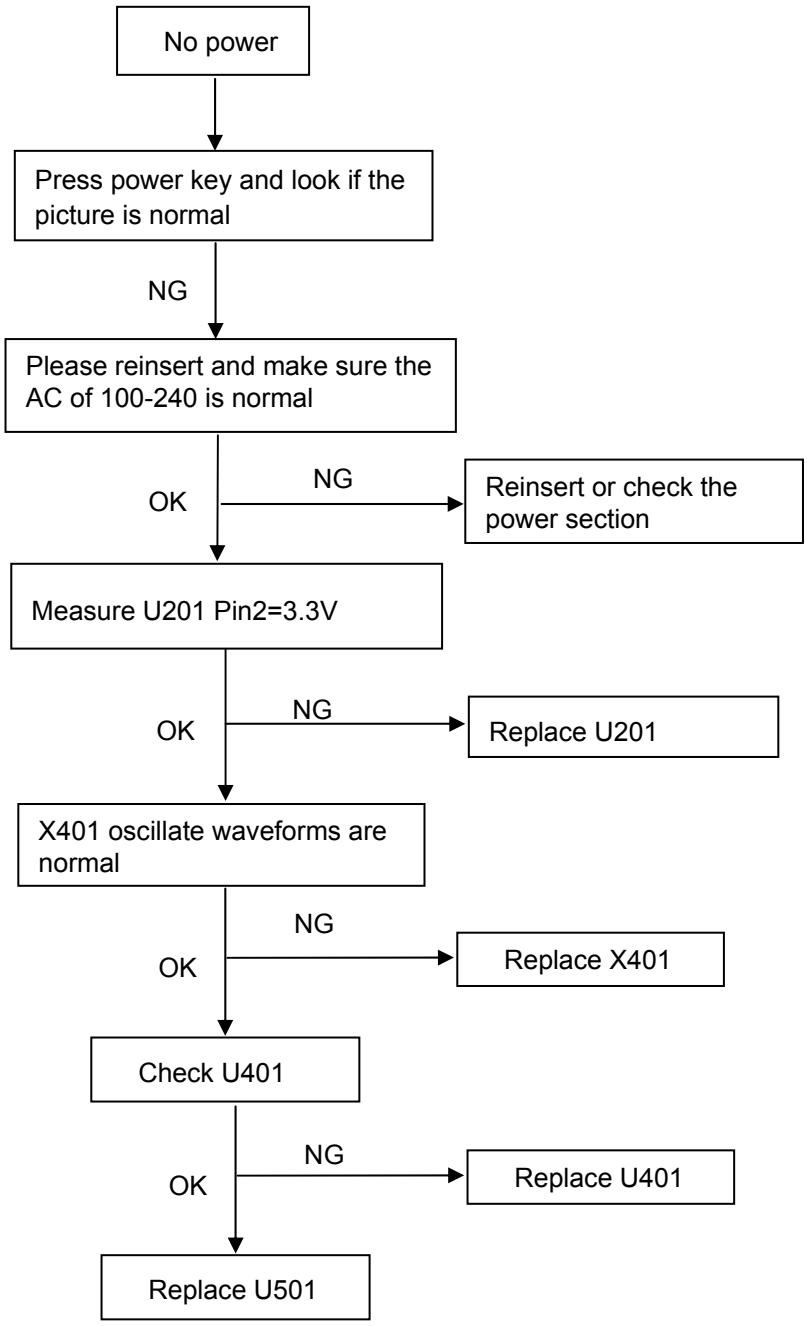
If the monitor fails to operate correctly, please follow the steps below for a possible solution.

1. Perform the adjustments described in OPERATING THE MONITOR, depending on the problem you have. If the monitor does not get a picture, skip to 2.
2. Consult the following items if you cannot find an appropriate adjustment item in OPERATING THE MONITOR or if the problem persists.
3. If you are experiencing a problem which is not described below or you cannot correct the problem, discontinue using the monitor and contact your dealer or iiyama service center for further assistance.

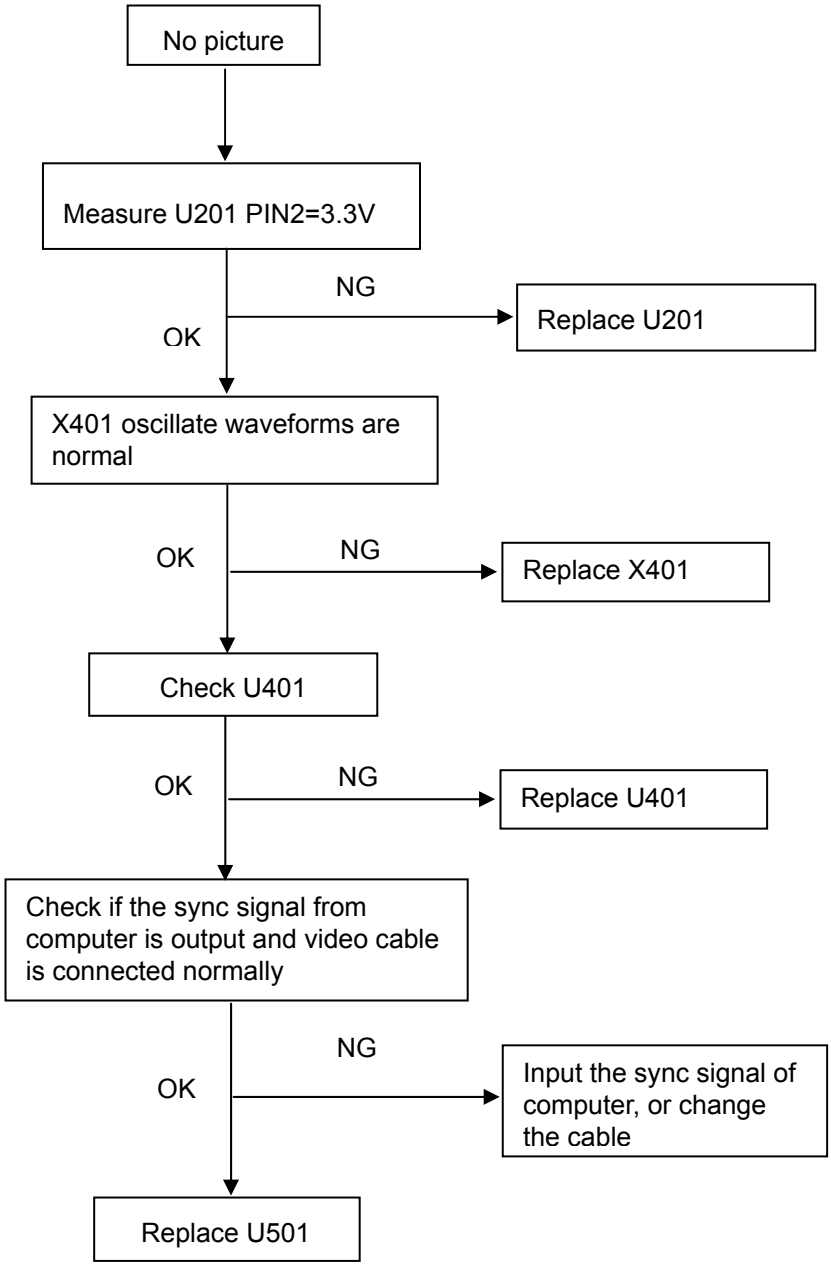
Problem	Check
① The picture does not appear.	
(Power indicator does not light up.)	☐ The Power Cable is firmly seated in the socket. ☐ The Power Switch is turned ON. ☐ The AC socket is live. Please check with another piece of equipment.
(Power indicator is green/blue.)	☐ If the blank screen saver is in active mode, touch the keyboard or the mouse. ☐ Increase the Contrast and/or Brightness. ☐ The computer is ON. ☐ The Signal Cable is properly connected. ☐ The signal timing of the computer is within the specification of the monitor.
(Power indicator is orange.)	☐ If the monitor is in power management mode, touch the keyboard or the mouse. ☐ The computer is ON. ☐ The Signal Cable is properly connected. ☐ The signal timing of the computer is within the specification of the monitor.
② The screen is not synchronized.	☐ The Signal Cable is properly connected. ☐ The signal timing of the computer is within the specification of the monitor. ☐ The video output level of the computer is within the specification of the monitor.
③ The screen position is not in the center.	☐ The signal timing of the computer is within the specification of the monitor.
④ The screen is too bright or too dark.	☐ The video output level of the computer is within the specification of the monitor.
⑤ The screen is shaking.	☐ The power voltage is within the specification of the monitor. ☐ The signal timing of the computer is within the specification of the monitor.

Main Board

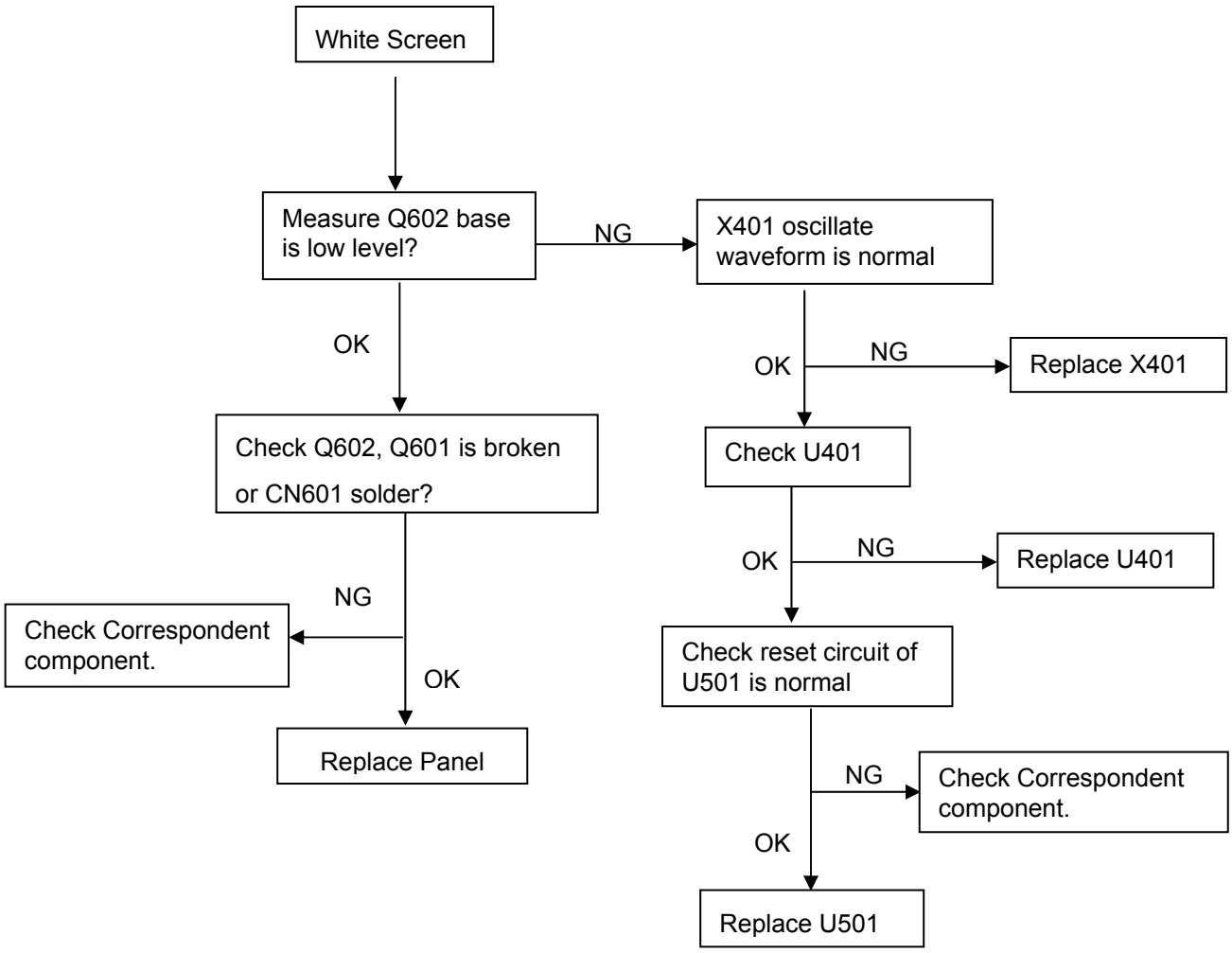
(1) No Power



(2) No picture

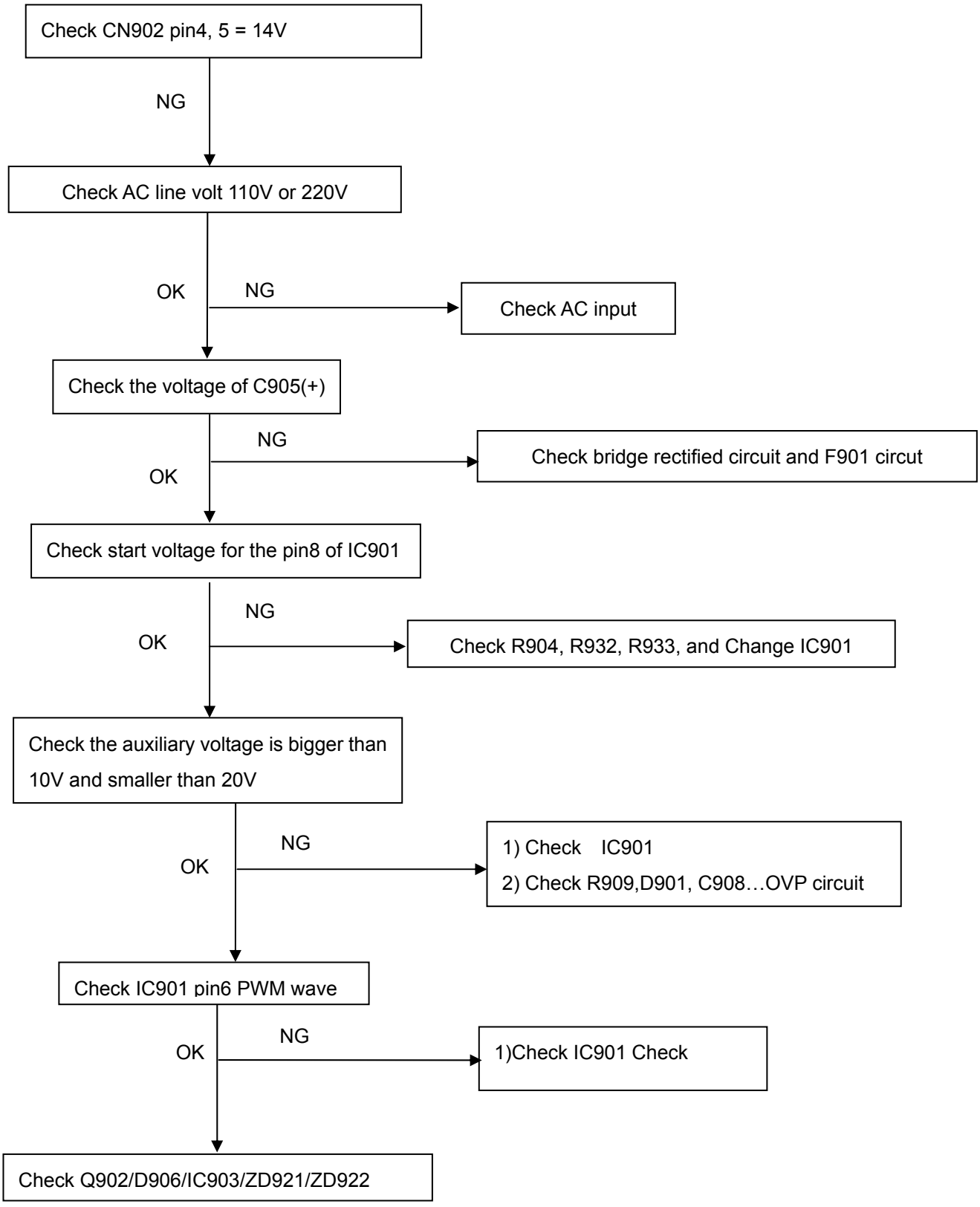

No picture
Measure U201 PIN2=3.3V
NG
Replace U201
OK
X401 oscillate waveforms are normal
OK
NG
Replace X401
Check U401
OK
NG
Replace U401
Check if the sync signal from computer is output and video cable is connected normally
NG
Input the sync signal of computer, or change the cable
OK
Replace U501

(3) White screen

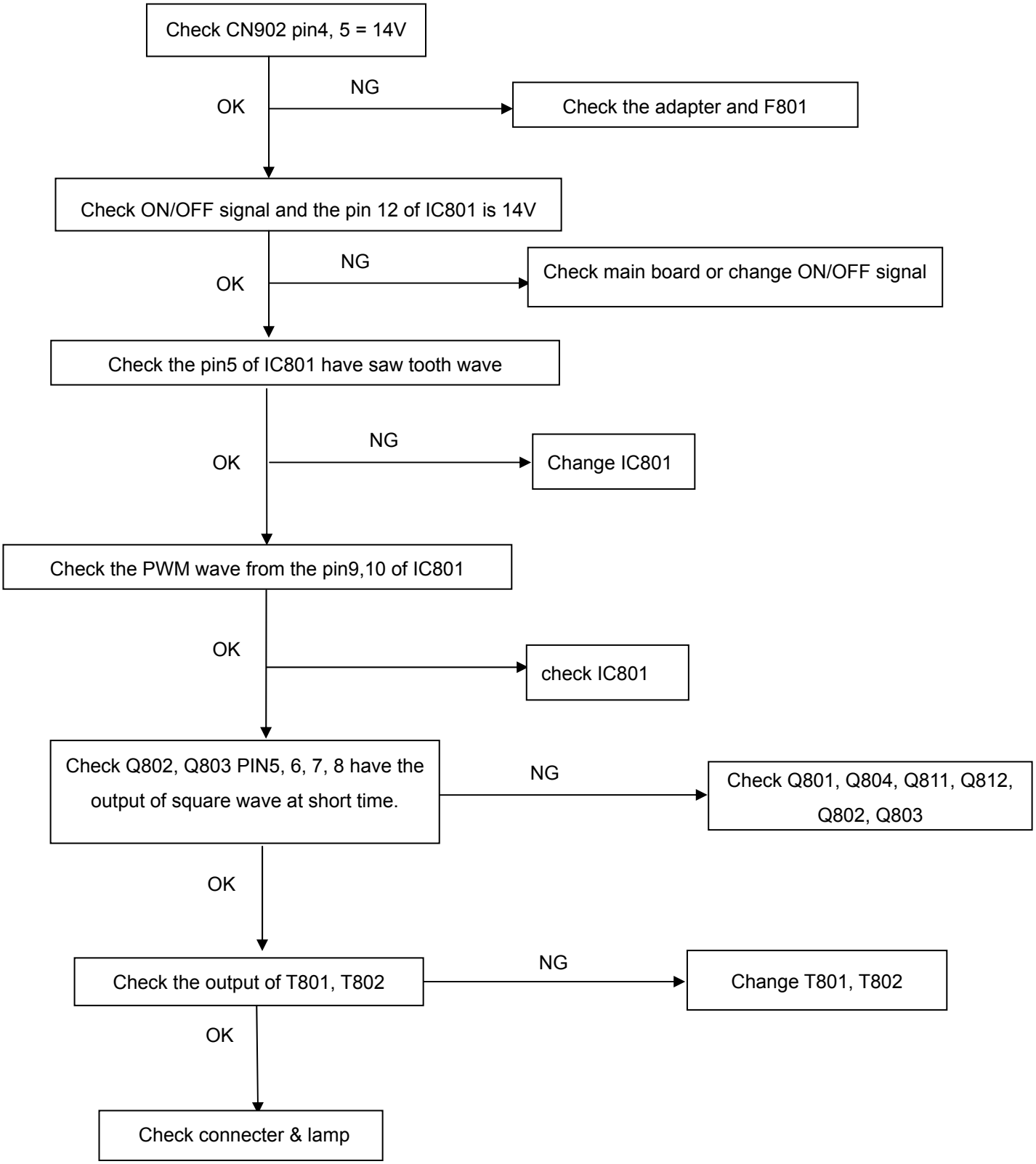


Power/Inverter Board

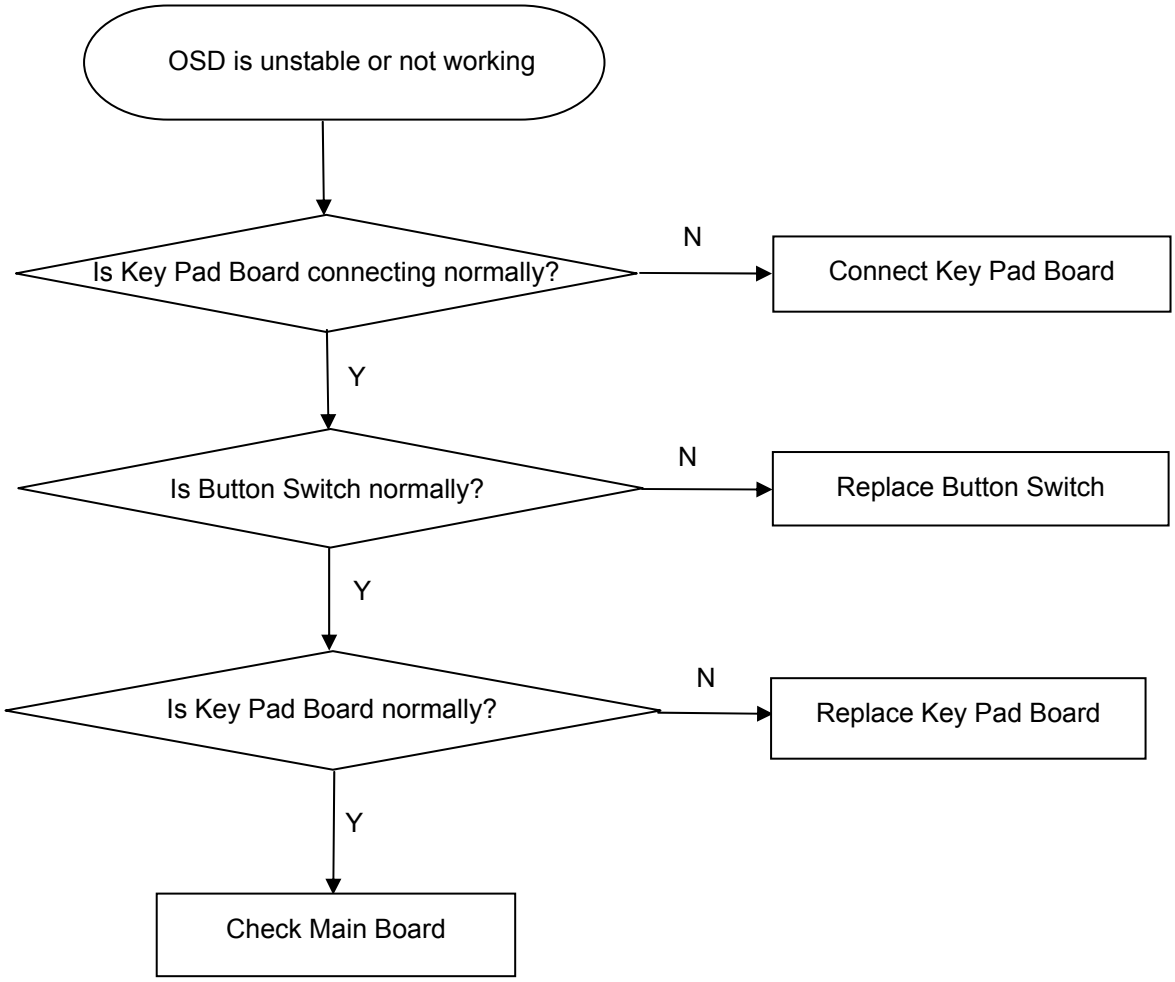
No power



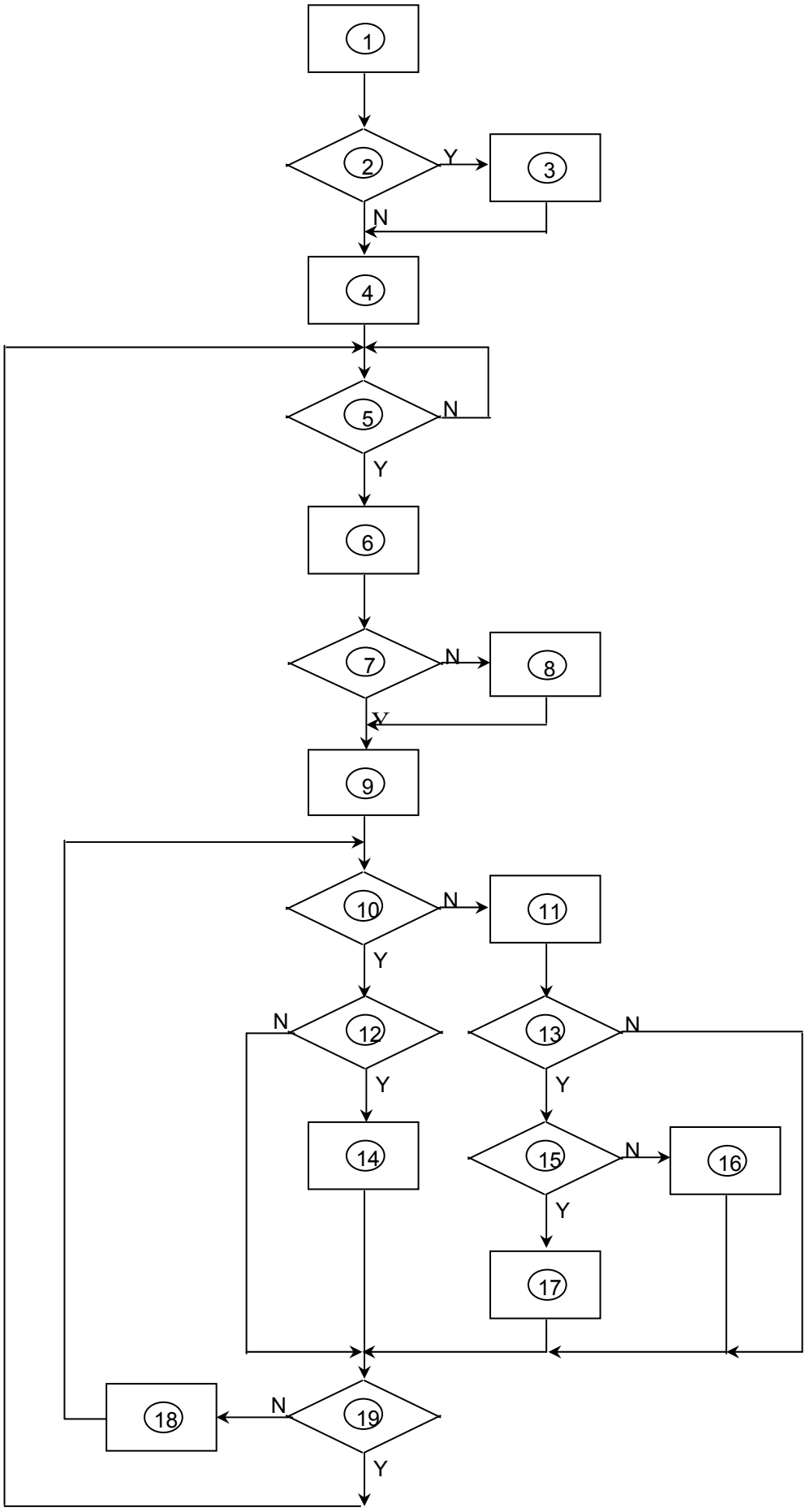
W / LED, No Backlight



Keypad Board



6.3 Circuit operation theory



1) MCU initializes.
2) Is the EPROM blank?
3) Program the EPROM by default values.
4) Get the PWM value of brightness from EPROM.
5) Is the power key pressed?
6) Clear all global flags.
7) Are the AUTO and SELECT keys pressed?
8) Enter factory mode.
9) Save the power key status into EPROM.
   Turn on the LED and set it to green color.
   Scalar initializes.
10) In standby mode?
11) Update the lifetime of back light.
12) Check the analog port, are there any signals coming?
13) Does the scalar send out an interrupt request?
14) Wake up the scalar.
15) Are there any signals coming from analog port?
16) Display "No connection Check Signal Cable" message. And go into standby mode after the message disappears.
17) Program the scalar to be able to show the coming mode.
18) Process the OSD display.
19) Read the keyboard. Is the power key pressed?

6.4 BOM List

T97MRDDBTWBQNN

Location	TPV Part No.	Description
	007G 7 L106	COMPOUND PALLET
	007G 7 L107	COMPOUND PALLET
	044G6002120106	PAPER BOARD
	044G600270010A	PAPER BOARD
	044G9003214	CORNER PAPER
	050G 600 2	HANDLE1
	050G 600 3	HANDLE2
	052G 1186	SMALL TAPE
	089G 728CAA 2G	SIGNAL CABLE
	089G404A18N YH	POWER CABLE
	095G8018 3504	LVDS CABLE
	0M1G 130 5 47 CR3	SCREW
	0M1G 130 5120	SCREW
	0M1G1730 6120	SCREW
	0M1G1730 6120	SCREW
	705GQ734328	19" LCD BEZEL ASS'Y
	A33G0248ADC 1L0100	KEY PAD 1
	A33G0248ADC 2L0100	KEY PAD 2
	A33G0249ADCA1C0100	POWER BUTTON
	A33G0250ADQ 1C0100	LENS
	A34G0450ADDA1B0130	BEZEL(L19W-7BENQ)
	705GQ734329	19" LCD REAR COVER ASS'Y
	A33G0258ADPB1L0100	LOGO COVER
	A34G0451ADP 2B0130	REAR COVER(L19W-7BENQ)
	705GQ734330	19" LCD STAND-BASE ASS'Y
	0M1G1740 10120	SCREW
	0Q1G1740 10120	SCREW
	A33G0247ADP 1L0100	STAND FRONT
	A33G0251ADP 1L0100	CABLE CLIP
	A34G0452ADP 1B0133	BASE
	A34G0453ADP 1B0100	STAND BACK
	A37G0051 1	HINGE
	750GLM90A1711N	PANEL M190A1-L07 C2(C1) TW CMO
	A15G0205 BC 2	MAINFRAME
	AM1G1740 10 47 CR3	SCREW M3X6
	CBPC7MRDBQQ	MAIN BOARD

CN202	033G3802 6	WAFER
CN201	033G3802 9	WAFER 9P RIGHT ANELE PITCH
CN601	033G8027 24 H	CONN W TO B12P*2 P*2.0 4505-2
	040G 457624 1B	LABEL-CPU
	040G 45762412B	CBPC LABEL
R507	061G152M339 64	CHIPR 3.3 OHM +-5% 2W
C405	067G 3151007KV	ELCAP 10UF M 50V 105℃ KINGNICHI
C202	067G 3151014KV	EC 105℃ CAP 100UF M 25V
C203	067G 3151014KV	EC 105℃ CAP 100UF M 25V
C505	067G 3152207KV	ELCAP 22UF M 50V 105℃ KING NICHI
C604	067G 3154704KV	ELCAP 47UF M 25V 105℃ KINGNICHI
CN301	088G 35315F H	D-SUB 15PIN
X401	093G 22 45 H	24MHZ/30PF/49US
U402	056G 158501	AZ431AN-A-E1
U501	056G 562701	SCALER IC RTD2025L QFN-48
U201	056G 585 4A	AP1117E33LA
U401	056G1125701 X(WBQRWR9MRQ1)	IC MCU RTD2120L-LF REALTEK
U403	056G113356A	24LC16B/SNG SOIC-8PIN
Q401	057G 417 4	PMBS3904/PHILIPS-SMT(04)
Q202	057G 417 4	PMBS3904/PHILIPS-SMT(04)
Q204	057G 417 6	PMBS3906/PHILIPS-SMT(06)
Q205	057G 417 6	PMBS3906/PHILIPS-SMT(06)
Q602	057G 417 6	PMBS3906/PHILIPS-SMT(06)
Q501	057G 417 22 T	TRA KN2907AS -60V/-0.6A SOT-23
Q502	057G 417 22 T	TRA KN2907AS -60V/-0.6A SOT-23
Q601	057G 763 1	A03401 SOT23 BY AOS(A1)
R429	061G0402000	RST CHIPR 0 OHM +-5% 1/16W
R302	061G0402000	RST CHIPR 0 OHM +-5% 1/16W
R408	061G0402101	RST CHIPR 100 OHM +-5% 1/16W
R435	061G0402101	RST CHIPR 100 OHM +-5% 1/16W
R434	061G0402101	RST CHIPR 100 OHM +-5% 1/16W
R433	061G0402101	RST CHIPR 100 OHM +-5% 1/16W
R432	061G0402101	RST CHIPR 100 OHM +-5% 1/16W
R430	061G0402101	RST CHIPR 100 OHM +-5% 1/16W
R422	061G0402101	RST CHIPR 100 OHM +-5% 1/16W
R420	061G0402101	RST CHIPR 100 OHM +-5% 1/16W
R311	061G0402101	RST CHIPR 100 OHM +-5% 1/16W
R303	061G0402101	RST CHIPR 100 OHM +-5% 1/16W
R301	061G0402101	RST CHIPR 100 OHM +-5% 1/16W

R409	061G0402101	RST CHIPR 100 OHM +-5% 1/16W
R410	061G0402101	RST CHIPR 100 OHM +-5% 1/16W
R454	061G0402102	RST CHIPR 1 KOHM +-5% 1/16W
R453	061G0402102	RST CHIPR 1 KOHM +-5% 1/16W
R424	061G0402102	RST CHIPR 1 KOHM +-5% 1/16W
R423	061G0402102	RST CHIPR 1 KOHM +-5% 1/16W
R402	061G0402102	RST CHIPR 1 KOHM +-5% 1/16W
R407	061G0402103	RST CHIPR 10 KOHM +-5% 1/16W
R406	061G0402103	RST CHIPR 10 KOHM +-5% 1/16W
R405	061G0402103	RST CHIPR 10 KOHM +-5% 1/16W
R601	061G0402103	RST CHIPR 10 KOHM +-5% 1/16W
R436	061G0402103	RST CHIPR 10 KOHM +-5% 1/16W
R425	061G0402103	RST CHIPR 10 KOHM +-5% 1/16W
R416	061G0402103	RST CHIPR 10 KOHM +-5% 1/16W
R404	061G0402103	RST CHIPR 10 KOHM +-5% 1/16W
R213	061G0402103	RST CHIPR 10 KOHM +-5% 1/16W
R210	061G0402103	RST CHIPR 10 KOHM +-5% 1/16W
R201	061G0402201	RST CHIP 200R 1/16W 5%
R426	061G0402220	RST CHIPR 22 OHM +-5% 1/16W
R428	061G0402220	RST CHIPR 22 OHM +-5% 1/16W
R305	061G0402222	RST CHIPR 2.2 KOHM +-5% 1/16W
R304	061G0402222	RST CHIPR 2.2 KOHM +-5% 1/16W
R306	061G0402361	RST CHIP 360R 1/16W 5%
R309	061G0402361	RST CHIP 360R 1/16W 5%
R308	061G0402361	RST CHIP 360R 1/16W 5%
R315	061G0402361	RST CHIP 360R 1/16W 5%
R313	061G0402361	RST CHIP 360R 1/16W 5%
R312	061G0402361	RST CHIP 360R 1/16W 5%
R208	061G0402391	RST CHIPR 390 OHM +-5% 1/16W
R401	061G0402392	RST CHIP 3.9K 1/16W 5%
R403	061G0402392	RST CHIP 3.9K 1/16W 5%
R437	061G0402392	RST CHIP 3.9K 1/16W 5%
R438	061G0402392	RST CHIP 3.9K 1/16W 5%
R207	061G0402471	RST CHIPR 470 OHM +-5% 1/16W
R202	061G0402472	RST CHIPR 4.7 KOHM +-5% 1/16W
R411	061G0402472	RST CHIPR 4.7 KOHM +-5% 1/16W
R412	061G0402472	RST CHIPR 4.7 KOHM +-5% 1/16W
R451	061G0402472	RST CHIPR 4.7 KOHM +-5% 1/16W
R605	061G0402472	RST CHIPR 4.7 KOHM +-5% 1/16W
R413	061G0402472	RST CHIPR 4.7 KOHM +-5% 1/16W

R414	061G0402472	RST CHIPR 4.7 KOHM +-5% 1/16W
R604	061G0402473	RST CHIPR 47 KOHM +-5% 1/16W
R415	061G0402682	RST CHIP 6K8 1/16W 5%
R431	061G0402682	RST CHIP 6K8 1/16W 5%
R439	061G0402682	RST CHIP 6K8 1/16W 5%
R307	061G0402750	RST CHIPR 75 OHM +-5% 1/16W
R310	061G0402750	RST CHIPR 75 OHM +-5% 1/16W
R314	061G0402750	RST CHIPR 75 OHM +-5% 1/16W
R602	061G0805331	RST CHIPR 330 OHM +-5% 1/8W
C401	065G0402100 31	CAP 0402 10PF J 50V NPO
C411	065G0402100 31	CAP 0402 10PF J 50V NPO
C602	065G0402103 22	CHIP 0.01UF 25V X7R
C201	065G0402104 15	MLCC 0402 0.1UF K 16V X5R
C204	065G0402104 15	MLCC 0402 0.1UF K 16V X5R
C205	065G0402104 15	MLCC 0402 0.1UF K 16V X5R
C206	065G0402104 15	MLCC 0402 0.1UF K 16V X5R
C209	065G0402104 15	MLCC 0402 0.1UF K 16V X5R
C210	065G0402104 15	MLCC 0402 0.1UF K 16V X5R
C315	065G0402104 15	MLCC 0402 0.1UF K 16V X5R
C403	065G0402104 15	MLCC 0402 0.1UF K 16V X5R
C406	065G0402104 15	MLCC 0402 0.1UF K 16V X5R
C410	065G0402104 15	MLCC 0402 0.1UF K 16V X5R
C501	065G0402104 15	MLCC 0402 0.1UF K 16V X5R
C503	065G0402104 15	MLCC 0402 0.1UF K 16V X5R
C506	065G0402104 15	MLCC 0402 0.1UF K 16V X5R
C507	065G0402104 15	MLCC 0402 0.1UF K 16V X5R
C603	065G0402104 15	MLCC 0402 0.1UF K 16V X5R
C404	065G0402104 15	MLCC 0402 0.1UF K 16V X5R
C412	065G0402105 A5	CAP 0402 1UF K 10V X5R
C402	065G0402105 A5	CAP 0402 1UF K 10V X5R
C303	065G0402220 31	CHIP 22PF 50V NPO
C302	065G0402220 31	CHIP 22PF 50V NPO
C311	065G0402473 12	CHIP 0.047UF 16V X7R
C309	065G0402473 12	CHIP 0.047UF 16V X7R
C307	065G0402473 12	CHIP 0.047UF 16V X7R
C306	065G0402473 12	CHIP 0.047UF 16V X7R
C304	065G0402473 12	CHIP 0.047UF 16V X7R
C301	065G0402473 12	CHIP 0.047UF 16V X7R
C305	065G0402509 31	CHIP 5PF 50V NPO
C308	065G0402509 31	CHIP 5PF 50V NPO

C310	065G0402509 31	CHIP 5PF 50V NPO
FB201	071G 56K121 M	CHIP BEAD
FB502	071G 56K121 M	CHIP BEAD
FB503	071G 56K121 M	CHIP BEAD
FB601	071G 56K121 M	CHIP BEAD
FB301	071G 59K190 B	19 OHM BEAD
FB302	071G 59K190 B	19 OHM BEAD
FB303	071G 59K190 B	19 OHM BEAD
D301	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D302	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D303	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D402	093G 64 42 PP	BAV70 SOT-23
ZD301	093G 39S 34 T	UDZS5.6B
ZD302	093G 39S 34 T	UDZS5.6B
ZD303	093G 39S 34 T	UDZS5.6B
ZD304	093G 39S 34 T	UDZS5.6B
ZD305	093G 39S 34 T	UDZS5.6B
ZD307	093G 39S 34 T	UDZS5.6B
	715G2498 1 AO	MAIN BOARD PCB
	KEPC7QB4	KEY BOARD
SW004	077G 602 1 CJ	TACT SWITCH
SW005	077G 602 1 CJ	TACT SWITCH
SW006	077G 602 1 CJ	TACT SWITCH
SW001	077G 602 1 CJ	TACT SWITCH
SW002	077G 602 1 CJ	TACT SWITCH
SW003	077G 603 3 FD	TACT SWITCH SFKQLA2520
LED001	081G 10 12 KB	LED 5MM SPUER BRIGHT YELLOW/GREEN
GND1	095G 900690 D	WIRE HARNESS 100MM
CN001	095G8014 6D660	HARNESS 6P-6P 160MM
R006	061G0603180 1F	RST CHIPR 1.8 KOHM +-1% 1/10W
R004	061G0603180 1F	RST CHIPR 1.8 KOHM +-1% 1/10W
R003	061G0603180 1F	RST CHIPR 1.8 KOHM +-1% 1/10W
R007	061G0603300 1F	RST CHIPR 3 KOHM +-1% 1/10W
R005	061G0603300 1F	RST CHIPR 3 KOHM +-1% 1/10W
R002	061G0603300 1F	RST CHIPR 3 KOHM +-1% 1/10W
JR001	061G0805000	0 OHM 1/10W
C010	065G0603104 32	CHIP 0.1UF 50V X7R
C006	065G0603104 32	CHIP 0.1UF 50V X7R
C011	065G0603104 32	CHIP 0.1UF 50V X7R
C009	065G0603104 32	CHIP 0.1UF 50V X7R

C008	065G0603104 32	CHIP 0.1UF 50V X7R
C007	065G0603104 32	CHIP 0.1UF 50V X7R
	715G2695 1	KEY BOARD PCB
	PWPC942HU2P	POWER BOARD
CN801	033G8021 2E F	WAFER
CN802	033G8021 2E F	WAFER
CN803	033G8021 2E F	WAFER
CN804	033G8021 2E F	WAFER
	040G 45762420A	LABEL 25X6MM
IC903	056G 139 3A	PC123Y22FZOF
NR901	061G 58080 WT	8 OHM NCT
R908	061G152M104 64	100KOHM 5% 2W
R914	061G152M228 64	0.22 OHM 5% 2W
C903	063G 10747410V	0.47UF 275VAC ARCO
C801	065G 3J1006ET	10PF,J,3KV,SL
C811	065G 3J1006ET	10PF,J,3KV,SL
C902	065G305M1022BP	Y2 1000PF M 250VAC Y5P
C901	065G305M1022BP	Y2 1000PF M 250VAC Y5P
C921	065G306M4722BP	4700PF +-20% 400VAC
C905	067G 40J10115K	EC CAP 100UF 450V 18*35MM
C803	067G215D4714KV	E.C 105℃ CAP 470UF M 25V ED SERIES
C802	067G215D4714KV	E.C 105℃ CAP 470UF M 25V ED SERIES
C918	067G215D6814KV	CAP 105℃ 680UF M 25V
C917	067G215D6814KV	CAP 105℃ 680UF M 25V
C939	067G215S1024KV	EC 105℃ CAP 1000UF M 25V
C915	067G215S4713KV	EC 105℃ CAP 470UF M 16V
L902	073G 174 65 H	LINE FILTER
L901	073G 174 76 H	FILTER
L903	073G 253191 H	IND CHOKE 1.1UH DADON
L904	073G 253191 YS	CHOKE COIL 1.1UH YS04110055
T901	080GL19T 23 YS	X'FMR 510UH YS04160061
T801	080GL19T 24 YS	X'FMR 1.12H YS04170127
T802	080GL19T 24 YS	X'FMR 1.12H YS04170127
CN901	087G 501 32 S	AC SOCKET
BD901	093G 50460 28	BRIDGE DIODE KBP208G LITEON
D907	093G3006 1 1	31DQ06FC3 NIHON INTER
CN902	095G8014 9D 57	HARNESS 9P-9P 210MM
	705G 193 57 01	Q901 ASS'Y
Q901	057G 667 21	STP10NK70ZFP
	090G6263 1	HEAT SINK

	AM1G1730 8120 GP	SCREW
	705G 193 93 01	D906 ASS'Y
D906	093G 60218	SB10100FCT
	AM1G1730 8120 GP	SCREW
	Q90G6274 2	HEAT SINK
IC801	056G 379 22	IC TL494IDR SOIC-16
IC901	056G 379 71	IC TEA1530AT SO-8 PHILIPS
Q811	057G 417 4	PMBS3904/PHILIPS-SMT(04)
Q807	057G 417 4	PMBS3904/PHILIPS-SMT(04)
Q806	057G 417 4	PMBS3904/PHILIPS-SMT(04)
Q801	057G 417 4	PMBS3904/PHILIPS-SMT(04)
Q812	057G 417 6	PMBS3906/PHILIPS-SMT(06)
Q804	057G 417 6	PMBS3906/PHILIPS-SMT(06)
Q902	057G 758 1	2N7002ESOT23 SILICONIX
Q809	057G 759 2	RK7002
Q810	057G 759 2	RK7002
Q808	057G 760 4B	PDTA144WK SOT346
Q805	057G 760 5B	PDTC144WK SOT346
Q802	057G 763 14	AM9945N
Q803	057G 763 14	AM9945N
R827	061G0603000	RST CHIPR 0 OHM +-5% 1/10W
R801	061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W
R809	061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W
R812	061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W
R814	061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W
R815	061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W
R816	061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W
R818	061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W
R821	061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W
R822	061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W
R824	061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W
R826	061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W
R925	061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W
R942	061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W
R926	061G0603100 2F	RST CHIPR 10 KOHM +-1% 1/10W
R834	061G0603100 2F	RST CHIPR 10 KOHM +-1% 1/10W
R833	061G0603100 2F	RST CHIPR 10 KOHM +-1% 1/10W
R832	061G0603100 2F	RST CHIPR 10 KOHM +-1% 1/10W
R828	061G0603100 2F	RST CHIPR 10 KOHM +-1% 1/10W
R817	061G0603100 2F	RST CHIPR 10 KOHM +-1% 1/10W

R813	061G0603100 2F	RST CHIPR 10 KOHM +-1% 1/10W
R808	061G0603100 2F	RST CHIPR 10 KOHM +-1% 1/10W
R803	061G0603105	RST CHIPR 1 MOHM +-5% 1/10W
R835	061G0603105	RST CHIPR 1 MOHM +-5% 1/10W
R862	061G0603105	RST CHIPR 1 MOHM +-5% 1/10W
R851	061G0603150 2F	RST CHIPR 15 KOHM +-1% 1/10W
R924	061G0603152	RST CHIPR 1.5 KOHM +-5% 1/10W
R930	061G0603240 1F	RST CHIPR 2.4 KOHM +-1% 1/10W
R811	061G0603240 1F	RST CHIPR 2.4 KOHM +-1% 1/10W
R831	061G0603240 1F	RST CHIPR 2.4 KOHM +-1% 1/10W
R940	061G0603330 2F	RST CHIPR 33 KOHM +-1% 1/10W
R927	061G0603360 1F	RST CHIPR 3.6 KOHM +-1% 1/10W
R823	061G0603362	RST CHIPR 3.6 KOHM +-5% 1/10W
R819	061G0603362	RST CHIPR 3.6 KOHM +-5% 1/10W
R861	061G0603390 3F	RST CHIPR 390 KOHM +-1% 1/10W
R807	061G0603470 2F	RST CHIPR 47 KOHM +-1% 1/10W
R820	061G0603470 2F	RST CHIPR 47 KOHM +-1% 1/10W
R854	061G0603680 2F	RST CHIPR 68 KOHM +-1% 1/10W
R853	061G0603680 2F	RST CHIPR 68 KOHM +-1% 1/10W
R841	061G0603680 2F	RST CHIPR 68 KOHM +-1% 1/10W
R806	061G0603680 2F	RST CHIPR 68 KOHM +-1% 1/10W
R839	061G0805000	0 OHM 1/10W
R850	061G0805000	0 OHM 1/10W
R804	061G0805101	RST CHIPR 100 OHM +-5% 1/8W
R929	061G0805102	RST CHIPR 1KOHM +-5% 1/8W
R917	061G0805102	RST CHIPR 1KOHM +-5% 1/8W
R911	061G0805102	RST CHIPR 1KOHM +-5% 1/8W
R938	061G0805103	10 KOHM 1/10W
R916	061G0805152	RST CHIPR 1.5 KOHM +-5% 1/8W
R829	061G0805220	22&8 1/10W
R825	061G0805220	22&8 1/10W
R912	061G0805220 2F	RST CHIPR 22 KOHM +-1% 1/8W
R915	061G0805224	RST CHIPR 220 KOHM +-5% 1/8W
R837	061G0805473	RST CHIPR 47 KOHM +-5% 1/8W
R810	061G0805510 2F	RST CHIPR 51 KOHM +-1% 1/8W
R931	061G0805822	RST CHIPR 8.2 KOHM +-5% 1/8W
F801	061G1206000	RST CHIPR 0 OHM +-5% 1/4W
F902	061G1206000	RST CHIPR 0 OHM +-5% 1/4W
JR801	061G1206000	RST CHIPR 0 OHM +-5% 1/4W
JR802	061G1206000	RST CHIPR 0 OHM +-5% 1/4W

R967	061G1206000	RST CHIPR 0 OHM +-5% 1/4W
JR901	061G1206000	RST CHIPR 0 OHM +-5% 1/4W
JR809	061G1206000	RST CHIPR 0 OHM +-5% 1/4W
JR808	061G1206000	RST CHIPR 0 OHM +-5% 1/4W
JR807	061G1206000	RST CHIPR 0 OHM +-5% 1/4W
JR805	061G1206000	RST CHIPR 0 OHM +-5% 1/4W
JR804	061G1206000	RST CHIPR 0 OHM +-5% 1/4W
JR803	061G1206000	RST CHIPR 0 OHM +-5% 1/4W
R910	061G1206100	RST CHIP 10R 1/4W 5%
R909	061G1206100	RST CHIP 10R 1/4W 5%
R918	061G1206101	100 1206
R919	061G1206101	100 1206
R920	061G1206101	100 1206
R935	061G1206101	100 1206
R961	061G1206101	100 1206
R962	061G1206101	100 1206
R921	061G1206102	RST CHIPR 1 KOHM +-5% 1/4W
R922	061G1206102	RST CHIPR 1 KOHM +-5% 1/4W
R923	061G1206102	RST CHIPR 1 KOHM +-5% 1/4W
R928	061G1206102	RST CHIPR 1 KOHM +-5% 1/4W
R855	061G1206330	RST CHIPR 33 OHM +-5% 1/4W
R857	061G1206330	RST CHIPR 33 OHM +-5% 1/4W
R904	061G1206472	RST CHIPR 4.7 KOHM +-5% 1/4W
R932	061G1206472	RST CHIPR 4.7 KOHM +-5% 1/4W
R933	061G1206472	RST CHIPR 4.7 KOHM +-5% 1/4W
R901	061G1206684	RST CHIPR 680 KOHM +-5% 1/4W
R902	061G1206684	RST CHIPR 680 KOHM +-5% 1/4W
R903	061G1206684	RST CHIPR 680 KOHM +-5% 1/4W
C842	065G0603103 12	CHIP 0.01UF 16V X7R
C924	065G0603103 12	CHIP 0.01UF 16V X7R
C807	065G0603104 22	CHIP 0.1UF 25V X7R
C821	065G0603104 22	CHIP 0.1UF 25V X7R
C825	065G0603104 22	CHIP 0.1UF 25V X7R
C834	065G0603104 22	CHIP 0.1UF 25V X7R
C815	065G0603222 22	CHIP 2200PF 25V X7R
C816	065G0603222 22	CHIP 2200PF 25V X7R
C819	065G0603222 22	CHIP 2200PF 25V X7R
C823	065G0603222 22	CHIP 2200PF 25V X7R
C839	065G0805102 31	1000PF 50V NPO
C840	065G0805102 31	1000PF 50V NPO

C910	065G0805102 32	CHIP 1000P 50VX7R 0805
C805	065G0805104 32	CHIP 0.1U 50V X7R
C824	065G0805104 32	CHIP 0.1U 50V X7R
C907	065G0805104 32	CHIP 0.1U 50V X7R
C916	065G0805104 32	CHIP 0.1U 50V X7R
C930	065G0805104 32	CHIP 0.1U 50V X7R
C931	065G0805104 32	CHIP 0.1U 50V X7R
C822	065G0805105 22	CHIP 1UF 25V X7R 0805
C928	065G0805122 31	CHIP CAP 0805 1200PF J 50V NPO
C820	065G080522131G	220PF 50V NPO 2%
C911	065G0805224 22	CAIP CAP 0.22 UF 25V X7R
C909	065G0805224 32	0.22UF,K,50V,X7R
C845	065G0805225 12	CHIP 2.2UF 16V X7R 0805
C929	065G1206102 72	CHIP 1000PF 500V X7R
C912	065G1206102 72	CHIP 1000PF 500V X7R
D808	093G 64 38 D	DIODE BAW56 DIODES
D805	093G 64 38 D	DIODE BAW56 DIODES
D806	093G 64 44 S	LL4148WP
D809	093G 64 44 S	LL4148WP
D814	093G 64 44 S	LL4148WP
D817	093G 64 44 S	LL4148WP
D903	093G 64 44 S	LL4148WP
D915	093G 64 44 S	LL4148WP
D916	093G 64 44 S	LL4148WP
D801	093G 6433P	BAV99
D802	093G 6433P	BAV99
D803	093G 6433P	BAV99
D804	093G 6433P	BAV99
ZD902	093G 39S 15 T	RLZ15B LLDS
ZD921	093G 39S 15 T	RLZ15B LLDS
ZD922	093G 39S 25 T	RLZ5.1B LLDS
CN901	006G 31500	EYELET
IC904	056G 158 12	KIA431A-AT/P TO-92
C938	065G 2K152 1T6052	1.5NF/2KV Y5P +-10%
C906	065G 2K152 1T6052	1.5NF/2KV Y5P +-10%
C908	067G215Y2207KT	CAP 105℃ 22UF M 50V KINGNICHI
FB901	071G 55 29	FERRITE BEAD
F901	084G 55 1W	FUSE 4A 250V WICKMANN
D901	093G 6038P52T	PS102R
D900	093G1100 1052T	BA159GPT DO-41 CHENMKO

	715G2538 2	POWER BOARD PCB
T901	006G 31502	1.5MM RIVET
NR901	006G 31502	1.5MM RIVET
R936	061G0805204	RST CHIPR 200 KOHM +-5% 1/8W
	Q23G3178881 1A	LOGO
	Q40G 19N881 2A	RATING LABEL
	Q40G0001881 2A	CARTON LABEL
	Q40G0002881 2A	TCO03 LABEL
	Q44G6000 120A	EMPTY CARTON
	Q44G6000 121A	EMPTY CARTON
	Q44G6002CP130A	PAPER CAP
	Q44G6002CP172A	PAPER CAP
	Q44G9080 1	EPS
	Q44G9080 2	EPS
	Q44G9080881 1A	19W BENQ CARTON
	Q45G 88606 R	PE BAG FOR BASE
	Q45G 88609 87	EPE COVER FOR MONITOR
	Q50G 600 B 1	BENQ STRAP
	Q52G 1185 79	MIDDLE TAPE FOR BENQ CARTON
	Q52G 1185 87	BENQ TAPE FOR PALLET
	040G 58162435A	LABEL
	Q41G7800881 4A	SERVICE INFORMATION(4J.L2R05.001)
	Q41G7800881 6A	QSG(4J.0C401.001)
	Q41G7800881 8A	SERVICE INFORMATION(4J.L2R05.002)
	Q45G 76 28A35	PE BAG
	Q70G9002881 2A	CD(5B.0C401.001)

Diversity of T97SRDDBTWBQNN compared with T97MRDDBTWBQNN		
Location	**TPV Part No.**	**Description**
	052G 1211 A	165MINIUM TAPE
	705GQ734331	19" LCD BEZEL ASS'Y
	A34G0455ADDA1B0130	BEZEL(L19W-7BENQ)
	705GQ734332	19" LCD REAR COVER ASS'Y
	A34G0451ADP 4B0130	REAR COVER(L19W-7BENQ)
	750GLS90M3152N	PANEL LTM190M2-L31 8TC(0TS) SZ SEC
	A15G0205 BS 2	MAINFRAME
	CBPC7SRDBQQ	MAIN BOARD
U401	056G1125701 X(WBQRWR9SRQ1)	IC MCU RTD2120L-LF REALTEK

Diversity of T97SRDDBTWBQNN compared with T97MRDDBTWBQNN		
Location	**TPV Part No.**	**Description**
	052G 1209 A	200MINIUM TAPE
	705GQ734331	19" LCD BEZEL ASS'Y
	A34G0455ADDA1B0130	BEZEL(L19W-7BENQ)
	705GQ734332	19" LCD REAR COVER ASS'Y
	A34G0451ADP 4B0130	REAR COVER(L19W-7BENQ)
E750L	750GLS90M3152N	PANEL LTM190M2-L31 8TC(0TS) SZ SEC
	A15G0205 BS 2	MAINFRAME
	CBPC7SRDBQQ	MAIN BOARD
U401	056G1125701 X（WBQRWR9SRQ1）	IC MCU RTD2120L-LF REALTEK
R313	061G0402101	RST CHIPR 100 OHM +-5% 1/16W
R309	061G0402101	RST CHIPR 100 OHM +-5% 1/16W
R306	061G0402101	RST CHIPR 100 OHM +-5% 1/16W
R315	061G0402101	RST CHIPR 100 OHM +-5% 1/16W
R312	061G0402101	RST CHIPR 100 OHM +-5% 1/16W
R308	061G0402101	RST CHIPR 100 OHM +-5% 1/16W
R207	061G0402121	RST CHIP 120R 1/16W 5%
R208	061G0402121	RST CHIP 120R 1/16W 5%
LED001	081G 10 12 GP	LED GP32052C/R008-ZY-30
CN001	095G8014 6X660	HARNESS 6P-6P 160MM
C905	067G 31510115K	EC 105℃ 100UF M 450V KINGNICHI
CN901	087G 501 37 S	AC INLET ST-01DG-B2K-K
R816	061G0603150 1F	RST CHIPR 1.5 KOHM +-1% 1/10W

R815	061G0603150 1F	RST CHIPR 1.5 KOHM +-1% 1/10W
R814	061G0603150 1F	RST CHIPR 1.5 KOHM +-1% 1/10W
R801	061G0603150 1F	RST CHIPR 1.5 KOHM +-1% 1/10W
R802	061G0603180 2F	RST CHIPR 18 KOHM +-1% 1/10W
R851	061G0603180 2F	RST CHIPR 18 KOHM +-1% 1/10W
R856	061G1206330	RST CHIPR 33 OHM +-5% 1/4W
R858	061G1206330	RST CHIPR 33 OHM +-5% 1/4W
C841	065G0805102 31	1000PF 50V NPO
C838	065G0805102 31	1000PF 50V NPO
D903	093G 64 38 P	BAW56
D806	093G 6432S	IN4148W
D814	093G 6432S	IN4148W
D817	093G 6432S	IN4148W
D915	093G 6432S	IN4148W
D916	093G 6432S	IN4148W
	715G2538 3	POWER BOARD PCB
	Q40G 19N881 2B	RATING LABEL
	Q40G0002881 3A	LABEL FOR CARTON
	Q44G9080BRO 1	PAPER BLOCK
	Q45G 88609126	EPE BAG
	Q41G7800881 5A	SAFETY_INSTRUCTIONS 4J.L2V03.001
	Q70G9002881 1B	CD MANUAL

Diversity of T97SRDDMTWBGNN compared with T97MRDDBTWBQNN		
Location	**TPV Part No.**	**Description**
	050G 600 1 W	WHITE STRAP
	052G 1209 A	200MINIUM TAPE
E089B	089G 728CAA 2G	SIGNAL CABLE
E089C	089G414A18N YH	POWER CABLE
	705GQ734332	19" LCD REAR COVER ASS'Y
	A34G0451ADP 4B0130	REAR COVER(L19W-7BENQ)
	705GQ734370	19" LCD BEZEL ASS'Y
	A33G0248ADP 1L0100	KEY PAD 1
	A33G0248ADP 2L0100	KEY PAD 2
	A33G0249BAAA1L0100	POWER BUTTON
	A34G0455ADPA1B0130	BEZEL(L19W-7BENQ)
E750L	750GLS90M3152N	PANEL LTM190M2-L31 8TC(0TS) SZ SEC
	A15G0205 BS 2	MAINFRAME
	CBPC7SRDBQQ	MAIN BOARD

U401	056G1125701 X(WBQRWR9SRQ6)	IC MCU RTD2120L-LF REALTEK
R313	061G0402101	RST CHIPR 100 OHM +-5% 1/16W
R309	061G0402101	RST CHIPR 100 OHM +-5% 1/16W
R306	061G0402101	RST CHIPR 100 OHM +-5% 1/16W
R315	061G0402101	RST CHIPR 100 OHM +-5% 1/16W
R312	061G0402101	RST CHIPR 100 OHM +-5% 1/16W
R308	061G0402101	RST CHIPR 100 OHM +-5% 1/16W
R207	061G0402121	RST CHIP 120R 1/16W 5%
R208	061G0402121	RST CHIP 120R 1/16W 5%
LED001	081G 10 12 GP	LED GP32052C/R008-ZY-30
CN001	095G8014 6X660	HARNESS 6P-6P 160MM
C905	067G 31510115K	EC 105℃ 100UF M 450V KINGNICHI
CN901	087G 501 37 S	AC INLET ST-01DG-B2K-K
R801	061G0603150 1F	RST CHIPR 1.5 KOHM +-1% 1/10W
R814	061G0603150 1F	RST CHIPR 1.5 KOHM +-1% 1/10W
R815	061G0603150 1F	RST CHIPR 1.5 KOHM +-1% 1/10W
R816	061G0603150 1F	RST CHIPR 1.5 KOHM +-1% 1/10W
R802	061G0603180 2F	RST CHIPR 18 KOHM +-1% 1/10W
R851	061G0603180 2F	RST CHIPR 18 KOHM +-1% 1/10W
R856	061G1206330	RST CHIPR 33 OHM +-5% 1/4W
R858	061G1206330	RST CHIPR 33 OHM +-5% 1/4W
C841	065G0805102 31	1000PF 50V NPO
C838	065G0805102 31	1000PF 50V NPO
D903	093G 64 38 P	BAW56
D806	093G 6432S	IN4148W
D814	093G 6432S	IN4148W
D817	093G 6432S	IN4148W
D915	093G 6432S	IN4148W
D916	093G 6432S	IN4148W
	715G2538 3	POWER BOARD PCB
	Q40G 19N881 1A	RATING LABEL
	Q40G0001881 1A	CARTON LABEL
	Q40G0001881 4A	S/N LABEL
	Q40G0002881 1A	WARRANTY LABEL
	Q40G0002881 3A	LABEL FOR CARTON
	Q44G9080881 2A	19W BENQ CARTON
	Q44G9080BRO 1	PAPER BLOCK
	Q45G 88609126	EPE BAG
	Q45G 88618104 R	PE BAG FOR CARTON
	Q41G7800881 2A	(4J.06L03.001)CERTIFICATE

	Q41G780088117A	(4J.06K02.003)WARRANTY CARD FOR CHINA
	Q70G9002881 3A	CD MANUAL(5B.0C401.003-DCR)