Service Manual

ViewSonic VA712b-2
Model No VS10901
17” Color TFT LCD Display

Manufacture Date: Mar-30-06

Revision History

Revision	Date	Description of changes	Approval
A00	**Sep-9-05**	**Initial Release**	**YG.WANG**
A01	**Mar-30-06**	**Update the Handing and Placing Methods and the Circuit Description and the Adjustment Procedure**	**YG.WANG**

TABLE OF CONTENTS

1. Precautions And Safety Notices

1.1 SAFETY PRECAUTIONS

This monitor is manufactured and tested on a ground principle that a user's safety comes first. However, improper use or installation may cause damage to the monitor as well as the user. Carefully go over the following WARNINGS before installing and keep this guide handy.

WARNINGS

- This monitor should be operated only at the correct power sources indicated on the label on the rear end of the monitor. If you're unsure of the power supply in your residence, consult you local dealer or power company.
- Use only the special power adapter that comes with this monitor for power input.
- Do not try to repair the monitor your self as it contains no user-serviceable parts. This monitor should only be repaired by a qualified technician.
- Do not remove the monitor cabinet. There is high-voltage parts inside that may cause electric shock to human bodies, even when the power cord is unplugged.
- Stop using the monitor if the cabinet is damaged. Have it checked by a service technician.
- Put your monitor only in a clean, dry environment. If it gets wet, unplug the power cable immediately and consult your service technician.
- Always unplug the monitor before cleaning it .Clean the cabinet with a clean, dry cloth. Apply non-ammonia based cleaner onto the cloth, not directly onto the glass screen.
- Keep the monitor away from magnetic objects, motors, TV sets, and transformer.
- Do not place heavy objects on the monitor or power cord.

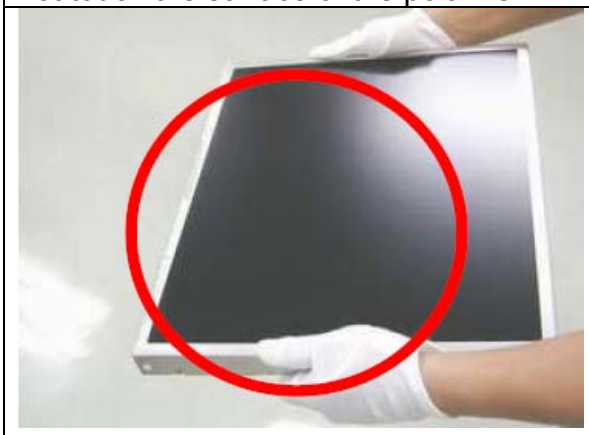
1.2 PRODUCT SAFETY NOTICE

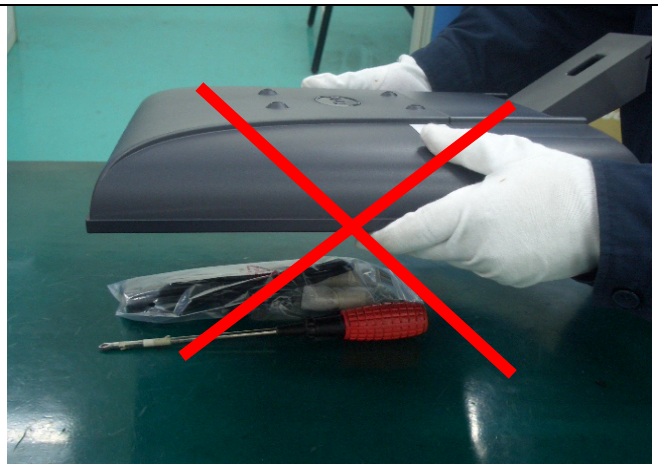
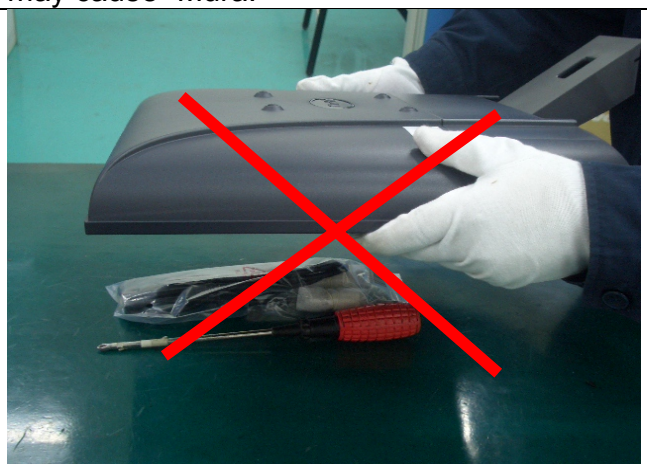
Many electrical and mechanical parts in this chassis have special safety visual inspections and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltages, wattage, etc. Before replacing any of these components read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire ,or other hazards.

1.3 SERVICE NOTES

1. When replacing parts or circuit boards, clamp the lead wires around terminals before soldering.
2. When replacing a high wattage resistor(more than 1W of metal oxide film resistor) in circuit board, keep the resistor about 5mm away from circuit board.
3. Keep wires away from high voltage, high temperature components and sharp edges.
4. Keep wires in their original position so as to reduce interference.
5. Usage of this product please refer to also user's manual.

1.4 HANDING AND PLACING METHODS

Correct Methods:	Incorrect Methods:
Only touch the metal frame of the LCD panel or the front cover of the monitor. Do not touch the surface of the polarizer.	Surface of the LCD panel is pressed by fingers and that may cause “Mura.”
	
	
Take out the monitor with cushions	Taking out the monitor by grasping the LCD panel. That may cause “Mura.”
	

Place the monitor on a clean and soft foam pad.	Placing the monitor on foreign objects. That could scratch the surface of the panel or cause “Mura.”
	
Place the monitor on the lap, the panel surface must be upwards.	The panel is placed facedown on the lap. That may cause “Mura.”
	

2. Specification

2.1 PRODUCT SPECIFICATIONS

LCD Panel	17.0” TFT
Recommend Resolution	1280 x1024@60Hz
Pixel Dimension	0.264(H) x 0.264(V)mm
LCD Display Color	16.2M Colors (RGB 6-bit+FRC data)
Viewing Angle	Horizontal: 140 ° Vertical: 130 °
Contrast Ratio	500：1 (Typ.)
Brightness	300 cd/㎡(Typ.)
Response Time	8ms(Typ.)
Active Display Area	337.9mm(H) x 270.3mm(V)
Maximum Pixel Clock	135 MHz
Horizontal Frequency	30 – 82 kHz
Vertical Refresh Rate	50 – 85 Hz.
Temperature	Operating: 0°C to +40°C Storage: -20°C to +60°C
Input Signal	Analog / Digital
Power Management	Energy Star compliant VESA DPMS compatible ≦1 W
Power	Input Voltage : 90V~264ACV，50~60Hz(auto switch) Consumption: 39 Watts(Max.)　36 Watts(Typ.)

2.2 FACTORY SUPPORTING MODES

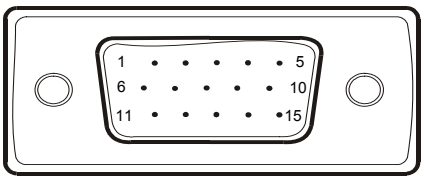
Timing Table :

Item	Timing	Analog	Digital
1	640 x 350 @ 70Hz, 31.5kHz	Yes	Yes
2	640 x 480 @ 60Hz, 31.5kHz	Yes	Yes
3	640 x 480 @ 67Hz, 35.0kHz	Yes	Yes
4	640 x 480 @ 72Hz, 37.9kHz	Yes	Yes
5	640 x 480 @ 75Hz, 37.5kHz	Yes	Yes
6	640 x 480 @ 85Hz, 43.27kHz	Yes	Yes
7	720 x 400 @ 70Hz, 31.5kHz	Yes	Yes
8	800 x 600 @ 56Hz, 35.1kHz	Yes	Yes
9	800 x 600 @ 60Hz, 37.9kHz	Yes	Yes
10	800 x 600 @ 72Hz, 48.1kHz	Yes	Yes
11	800 x 600 @ 75Hz, 46.9kHz	Yes	Yes
12	800 x 600 @ 85Hz, 53.7kHz	Yes	Yes
13	832 x 624 @ 75Hz, 49.7kHz	Yes	Yes
14	1024 x 768 @ 60Hz, 48.4kHz	Yes	Yes
15	1024 x 768 @ 70Hz, 56.5kHz	Yes	Yes
16	1024 x 768 @ 72Hz, 58.1kHz	Yes	Yes
17	1024 x 768 @ 75Hz, 60.0kHz	Yes	Yes
18	1024 x 768 @ 85Hz, 68.67kHz	Yes	Yes
19	1152 x 870 @ 75Hz, 68.6kHz	Yes	Yes
20	1280 x 1024 @ 60Hz, 63.4kHz	Yes	Yes
21	1280 x 1024 @ 75Hz, 79.97kHz	Yes	Yes
22	1280 x 720 @ 60Hz, 45kHz	Yes	Yes

Primary Preset:： VESA : 1280 x1024@60Hz

2.3 INTERFACE DESCRIPTION

D-SUB 15 PIN CONNECTOR

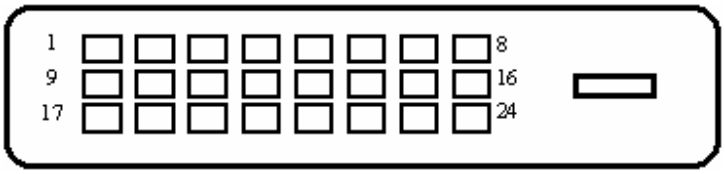


Pin Number	Pin Function
1	Red video input
2	Green video input
3	Blue video input
4	No Connection
5	Ground
6	Red video ground
7	Green video ground
8	Blue video ground
9	+5V
10	H/V sync ground
11	No connection
12	(SDA)
13	Horizontal sync (Composite sync)
14	Vertical sync
15	(SCL)

SIGNAL LEVEL

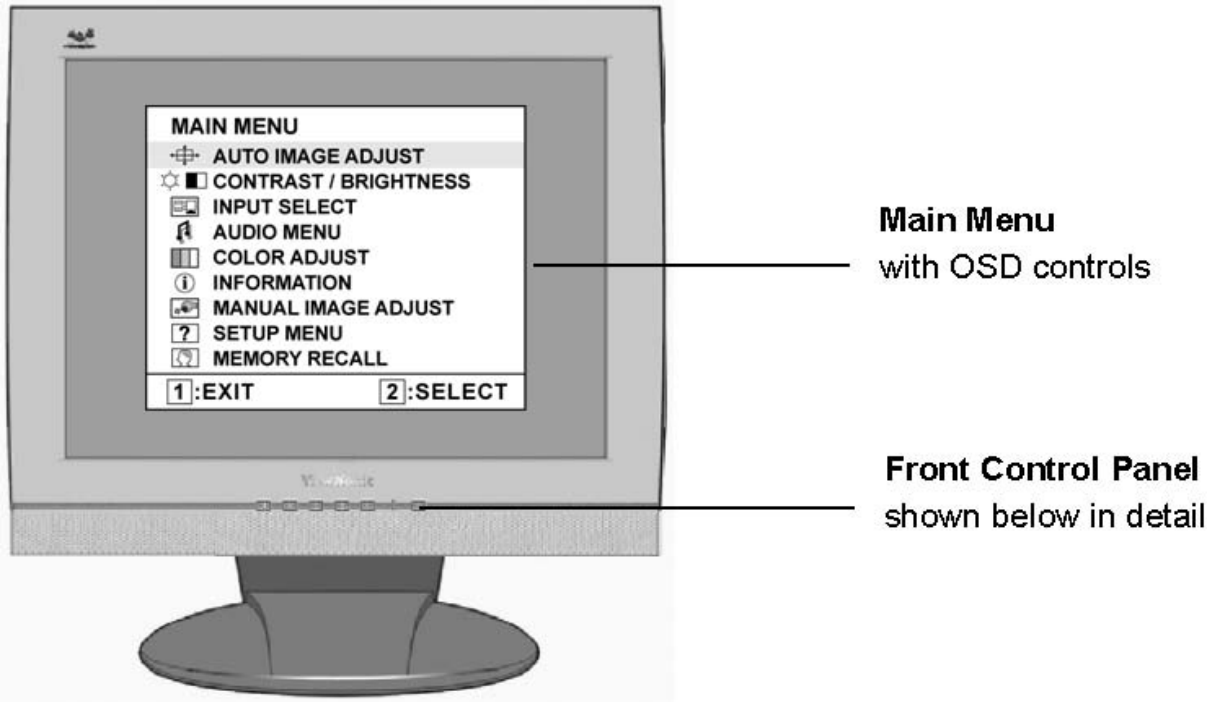
CONNECTOR	SIGNAL	DESCRIPTION
R	RED	0.7vp-p(VIDEO)
G	GREEN	0.7vp-p(VIDEO)
B	BLUE	0.7vp-p(VIDEO)
H	H/SYNC	TTL positive or negative
V	V/SYNC	TTL positive or negative
SDA	DDC1/2B	TTL
SCL	DDC1/2B	TTL

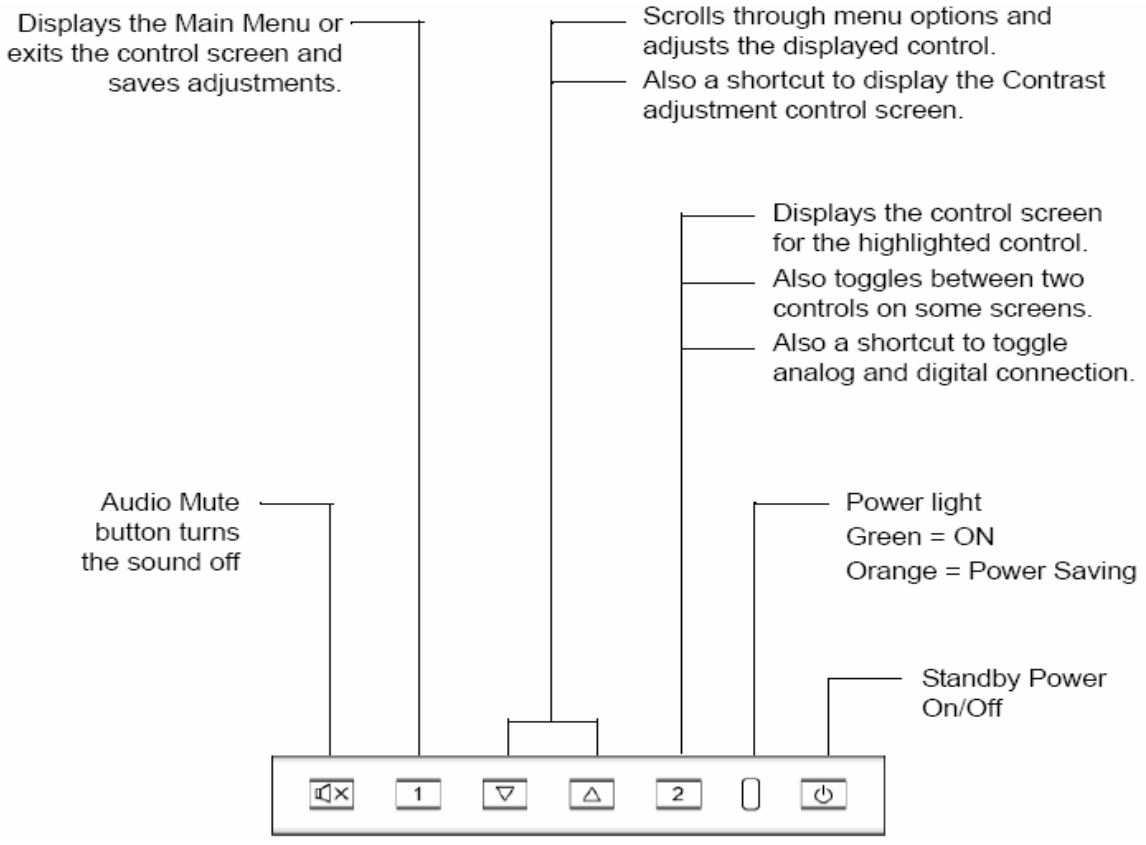
DVI-D 24 PIN CONNECTOR



Pin No.	Signal Name	Description
1	RX2-	TMDS negative differential input, channel 2
2	RX2+	TMDS positive differential input, channel 2
3	GND	Logic Ground
4	Reserved 4	Reserved. No connection
5	Reserved 5	Reserved. No connection
6	DDC-CLK	DDC2B Clock
7	DDC-DAT	DDC2B Data
8	Reserved 8	Reserved. No connection
9	RX1-	TMDS negative differential input, channel 1
10	RX1+	TMDS positive differential input, channel 1
11	GND	Logic Ground
12	Reserved 12	Reserved. No connection
13	Reserved 13	Reserved. No connection
14	VCCX	Power
15	GND	Logic Ground
16	SENS	SENSE Pin, Pull High
17	RX0-	TMDS negative differential input, channel 0
18	RX0+	TMDS positive differential input, channel 0
19	GND	Logic Ground
20	Reserved 20	Reserved. No connection
21	Reserved 21	Reserved. No connection
22	GND	Logic Ground
23	RXC+	TMDS positive differential input, reference clock
24	RXC-	TMDS negative differential input, reference clock

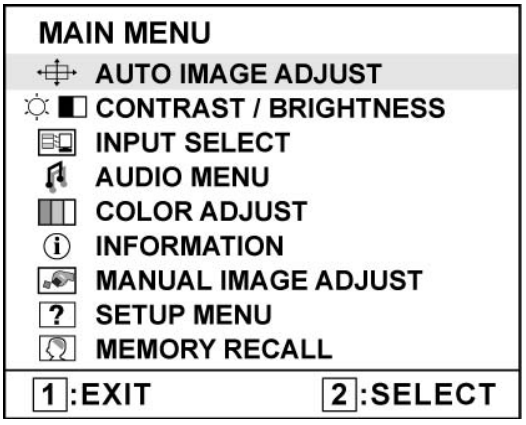
3. Front Panel Function Controls And Indicators





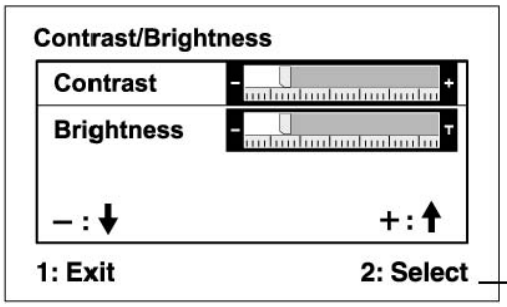
Do the following to adjust the display setting:

1. To display the Main Menu, press button [1].



NOTE: All OSD menus and adjustment screens disappear automatically after about 15 seconds. This is adjustable through the OSD timeout setting in the setup menu.

2. To select a control to adjust, press or ▼ to ▲ scroll up or down in the Main Menu.
3. After the desired control is selected, press button [2]. A control screen like the one shown below appears.



The command line at the bottom of the control screen tells what to do next from this screen. You can toggle between control screens, adjust the selected option, or exit the screen.

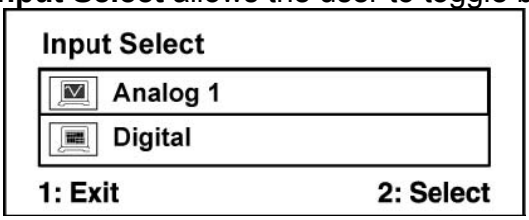
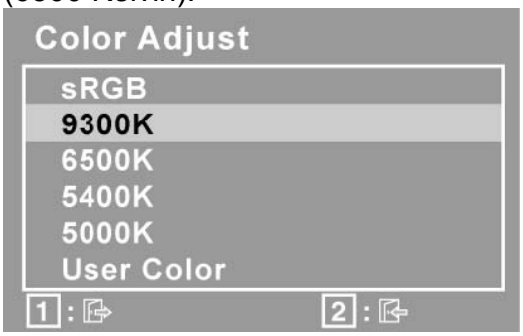
4. To adjust the setting, press the up ▼ or ▲ down T buttons.
5. To save the adjustments and exit the menu, press button [1] *twice*.

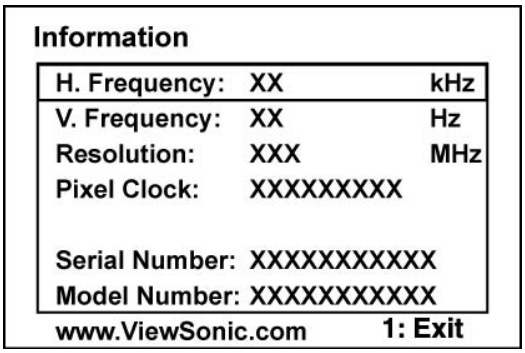
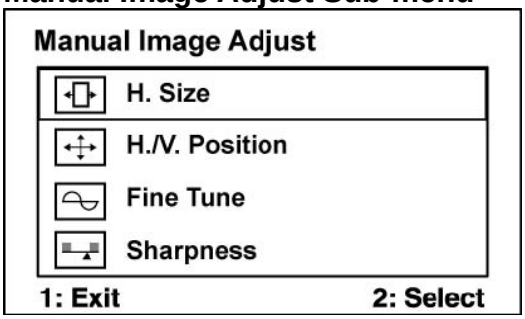
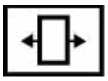
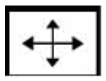
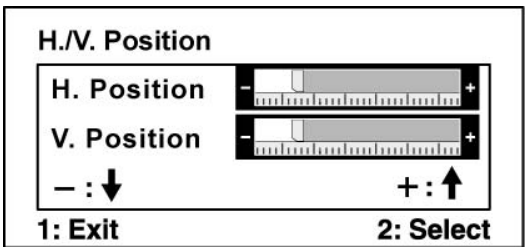
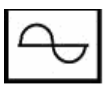
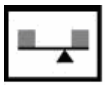
The following tips may help you optimize your display:

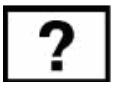
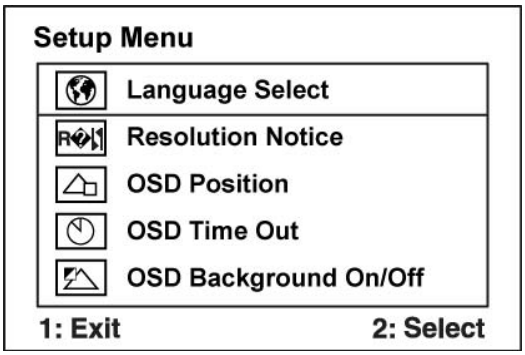
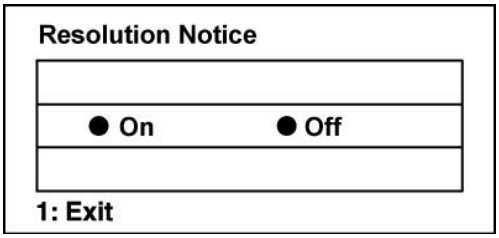
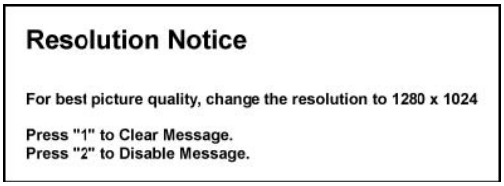
- Adjust the computer's graphics card so that it outputs a 1280 x 1024 @ 60Hz video signal to the LCD display. (Look for instructions on “changing the refresh rate” in the graphics card's user guide.)
- If necessary, make small adjustments using H. POSITION and V. POSITION until the screen image is completely visible. (The black border around the edge of the screen should barely touch the illuminated “active area” of the LCD display.)

Main Menu Controls

Adjust the menu items shown below by using the up ▲ and down ▼ buttons.

Control	Explanation
	Auto Image Adjust sizes and centers the screen image automatically.
	Contrast adjusts the difference between the image background (black level) and the foreground (white level).
	Brightness adjusts background black level of the screen image.
	Input Select allows the user to toggle between an analog and a digital signal. 
	Audio Adjust **Volume** increases the volume, decreases the volume, and mutes the audio. **Mute** temporarily silences audio output.
	Color Adjust provides several color adjustment modes, including preset color temperatures and a User Color mode which allows independent adjustment of red (R), green (G), and blue (B). The factory setting for this product is 6500K (6500 Kelvin).  **9300K-**Adds blue to the screen image for cooler white (used in most office settings with fluorescent lighting). **6500K-**Adds red to the screen image for warmer white and richer red. **5400K-**Adds green to the screen image for a darker color. **5000K-**Adds blue and green to the screen image for a darker color. **User Color** Individual adjustments for red (R), green (G), and blue (B). **1.** To select color (R, G or B) press button [2]. **2.** To adjust selected color, press ▼ and ▲. **Important:** If you select RECALL from the Main Menu when the product is set to a Preset Timing Mode, colors return to the 6500K factory preset.

	**Information** displays the timing mode (video signal input) coming from the graphics card in the computer, the LCD model number, the serial number, and the ViewSonic® website URL. See your graphics card's user guide for instructions on changing the resolution and refresh rate (vertical frequency). **NOTE:** VESA 1280 x 1024 @ 60Hz (recommended) means that the resolution is 1280 x 1024 and the refresh rate is 60 Hertz. 
	**Manual Image Adjust Sub-menu** 
	**H. Size (Horizontal Size)** adjusts the width of the screen image.
	**H./V. Position (Horizontal/Vertical Position)** moves the screen image left or right and up or down. 
	**Fine Tune** sharpens the focus by aligning text and/or graphics with pixel boundaries. **NOTE:** Try Auto Image Adjust first.
	**Sharpness** adjusts the clarity and focus of the screen image.

	**Setup Menu** displays the menu shown below: 
	**Language Select** allows the user to choose the language used in the menus and control screens.
	**Resolution Notice** allows the user to enable or disable this notice.  If you enable the Resolution Notice shown above and your computer is set at a resolution other than 1280 x 1024, the following screen appears. 
	**OSD Position** allows the user to move the OSD menus and control screens.
	**OSD Timeout** sets the length of time the OSD screen is displayed. For example, with a “30 second” setting, if a control is not pushed within 30 seconds, the display screen disappears.
	**OSD Background** allows the user to turn the OSD background On or Off.
	**Memory Recall** returns the adjustments back to factory settings if the display is operating in a factory Preset Timing Mode listed in the Specifications of this manual.

SHORT CUTS FUNCTION FROM THE BUTTONS

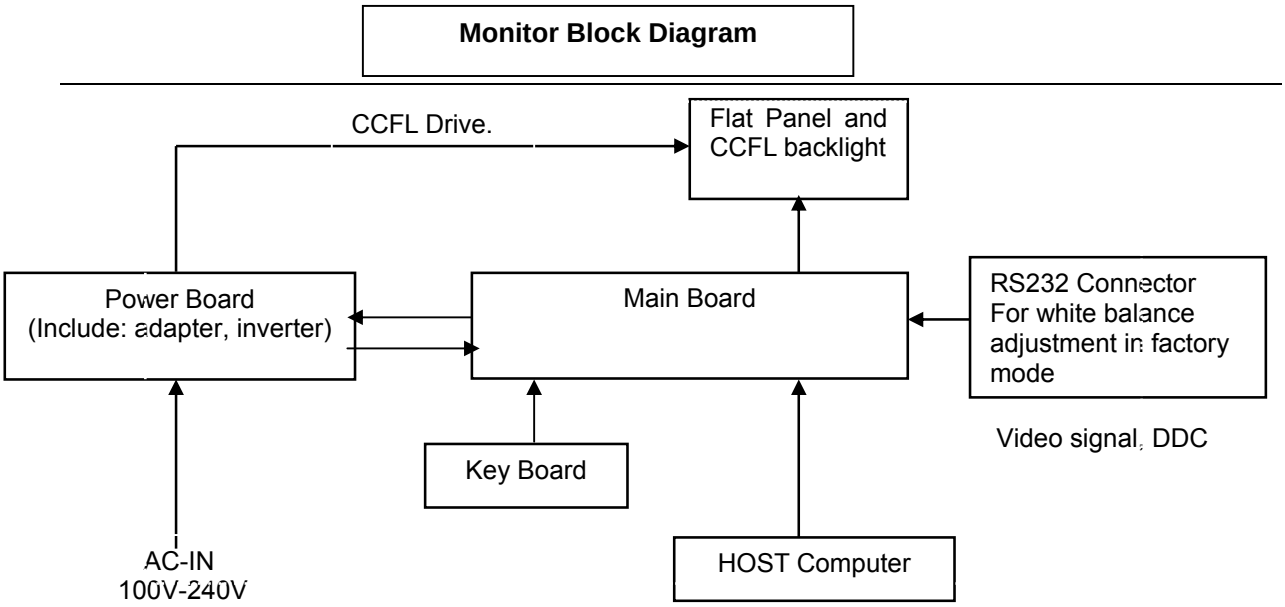
[1]	Main Menu
[2]	Auto Image Adjust
[▼] or [▲]	To immediately activate Contrast menu. It should be change to Brightness OSD by push button [2]
[▼] + [▲]	Recall Contrast or Brightness while in the Contrast or Brightness adjustment, or recall both of Contrast and Brightness when the OSD is not open.
[1] + [2]	Toggle 720x400 and 640x400 mode when input 720x400 or 640x400 mode
[1] + [▼] + [▲]	White Balance (Not shown on user's guide)
[1] + [▼]	• **Power Lock:** Press and hold "[2], & ▼" for 10 seconds. If the power button is pressed the message *Power Button Locked* will display for 5 seconds. With or without this setting, after a power failure, your LCD display's power will automatically turn ON when power is restored. • **Power Unlock:** Press and hold "[2], & ▼" again for 10 seconds.
[1] + [▲]	• **OSD Lock:** Press and hold "[1], & (▲)" for 10 seconds. If any buttons are pressed the message *OSD Locked* will display for 5 seconds. • **OSD Unlock:** Press and hold "[1], & ▲" again for 10 seconds.
[🔇]	Volume mute on/off
Remark : All the short cuts function are only available while OSD off	

4. Circuit Description

4.1 LCD MONITOR DESCRIPTION

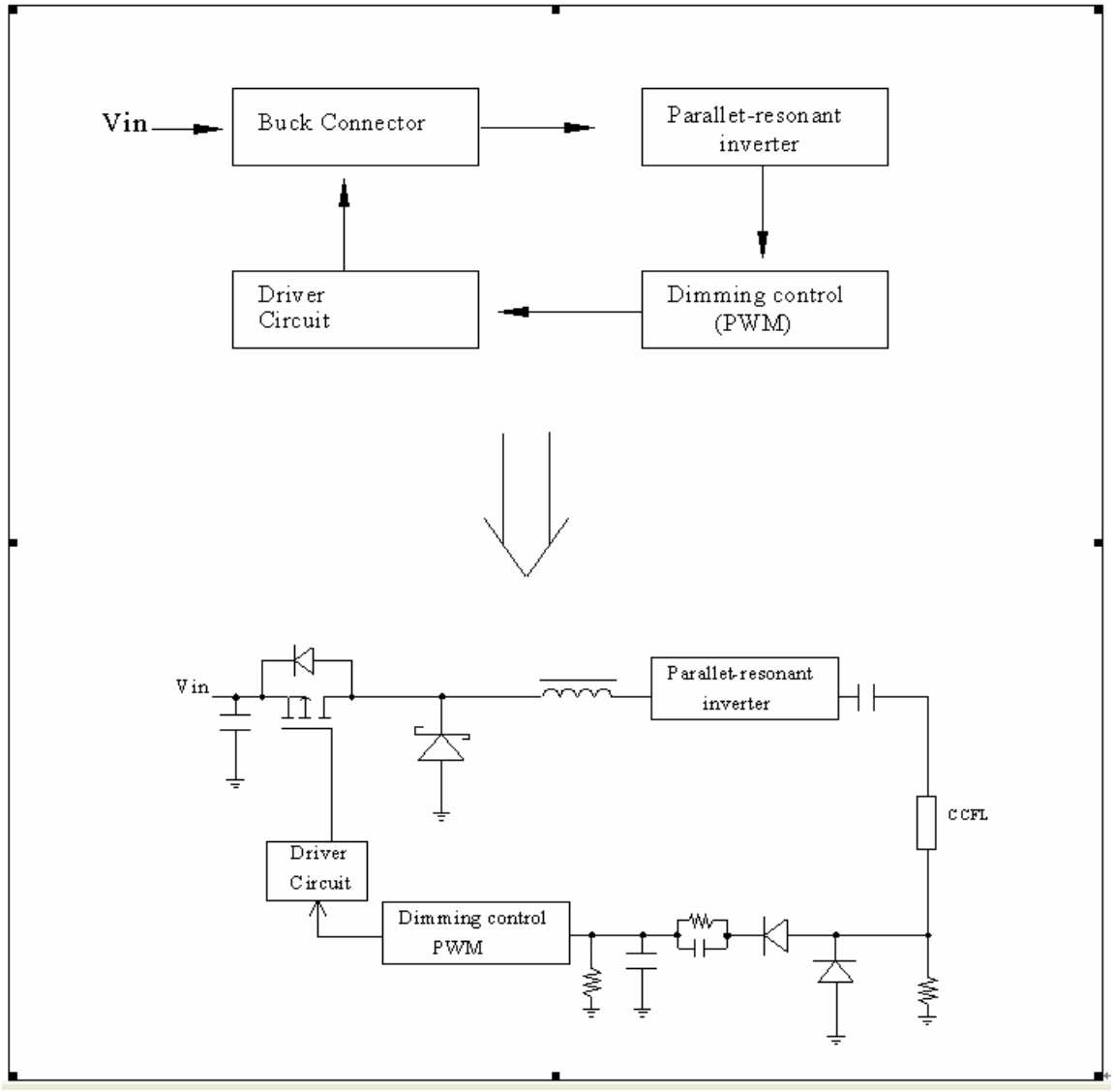
The LCD MONITOR will contain a Main Board, an Power Board, Key Board which house the flat panel control logic, brightness control logic and DDC.

The Power Board will provide AC to DC Inverter voltage to drive the backlight of panel and the Main Board chips each voltage.

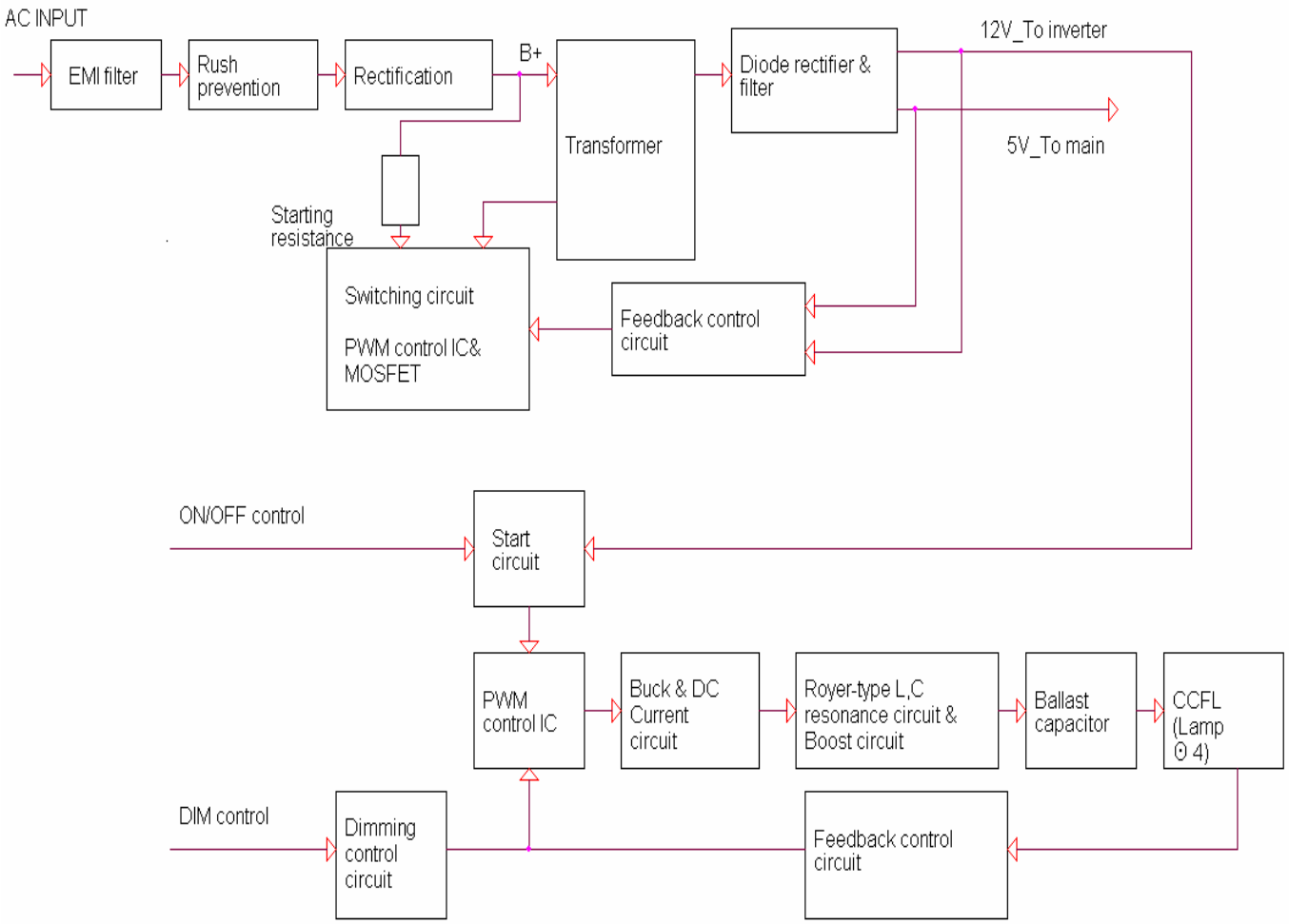


4.2 POWER BLOCK FUNCTION DESCRIPTION

Inverter Block Function



Power Block Function



4.4 INTRODUCTION OF IC

RTD2523B-LF(U401): integrate ADC, OSD, TMPS, RSDS TX, LVDS TX, convert analog RGB into digital and room and shrink scaling output to LCD panel.

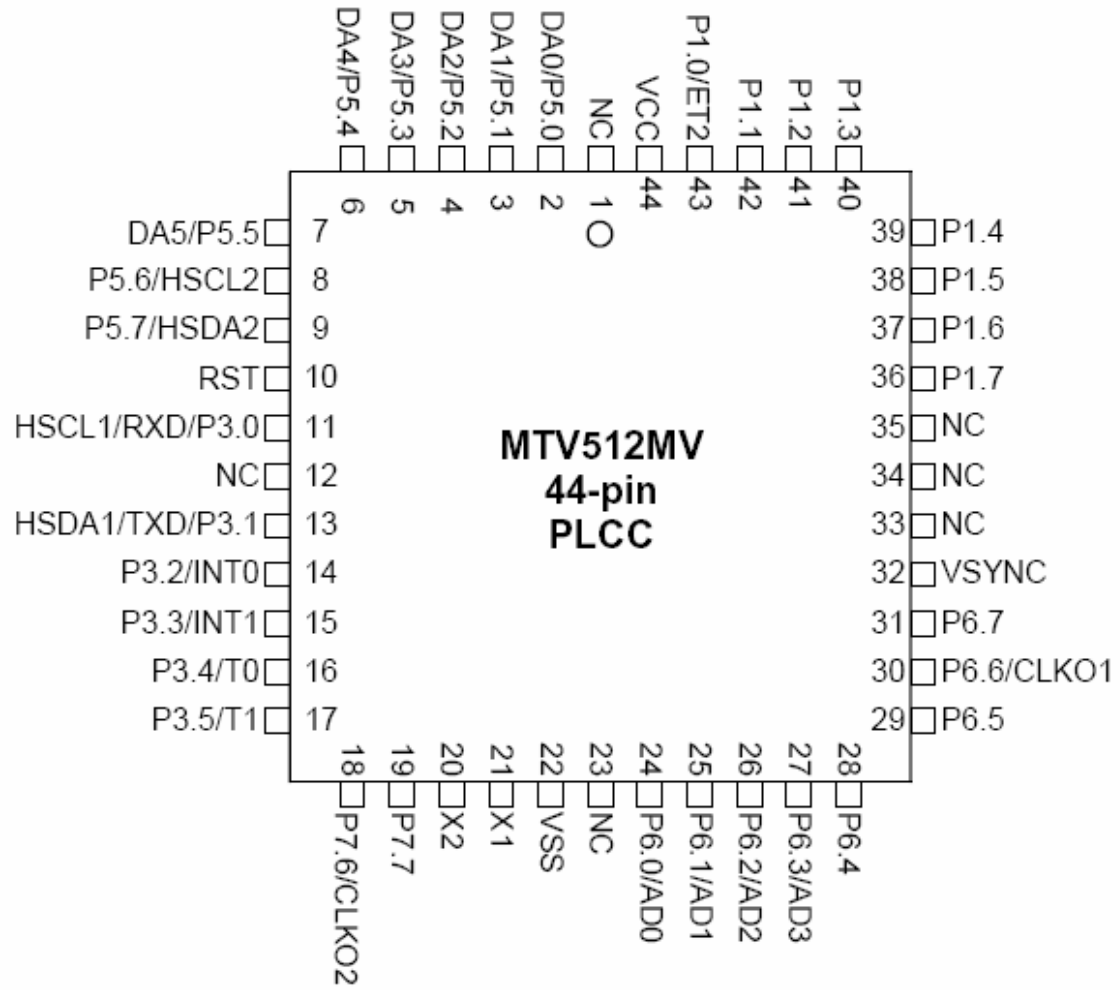
PIN Function:

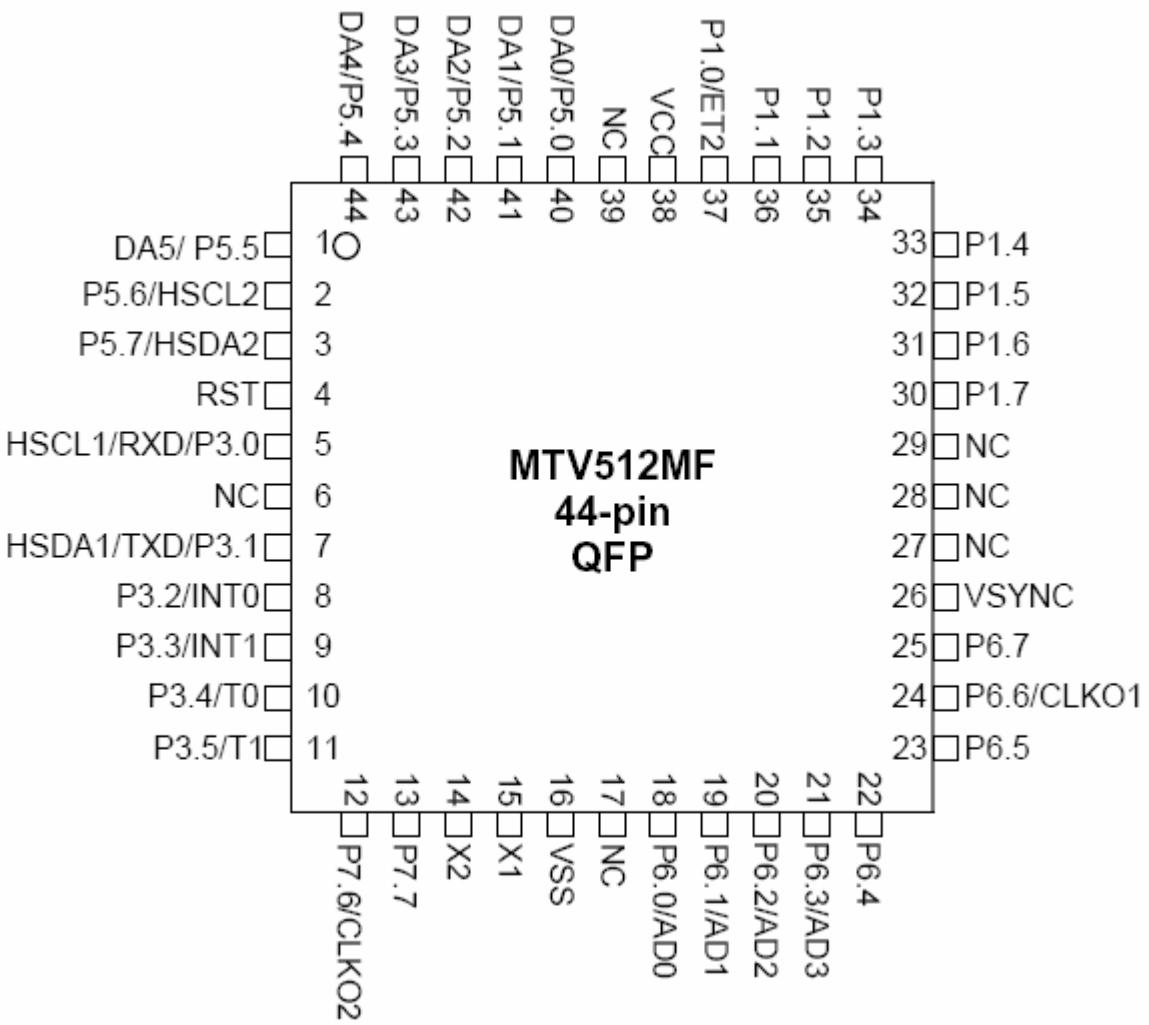
Pin	Symbol	Description
127	XO	Crystal OSC output
128	XI	Reference clock input from external crystal or from single-ended CMOS/TTL OSC（3.3V tolerance）
50	DDCSCL1（ADC）	Open drain（Internal 75K pull high）
51	DDCSDA1（ADC）	Open drain（Internal 75K pull high）
121	DDCSCL2（DVI）	Open drain（Internal 75K pull high）
120	DDCSDA2（DVI）	Open drain（Internal 75K pull high）
123	RESET_OUT	Reset out Open drain(internal 75KOhm high)
110/48	COUT	Crystal out
124	33VRST_REF	Reference 3.3V for Reset Out
109	33VPNLOUT	Panel on/off switch out （Max current driving 1A）
58	BJT_B	Embedded regulator P type BJT control pin out
5	TMDS_TST	TMDS_TEST Pin; Power-on-latch for host interface type.
7/13	TMDS_VDD	TMDS power（3.3V）
6	REXT	Impedance Match Reference.
49/112	PWM2	
4/48/111	PWM1	
3/5/122	PWM0	
4	BYPASS	For External Bypass Capacitor
125	DPLL_VDD	Power for digital PLL（3.3V）
2	APLL_VDD	Power for multi-phase PLL（3.3V）
3	PLL_TEST1	Test Pin 1;Power-on-latch for MCU crystal location
4	PLL_TEST2	Test Pin 2;Power-on-latch for crystal in frequency
56/118	SCSB	Serial control I/F chip select（Open drain）
57/119	SCLK	Serial control I/F clock（Open drain）
59/83/108	Pad 3.3V Power	PVCC
47/116	Digital 1.8V Power	VCCK
21/38	ADC_VDD	ADC Power（1.8V）
40	VCLK	Video8 Clock
19	AVSO	ADC vertical sync input 5V tolerance Power from PIN 13
20	AHSO	ADC horizontal sync input Adjustable Schmidt trigger 5V tolerance Power from PIN 13

AIC1084-33PM (U701): DC power convert, used to 5v convert 3.3v.

MTV512GMV64 (U402): The MTV512M micro-controller is an 8051 CPU core embedded device especially tailored for flat panel display applications. It includes an 8051 CPU core, 768-byte SRAM, 4 channels of 6-bit ADC, 3 external counters/timers, 6 channels of PWM DAC, VESA DDC interface, and a 64K-byte internal program Flash-ROM memory.

Circuit Diagram





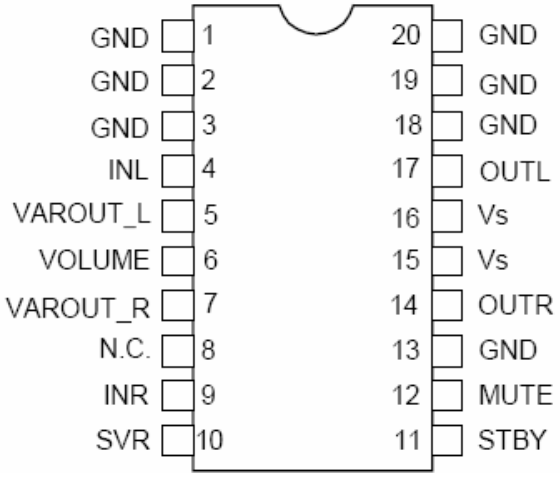
PIN Function

Name	Pin No.		DESCRIPTION
	PLCC	QFP	
NC	1	39	No connection
DA0/P5.0	2	40	PWM DAC output/General purpose I/O (open drain)
DA1/P5.1	3	41	PWM DAC output/General purpose I/O (open drain)
DA2/P5.2	4	42	PWM DAC output/General purpose I/O (open drain)
DA3/P5.3	5	43	PWM DAC output/General purpose I/O (open drain)
DA4/P5.4	6	44	PWM DAC output/General purpose I/O (open drain)
DA5/P5.5	7	1	PWM DAC output/General purpose I/O (open drain)
P5.6/HSCL2	8	2	General purpose I/O/Slave IIC1 SCL2（open drain）
P5.7/HSDA2	9	3	General purpose Output/Slave IIC1 SCL2（open drain）
RST	10	4	High Active RESET
HSCL1/P3.0/RXD	11	5	Slave IIC clock/General purpose I/O/Rxd (open drain)
HSDA1/P3.1/RXD	13	7	Slave IIC clock/General purpose I/O/Txd (open drain)
P3.2/INT0	14	8	General purpose I/O/External interrupt 0(Standard 8051)

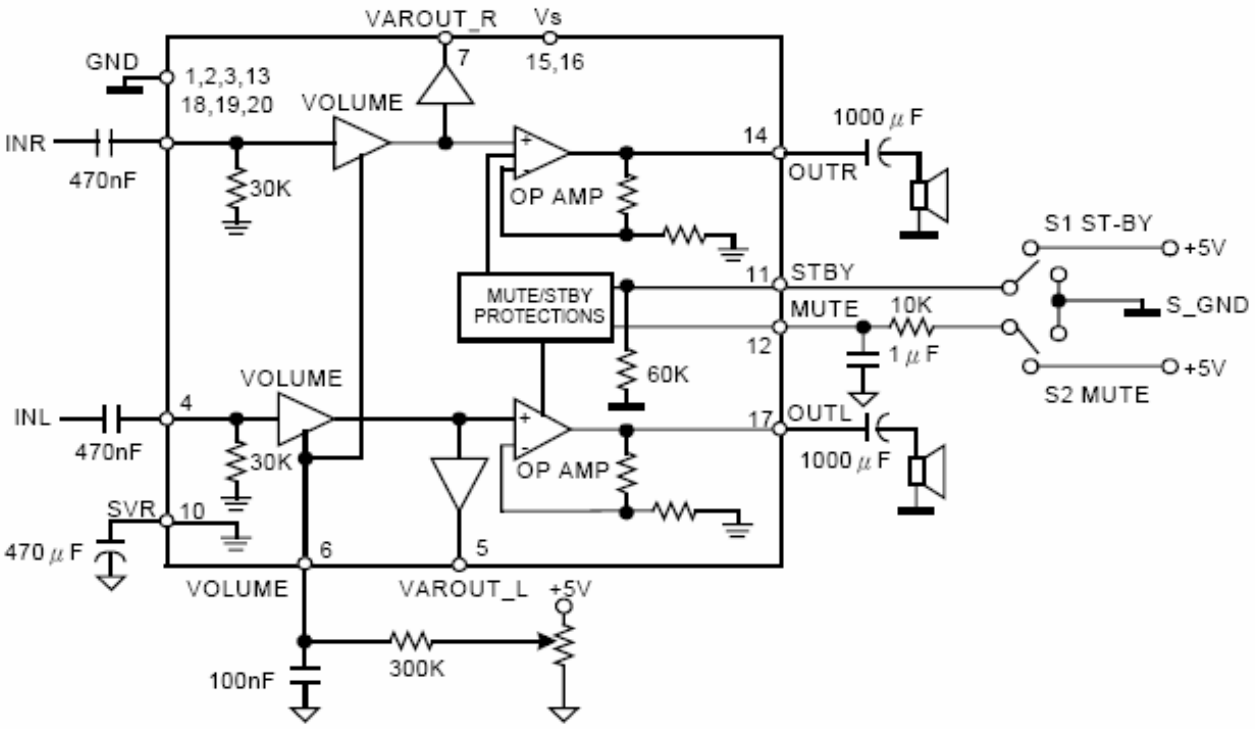
P3.3/INT1	15	9	General purpose I/O/External interrupt 1(Standard 8051)
P3.4/T0	16	10	General purpose I/O/T0 Ext. Counter/Timer 0(Standard8051)
P3.5/T1	17	11	General purpose I/O/T1 Ext. Counter/Timer 1(Standard8051)
P7.6/CLKO2	18	12	General purpose I/O/Clock out 2 (CMOS)
P7.7	19	13	General purpose I/O (CMOS)
X2	20	14	Crystal Out
X1	21	15	Crystal In
VSS	22	16	Ground
P6.0/AD0	24	18	General purpose I/O(COMS)/6-bit ADC channel 0 input
P6.1/AD1	25	19	General purpose I/O(COMS)/6-bit ADC channel 1 input
P6.2/AD2	26	20	General purpose I/O(COMS)/6-bit ADC channel 2 input
P6.3/AD3	27	21	General purpose I/O(COMS)/6-bit ADC channel 3 input
P6.4	28	22	General purpose I/O(COMS)
P6.5	29	23	General purpose I/O(COMS)
P6.6/CLKO1	30	24	General purpose I/OCLKO1(COMS)
P6.7	31	25	General purpose I/O(COMS)
VSYNC	32	26	VSYNC input
P1.7	36	30	General purpose I/O(Standard 8051/CMOS)
P1.6	37	31	General purpose I/O(Standard 8051/CMOS)
P1.5	38	32	General purpose I/O(Standard 8051/CMOS)
P1.4	39	33	General purpose I/O(Standard 8051/CMOS)
P1.3	40	34	General purpose I/O(Standard 8051/CMOS)
P1.2	41	35	General purpose I/O(Standard 8051/CMOS)
P1.1	42	36	General purpose I/O(Standard 8051/CMOS)
P1.0/ET2	43	37	General purpose I/O/External Counter/Timer2(Standard 8051/CMOS)
VCC	44	38	3.3V power

TDA7496L (U201): The UTC TDA7496L is a stereo 2W+2W class AB power amplifier, specially designed for high quality sound, TV and Monitor applications. Features of the UTC TDA7496L include linear volume control, Stand-by and mute functions.

Pin Function

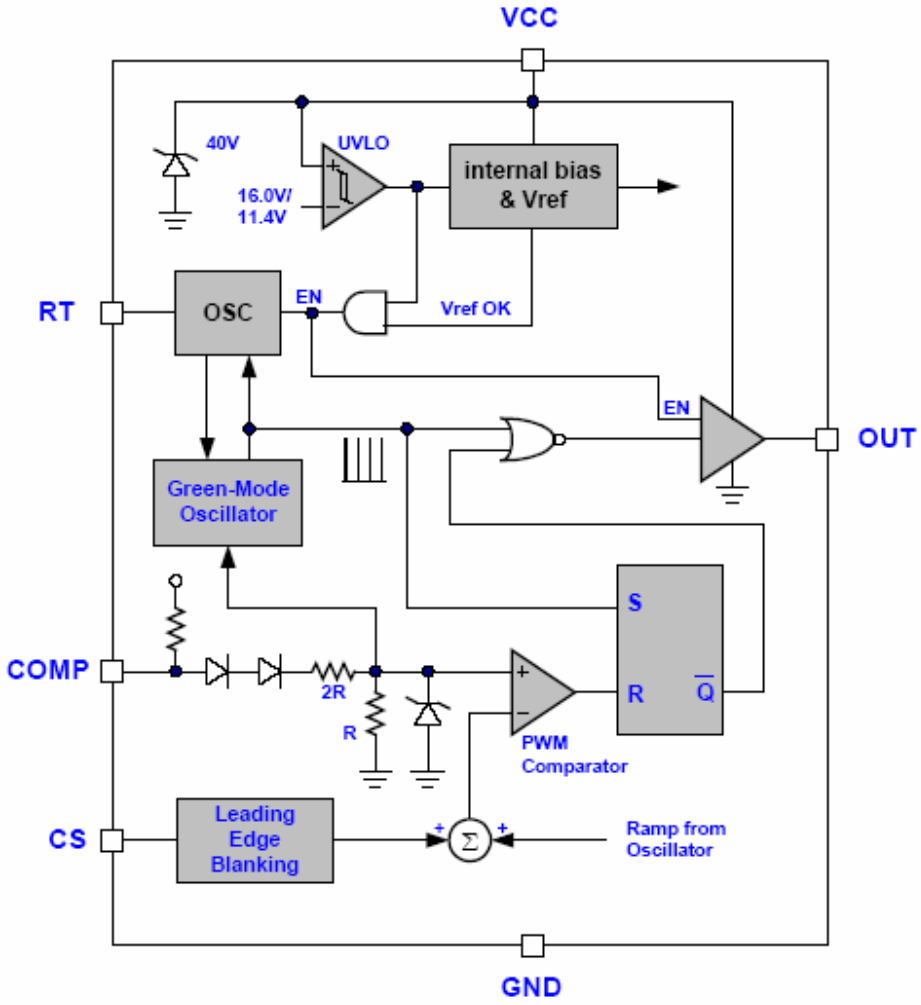


Circuit Diagram



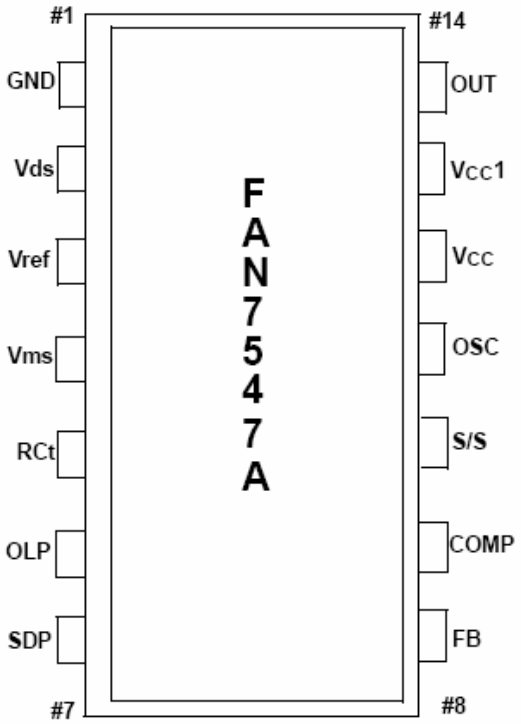
LD7552BS (IC901): PWM control, high-voltage startup current. The circuit unit has functions such as over-current protection, over-voltage protection, output short-circuit protection and etc. The function of each pin and the inside circuit diagram are as follows**:**

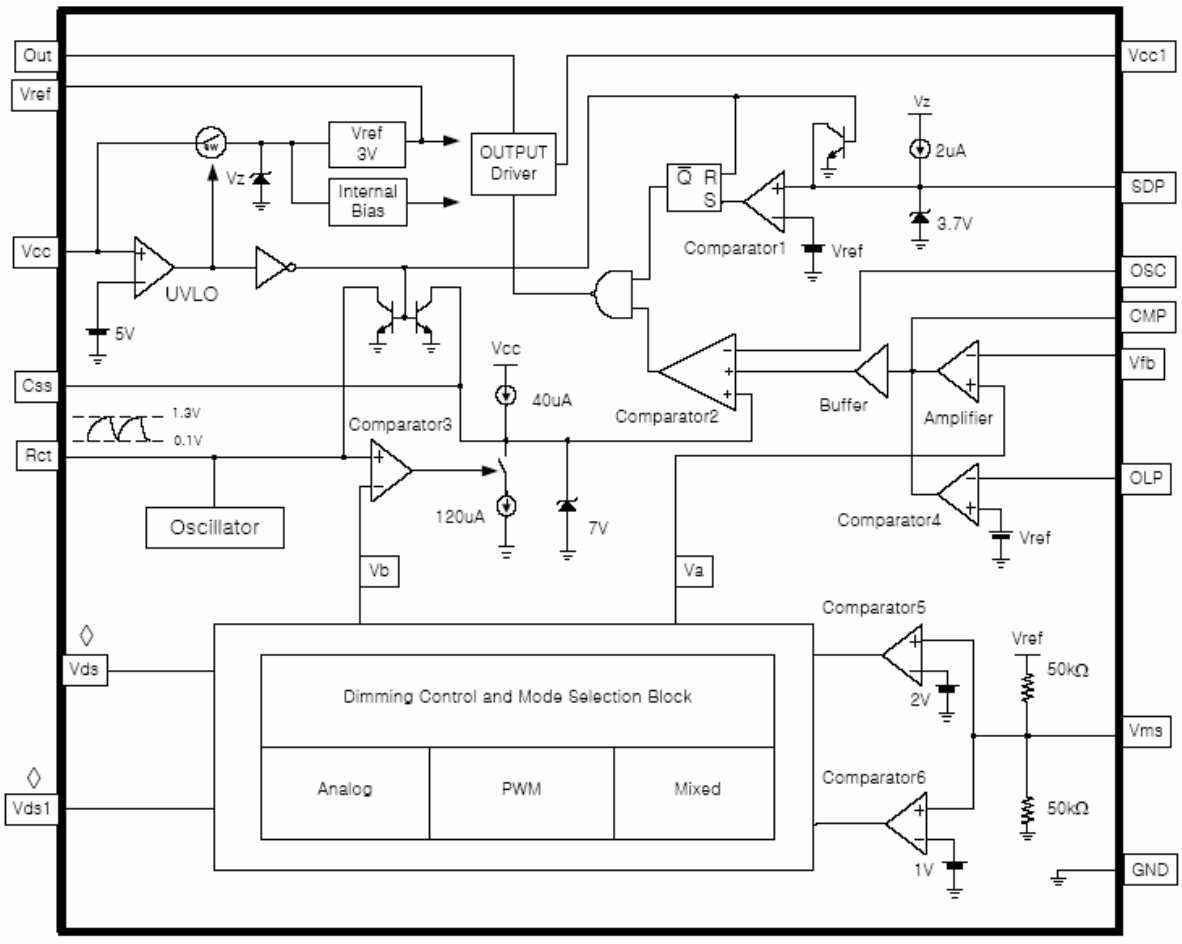
Pin	Name	Function
1	GND	Ground
2	COMP	Voltage feedback pin (same as the COMP pin in UC384X), By connecting a photo-coupler to close the control loop and achieve the regulation
3	VCC	Supply voltage pin
4	RT	This pin is to program the switching frequency. By connecting a resistor to ground to set the switching frequency.
6	NC	Unconnected pin
7	VCC	Supply voltage pin
8	OUT	Gate drive output to drive the external MOSFET



FAN7547A(IC201): The FAN7547A provides all control functions for a current fed push-pull self oscillation type converter, and also contains voltage. Typical operating frequency range is between 30kHz depending on the CCFL(Cold Cathode Fluorescent Lamp) and the transformer's characteristics:

NO.	Name	Function Description	NO.	Name	Function Description
1	GNDT	Ground	8	FB	Feedback Input
2	Vds	Dimming Voltage Input	9	COMP	Error Amplifier Output
3	Vref	Reference Voltage	10	S/S	Soft Start
4	Vms	Dimming Mode Selection	11	OSC	Main Ct
5	Rct	Burst Dimming Frequency Set	12	Vcc	Supply Voltage
6	OLP	Open Lamp Protection	13	Vcc1	Output Drive Source Voltage
7	SDP	Shutdown Protection	14	OUT	Output Drive


#1
#14
GND
Vds
Vref
Vms
RCt
OLP
SDP
OUT
Vcc1
Vcc
OSC
S/S
COMP
FB
#7
#8
FAN7547A


Out
Vref
Vcc
Css
Rct
Vds
Vds1
Vcc1
SDP
OSC
CMP
Vfb
OLP
Vms
GND
Vref 3V
Internal Bias
OUTPUT Driver
Vz
2uA
3.7V
Comparator1
Vref
UVLO
5V
Vcc
40uA
Comparator2
Buffer
Amplifier
1.3V
0.1V
Comparator3
120uA
7V
Oscillator
Vb
Va
Comparator4
Vref
Comparator5
2V
Vref
50kΩ
Comparator6
1V
50kΩ
Dimming Control and Mode Selection Block
Analog
PWM
Mixed

5. Adjust Procedure

5.1 ADJUSTMENT CONDITIONS AND PRECAUTIONS

1. Approximately 30 minutes should be allowed for warm up before proceeding.
2. Adjustments should be undertaken only on those necessary elements since most of them have been carefully preset at the factory.
3. ESD protection is needed before adjustment.

5.2 MAIN ADJUSTMENTS

NO.	FUNCTIONS	DESIGNATION
1.	White Balance	Function Key
2.	Geometry	Function Key

5.3 ALIGNMENT PROCEDURES

Approximately 30 minutes should be allowed for warm up before proceeding White-Balance adjustment.

1. Adjust of White Balance

1.)How to do the Chroma-7120 MEM .Channel setting

A、Reference to Chroma 7120 user guide
B、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.CHANNEL9 (9300 color):
9300 color temp. parameter is Wx = 0.283 ±0.02;Wy = 0.298 ±0.02;
Y > 190 cd/m^2 ,
B、MEM.CHANNEL10 (6500 color):
6500 color temp. parameter is Wx = 0.313±0.02;Wy = 0.329 ±0.02;
Y > 260 cd/m^2,
C、MEM.CHANNEL 11 (5400 color):
5400 color temp. parameter is Wx = 0.335±0.02;Wy = 0.350 ±0.02;
Y > 210 cd/m^2,
D、MEM.CHANNEL 12 (5000 color):
5000 color temp. parameter is Wx = 0.346±0.02;Wy = 0.359 ±0.02;
Y > 210 cd/m^2
E、MEM.CHANNEL13 (SRGB color):
SRGB color temp. parameter is Wx = 0.313±0.02;Wy = 0.329 ±0.02;
Y > 220 cd/m^2,

3.)Into factory mode of VA712b-2

A、First Power off, then press Switch 2 button along with press Power button will activate the factory mode, then MCU will do AUTO LEVEL automatically. Meanwhile press MENU the OSD screen will located at **LEFT TOP OF PANEL**.

4.)Bias adjustment :

Set the **Contrast** to 70

Adjust the **Brightness** to 100.

5.)Gain adjustment :

Move cursor to "-F-" and press MENU key

A、Adjust 9300 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 = 0.283 ±0.02, y =0.298 ±0.02, Y > 250 cd/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±5

B、Adjust 6500 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 = 0.313 ±0.02, y = 0.329 ±0.02, Y>260 cd/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 reached the 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±5

C、Adjust 5400 color-temperature

(1) Switch the chroma-7120 to **RGB-Mode** (with press “MODE” button)
(2)、Switch the MEM .channel to Channel 11(with up or down arrow on Chroma 7120)
(3)、The LCD-indicator on Chroma 7120 will show x = 0.335 ±0.02, y = 0.350 ±0.02, Y>210 cd/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 reached the 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±5

D、Adjust 5000 color-temperature

(1) Switch the chroma-7120 to **RGB-Mode** (with press “MODE” button)
(2)、Switch the MEM .channel to Channel 11(with up or down arrow on Chroma 7120)
(3)、The LCD-indicator on Chroma 7120 will show x = 0.346 ±0.02, y = 0.359 ±0.02, Y>210 cd/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 reached the 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±5

E、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 = 0.313 ±0.02, y = 0.329 ±0.02, Y>220 cd/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 reached the 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±5

F、Press reset key and Turn the Power-button “off to on” to quit from factory mode.

2. Geometry

1).Set cross-hatch pattern and preset timing as timing table listed.

2).Change to each mode in turn and wait for the monitor finish auto-alignment and save press before change to next mode.

3).Until all of modes are adjusted, exit OSD menu and press POWER OFF to exit factory mode.

5.4 Factory Defaults

Item	Defaults	Item	Defaults
Contrast	70%	OSD H. Position	50%
Brightness	100%	OSD V. Position	50%
Volume	50%	OSD Time Out	15 Sec
Color Temperature	6500K	Resolution Notice	Enable
Sharpness	33%	OSD background	Enable
720X400/640X400	720X400		

5.5 Function Test

1 Product: 17” LCD Monitor

2 Test Equipment: Color Video Signal & Pattern (or PC with SXGA resolution and a sound card)

3 Test Condition: Before function test and alignment, each LCD Monitor should be warmed up for at least 30 minutes with the following conditions:

(a)In room temperature,

(b) With full-white screen, RGB, and Black

(c) With cycled display modes,

640*480 (H=43.27kHz, V=85Hz)

800*600 (H=53.7kHz, V=85Hz)

1024*768 (H=68.67kHz, V=85Hz)

1280*1024 (H=79.97kHz, V=75Hz)

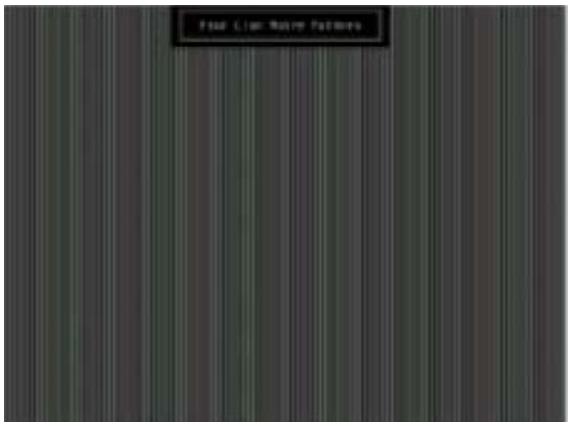
4 Test Display Modes & Pattern

Compatible Modes

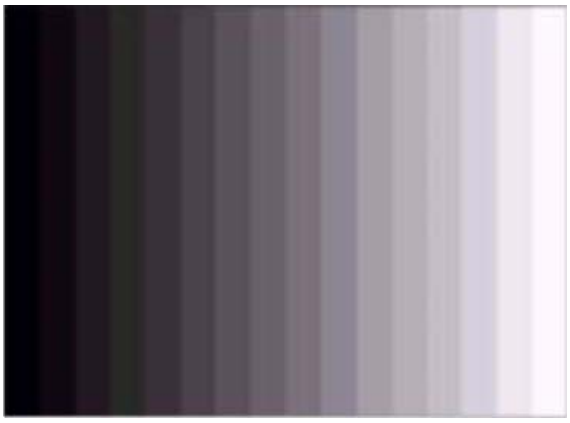
Analog	Digital
640 x 350 @ 70Hz, 31.5kHz	640 x 350 @ 70Hz, 31.5kHz
640 x 400 @ 70Hz, 31.5kHz	640 x 400 @ 70Hz, 31.5kHz
640 x 480 @ 60Hz, 31.5kHz	640 x 480 @ 60Hz, 31.5kHz
640 x 480 @ 67Hz, 35.0kHz	640 x 480 @ 67Hz, 35.0kHz
640 x 480 @ 72Hz, 37.9kHz	640 x 480 @ 72Hz, 37.9kHz
640 x 480 @ 75Hz, 37.5kHz	640 x 480 @ 75Hz, 37.5kHz
720 x 400 @ 70Hz, 31.5kHz	720 x 400 @ 70Hz, 31.5kHz
800 x 600 @ 56Hz, 35.1kHz	800 x 600 @ 56Hz, 35.1kHz
800 x 600 @ 60Hz, 37.9kHz	800 x 600 @ 60Hz, 37.9kHz
800 x 600 @ 75Hz, 46.9kHz	800 x 600 @ 75Hz, 46.9kHz
800 x 600 @ 72Hz, 48.1kHz	800 x 600 @ 72Hz, 48.1kHz
832 x 624 @ 75Hz, 49.7kHz	832 x 624 @ 75Hz, 49.7kHz
1024 x 768 @ 60Hz, 48.4kHz	1024 x 768 @ 60Hz, 48.4kHz
1024 x 768 @ 70Hz, 56.5kHz	1024 x 768 @ 70Hz, 56.5kHz
1024 x 768 @ 72Hz, 58.1kHz	1024 x 768 @ 72Hz, 58.1kHz
1024 x 768 @ 75Hz, 60.0kHz	1024 x 768 @ 75Hz, 60.0kHz
1280 x 1024 @ 60Hz, 63.4kHz	1280 x 1024 @ 60Hz, 63.4kHz
1280 x 1024 @ 75Hz, 79.97kHz	1280 x 1024 @ 75Hz, 79.97kHz
1280x 720 @ 60Hz, 45kHz	1280x 720 @ 60Hz, 45kHz

Function Test Display Pattern

Item	Test Content	Pattern	Specification	Remark
1	Frequency & Tracking	Fine Line Moire	Eliminate visual wavy noise.	Figure 1
2	Contrast/Brightness	16 Gray Scale	16 gray levels sh should be distinguishable.	Figure 2
3	Boundary	Horizontal&Vertical Thickness	Horizontal and Vertical position of video should be adjustable to be within the screen frame.	Figure 3
4	RGB Color Performance	RGB Color Intensities	Contrast of each R, G, B, color should be normal.	Figure 4,5,6
5	Screen Uniformity & Flicker	Full White	Should be compliant with the spec.	Figure 7
6	Dead Pixel/Line	White Screen & Dark Screen	The numbers of dead pixels should be compliant with the spec.	Figure 7,8
7	White Balance	White & Black Pattern	The screen must have the pure white and black pattern, no other color.	Figure 9



Fine Line Morie Pattern (Figure1)



Gray Scale Pattern (Figure2)

Horizontal & Vertical Thickness Pattern (Figure 3)

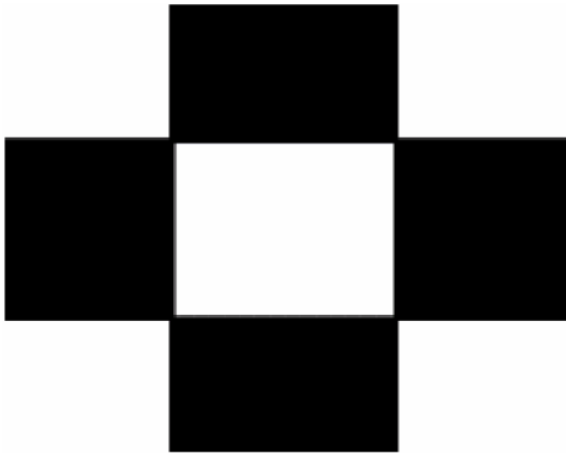
R. Color Pattern (Figure 4)

G. Color Pattern (Figure 5)

B. Color Pattern (Figure 6)

Full White Pattern (Figure 7)

Dark Screen Pattern (Figure 8)



Black-White Pattern (Figure 9)

4.3 Function Test and Alignment Procedure

All Modes Reset

You should do “All Mode Reset” (Refer to Chapter III-3. Hot Keys for Function Controls) first. This action will allow you to erase all end-user’s settings and restore the factory defaults.

Auto Image Adjust

Please select and enter “Auto Image Adjust” function on Main Menu to see if it is workable. The “Auto Image Adjust” function is aimed to offer a better screen quality by built-in ASIC. For optimum screen quality, the user has to adjust each function manually.

Firmware

Test Pattern: Burn In Mode (Refer to Chapter III-3. Hot Keys for Function Controls)

- Make sure the F/W is the latest version.

DDC

Test Pattern: EDID program

Make sure it can pass test program.

Fine Tune and Sharpness

Test Signal: 1280*1024@60Hz

Test Pattern: Line Moire Pattern

Check and see if the image has noise and focus performs well. Eliminate visual line bar.

If not, readjust by the following steps:

(a)Select and enter “Fine Tune” function on “Manual Image Adjust” to adjust the image to eliminate visual wavy noise.

(b)Then, select and enter “Sharpness” function to adjust the clarity and focus of the screen image.

Boundary

Test Signal: 1280*1024@60Hz

Test Pattern: Horizontal & Vertical Line Thickness Pattern

Check and see if the image boundary is within the screen frame.

If not, readjust by the following steps:

(a)Select and enter “Manual Image Adjust” function on OSD Main Menu.

(b)Then, select and enter “Horizontal Size” or “Horizontal/Vertical Position” function to adjust the video boundary to be full scanned and within screen frame.

White Balance

Test Signal: 640*480@60Hz

Test Pattern: White and Black Pattern

1.5.8 R, G, B, Colors Contrast

Test Signal: 1280*1024@60Hz

Test Pattern: R, G, B, Color Intensities Pattern and 16 Gray Scale Pattern

- Check and see if each color is normal and distinguishable.
- If not, please return the unit to repair area.

Screen Uniformity and Flicker

Test Signal: 1280*1024@60Hz

Test Pattern: Full White Pattern

- Check and see if it is in normal condition.

1.5.10 Dead Pixel and Line

Test Signal: 1280*1024@60Hz

Test Pattern: Dark and White Screen Pattern

- Check and see if there are dead pixels on LCD panel with shadow gauge and filter film.
- The total numbers and distance of dead pixels should be compliant with the spec.

Mura

Test Pattern: White, RGB, Black, & Grey

Test Tool: 10% ND Filter

- Check if the Mura can pass 10% ND Filter.

Audio

Test Signal: Voice signal (optional, depend on model)

Test Pattern: liberty

- Make sure there is audio output.
- Make sure that audio function (volume 80%) is working without noise and

resonance.

- Make sure that the sound of right and left speakers are in balance.

Check for Secondary Display Modes

Test Signal:

Analog: 640*350@70Hz; 640*480@60/67/72/75/85Hz;
720*400@70Hz; 800*600@56/60/72/75/85Hz;
832*624@75Hz, 1024*768@60/70/72/75/85Hz;
1280*1024@60/75Hz

Digital: 640*350@70Hz; 640*480@60/72/75/85Hz;
720*400@70Hz; 800*600@56/60/72/75/85Hz;
1024*768@60/70/72/75/85Hz; 1152*870@75Hz,
1280*720@60Hz, 1280*1024@60Hz

- Normally when the primary mode 1280*1024@60Hz is well adjusted and compliant with the specification, the secondary display modes will also be compliant with the spec. But we still have to check with the general test pattern to make sure every secondary is compliant with the specification.
-

All Modes Reset

After final QC step, we have to erase all saved changes again and restore the factory defaults. You should do “All Mode Reset” again.

Power Off Monitor

Turn off the monitor by pressing “Power” button.

5.6 Firmware Upgrade Procedure

When you receive the returned monitor, please check whether the firmware version is the latest. If not, please do the following procedures to upgrade it to the latest version.

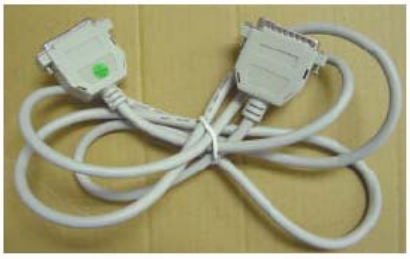
1 Equipment Needed

- VA712-2/VA712b-2 Monitor
- Fixture for Firmware Upgrade
- Power Adapter (P/N: 47.58201.001) *1 for Fixture
- VGA Cable (P/N: 42.59901.003) *1(Pin 4, 11 should be connected to GND)
- PC (Personal Computer)
- LPT Cable (P/N: 42.59906.001) *1
- Firmware Upgrade Program
- One additional monitor for checking the program execution

PC

Fixture

VA712-2/VA71b-2

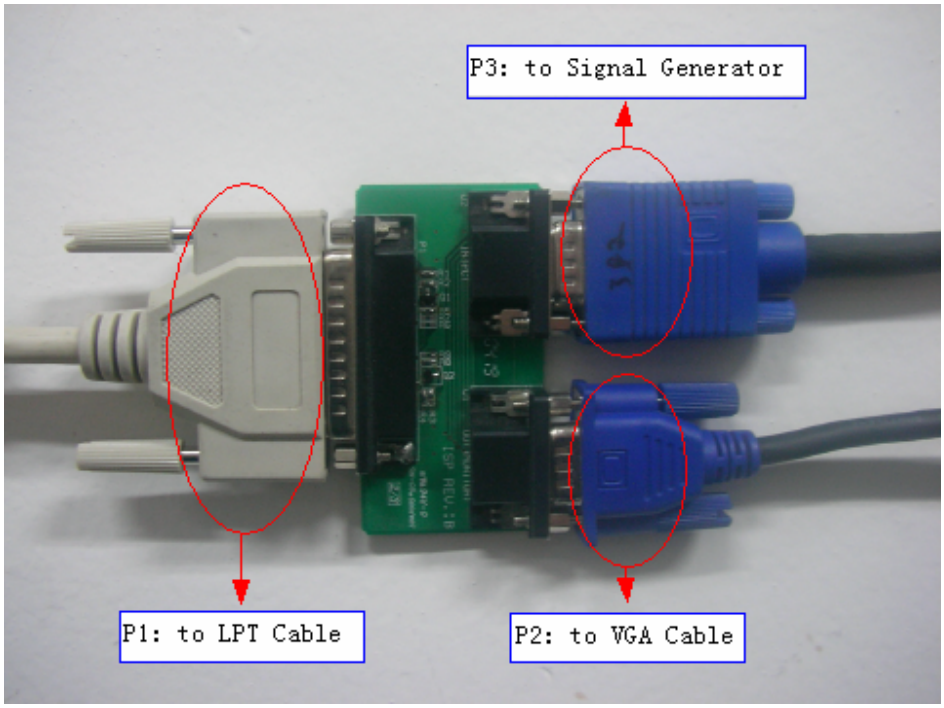


LPT Cable
(P/N: 42.59906.001)

VGA Cable
(P/N: 42.59901.003)

2 Setup Procedure

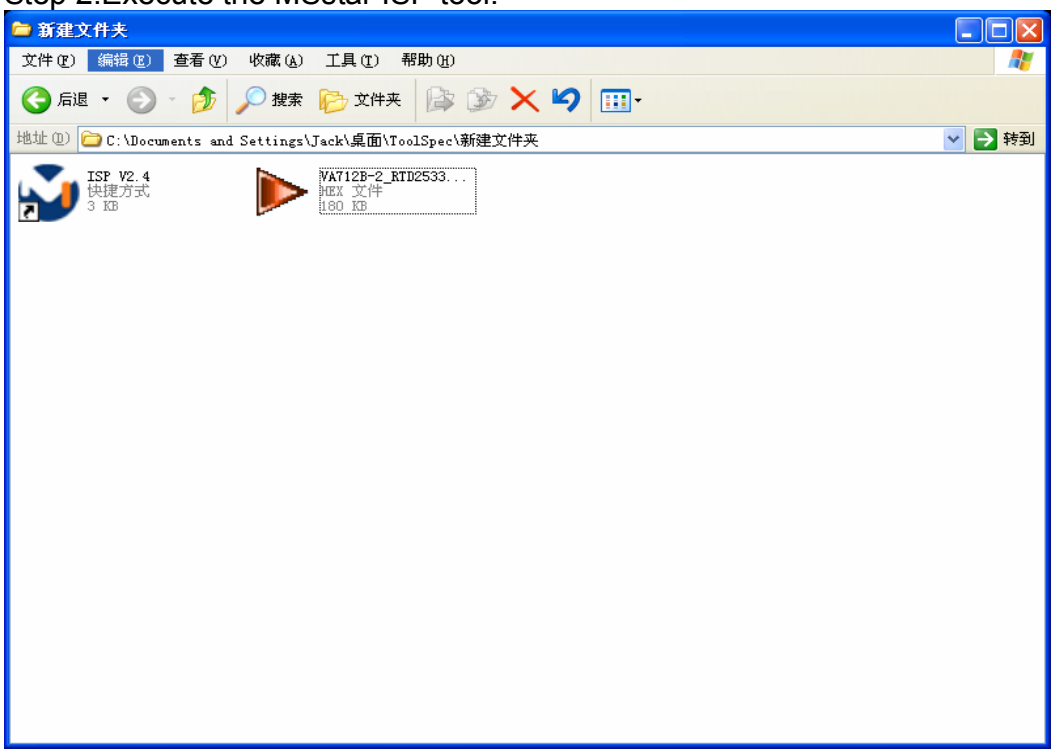
2.1 Connect P1 of Fixture with printer port of PC by LPT Cable.
2.2 Connect P2 of Fixture with VA712-2/VA712b-2 Monitor by VGA Cable.
2.3 Connect Power Cord to VA712-2/VA712b-2 Monitor.
2.4 Connect P3 to the Signal Generator (eg.Chroma2326) for verifying it after the operation being completed.
2.5 Connect PC to the additional monitor.



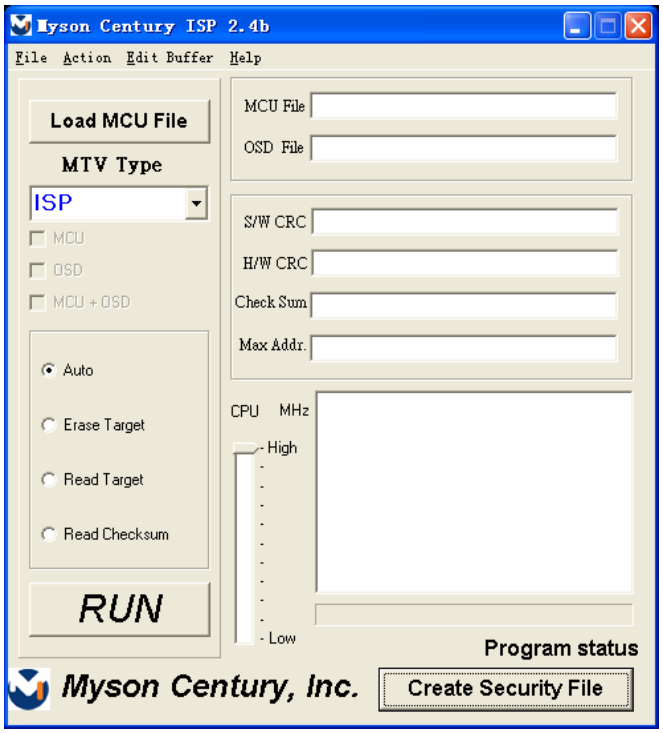
3 Firmware Upgrade Procedure

Step 1. Let VA712-2/VA712b-2 set to be connected with AC cable and VGA cable.

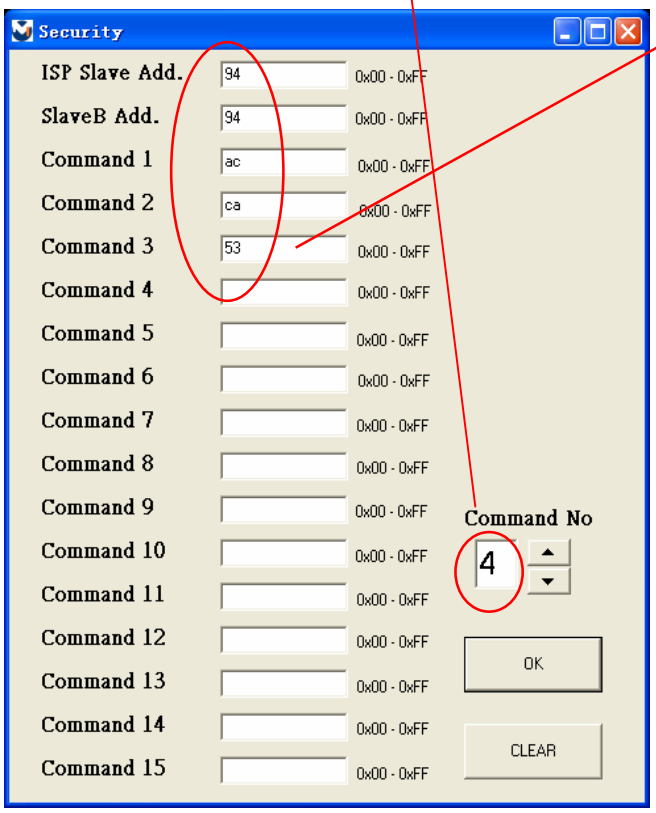
Step 2.Execute the MSstar ISP tool.



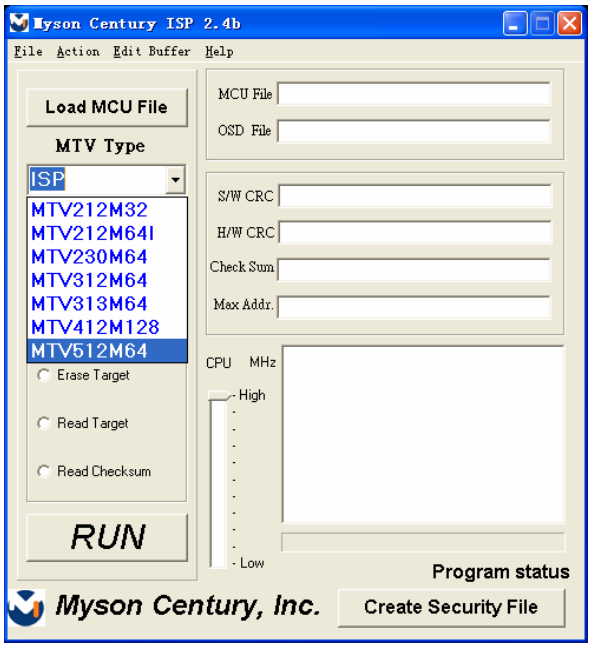
Step 3. Click “Create Security File” button. Open a new window to key in security code.



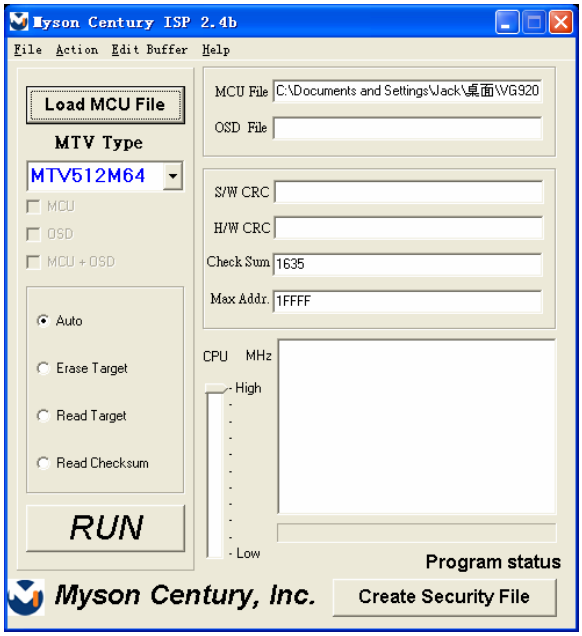
Step 4.Set “Command NO” to 4,and key in security code :“94,94,ac,ca,53” to shown as following, then press “OK” button to close window.



Step 5. Click dropdown listbox for MTV type, select the “MTV512M64” viewed on your set.

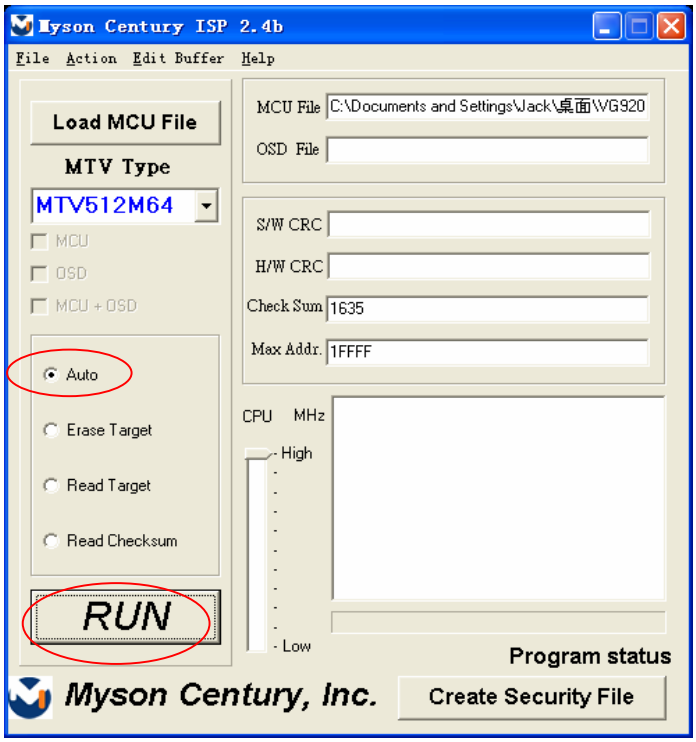


Step 6. Click “Load MCU File” button. Select the object bincode on your corresponding directory.

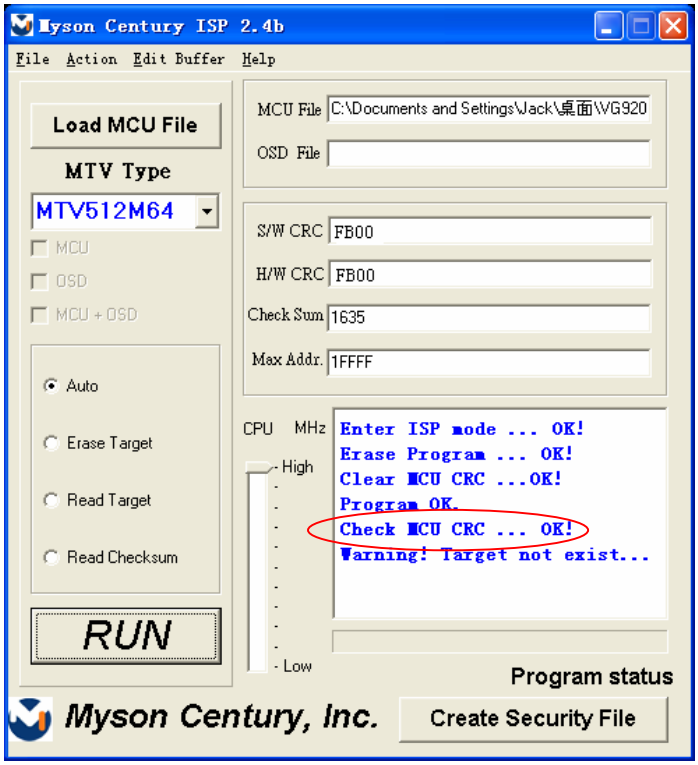


Step 7. Click “确定” button to finish the selection of bincode.

Step 8. Select “Auto” optionbutton, then execute the flashing action by clicking the “RUN” button.



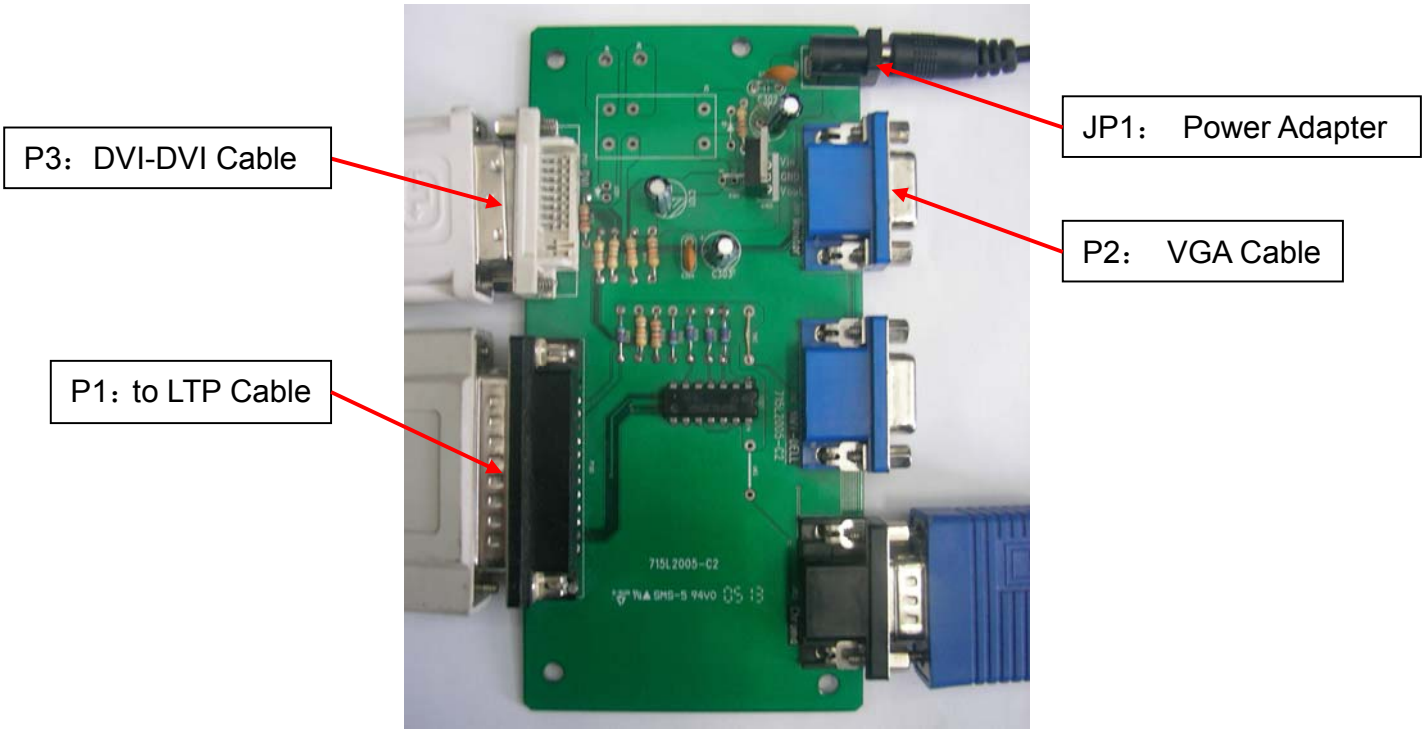
Step 9. If the flashing F/W has been completed, the message of “Check MCU CRC OK” on the right TextBox means the Host verify ok for the progress of program.



Step 10. Unplug and replug power cord of VA712-2/VA712b-2 set and then check the OSD operation and image on srceen.

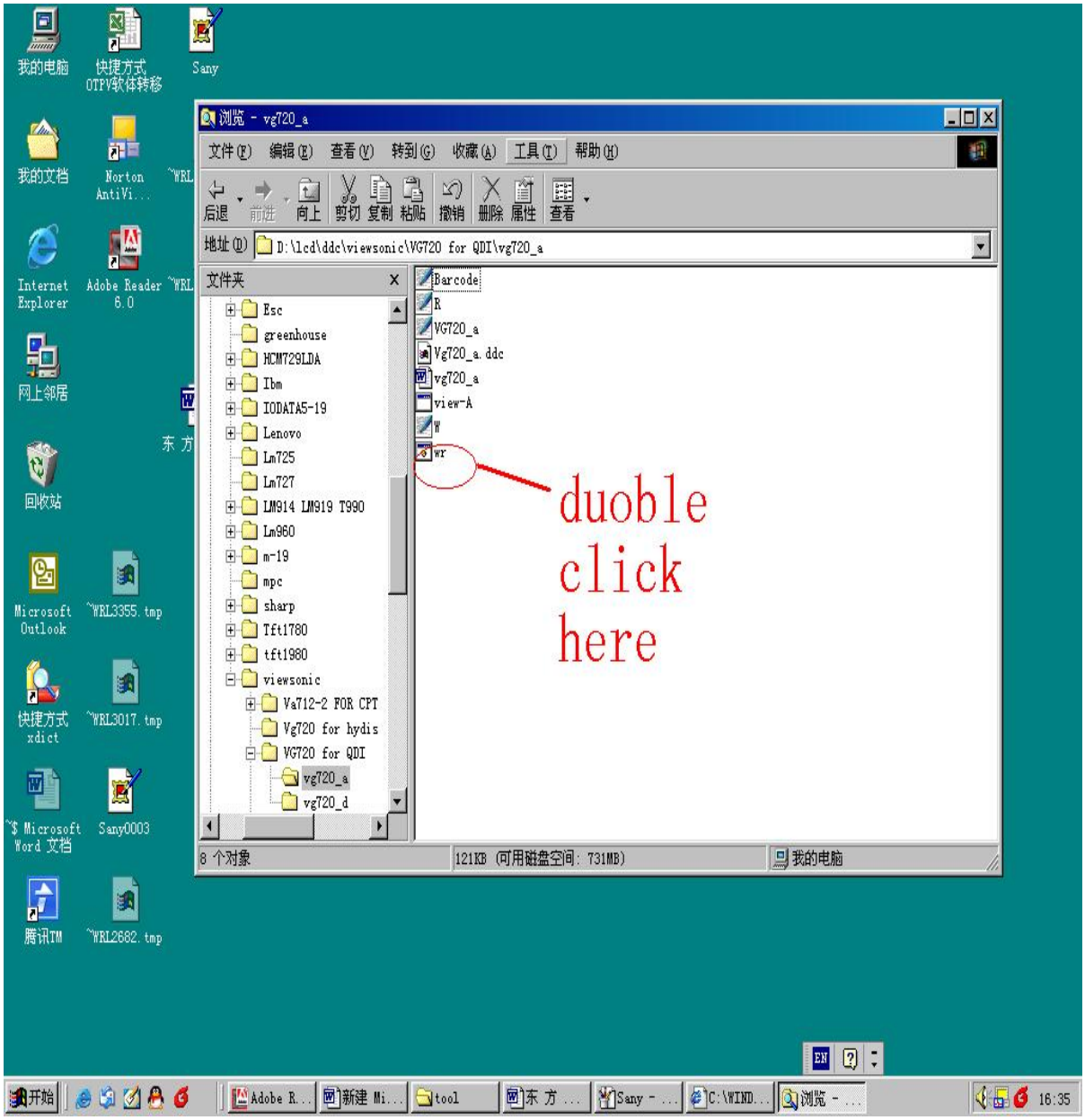
Step 11. At last, do “Memory Recall.”

3.2 Setup Procedure
3.2.1 Connect P2 and monitor of Fixture with VGA ports of VA712-2/VA712b-2 by VGA Cable.
3.2.2 Connect P3 of Fixture with DVI port of **VA712b-2** by DVI-DVI Cable.
3.2.3 Connect P1 of Fixture with Printer port of PC by LPT Cable.
3.2.4 Plug Power Adapter to Fixture.
3.2.5 Connect Power Cord to VA712-2/VA712b-2 Monitor.
3.2.6 Connect PC to the additional monitor.

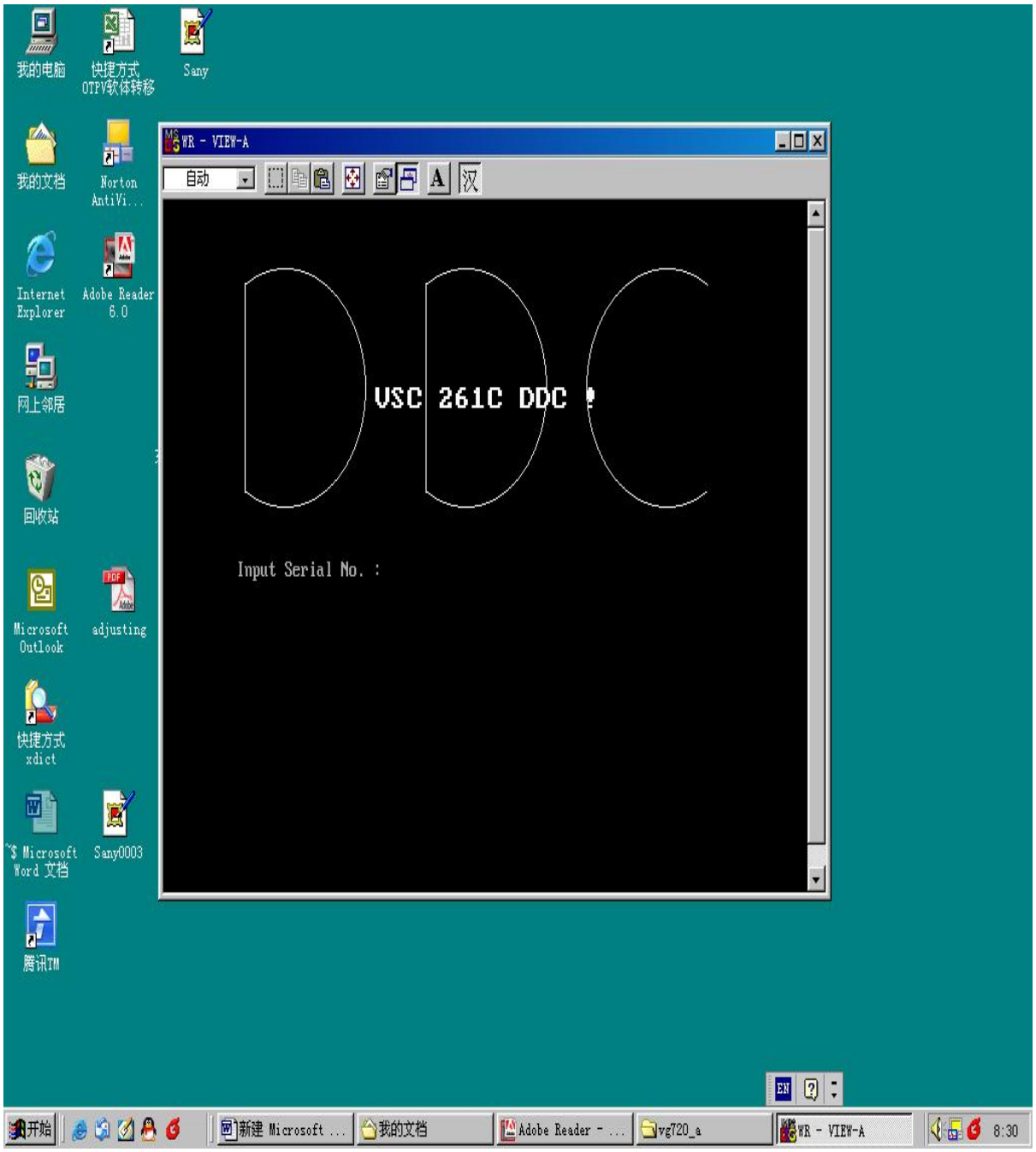


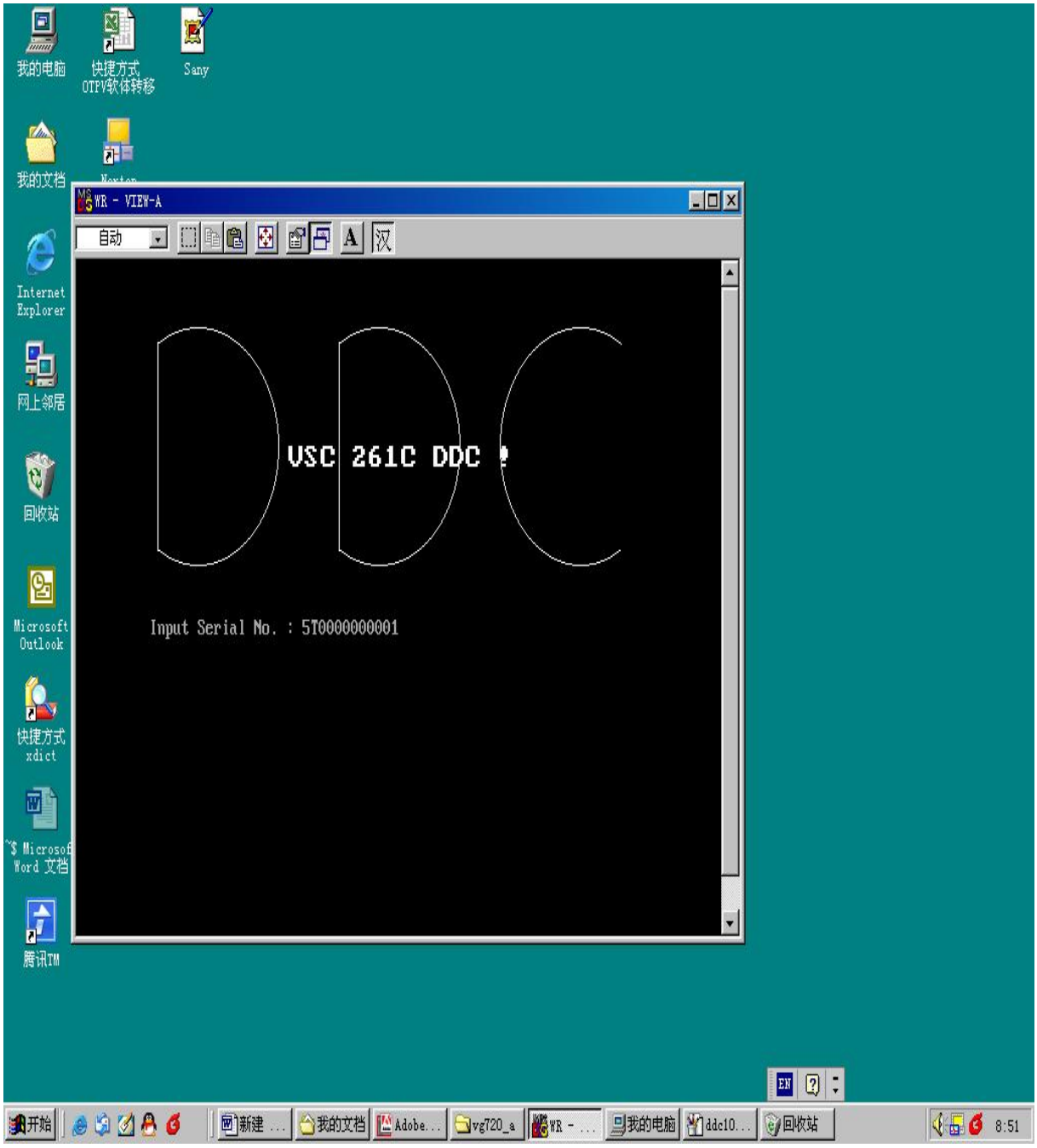
3.3 DDC Key In Procedure

Sep1.Select and execute DDC Key In program

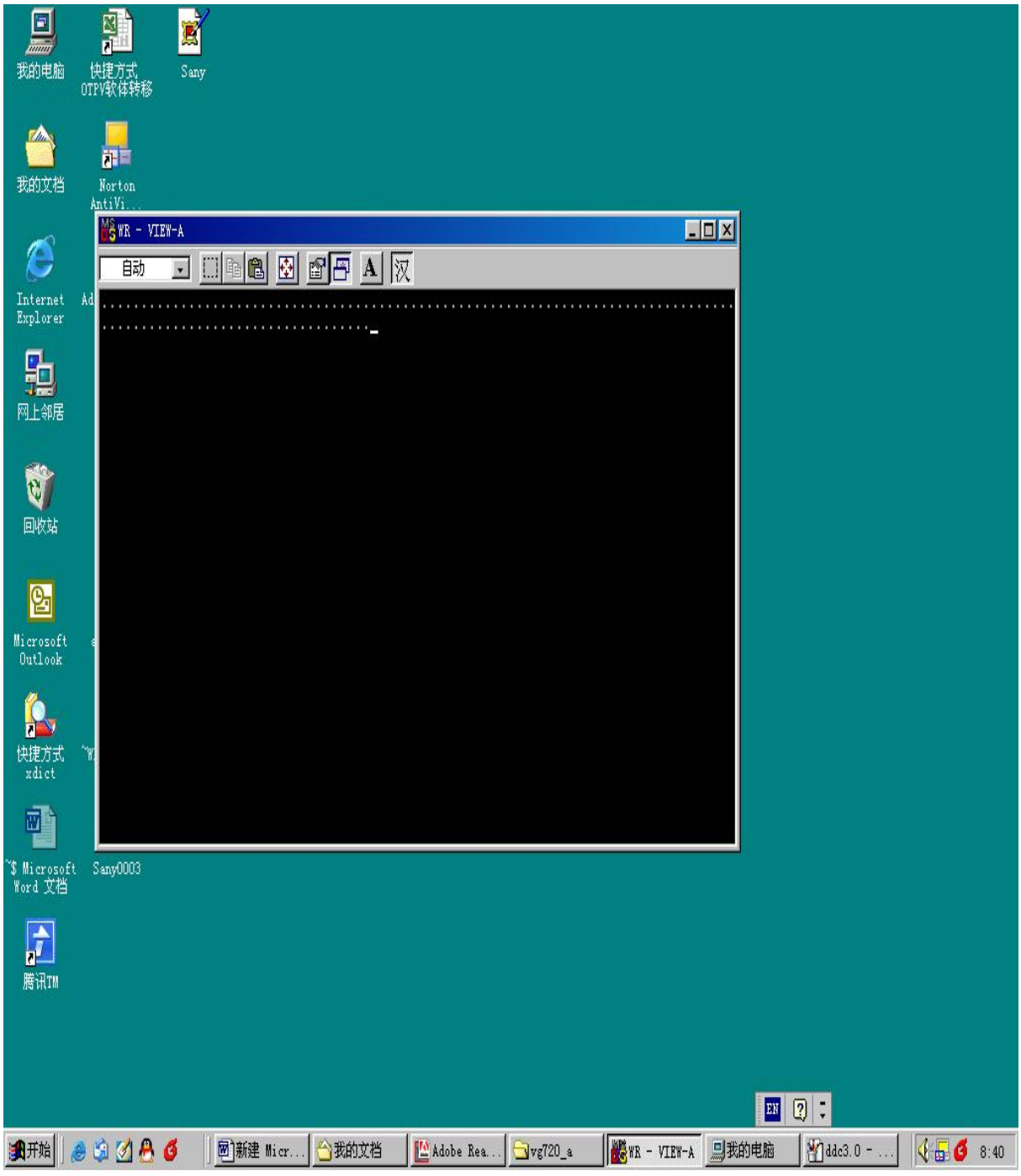


Sep2:Inpute the S/N and execute “Enter”

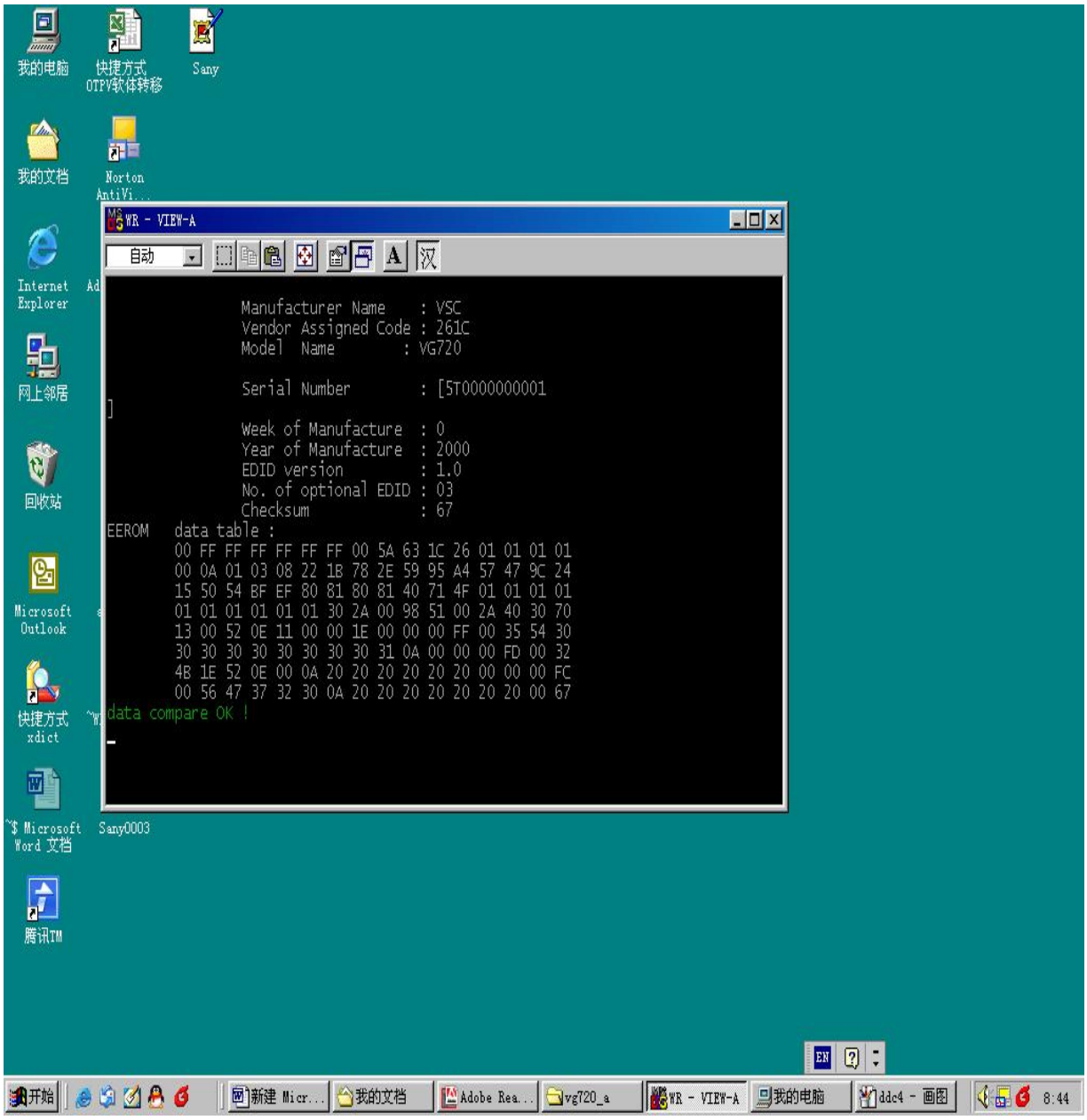



我的电脑
快捷方式
OTPV软体转移
Sany
我的文档
Internet
Explorer
网上邻居
回收站
Microsoft
Outlook
快捷方式
xdict
Microsof
Word 文档
腾讯TM
WR - VIEW-A
自动
汉
VSC 261C DDC
Input Serial No. : 5T0000000001
开始
新建 ...
我的文档
Adobe...
vg720_a
WR - ...
我的电脑
ddc10...
回收站
8:51

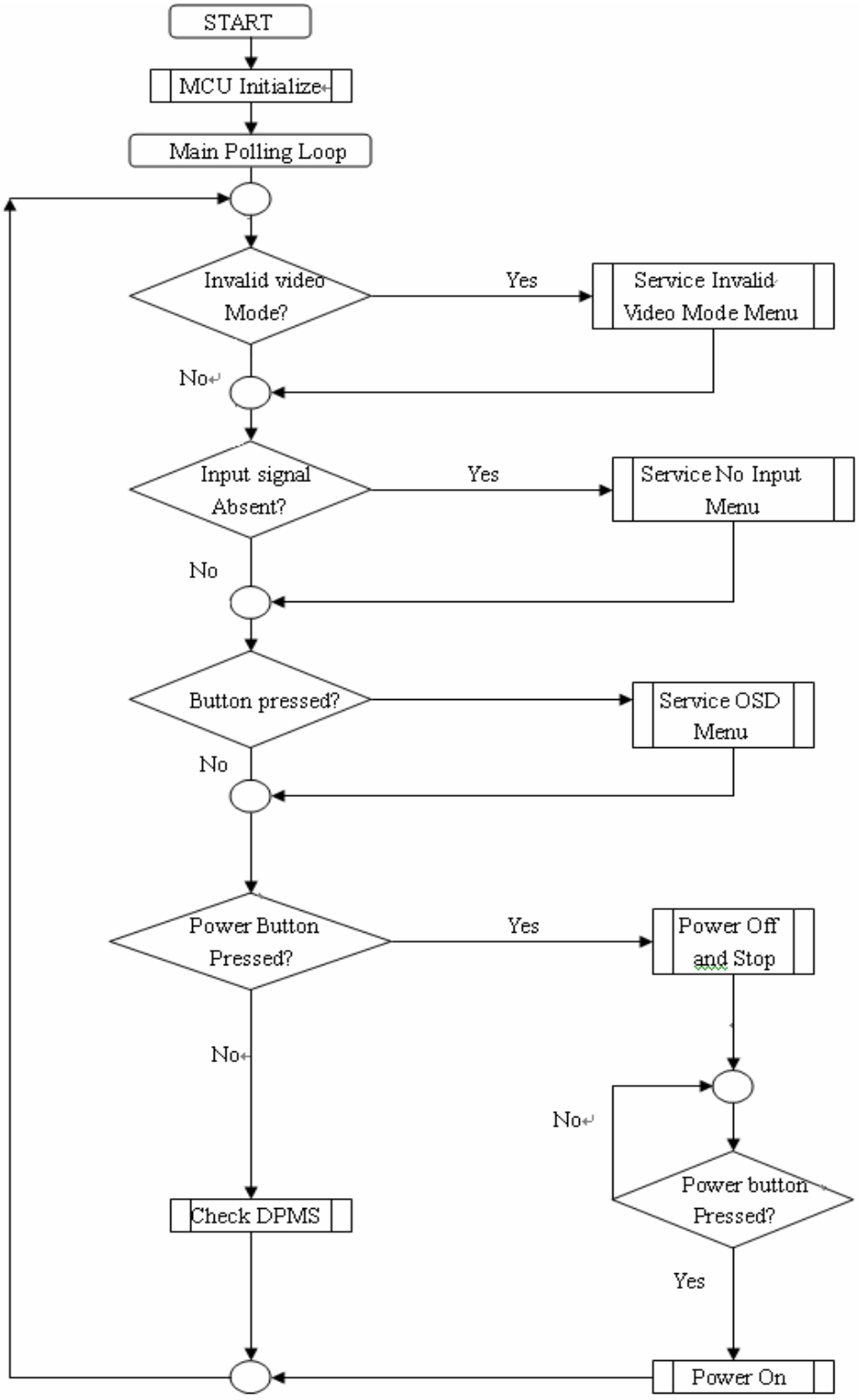
Sep3:Key the “Enter” and write the data



Sep4:If ddc program OK and show “data compare ok”



6. Trouble Shooting Flow Chart



7. Recommended Spare Part List

VA712b-2 BOM list（T780KCWHKDV3ABP）

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
1		AUPC780B3P	AUDIO BOARD			1
2		CBPC780KCWV3P	CONVERSION BOARD			1
3		KEPC780KE1P	KEY BOARD			1
4		PWPC1742CPV2P	POWER BOARD			1
5		7G 1 S 29	WOODEN PALLET			0.018
6		11G6054 1	PIN CONNECTOR			4
7		12G 436 1	VESA RUBBER			4
8		12G8394 1	FOOT PORON			6
9		15G5786 1	VRSA BRACKET			1
10		15G8239 1	Kensington bracket			1
11		15G8267 1	MAIN FRAEM			1
12		15G8269 1	HINGE BKT			1
13		19G6014 1	打包固定夹			0.2
14		23G3178709 4A	VSC17-LCD FRONT LOGO			1
15		23G3178709 6A	BIRD LOGO (E015-006)			1
16		33G4942 X2 B	FONCTION BUTTON			1
17		33G4943 1	POWER LENS			1
18		33G4944 1	VSC LOGO			1
19		34G1750A4Z B	BEZEL			1
20		34G1751 4Z B	REAR COVER			1
21		34G1752 4Z B	DECO COVER			1
22		34G1753 4Z B	STAND			1
23		34G1754 4Z B	BASE			1
24		37G 552 1	HINGE			1
25		40G 45760819A	机种标签			1
26		40G 459709 1B	CARTON LABEL			1
27		40G 459709 5A	HI-POT LABEL FOR 17-LCD			1
28		40G 581 26704	唛头纸 FOR CARTON/PALLET			0.01
29		40G 58162435A	MANUAL P/N LABEL			1.05
30		40G 58170918D	PALLET LABEL			0.25
31		40G 970709 8A	ID			1
32		40G457B709 1A	Hg LABEL			1
33		40G581B709 2B	BLUE STICKER-2			1
34		40G581B709 3A	8ms STICKER			1
35		40G581B709 4A	S/N LABEL			1
36		41G7801709 6A	QSG			1

37		44G3231502	导电泡棉			2
38		44G3783 1	EPS(R)			1
39		44G3783 2	EPS(R)			1
40		44G6002 S 22	PAPER PLATE			0.018
41		44G6002 S 23	PAPER PLATE			0.018
42		44G9003210	CORNER PAPER			0.071
43		45G 76 28 V3	PE BAG			1
44		45G 77 3	TRANSPARENT SHEET			173
45		45G 88606	PE BAG FOR BASE			1
46		45G 88607	PE BAG			1
47		45G 88609 B	EPE COVER			1
48		50G 600 1 W	白色机用打包带			74
49		50G 600 2	HANDLE1			1
50		50G 600 3	HANDLE2			1
51		52G 1150 C	BLACK TAPE			4
52		52G 1185	MIDDLE TAPE FOR CARTON			10
53		52G 1185 24	TAPE			65
54		52G 1206 A	铝箔胶带			3
55		52G 1207 A	铝箔胶带			1
56		52G 1217 VS	铝箔胶带			2
57		52G 1901 A	铝箔胶带			2
58		52G6019 1	YELLOW TAPE			5
59		52G6020 1	PROTECT FILM			1
60		52G8025 11803	MYLAR POWER			1
61		52G8025 11804	MYLAR SHIELD			1
62		70G1701709 9B	CD MANUAL			1
63		78G 311 8 L	SPEAKER 8OHM 2.5W			1
64		78G 311 8 R	SPEAKER 8OHM 2.5W			1
65		85G 722 1	MAIN SHIELD			1
66		89G 173 56 31	AUDIO CABLE			1
67		89G 728GAA902	SIGNAL CABLE			0
68		89G 728HAA902	SIGNAL CABLE			1
69		89G1748GAADVI	SIGNAL CABLE			1
70		89G1748HAADVI	SIGNAL CABLE			0
71		89G1748LAADVI	SIGNAL CABLE			0
72		89G402A18N IS	POWER CABLE			0
73		89G402A18N LS	POWER CORD			1
74		95G8014 14 34	HARNESS 14P-14P 50mm			1
75		95G8014 16926	WIRE HARNESS			1

76		95G8018 30910	WIRE HARNESS			1
77		M1G 330 4128	SCREW			4
78		M1G 330 4128	SCREW			4
79		M1G1140 6128	SCREW			1
80		M1G1730 6128	SCREW			3
81		M1G1730 6128	SCREW			3
82		M1G1730 6128	SCREW			2
83		M1G1740 12120	SCREW			4
84		Q1G 130 6120	SCREW			2
85		Q1G 330 8128	SCREW			2
86		Q1G 330 8128	SCREW			3
87		Q1G 330 10 47	SCREW			1
88		Q1G1030 8128	SCREW			4
89		Q1G1040 10128	SCREW			3
90		750GLC70A7Q 12	CLAA170EA07Q 17″ LCD PAN			1
91		750GLC70A7Q 13	CLAA170EA07Q 17″ LCD PAN			0
92		750GLC70A7Q 22	CLAA170EA07Q 17″ LCD PAN			0
93		750GLC70A7Q 23	CLAA170EA07Q 17″ LCD PAN			0
94		C 44G3783709 1A	CARTON			1
95		AUPC780B3P	AUDIO BOARD			
96		AUPC780A7AIP	AUDIO AI BOARD			1
97		AUPC780A7SMTP	AUDIO SMT BOARD			1
98		12G 408 6	THERMAL PAD			1
99		33G801714A	WAFER&PLUG	CN202		1
100		51G6002 1	导热胶			0.2
101		56G 616 1	AMPLIFIER IC E-TDA7496L	U201		1
102		61G 60222452T	220KOHM 5% 1/6W	R212		1
103		67G 2151097NT	1UF/50V	C209		1
104		67G 2151097NT	1UF/50V	C210		1
105		67G215L471 3N	470UF/16V	C205		1
106		67G215L471 3N	470UF/16V	C207		1
107		67G215L471 3N	470UF/16V	C208		1
108		67G215L681 4N	680UF 25V	C201		1
109		67G215L681 4N	680UF 25V	C202		1
110		88G 30214K	PHONE JACK 5PIN	CN201		1
111		90G6093 1	HEAT SINK			1
112		AUPC780A7AIP	AUDIO AI BOARD			
113		95G 90 23	TINCOATEDCOPPER	J201		0
114		95G 90 23	TINCOATEDCOPPER	J202		0

115		95G 90 23	TINCOATEDCOPPER	J203		0
116		95G 90 23	TINCOATEDCOPPER	J204		0
117		95G 90 23	TINCOATEDCOPPER	J205		0
118		95G 90 23	TINCOATEDCOPPER	J206		0
119		715G1144 2 SH6403	PCB			1
120		AUPC780A7SMTP	AUDIO SMT BOARD			
121		61L0603102	CHIPR 1KOHM +-5% 1/10W	R207		1
122		61L0603102	CHIPR 1KOHM +-5% 1/10W	R208		1
123		61L0603183	CHIP 18K OHM 1/10W	R201		1
124		61L0603183	CHIP 18K OHM 1/10W	R203		1
125		61L0603203	CHIPR 20KOHM +-5% 1/10W	R210		1
126		61L0603203	CHIPR 20KOHM +-5% 1/10W	R211		1
127		61L0603204	200K 0603	R202		1
128		65G0805101 31	CHIP 100PF 50V NPD 0805	C211		1
129		65G0805101 31	CHIP 100PF 50V NPD 0805	C212		1
130		65G0805104 326360	DHIP 0.1UF 50V X7R	C203		1
131		65G0805104 326360	DHIP 0.1UF 50V X7R	C213		1
132		65G0805474 226213	CHEP 0.47UF 25V X7R 080	C204		1
133		65G0805474 226213	CHEP 0.47UF 25V X7R 080	C206		1
134		CBPC780KCWV3P	CONVERSION BOARD			
135		AIC780KCWV3P	MAIN BOARD			1
136		33G801714A	WAFER&PLUG	CN702		1
137		33G801724A H	PIN 24P 2.0MM RIGHT ANGL	CN403		1
138		33G8027 12	WAFER 2*6P 2.0MM R/A	CN701		1
139		33G8027 16	WAFER 16PIN 2.0MM DIP	CN404		1
140		40G 45762412B	CBPC LABEL			1.03
141		44G3231508512	导电泡棉			1
142		44G3231508513	导电泡棉			1
143		51G6002 1	导热胶			0.2
144		67G215L101 4N	LOW ESR EC 100UF 25V NCC	C701		1
145		67G215L101 4N	LOW ESR EC 100UF 25V NCC	C703		1
146		67G215L101 4N	LOW ESR EC 100UF 25V NCC	C706		1
147		67G215L101 4N	LOW ESR EC 100UF 25V NCC	C719		1
148		67G215L221 4N	220UF/25V	C702		1
149		67G309V100 3	Electrolytic CAP	C410		1
150		67G309V100 3	Electrolytic CAP	C418		1
151		67G309V100 3	Electrolytic CAP	C720		1
152		67G309V220 3	22UF +-20% 16V	C406		1
153		88G 35315F H	D-SUB 15PIN	CN401		1

154		88G 35315F HJ	D-SUB 15PIN	CN401		0
155		88G 35424F H	DVID CONN 24P FEMALE 90	CN402		1
156		90G6250 1 GP	散热片			1
157		93G 22 45	CRYSTAL 24MHz HC-49US	X402		1
158		AIC780KCWV3P	MAIN BOARD			
159		40G 457624 1B	CPU LABEL			1
160		56G 562116	RTD2523B-LF PQFP-128	U401		1
161		56G 563 7	AIC1084-33PM TO-263	U701		1
162		56G1125543CA3	MTV512MV PLCC-44 MYSON	U402		1
163		56G1133 34	IC M24C02-WMN6TP	U405		1
164		56G1133 34	IC M24C02-WMN6TP	U406		1
165		56G1133 56	IC M24C16-WMN6TP	U404		1
166		57G 417 4	PMBS3904/PLILIPS	Q407		1
167		57G 417 4	PMBS3904/PLILIPS	Q701		1
168		57G 417 4	PMBS3904/PLILIPS	Q702		1
169		57G 417 4	PMBS3904/PLILIPS	Q704		1
170		57G 417 6	PMBS3906 PNP	Q404		1
171		57G 417 6	PMBS3906 PNP	Q405		1
172		57G 417 17 T	PZT2907A SOT-223	Q403		1
173		57G 763 1	AO3401L	U703		1
174		61L0603000	CHIPR 0OHM +-5% 1/10W	FB409		1
175		61L0603000	CHIPR 0OHM +-5% 1/10W	FB410		1
176		61L0603000	CHIPR 0OHM +-5% 1/10W	FB411		1
177		61L0603000	CHIPR 0OHM +-5% 1/10W	R402		1
178		61L0603000	CHIPR 0OHM +-5% 1/10W	R403		1
179		61L0603000	CHIPR 0OHM +-5% 1/10W	R412		1
180		61L0603000	CHIPR 0OHM +-5% 1/10W	R416		1
181		61L0603000	CHIPR 0OHM +-5% 1/10W	R417		1
182		61L0603000	CHIPR 0OHM +-5% 1/10W	R419		1
183		61L0603000	CHIPR 0OHM +-5% 1/10W	R422		1
184		61L0603000	CHIPR 0OHM +-5% 1/10W	R423		1
185		61L0603000	CHIPR 0OHM +-5% 1/10W	R424		1
186		61L0603000	CHIPR 0OHM +-5% 1/10W	R425		1
187		61L0603000	CHIPR 0OHM +-5% 1/10W	R426		1
188		61L0603000	CHIPR 0OHM +-5% 1/10W	R431		1
189		61L0603000	CHIPR 0OHM +-5% 1/10W	R432		1
190		61L0603000	CHIPR 0OHM +-5% 1/10W	R433		1
191		61L0603000	CHIPR 0OHM +-5% 1/10W	R434		1
192		61L0603000	CHIPR 0OHM +-5% 1/10W	R449		1

193		61L0603000	CHIPR 0OHM +-5% 1/10W	R456		1
194		61L0603000	CHIPR 0OHM +-5% 1/10W	R457		1
195		61L0603000	CHIPR 0OHM +-5% 1/10W	R713		1
196		61L0603000	CHIPR 0OHM +-5% 1/10W	R718		1
197		61L0603101	CHIPR 100OHM +-5% 1/10W	R4002		1
198		61L0603101	CHIPR 100OHM +-5% 1/10W	R4003		1
199		61L0603101	CHIPR 100OHM +-5% 1/10W	R4019		1
200		61L0603101	CHIPR 100OHM +-5% 1/10W	R4026		1
201		61L0603101	CHIPR 100OHM +-5% 1/10W	R4027		1
202		61L0603101	CHIPR 100OHM +-5% 1/10W	R4028		1
203		61L0603101	CHIPR 100OHM +-5% 1/10W	R4029		1
204		61L0603101	CHIPR 100OHM +-5% 1/10W	R427		1
205		61L0603101	CHIPR 100OHM +-5% 1/10W	R428		1
206		61L0603101	CHIPR 100OHM +-5% 1/10W	R435		1
207		61L0603101	CHIPR 100OHM +-5% 1/10W	R437		1
208		61L0603101	CHIPR 100OHM +-5% 1/10W	R438		1
209		61L0603101	CHIPR 100OHM +-5% 1/10W	R439		1
210		61L0603101	CHIPR 100OHM +-5% 1/10W	R442		1
211		61L0603101	CHIPR 100OHM +-5% 1/10W	R445		1
212		61L0603101	CHIPR 100OHM +-5% 1/10W	R446		1
213		61L0603101	CHIPR 100OHM +-5% 1/10W	R448		1
214		61L0603101	CHIPR 100OHM +-5% 1/10W	R450		1
215		61L0603101	CHIPR 100OHM +-5% 1/10W	R451		1
216		61L0603101	CHIPR 100OHM +-5% 1/10W	R458		1
217		61L0603101	CHIPR 100OHM +-5% 1/10W	R459		1
218		61L0603101	CHIPR 100OHM +-5% 1/10W	R460		1
219		61L0603101	CHIPR 100OHM +-5% 1/10W	R461		1
220		61L0603101	CHIPR 100OHM +-5% 1/10W	R462		1
221		61L0603101	CHIPR 100OHM +-5% 1/10W	R495		1
222		61L0603101	CHIPR 100OHM +-5% 1/10W	R499		1
223		61L0603102	CHIPR 1KOHM +-5% 1/10W	R421		1
224		61L0603102	CHIPR 1KOHM +-5% 1/10W	R704		1
225		61L0603103	CHIPR 10KOHM+-5% 1/10W	R4017		1
226		61L0603103	CHIPR 10KOHM+-5% 1/10W	R467		1
227		61L0603103	CHIPR 10KOHM+-5% 1/10W	R468		1
228		61L0603103	CHIPR 10KOHM+-5% 1/10W	R469		1
229		61L0603103	CHIPR 10KOHM+-5% 1/10W	R470		1
230		61L0603103	CHIPR 10KOHM+-5% 1/10W	R471		1
231		61L0603103	CHIPR 10KOHM+-5% 1/10W	R489		1

232		61L0603103	CHIPR 10KOHM+-5% 1/10W	R497		1
233		61L0603103	CHIPR 10KOHM+-5% 1/10W	R498		1
234		61L0603103	CHIPR 10KOHM+-5% 1/10W	R701		1
235		61L0603103	CHIPR 10KOHM+-5% 1/10W	R705		1
236		61L0603103	CHIPR 10KOHM+-5% 1/10W	R706		1
237		61L0603103	CHIPR 10KOHM+-5% 1/10W	R707		1
238		61L0603103	CHIPR 10KOHM+-5% 1/10W	R708		1
239		61L0603103	CHIPR 10KOHM+-5% 1/10W	R712		1
240		61L0603103	CHIPR 10KOHM+-5% 1/10W	R716		1
241		61L0603103	CHIPR 10KOHM+-5% 1/10W	R723		1
242		61L0603103	CHIPR 10KOHM+-5% 1/10W	R724		1
243		61L0603105	CHIPR 1MOHM+-5% 1/10W	R440		1
244		61L0603151	CHIPR 150 OHM +-5% 1/10W	R4001		1
245		61L0603153	CHIPR 15K OHM +-5% 1/10W	R407		1
246		61L0603202	CHIPR 2KOHM+-5%1/10W	R441		1
247		61L0603202	CHIPR 2KOHM+-5%1/10W	R452		1
248		61L0603202	CHIPR 2KOHM+-5%1/10W	R453		1
249		61L0603223	CHIPR 22K OHM +-5% 1/10W	R4016		1
250		61L0603303	CHIP 30K OHM 5% 1/10W	R409		1
251		61L0603332	CHIP 3.3K OHM 1/10W	R444		1
252		61L0603471	CHIPR 470OHM+-5%1/10W	R473		1
253		61L0603471	CHIPR 470OHM+-5%1/10W	R491		1
254		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R4008		1
255		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R4010		1
256		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R4011		1
257		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R4013		1
258		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R4022		1
259		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R4023		1
260		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R4024		1
261		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R4025		1
262		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R408		1
263		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R410		1
264		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R411		1
265		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R415		1
266		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R464		1
267		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R465		1
268		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R466		1
269		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R476		1
270		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R477		1

271		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R478		1
272		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R479		1
273		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R480		1
274		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R481		1
275		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R482		1
276		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R483		1
277		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R484		1
278		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R485		1
279		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R486		1
280		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R487		1
281		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R488		1
282		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R492		1
283		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R493		1
284		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R709		1
285		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R710		1
286		61L0603472	CHIP 4.7KOHM +-5% 1/10W	R722		1
287		61L0603513	CHIP 51K OHM	R721		1
288		61L0603682	CHIP 6.8K OHM 1/10W	R4007		1
289		61L0603750	CHIPR 75OHM+-5%1/10W	R436		1
290		61L0603750	CHIPR 75OHM+-5%1/10W	R443		1
291		61L0603750	CHIPR 75OHM+-5%1/10W	R447		1
292		65G0603100 31	CHIP 10PF 50V NPO	C423		1
293		65G0603100 31	CHIP 10PF 50V NPO	C427		1
294		65G0603100 31	CHIP 10PF 50V NPO	C430		1
295		65G0603100 31	CHIP 10PF 50V NPO	C433		1
296		65G0603100 31	CHIP 10PF 50V NPO	C446		1
297		65G0603100 31	CHIP 10PF 50V NPO	C447		1
298		65G0603102 32	CHIP 1000PF 50 X7R	C437		1
299		65G0603102 32	CHIP 1000PF 50 X7R	C438		1
300		65G0603102 32	CHIP 1000PF 50 X7R	C439		1
301		65G0603102 32	CHIP 1000PF 50 X7R	C440		1
302		65G0603102 32	CHIP 1000PF 50 X7R	C441		1
303		65G0603102 32	CHIP 1000PF 50 X7R	C442		1
304		65G0603102 32	CHIP 1000PF 50 X7R	C451		1
305		65G0603104 32	CHIP 0.1UF 50V X7R	C403		1
306		65G0603104 32	CHIP 0.1UF 50V X7R	C404		1
307		65G0603104 32	CHIP 0.1UF 50V X7R	C405		1
308		65G0603104 32	CHIP 0.1UF 50V X7R	C407		1
309		65G0603104 32	CHIP 0.1UF 50V X7R	C408		1

310		65G0603104 32	CHIP 0.1UF 50V X7R	C409		1
311		65G0603104 32	CHIP 0.1UF 50V X7R	C411		1
312		65G0603104 32	CHIP 0.1UF 50V X7R	C412		1
313		65G0603104 32	CHIP 0.1UF 50V X7R	C413		1
314		65G0603104 32	CHIP 0.1UF 50V X7R	C414		1
315		65G0603104 32	CHIP 0.1UF 50V X7R	C415		1
316		65G0603104 32	CHIP 0.1UF 50V X7R	C416		1
317		65G0603104 32	CHIP 0.1UF 50V X7R	C417		1
318		65G0603104 32	CHIP 0.1UF 50V X7R	C419		1
319		65G0603104 32	CHIP 0.1UF 50V X7R	C420		1
320		65G0603104 32	CHIP 0.1UF 50V X7R	C421		1
321		65G0603104 32	CHIP 0.1UF 50V X7R	C448		1
322		65G0603104 32	CHIP 0.1UF 50V X7R	C449		1
323		65G0603104 32	CHIP 0.1UF 50V X7R	C450		1
324		65G0603104 32	CHIP 0.1UF 50V X7R	C452		1
325		65G0603104 32	CHIP 0.1UF 50V X7R	C453		1
326		65G0603104 32	CHIP 0.1UF 50V X7R	C454		1
327		65G0603104 32	CHIP 0.1UF 50V X7R	C455		1
328		65G0603104 32	CHIP 0.1UF 50V X7R	C456		1
329		65G0603104 32	CHIP 0.1UF 50V X7R	C457		1
330		65G0603104 32	CHIP 0.1UF 50V X7R	C458		1
331		65G0603104 32	CHIP 0.1UF 50V X7R	C459		1
332		65G0603104 32	CHIP 0.1UF 50V X7R	C460		1
333		65G0603104 32	CHIP 0.1UF 50V X7R	C704		1
334		65G0603104 32	CHIP 0.1UF 50V X7R	C705		1
335		65G0603104 32	CHIP 0.1UF 50V X7R	C707		1
336		65G0603104 32	CHIP 0.1UF 50V X7R	C709		1
337		65G0603104 32	CHIP 0.1UF 50V X7R	C710		1
338		65G0603104 32	CHIP 0.1UF 50V X7R	C711		1
339		65G0603104 32	CHIP 0.1UF 50V X7R	C715		1
340		65G0603104 32	CHIP 0.1UF 50V X7R	C717		1
341		65G0603104 32	CHIP 0.1UF 50V X7R	C718		1
342		65G0603220 32	Chip Cap 22PF	C432		1
343		65G0603473 32	CHIP 47NF 50V X7R	C422		1
344		65G0603473 32	CHIP 47NF 50V X7R	C424		1
345		65G0603473 32	CHIP 47NF 50V X7R	C425		1
346		65G0603473 32	CHIP 47NF 50V X7R	C426		1
347		65G0603473 32	CHIP 47NF 50V X7R	C428		1
348		65G0603473 32	CHIP 47NF 50V X7R	C429		1

349		65G0603473 32	CHIP 47NF 50V X7R	C431		1
350		65G0805105 12	CHIP CAPACITOR 1UF 16V X	C708		1
351		65G0805105 12	CHIP CAPACITOR 1UF 16V X	C714		1
352		71G 56Z601	2.0X1.2 100M=600OHM	FB401		1
353		71G 56Z601	2.0X1.2 100M=600OHM	FB402		1
354		71G 56Z601	2.0X1.2 100M=600OHM	FB403		1
355		71G 56Z601	2.0X1.2 100M=600OHM	FB404		1
356		71G 56Z601	2.0X1.2 100M=600OHM	FB405		1
357		71G 56Z601	2.0X1.2 100M=600OHM	FB701		1
358		71G 56Z601	2.0X1.2 100M=600OHM	FB702		1
359		71G 56Z601	2.0X1.2 100M=600OHM	FB703		1
360		71G 56Z601 M	CHIP BEAD 0805 600OHM	FB401		0
361		71G 56Z601 M	CHIP BEAD 0805 600OHM	FB402		0
362		71G 56Z601 M	CHIP BEAD 0805 600OHM	FB403		0
363		71G 56Z601 M	CHIP BEAD 0805 600OHM	FB404		0
364		71G 56Z601 M	CHIP BEAD 0805 600OHM	FB405		0
365		71G 56Z601 M	CHIP BEAD 0805 600OHM	FB701		0
366		71G 56Z601 M	CHIP BEAD 0805 600OHM	FB702		0
367		71G 56Z601 M	CHIP BEAD 0805 600OHM	FB703		0
368		71G 59C300	0.8X1.6 100M=300HM	FB406		1
369		71G 59C300	0.8X1.6 100M=300HM	FB407		1
370		71G 59C300	0.8X1.6 100M=300HM	FB408		1
371		93G 64 42 P	BAV70 DIODE	D423		1
372		93G 64 42 P	BAV70 DIODE	D424		1
373		93G 6433P	BAV99 SOT-23	D404		1
374		93G 6433P	BAV99 SOT-23	D405		1
375		93G 6433P	BAV99 SOT-23	D406		1
376		93G 6433P	BAV99 SOT-23	D407		1
377		93G 6433P	BAV99 SOT-23	D408		1
378		93G 6433P	BAV99 SOT-23	D409		1
379		93G 6433P	BAV99 SOT-23	D410		1
380		93G 6433P	BAV99 SOT-23	D411		1
381		93G 6433P	BAV99 SOT-23	D412		1
382		93G 6433P	BAV99 SOT-23	D413		1
383		93G 6433P	BAV99 SOT-23	D414		1
384		93G 39S 34 T	ZENER DIODE UDZS5.6B	D401		1
385		93G 39S 34 T	ZENER DIODE UDZS5.6B	D402		1
386		93G 39S 34 T	ZENER DIODE UDZS5.6B	D403		1
387		93G 39S 34 T	ZENER DIODE UDZS5.6B	D415		1

388		93G 39S 34 T	ZENER DIODE UDZS5.6B	D416		1
389		93G 39S 34 T	ZENER DIODE UDZS5.6B	D417		1
390		93G 39S 34 T	ZENER DIODE UDZS5.6B	D418		1
391		93G 39S 34 T	ZENER DIODE UDZS5.6B	D419		1
392		93G 39S 34 T	ZENER DIODE UDZS5.6B	D420		1
393		93G 39S 34 T	ZENER DIODE UDZS5.6B	D421		1
394		93G 39S 34 T	ZENER DIODE UDZS5.6B	D422		1
395		93G1004 4	SCHOTTKY DIODE 1A 40V SM	D701		1
396		93G1020 1 S	GSID	D702		1
397		715G1675 C U1	PCB BOARD			1
398		KEPC780KE1P	KEY BOARD			
399		KEPC780KE1SMTP	KEPC BOARD			1
400		33G3802 2H	WAFTER	CN002		1
401		33G3802 2H	WAFTER	CN003		1
402		33G801712A H	PIN HEADER 2*6 R/A	CN006		1
403		77G 600 1GCJ	轻触开关	SW001		1
404		77G 600 1GCJ	轻触开关	SW002		1
405		77G 600 1GCJ	轻触开关	SW003		1
406		77G 600 1GCJ	轻触开关	SW004		1
407		77G 600 1GCJ	轻触开关	SW005		1
408		77G 600 1GCJ	轻触开关	SW006		1
409		81G 12 1 GP	LED GP32032ME/R003-50-ZY	DP2		1
410		95G 90 23	TINCOATEDCOPPER	J001		1
411		KEPC780KE1SMT	P KEPC BOARD			
412		61L0805000	Chip Resistors 0OHM	FB001		1
413		61L0805000	Chip Resistors 0OHM	FB002		1
414		715G1690 D	KEPC			1
415		PWPC1742CPV2P	POWER BOARD			
416		PW1742CPV2SMTP	POWER BOARD FOR SMT			1
417		9G6005 1	PIN FOOT	W901		1
418		15G8268 1	AC LOCK BKT			1
419		33G8021 2D U	CON.2PR/A	CN201		0
420		33G8021 2D U	CON.2PR/A	CN202		0
421		33G8021 2D U	CON.2PR/A	CN203		0
422		33G8021 2D U	CON.2PR/A	CN204		0
423		33G8021 2D AC	WAFER	CN201		1
424		33G8021 2D AC	WAFER	CN202		1
425		33G8021 2D AC	WAFER	CN203		1
426		33G8021 2D AC	WAFER	CN204		1

427		40G 45762412B	CBPC LABEL			1
428		51G 6 4503	RTV 胶			1
429		56G 139 3A	PC123Y22FZOF	IC902		1
430		56G 139 3B	PC123Y82FZOF	IC902		0
431		57G 417 11	KTC5103L-Y-U/P IPAK	Q206		1
432		57G 417 11	KTC5103L-Y-U/P IPAK	Q207		1
433		57G 761 7	TRANSISTOR KTD1691/P	Q206		0
434		57G 761 7	TRANSISTOR KTD1691/P	Q207		0
435		57G 763 12	AOU401L TO-251	Q201		0
436		57G 763 13	AOU417 TO251-3L	Q201		1
437		61G 58080 WT	NTCR	NR901		1
438		61G152M338 64	0.33 OHM 5% 2W	R916		1
439		63G 107474 HS	X2 CAP. 0.47UF	C900		1
440		63G 10747410S	0.47UF +-10% 250VAC	C900		0
441		63G210J3342B2	0.33uF 250V PMS TAIYANG	C211		0
442		63G211J334 AB	0.33UF 5% 160V	C211		1
443		65G 3J1206EM	12PF 5% SL 3KV MURATA	C205		0
444		65G 3J1206EM	12PF 5% SL 3KV MURATA	C210		0
445		65G 3J1206EM	12PF 5% SL 3KV MURATA	C214		0
446		65G 3J1206EM	12PF 5% SL 3KV MURATA	C215		0
447		65G 3J1206ET	12PF 5% SL 3KV TDK	C205		1
448		65G 3J1206ET	12PF 5% SL 3KV TDK	C210		1
449		65G 3J1206ET	12PF 5% SL 3KV TDK	C214		1
450		65G 3J1206ET	12PF 5% SL 3KV TDK	C215		1
451		65G305M1022BJ	1000PF Y2 400V 20% BY JN	C901		0
452		65G305M1022BJ	1000PF Y2 400V 20% BY JN	C902		0
453		65G305M1022BM	100PF Y2 250V 20% BY MUR	C901		1
454		65G305M1022BM	100PF Y2 250V 20% BY MUR	C902		1
455		65G305M1022BP	Y2 1000PF M 250VAC Y5P	C901		0
456		65G305M1022BP	Y2 1000PF M 250VAC Y5P	C902		0
457		65G306M2222BM GP	2200PF +-20% 250V AC	C932		1
458		65G306M2222BP	2200PF Y1 400 20% BY UK	C932		0
459		67G215D471 4K	LOW ESR EC 470UF 25V	C202		1
460		67G215D471 4K	LOW ESR EC 470UF 25V	C925		1
461		67G215H102 3N	KY16VB1000M-1 10*20	C923		0
462		67G215L102 4N	LOW ESR 1000UF 25V	C922		0
463		67G215L102 4N	LOW ESR 1000UF 25V	C924		0
464		67G215L471 4N	470UF25V KY25VB470-M-L 1	C202		0
465		67G215L471 4N	470UF25V KY25VB470-M-L 1	C925		0

466		67G215S10115K	LOW ESR EC 100uF 450V	C903		1
467		67G215S10115N	1000/450PAG450VB100M-L 1	C903		0
468		67G215S102 3K	ED1000UF 16V	C923		1
469		67G215S102 4K	ED1000UF 25V	C922		1
470		67G215S102 4K	ED1000UF 25V	C924		1
471		67G215S471 3K	LOW ESR EC.470UF 16V	C926		1
472		67G215Y471 3N	470UF 16V KY16VB470M-L 8	C926		0
473		73G 253 91 L	CHOKE BY LI TA	L921		1
474		73G 253 91 L	CHOKE BY LI TA	L922		1
475		73G 253 91 LS	CHOKE COIL	L921		0
476		73G 253 91 LS	CHOKE COIL	L922		0
477		73G 253173 YS	47 uH +-10% CHOKE COIL	L201		1
478		73L 174 40 LG	LINE FILTER	L902		0
479		73L 174 40 TG	LINE FILTER	L902		0
480		73L 174 40LSG	LINE FILTER	L902		1
481		73L 174 50 LH	LINE FILTER	L901		1
482		73L 174 50LSH	LINE FILTER	L901		0
483		80GL17T 30 YS	X'FMR YSTDA500280G	PT201		1
484		80GL17T 30 YS	X'FMR YSTDA500280G	PT202		1
485		80GL17T 31 L	X'FMR PT-004433-3	T901		1
486		80GL17T 31 N	X'FMR	T901		0
487		87G 501 32 S	AC SOCKET	CN901		1
488		93G 50460 13	KBP206G 2A 600V	DB901		1
489		93G 50460502	BRIDGE KBP206G 2A 800V	DB901		0
490		93G1100 1052T	BA159GPT DO-41 DIODE 1A	D900		1
491		93G3006 1	DIODE 31DQ06FC	D921		1
492		95G8014 12 42	HARNESS 10P-12P 100mm	CN902		1
493		705G 780 57V1P	R909 组件			1
494		705G 780 57V2P	Q900 组件			1
495		705G 780 57V3P	D920 组件			1
496		PW1742CPV2SMTP	POWER BOARD FOR SMT			
497		PW1742CPV2AIP	POWER BOARD FOR AI			1
498		56G 379 52	LD7552BS SOP-8	IC901		1
499		56G 660 1	FAN7547MX SOIC-14	IC201		1
500		57G 417 4	PMBS3904/PLILIPS	Q204		1
501		57G 417 4	PMBS3904/PLILIPS	Q208		1
502		57G 417 6	PMBS3906 PNP	Q205		1
503		57G 417 12 T	2N3904S-RTK/PS SOT-23	Q204		0
504		57G 417 12 T	2N3904S-RTK/PS SOT-23	Q208		0

505		57G 417 13 T	2N3906S-RTK/PS SOT-23	Q205		0
506		57G 760 4	DTA144WKA	Q202		0
507		57G 760 5	DTC144WKA	Q203		0
508		57G 760 4B	PDTA144WK SOT 346	Q202		1
509		57G 760 5B	PDTC144WK SOT 346	Q203		1
510		61L0805102	CHIPR 1K OHM +-5% 1/8W	R214		1
511		61L0805102	CHIPR 1K OHM +-5% 1/8W	R217		1
512		61L0805102	CHIPR 1K OHM +-5% 1/8W	R222		1
513		61L0805102	CHIPR 1K OHM +-5% 1/8W	R223		1
514		61L0805102	CHIPR 1K OHM +-5% 1/8W	R913		1
515		61L0805102	CHIPR 1K OHM +-5% 1/8W	R925		1
516		61L0805102	CHIPR 1K OHM +-5% 1/8W	R927		1
517		61L0805103	CHIPR 10KOHM+-5%1/8W	R224		1
518		61L0805103	CHIPR 10KOHM+-5%1/8W	R225		1
519		61L0805103	CHIPR 10KOHM+-5%1/8W	R226		1
520		61L0805103	CHIPR 10KOHM+-5%1/8W	R227		1
521		61L0805103	CHIPR 10KOHM+-5%1/8W	R914		1
522		61L0805103	CHIPR 10KOHM+-5%1/8W	R915		1
523		61L0805104	CHIPR 100K OHM +-5% 1/8W	R911		1
524		61L0805104	CHIPR 100K OHM +-5% 1/8W	R919		1
525		61L0805152	CHIPR 1.5KOHM +-5% 1/8W	R213		1
526		61L0805152	CHIPR 1.5KOHM +-5% 1/8W	R216		1
527		61L0805154	CHIP 150KOHM 5% 1/8W	R215		1
528		61L0805221	CHIPR 220 OHM +-5% 1/8W	R206		1
529		61L0805223	CHIPR 22K OHM+-5% 1/8W 0	R211		1
530		61L0805240 1F	CHIPR 2.4KOHM +-1% 1/8W	R929		1
531		61L0805242	CHIP 2.4KOHM 1% 1/8W	R201		1
532		61L0805242	CHIP 2.4KOHM 1% 1/8W	R208		1
533		61L0805303	CHIP 30K OHM	R221		1
534		61L0805330 2F	CHIP 33KOHM 1/8W/1%	R926		1
535		61L0805333	CHIP 33KOHM 1% 1/8W	R220		1
536		61L0805360 1F	CHIP 3.6KOHM 1/8W 1%	R924		1
537		61L0805392	CHIP 3.9K OHM 1/10W	R928		1
538		61L0805471	CHIPR 470 OHM +-5% 1/8W	R210		1
539		61L0805473	CHIPR 47K OHM +-5% 1/8W	R209		1
540		61L0805513	CHIP 51KOHM 1/8W	R212		1
541		61L0805563	CHIP 56K OHM 5% 1/10W	R219		1
542		61L0805683	CHIPR 68K OHM +-5% 1/8W	R207		1
543		61L0805683	CHIPR 68K OHM +-5% 1/8W	R218		1

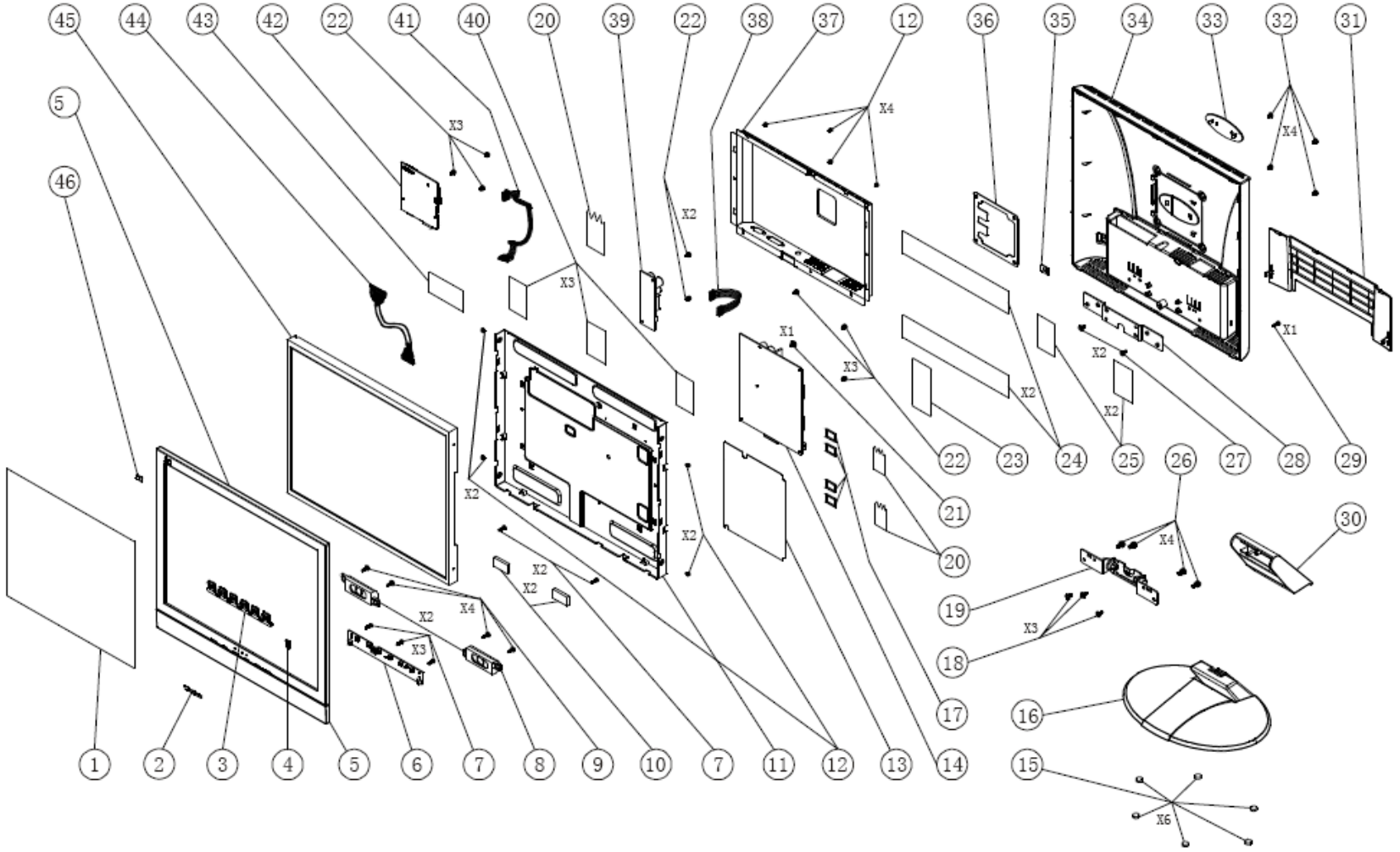
544		61L0805753	75K 1/8W	R918		1
545		61L1206000	CHIPR 0OHM+-5% 1/4W	F902		1
546		61L1206101	CHIP 100 OHM 5% 1/4W	R917		1
547		61L1206229	CHIP 2.2OHM 5% 1/8W	R910		1
548		61L1206334	330K 1/4W	R228		1
549		61L1206334	330K 1/4W	R900		1
550		61L1206334	330K 1/4W	R901		1
551		61L1206334	330K 1/4W	R902		1
552		61L1206434	CHIPR 430K 1206 1/4W 5%	R903		1
553		61L1206434	CHIPR 430K 1206 1/4W 5%	R904		1
554		61L1206434	CHIPR 430K 1206 1/4W 5%	R905		1
555		61L1206514	CHIPR 510KOHM +-5% 1/4W	R906		1
556		61L1206514	CHIPR 510KOHM +-5% 1/4W	R907		1
557		61L1206514	CHIPR 510KOHM +-5% 1/4W	R908		1
558		65G0805102 31	1000PF 50V NPO	C209		1
559		65G0805103 22	CHIP 0.01UF 25V X7R 0805	C220		1
560		65G0805104 22	CHIP 0.1UF 25VX7R 0805	C201		1
561		65G0805104 22	CHIP 0.1UF 25VX7R 0805	C203		1
562		65G0805104 22	CHIP 0.1UF 25VX7R 0805	C204		1
563		65G0805104 22	CHIP 0.1UF 25VX7R 0805	C206		1
564		65G0805104 22	CHIP 0.1UF 25VX7R 0805	C208		1
565		65G0805104 22	CHIP 0.1UF 25VX7R 0805	C213		1
566		65G0805104 22	CHIP 0.1UF 25VX7R 0805	C908		1
567		65G0805104 32	CHIP 0.1UF 50V X7R 0805	C905		1
568		65G0805104 32	CHIP 0.1UF 50V X7R 0805	C927		1
569		65G0805104 32	CHIP 0.1UF 50V X7R 0805	C930		1
570		65G0805104 32	CHIP 0.1UF 50V X7R 0805	C931		1
571		65G0805105 22	CHIP 1UF 25V X7R 0805	C217		1
572		65G0805105 22	CHIP 1UF 25V X7R 0805	C218		1
573		65G0805221 22	CHIP 220PF 25V X7R 0805	C907		1
574		65G0805222 32	2200PF/50V/0805/X7R	C221		1
575		65G0805222 32	2200PF/50V/0805/X7R	C222		1
576		65G0805222 32	2200PF/50V/0805/X7R	C223		1
577		65G0805222 32	2200PF/50V/0805/X7R	C224		1
578		65G0805223 22	E65	C934		1
579		65G0805224 22	E65	C207		1
580		65G0805224 22	E65	C216		1
581		65G0805472 32	4700PF/50V	C212		1
582		65G0805473 32	SMD 47NF +-10% 50V	C219		1

583		93G 60264	B340A DO-214AC	D201		1
584		93G 60264	B340A DO-214AC	D204		1
585		93G 6432S	1N4148W DIODE	D202		1
586		93G 6432S	1N4148W DIODE	D203		1
587		93G 6432S	1N4148W DIODE	D205		1
588		93G 6432S	1N4148W DIODE	D206		1
589		93G 6432S	1N4148W DIODE	D207		1
590		93G 6432S	1N4148W DIODE	D208		1
591		93G 6432S	1N4148W DIODE	D209		1
592		93G 6432S	1N4148W DIODE	D210		1
593		93G 6432S	1N4148W DIODE	D211		1
594		93G 6432S	1N4148W DIODE	D212		1
595		93G 6432S	1N4148W DIODE	D213		1
596		93G 6432S	1N4148W DIODE	D214		1
597		93G 6432S	1N4148W DIODE	D215		1
598		93G 6432S	1N4148W DIODE	D216		1
599		93G 6432S	1N4148W DIODE	D217		1
600		93G 6432S	1N4148W DIODE	D922		1
601		93G 6432S	1N4148W DIODE	D923		1
602		93G 6432V	DIODE LL4148 GS08	D202		0
603		93G 6432V	DIODE LL4148 GS08	D203		0
604		93G 6432V	DIODE LL4148 GS08	D205		0
605		93G 6432V	DIODE LL4148 GS08	D206		0
606		93G 6432V	DIODE LL4148 GS08	D207		0
607		93G 6432V	DIODE LL4148 GS08	D208		0
608		93G 6432V	DIODE LL4148 GS08	D209		0
609		93G 6432V	DIODE LL4148 GS08	D210		0
610		93G 6432V	DIODE LL4148 GS08	D211		0
611		93G 6432V	DIODE LL4148 GS08	D212		0
612		93G 6432V	DIODE LL4148 GS08	D213		0
613		93G 6432V	DIODE LL4148 GS08	D214		0
614		93G 6432V	DIODE LL4148 GS08	D215		0
615		93G 6432V	DIODE LL4148 GS08	D216		0
616		93G 6432V	DIODE LL4148 GS08	D217		0
617		93G 6432V	DIODE LL4148 GS08	D922		0
618		93G 6432V	DIODE LL4148 GS08	D923		0
619		93G 39S 25 T	RLZ5.1B ROHM	ZD922		1
620		93G 39S 38 T	PTZ9.1B ROHM	ZD920		1
621		93G 39S 40 T	RLZ13B ROHM	ZD921		1

622		93G3004 4	DIODE RB050L-40	D201		0
623		93G3004 4	DIODE RB050L-40	D204		0
624		PW1742CPV2AIP	POWER BOARD FOR AI			
625		6G 31502	1.5MM RIVET			15
626		56G 158 10 T	IC AZ431AZ-AE1 TO-92	IC903		0
627		56G 158 10 T	IC AZ431AZ-AE1 TO-92	IC921		0
628		56G 158 12	KIA431A-AT/P TO-92 IC	IC903		1
629		56G 158 12	KIA431A-AT/P TO-92 IC	IC921		1
630		61G 17210052T	100HM 5% 1/4W	R912		1
631		61G 17218252T	1.8KOHM 5% 1/4W	R202		1
632		61G 17218252T	1.8KOHM 5% 1/4W	R203		1
633		61G 17218252T	1.8KOHM 5% 1/4W	R204		1
634		61G 17218252T	1.8KOHM 5% 1/4W	R205		1
635		61G 17222152T	2200HM 5% 1/4W	R922		1
636		61G 20747052T	47 OHM 1/2W	R920		1
637		61G 20747052T	47 OHM 1/2W	R921		1
638		65G 1K152 1T	1500PF +/-10% 1KV Y5P	C904		1
639		65G 1K152 1T GP	1.5NP 1KV 25F +-10%	C904		0
640		65G517K102 5T	1000PF 10% Y5P 500V	C920		1
641		65G517K102 5T	1000PF 10% Y5P 500V	C921		1
642		67G 2152207NT	22UF/50V	C906		1
643		67G 2152207RT	22UF +-20% 50V	C906		0
644		84G 56 1	FUSE 2A 250V BY WICKMANN	F901		1
645		93G1020 752T	UF4003PT DO-41 DIODE 1A	D901		1
646		95G 90 23	TINCOATEDCOPPER	J201		1
647		95G 90 23	TINCOATEDCOPPER	J202		1
648		95G 90 23	TINCOATEDCOPPER	J203		1
649		95G 90 23	TINCOATEDCOPPER	J204		1
650		95G 90 23	TINCOATEDCOPPER	J205		1
651		95G 90 23	TINCOATEDCOPPER	J206		1
652		95G 90 23	TINCOATEDCOPPER	J207		1
653		95G 90 23	TINCOATEDCOPPER	J208		1
654		95G 90 23	TINCOATEDCOPPER	J209		1
655		95G 90 23	TINCOATEDCOPPER	J210		1
656		95G 90 23	TINCOATEDCOPPER	J211		1
657		95G 90 23	TINCOATEDCOPPER	J212		1
658		95G 90 23	TINCOATEDCOPPER	J213		1
659		95G 90 23	TINCOATEDCOPPER	J214		1
660		95G 90 23	TINCOATEDCOPPER	J215		1

661		95G 90 23	TINCOATEDCOPPER	J216		1
662		95G 90 23	TINCOATEDCOPPER	J217		1
663		95G 90 23	TINCOATEDCOPPER	J218		1
664		95G 90 23	TINCOATEDCOPPER	J219		1
665		95G 90 23	TINCOATEDCOPPER	J220		1
666		95G 90 23	TINCOATEDCOPPER	J221		1
667		95G 90 23	TINCOATEDCOPPER	J222		1
668		95G 90 23	TINCOATEDCOPPER	J901		1
669		95G 90 23	TINCOATEDCOPPER	J902		1
670		95G 90 23	TINCOATEDCOPPER	J903		1
671		95G 90 23	TINCOATEDCOPPER	J904		1
672		715G1686 F	PCB			1
673		705G 780 57V1P	R909 组件			
674		61G152M10458G	100K OHM 5% 2W	R909		1
675		96G 29 6	SHRINK TUBE UL/CSA			1
676		705G 780 57V2P	Q900 组件			
677		51G 200 1	散热油			2
678		57G 667 30	2SK2645-54MR TO-220F	Q900		0
679		57G 724 11	STP9NK65ZFP TO-220FP MOS	Q900		1
680		90G6264 1	HEAT SINK			1
681		M1G1730 8128	SCREW			1
682		705G 780 57V3P	D920 组件			
683		51G 200 1	散热油			2
684		90G6264 1	HEAT SINK			1
685		93G 60238	DIODE 10A 150V FCH10A15G	D920		0
686		93G 60239	DIODE FME-210B TO-220	D920		1
687		M1G1730 8128	SCREW			1

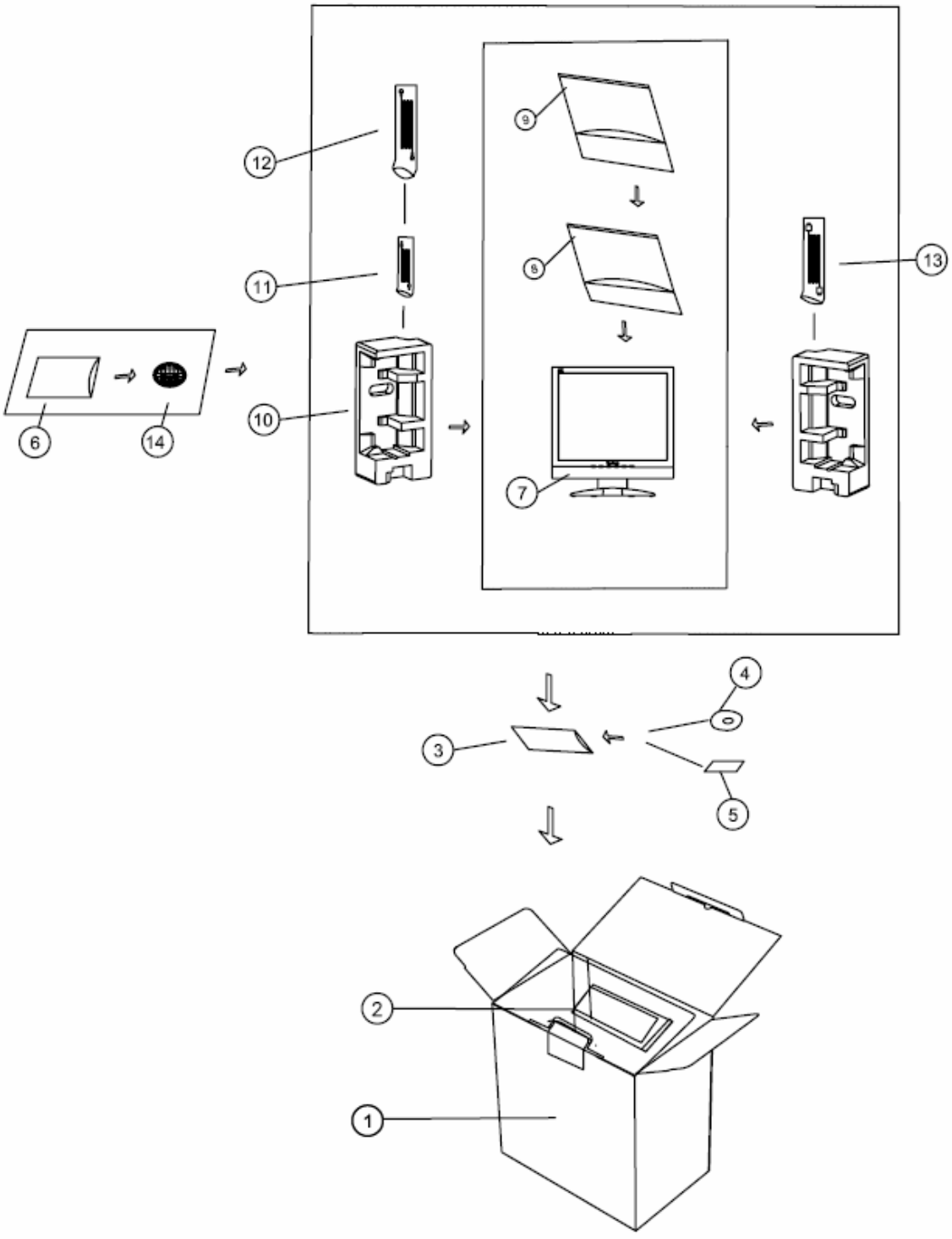
8. Exploded Diagram And Spare Parts List



ITEM	DESCRIPTION	PART NUMBER	Q'TY
1	PROTECT FILM	52G6020-1	1
2	VSC17-LCD FRONT LOGO	23G3178709 4A	1
3	FONCTION BUTTON	33G4942 X2 B	1
4	POWER LENS	33G4943 1	1
5	BEZEL	34G1750AKD B	1
6	KEPC780KE1P	KEY BOARD	1
7	SCREW	Q1G 330 8128	1
8	SPEAKER 8OHM 2.5W	78G 311 8 L/R	2
9	SCREW	Q1G 130 6120	1
10	导电泡棉	44G3231502	1
11	REAR COVER	34G1751 KR B	1
12	SCREW	M1G 330 4128	4
13	MYLAR POWER	52G8025 11803	1
14	PWPC1742CPV2P	POWER BOARD	1
15	FOOT PORON	12G8394 1	4
16	STAND BASE	34G1754 KR B	1
17	PIN CONNECTOR	11G6054 1	4
18	SCREW	Q1G 330 8128	3
19	HINGE	37G 552 1	1
20	YELLOW TAPE	52G6019 1	4
21	SCREW	M1G1140 6128	1
22	SCREW	M1G1730 6128	8

ITEM	DESCRIPTION	PART NUMBER	Q'TY
23	铝箔胶带	52G 1207 A	1
24	铝箔胶带	52G 1217 VS	2
25	铝箔胶带	52G 1901 A	2
26	SCREW	M1G1740 12120	4
27	SCREW	Q1G 130 6120	2
28	VRSA BRACKET	15G5786 1	1
29	SCREW	Q1G 330 8 47	1
30	STAND BASE	34G1753 KR B	1
31	DECO COVER	34G1752 KR B	1
32	VESA RUBBER	12G 436 2	4
33	VSC LOGO	33G4944 2	1
34	REAR COVER	34G1751 KR B	1
35	Kensington bracket	15G8239 1	1
36	VRSA BRACKET	15G5786 1	1
37	MAIN SHIELD	85G 722 2	1
38	HARNESS 14P-14P 50mm	95G8014 14 34	1
39	AUDIO BOARD	AUPC780B3P	1
40	铝箔胶带	52G 1206 A	3
41	WIRE HARNESS	95G8014 16926	1
42	CONVERSION BOARD	CBPC780KCWV4P	1
43	MYLAR SHIELD	52G8025 11804	1
44	WIRE HARNESS	95G8018 30910	1
45	CLAA170EA07Q 17" LCD PAN	750GLC70A7Q 12	1
46	BIRD LOGO	23G3178709 6A	1

5.7 Packing For Shipping



Packing Part List

ITEM	DESCRIPITON	PART NUMBER	Q'TY
1	CARTON	J44G3783709 1C	1
2	HANDLE1	50G 600 2	1
	HANDLE2	50G 600 3	1
3	PE BAG	45G 76 28 V3	1
4	CD MANUAL	70G1701709 9B	1
5	QSG	41G7801709 6A	1
6	EPE COVER	45G 88606	1
7	MONITOR	T780KCWHKDV3ABP	1
8	EPE COVER	45G 88609 B	1
9	PE BAG	45G 88607	1
10	EPS	44G3783 1	1
		44G3783 2	1
11	AUDIO CABLE	89G 173 56 31	1
12	POWER CORD	89G402A18N LS	1
13	SIGNAL CABLE	89G 725HAA902	1
14	BASE	34G1754 4Z B	1

9. Disassemble Process

9.1 Units Disassemble Process

9. 1. 1 *Tools*

- ✧ Glove
- ✧ Big cross screwdriver
- ✧ Small cross screwdriver
- ✧ Prize equipment or abandoned IC card
- ✧ Screw box
- ✧ Cushion
- ✧ Six angle sleeve spanner

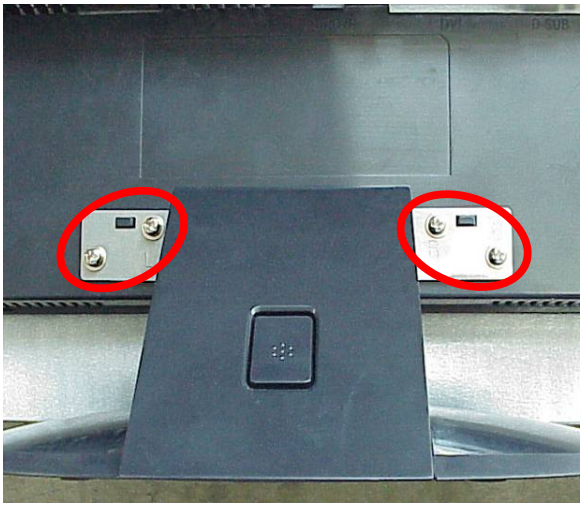
9.1.2 Disassemble process

1、 Tide up the worktable, spread straight cushion, put the monitor on it, the front side adown.(**Picture 1, 2**)
2、 Disassemble the 4 screws that fix the stand, remove the stand..(**Picture 3, 4**)
3、 Disassemble the fix screws of the back cover.（**Picture 5**）
4、 Use equipment or abandoned IC card to prize up the bezel through the bottom flute, as showed in the following the **picture 6,7**, and rip up the back cover downwards.(as showed in the following the **picture 8,9,10**)
5、 Disassemble the 4 screw M3*6MM through six angle sleeve spanner, showed in the following **picture 11**.
6、 Disassemble the 4 fixed screws in the shield, remove the shield as the direction arrowhead showed, refer to the following **picture 12**.
7、 Disassemble the 4 screws and 4 pins of the PWPC board, remove the PWPC board.(symbolized the following **picture 13** with red color)
8、 Disassemble the 3 screws and 4 pins of the main board, remove the main board. (symbolized the following **picture 13** with blue color)
9、 Disassemble the 2 screws of the audio board, remove the audio board. (symbolized the following **picture 13** with green color)
10、Disassemble the 3 screws and connect pins of the Key board, remove the Key board, refer to the following **picture 14,15 .**
11、Disassemble the 2 fixed screws of the main frame, and remove the bezel, as showed in the following the **picture 16,17.**
12、Disassemble the 2 fixed screws of the panel, remove the main frame, as showed in the following the **picture 18,19,20.** Do not damage the cable of the panel.
13、That's all. The disassemble process of the unit is over.

9.1.3 Show pictures：

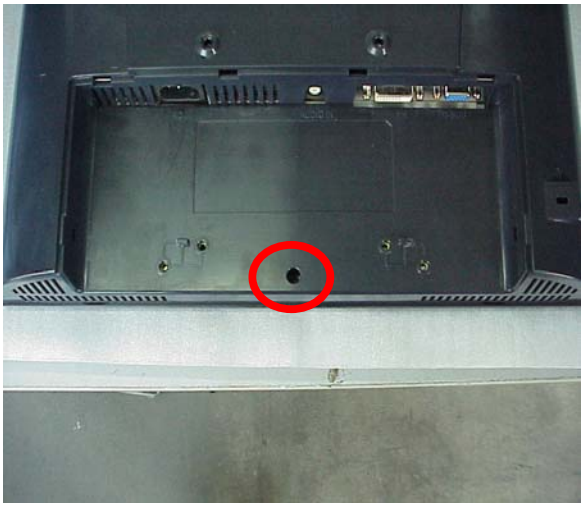
（Picture 1）

（Picture 2）

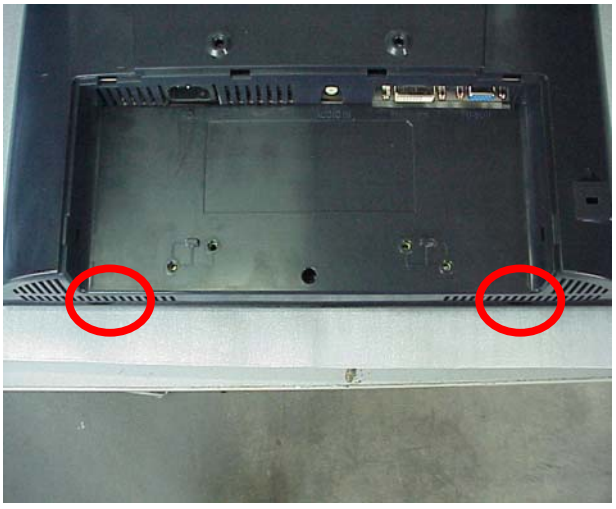


（Picture 3）

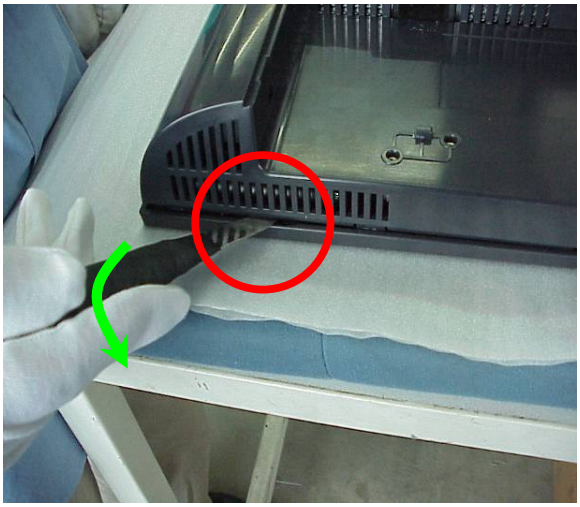
（Picture 4）



（Picture 5）

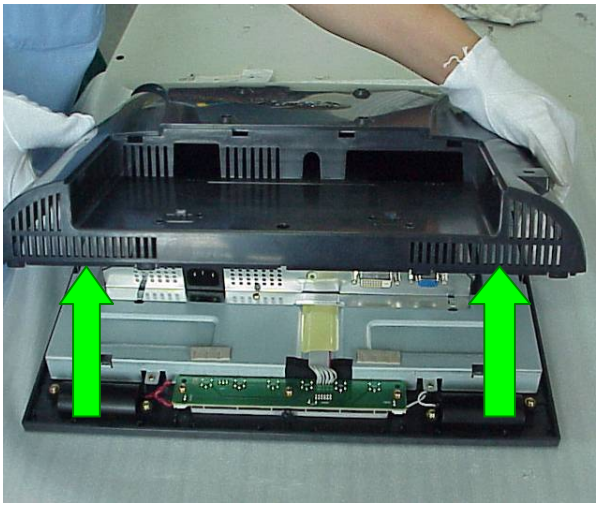


（Picture 6）

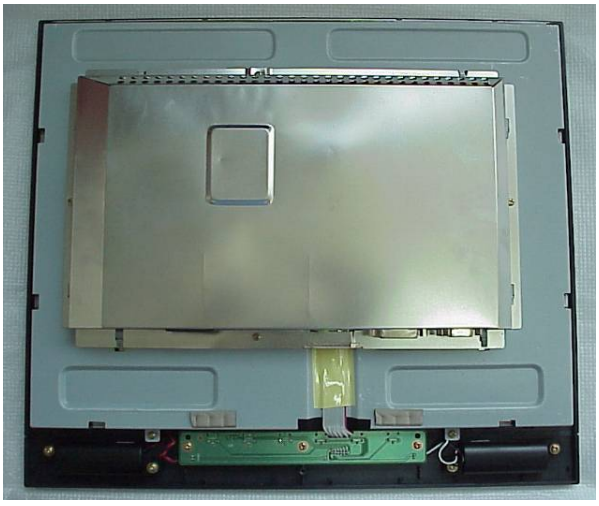


（Picture 7）

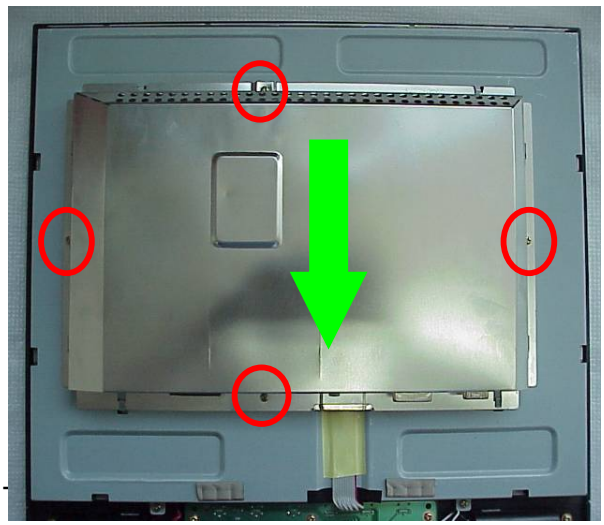
（Picture 8）



（Picture 9）

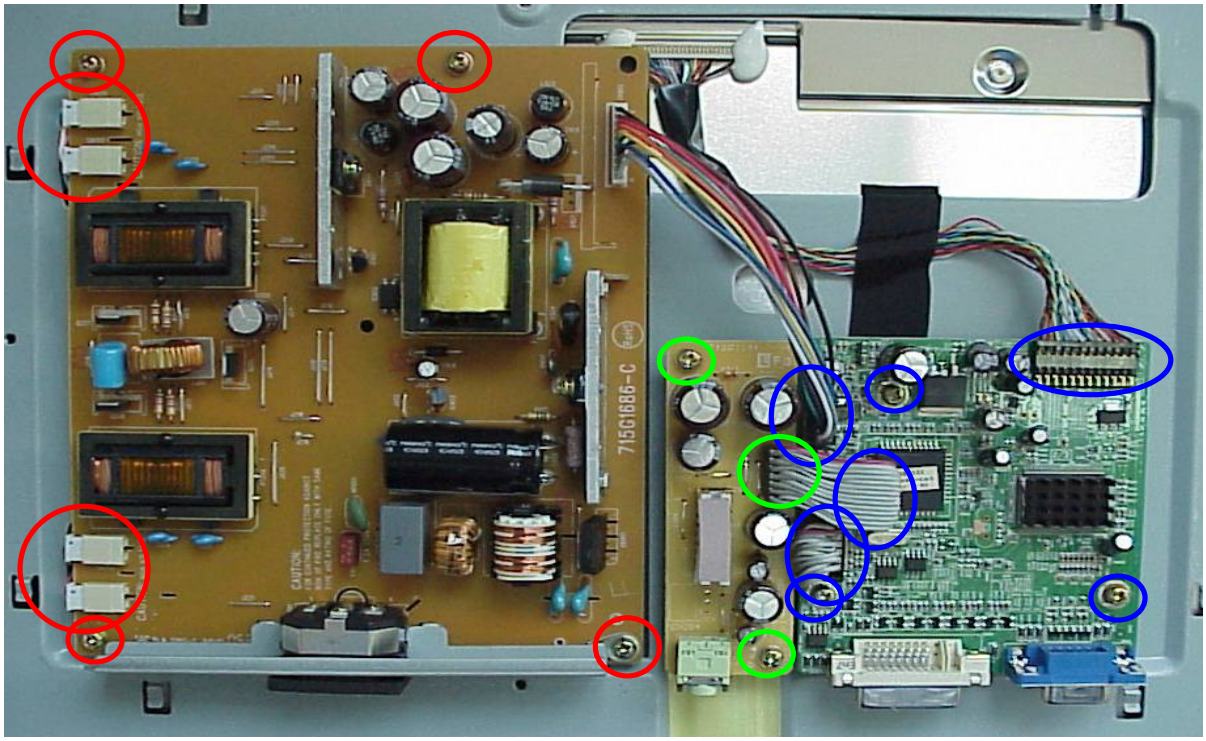


（Picture 10）

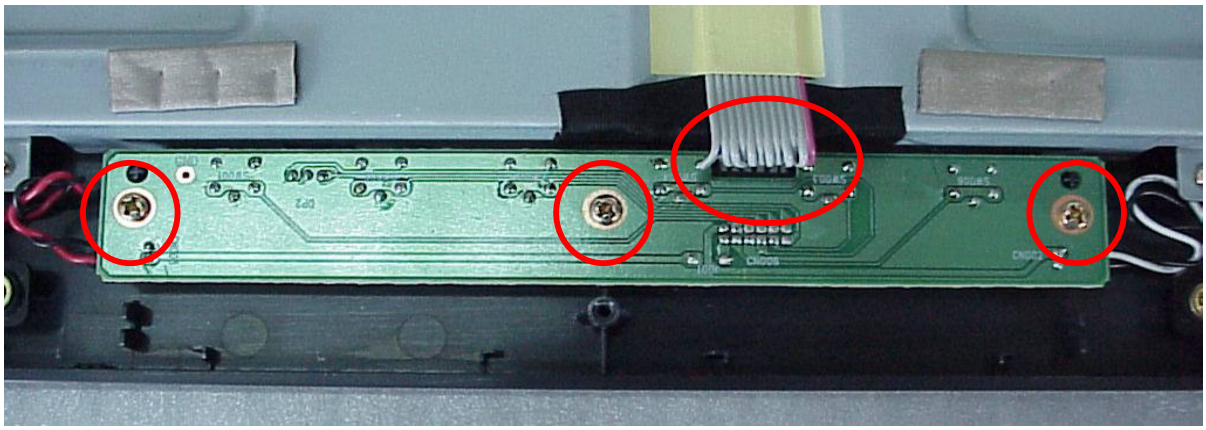


（Picture 11）

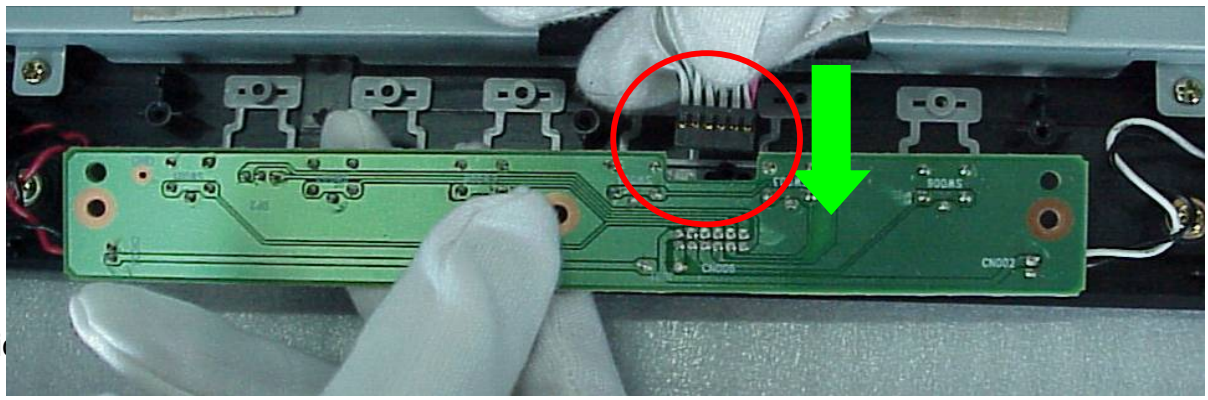
（Picture 12）



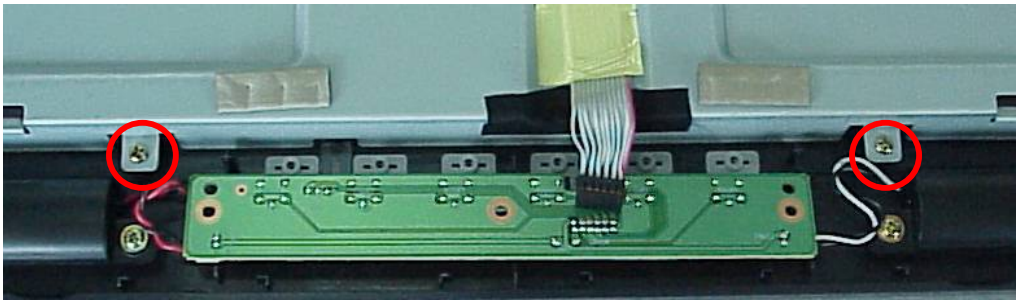
（Picture 13）



（Picture 14）



（Picture 15）

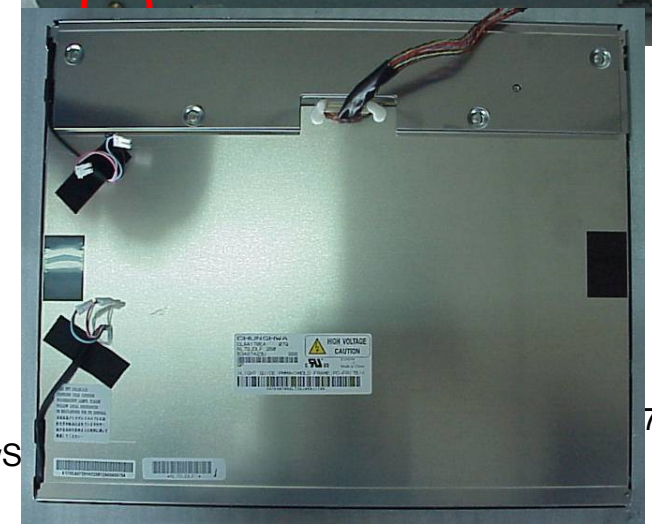


（Picture 16）

（Picture 17）

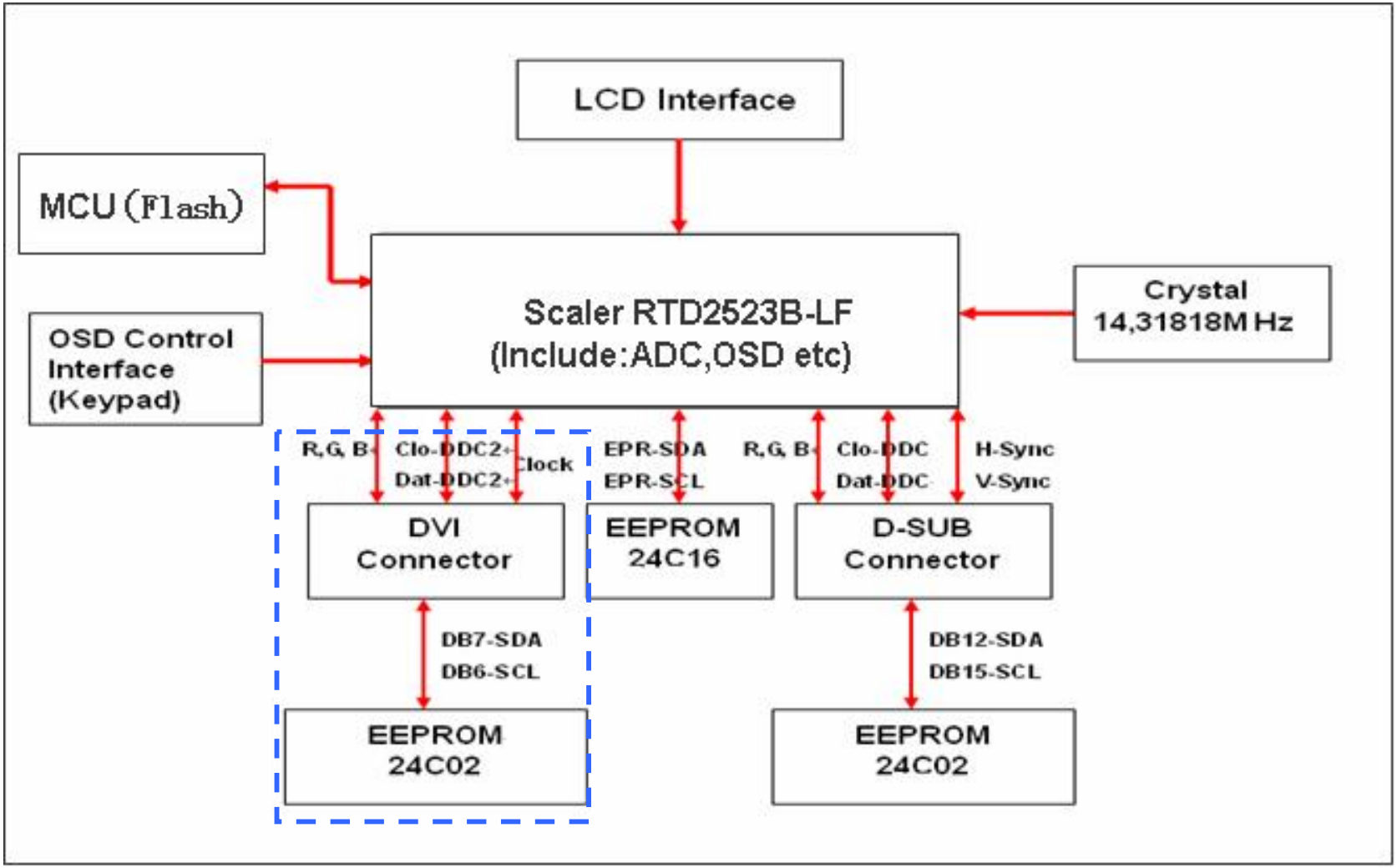
（Picture 18）

（Picture 19）



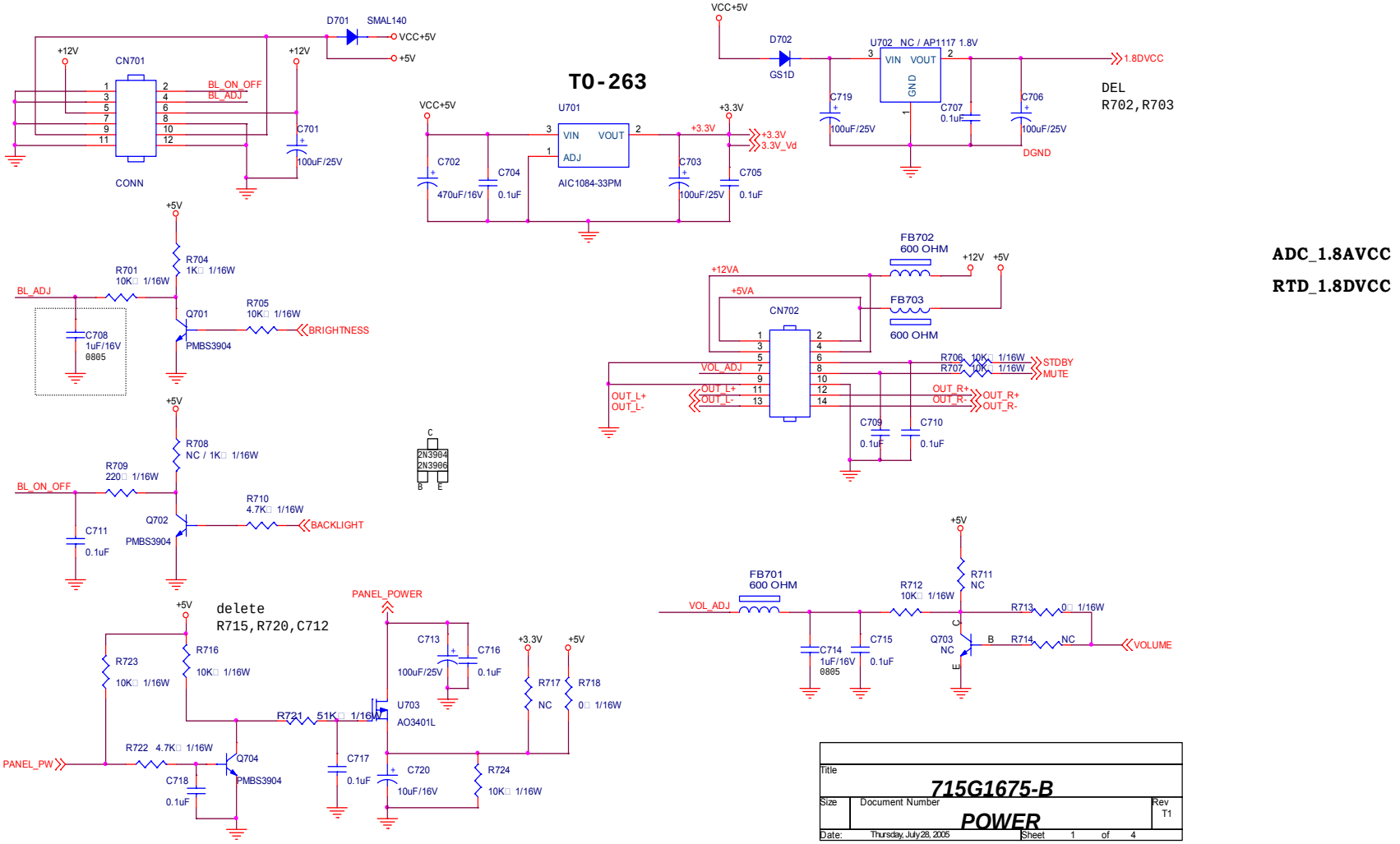
（**Picture 20**）

10. Block Diagram

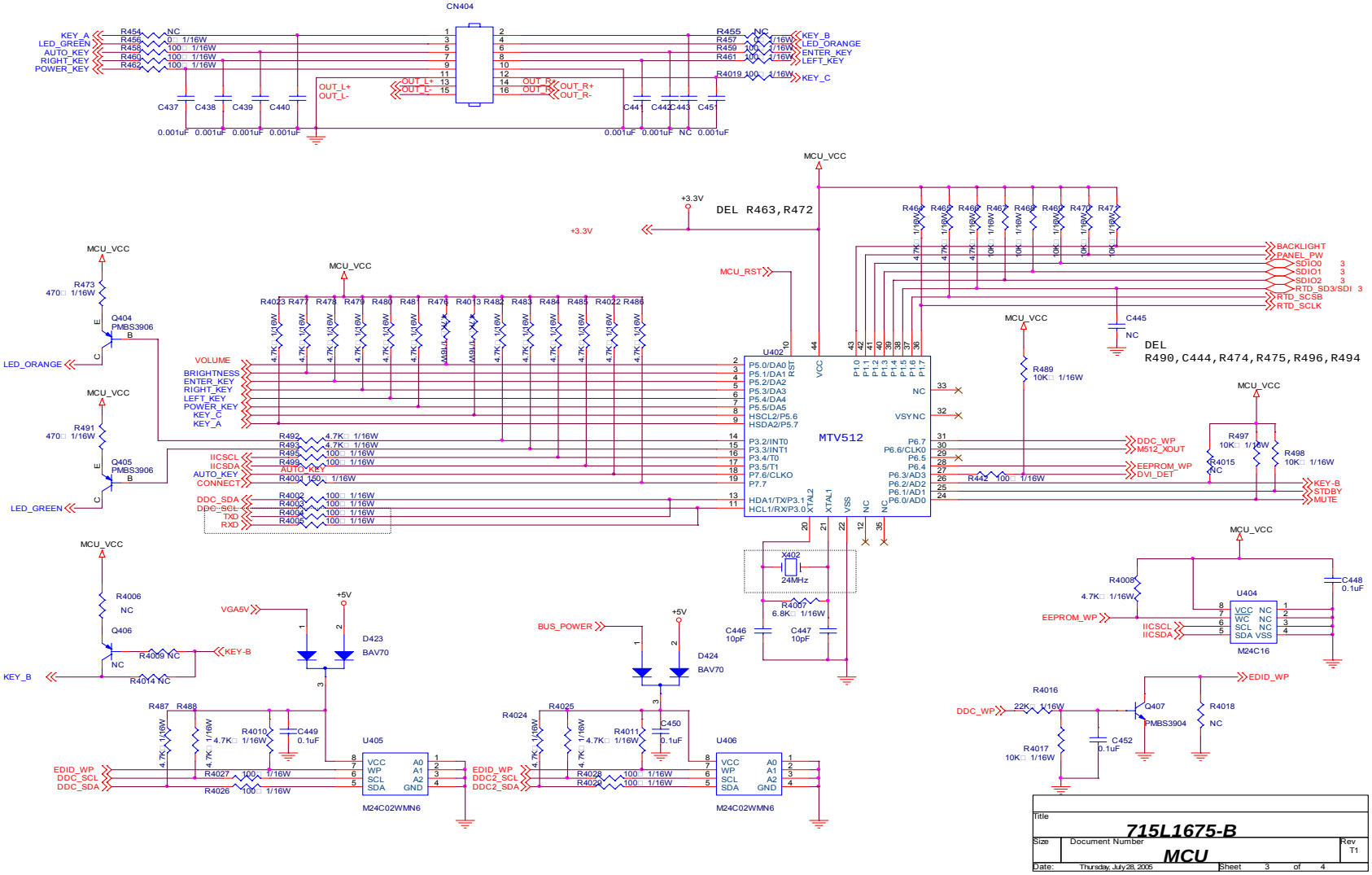


11. Schematic Diagram

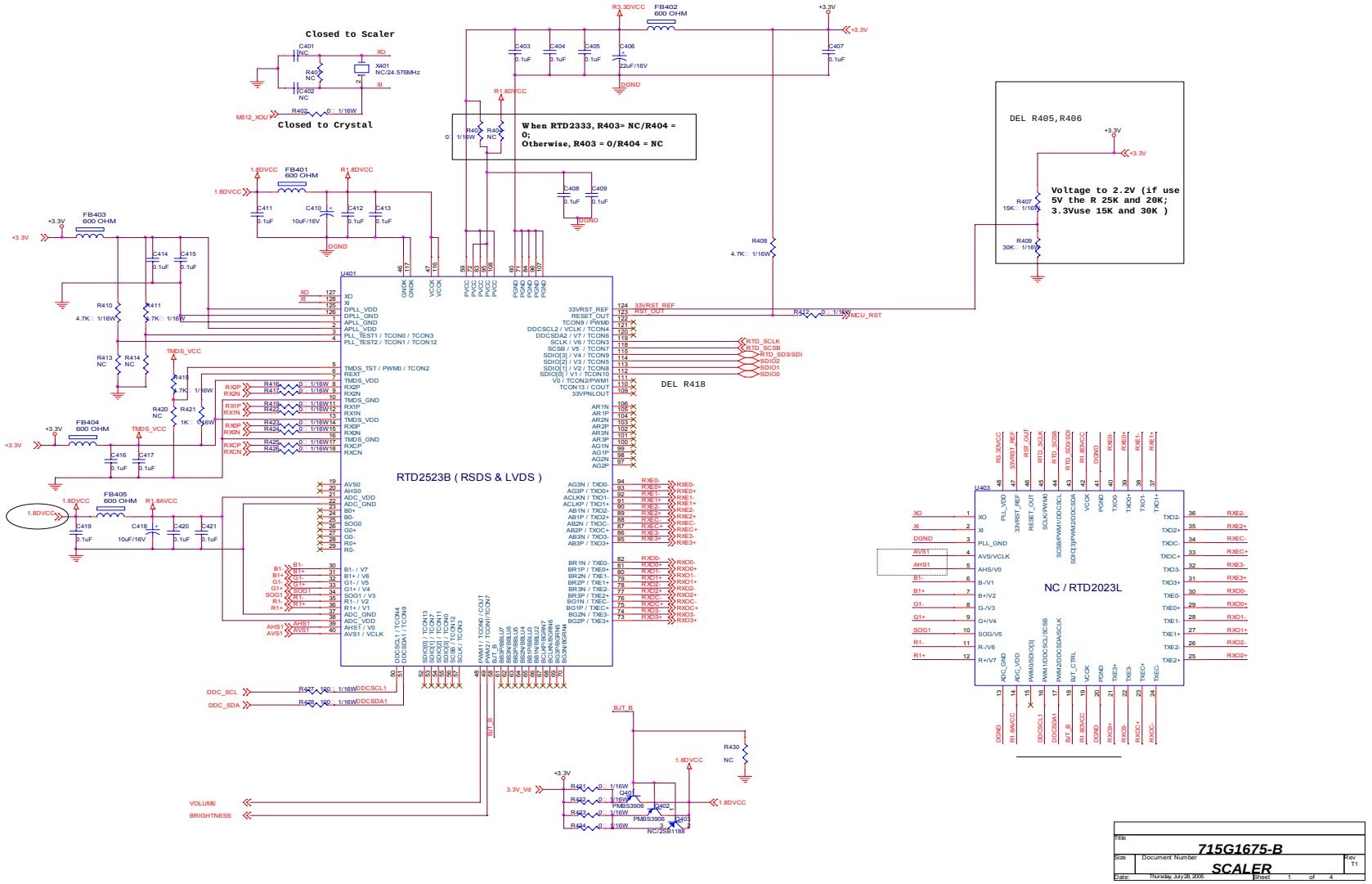
11.1 Power



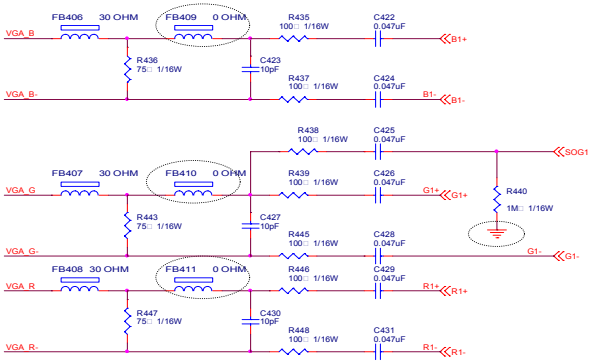
11.2 MCU

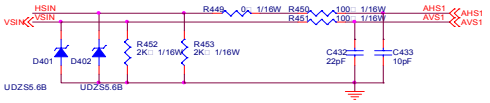

CN404
MCU_VCC
+3.3V
DEL R463,R472
MCU_RST
U402
MTV512
U404
M24C16
U405
M24C02WMN6
U406
M24C02WMN6
X402
24MHz
VOLUME
BRIGHTNESS
ENTER_KEY
RIGHT_KEY
LEFT_KEY
POWER_KEY
KEY_C
KEY_A
IICSCL
IICSDA
AUTO_KEY
CONNECT
DDC_SDA
DDC_SCL
TXD
RXD
LED_ORANGE
LED_GREEN
KEY_B
VGA5V
BUS_POWER
EEPROM_WP
DDC_WP
EDID_WP
DEL
R490,C444,R474,R475,R496,R494
715L1675-B
MCU
Thursday, July 28, 2005

11.3 Scaler

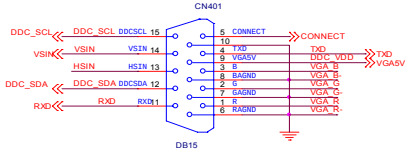

Closed to Scaler
Closed to Crystal
When RTD2333, R403= NC/R404 = 0;
Otherwise, R403 = 0/R404 = NC
DEL R405,R406
Voltage to 2.2V (if use 5V the R 25K and 20K; 3.3Vuse 15K and 30K)
DEL R418
RTD2523B (RSDS & LVDS)
NC / RTD2023L
715G1675-B
SCALER

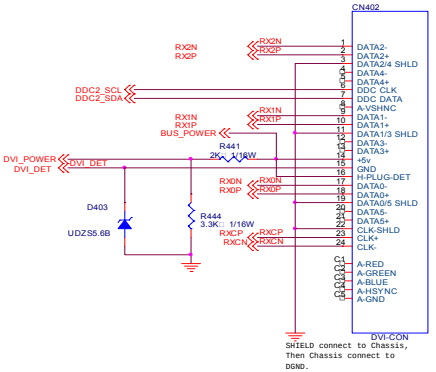
11.4 INPUT

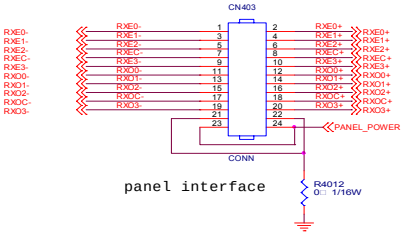


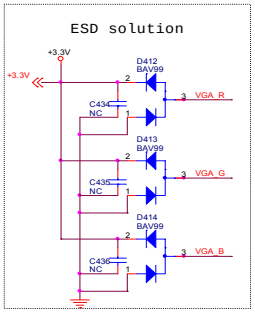


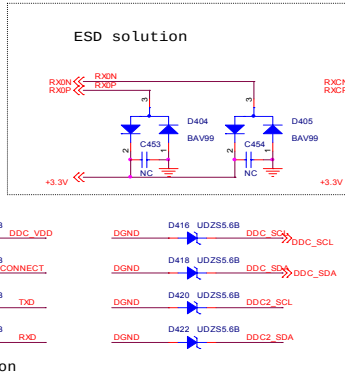
DEL ZD1, ADD D28,D29
2005/3/28

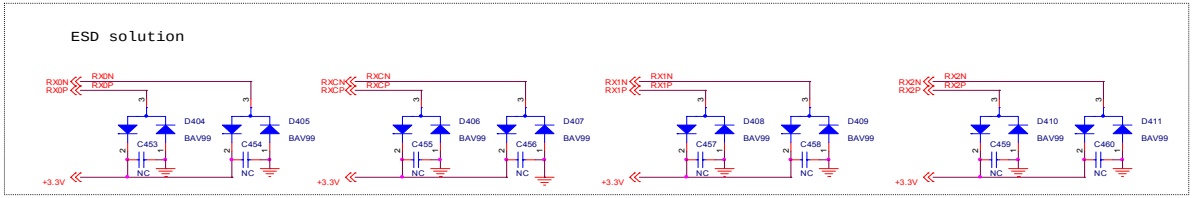






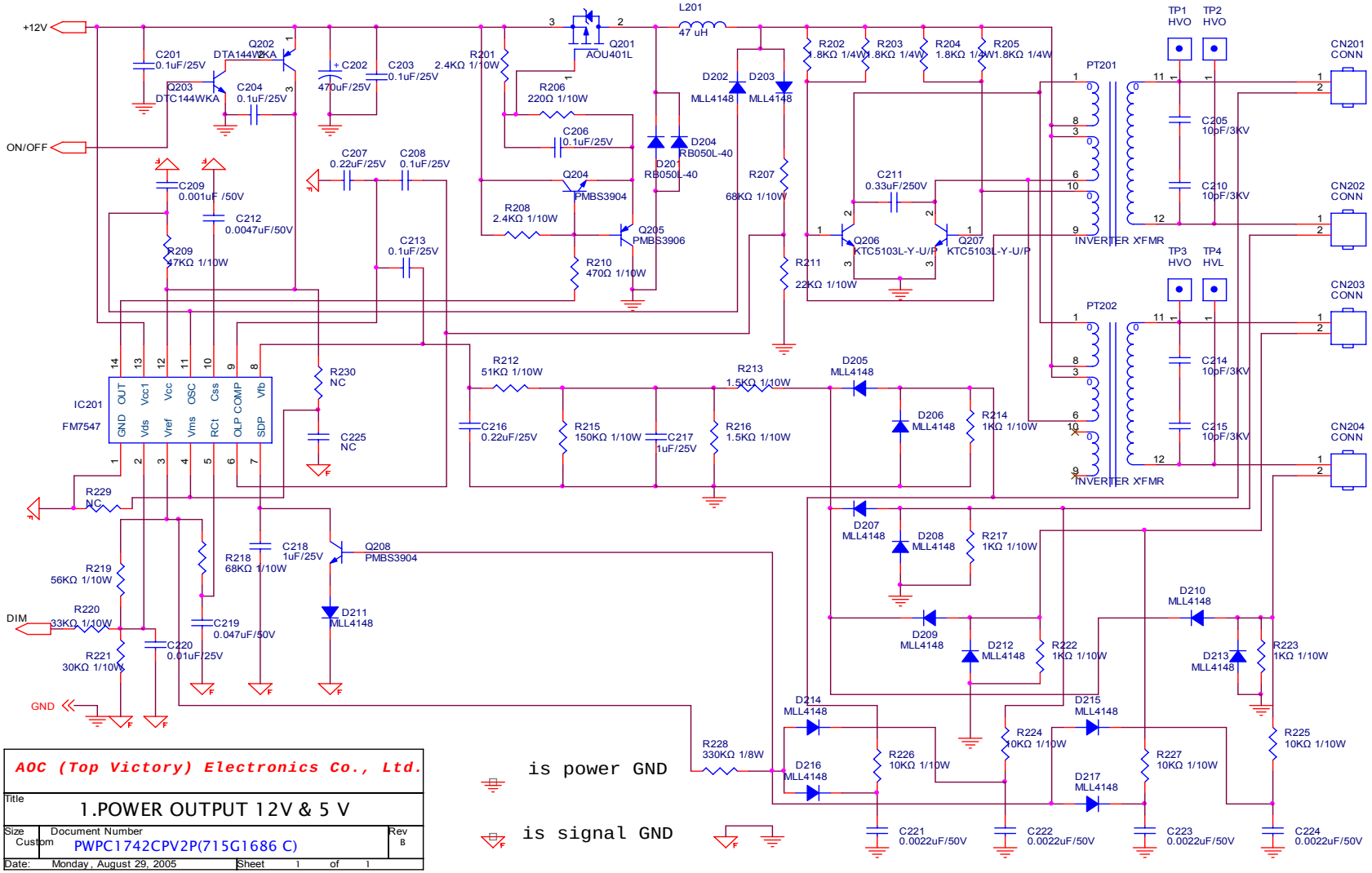




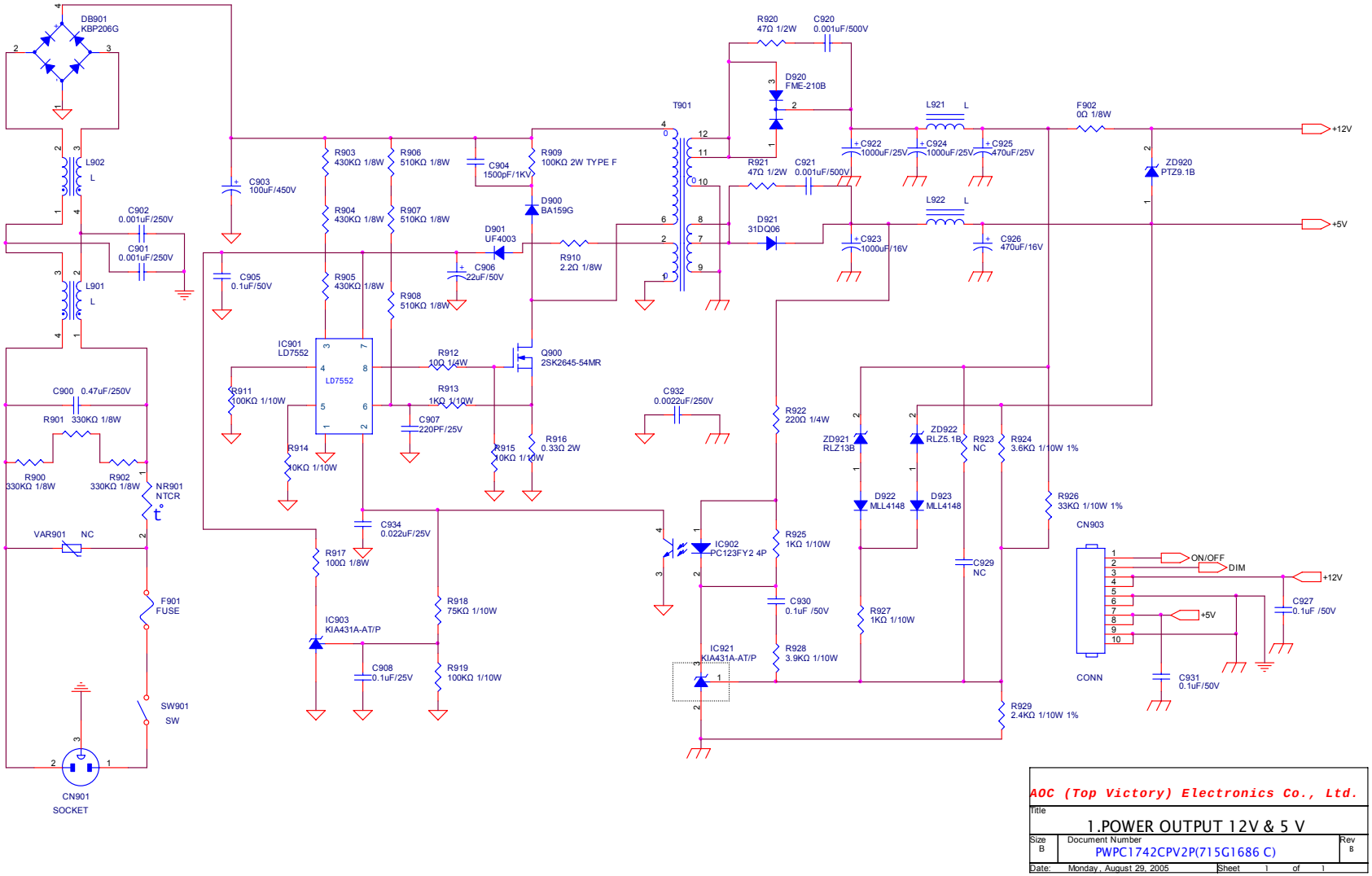


Title	715L1675-B	
Size	Document Number	Rev T1
	INPUT	
Date: Thursday, July 28, 2005	Sheet 2 of 4	

11.5 Inverter

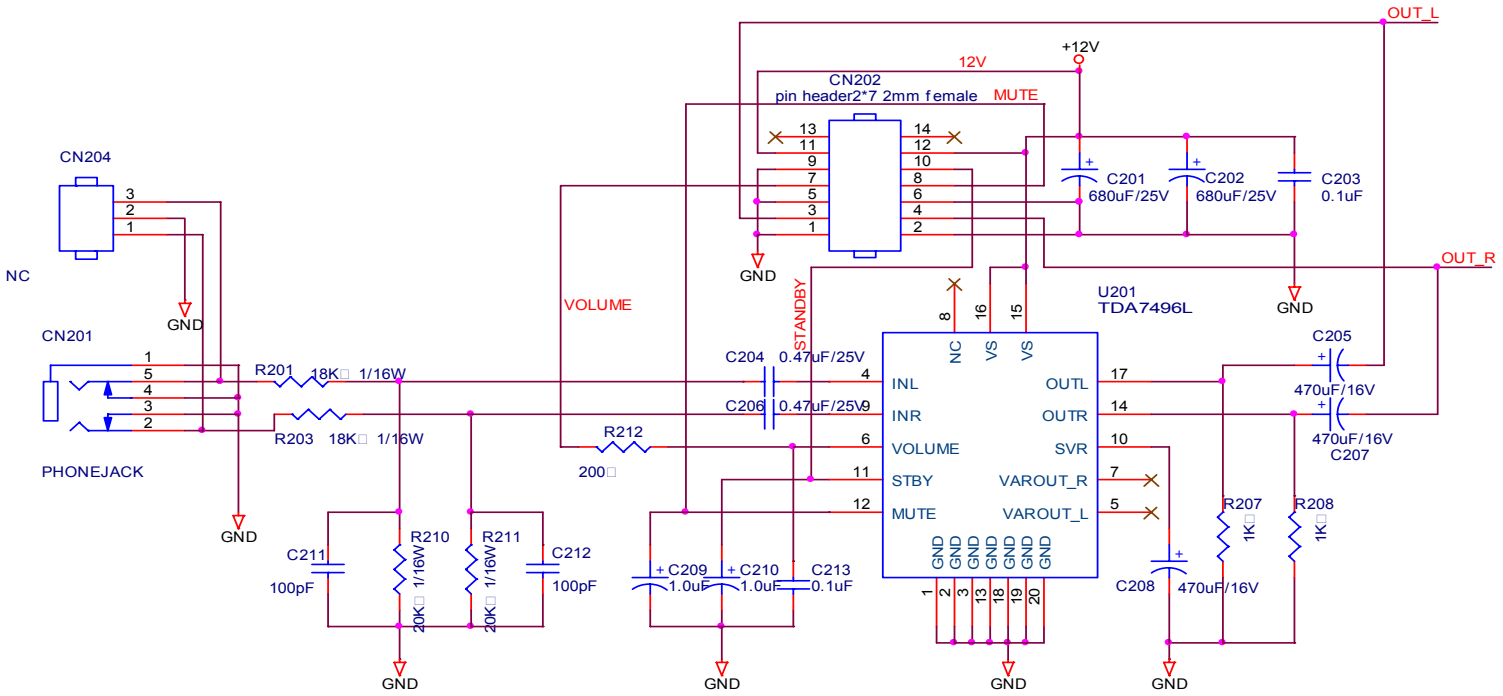


11.6 A-D Power



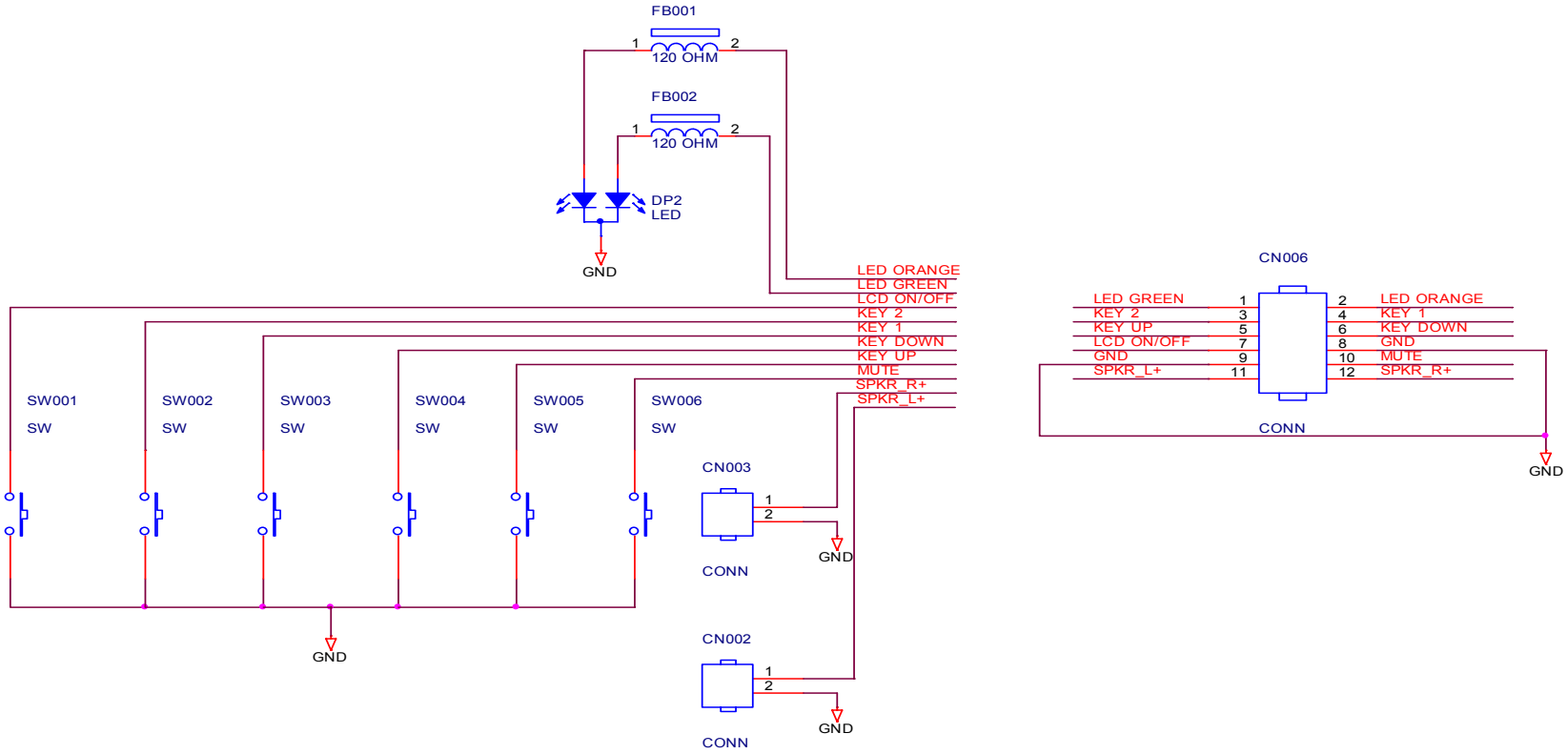
AOC (Top Victory) Electronics Co., Ltd.		
Title: 1.POWER OUTPUT 12V & 5 V		
Size: B	Document Number: PWPC1742CPV2P(715G1686 C)	Rev: B
Date: Monday, August 29, 2005	Sheet 1 of 1	

11.7 Audio



Title: Audio		
Size: A	Document Number: <Doc>	Rev: <Rev Code>
Date: Saturday, October 11, 2003	Sheet 1 of 1	

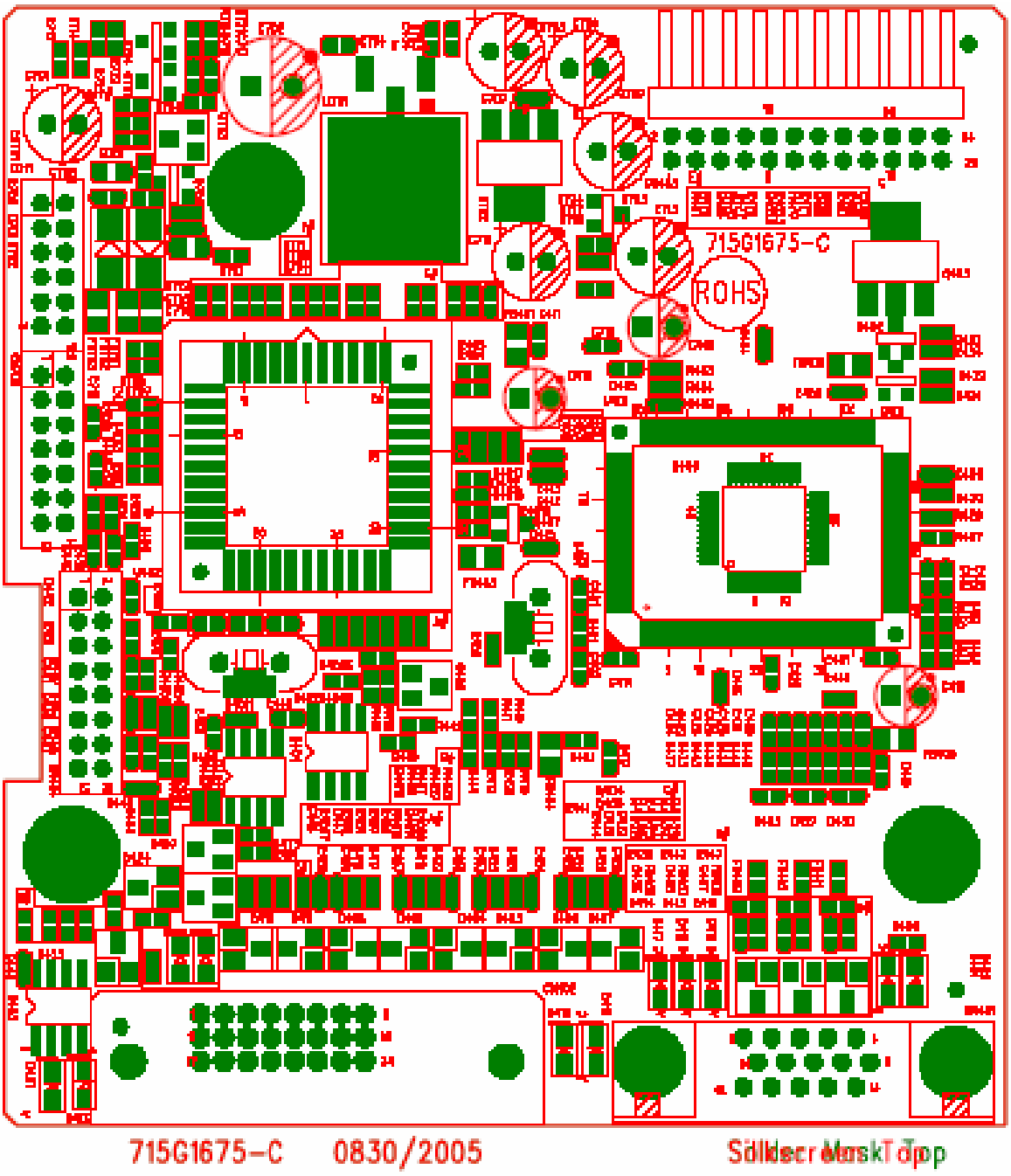
11.8 Key Pad

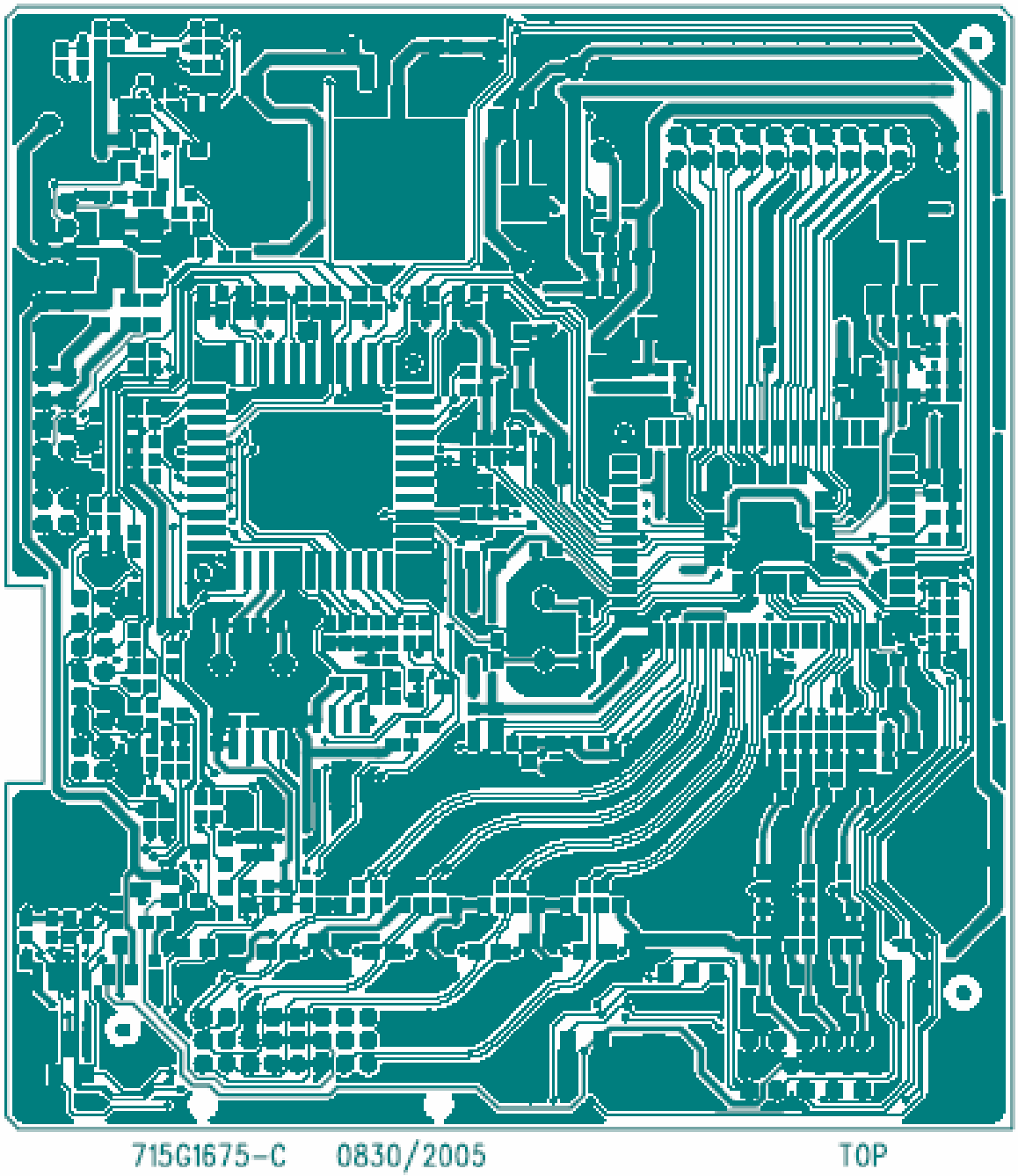


AOC (Top Victory) Electronics Co., Ltd.		
Title: **KEY PAD (For Viewsonic VA713)**		
Size: A	Document Number: CONTROL KEY PAD (Switch)	Rev: B
Date: Saturday, September 10, 2005	Sheet 1 of 1	

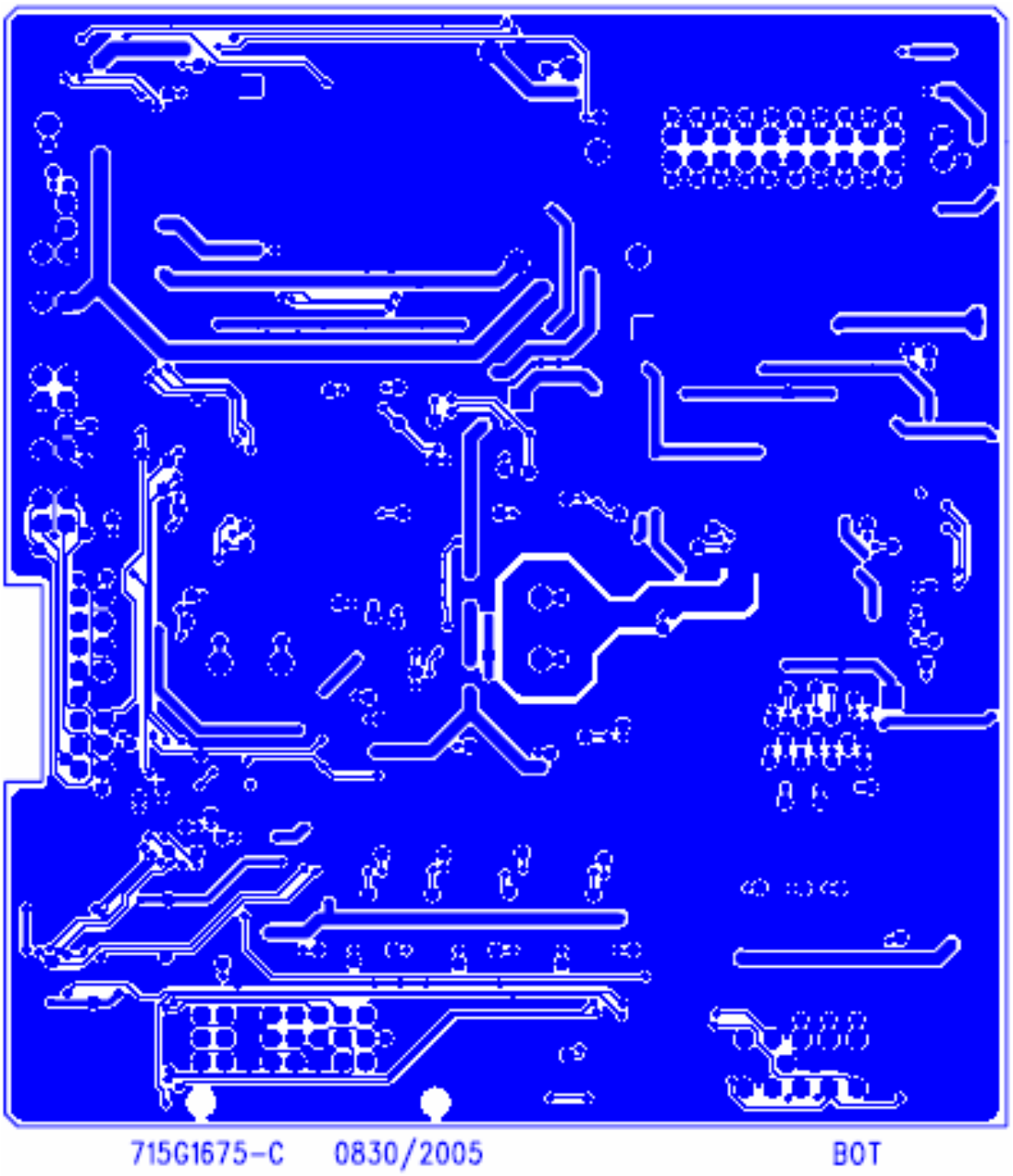
12. PCB Layout Diagram

12.1 MAIN BOARD PCB TOP VIEW

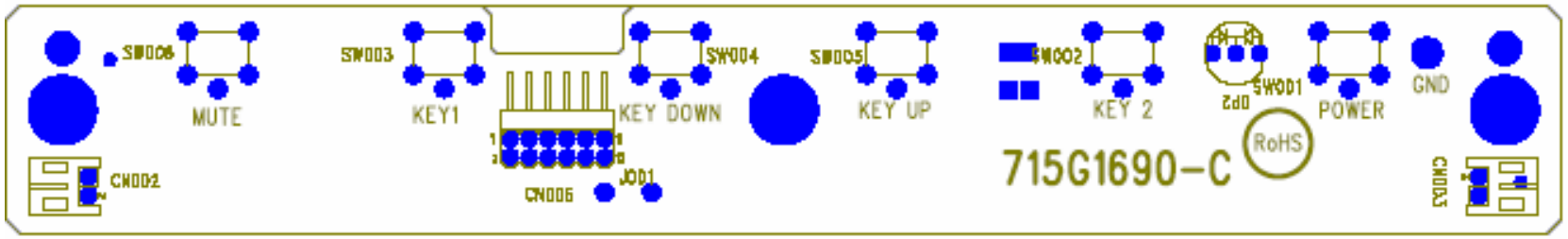



715G1675-C
0830/2005
TOP

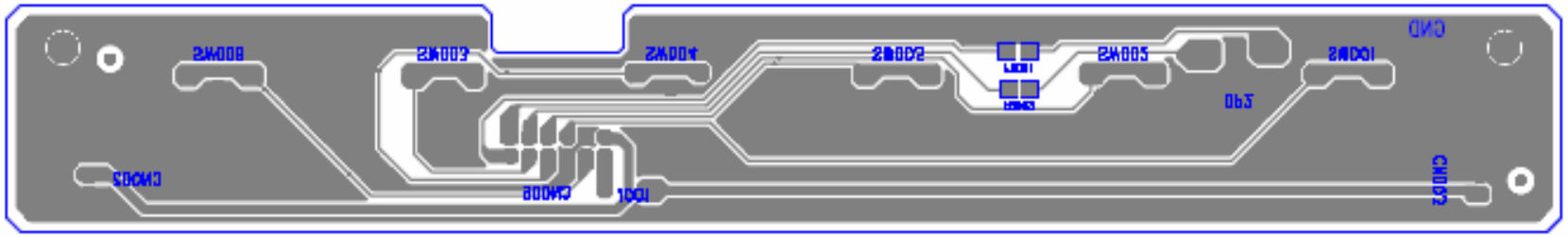
12.2 MAIN BOARD PCB BUTTON VIEW



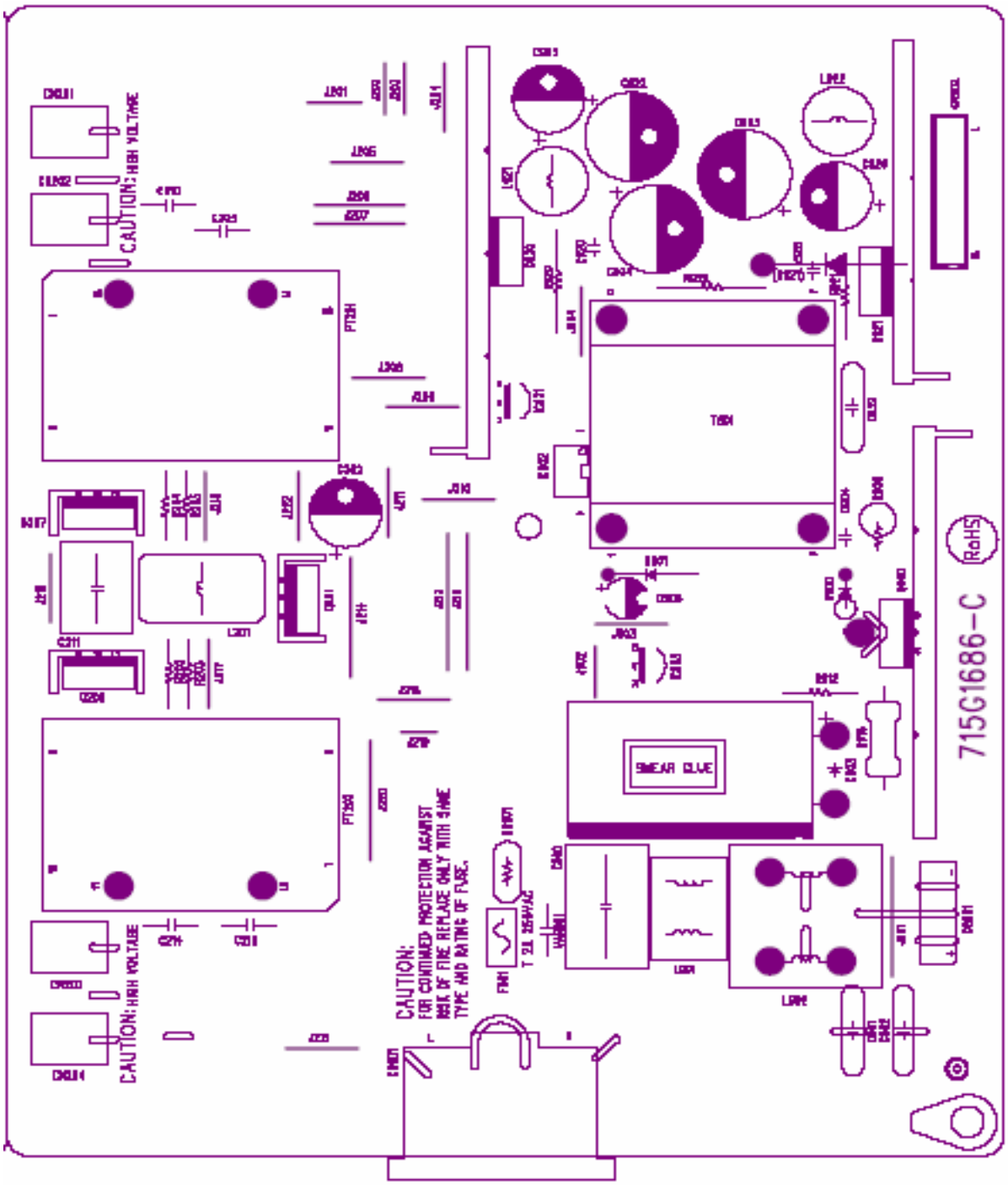
12..3 KEYBOARD TOP VIEW



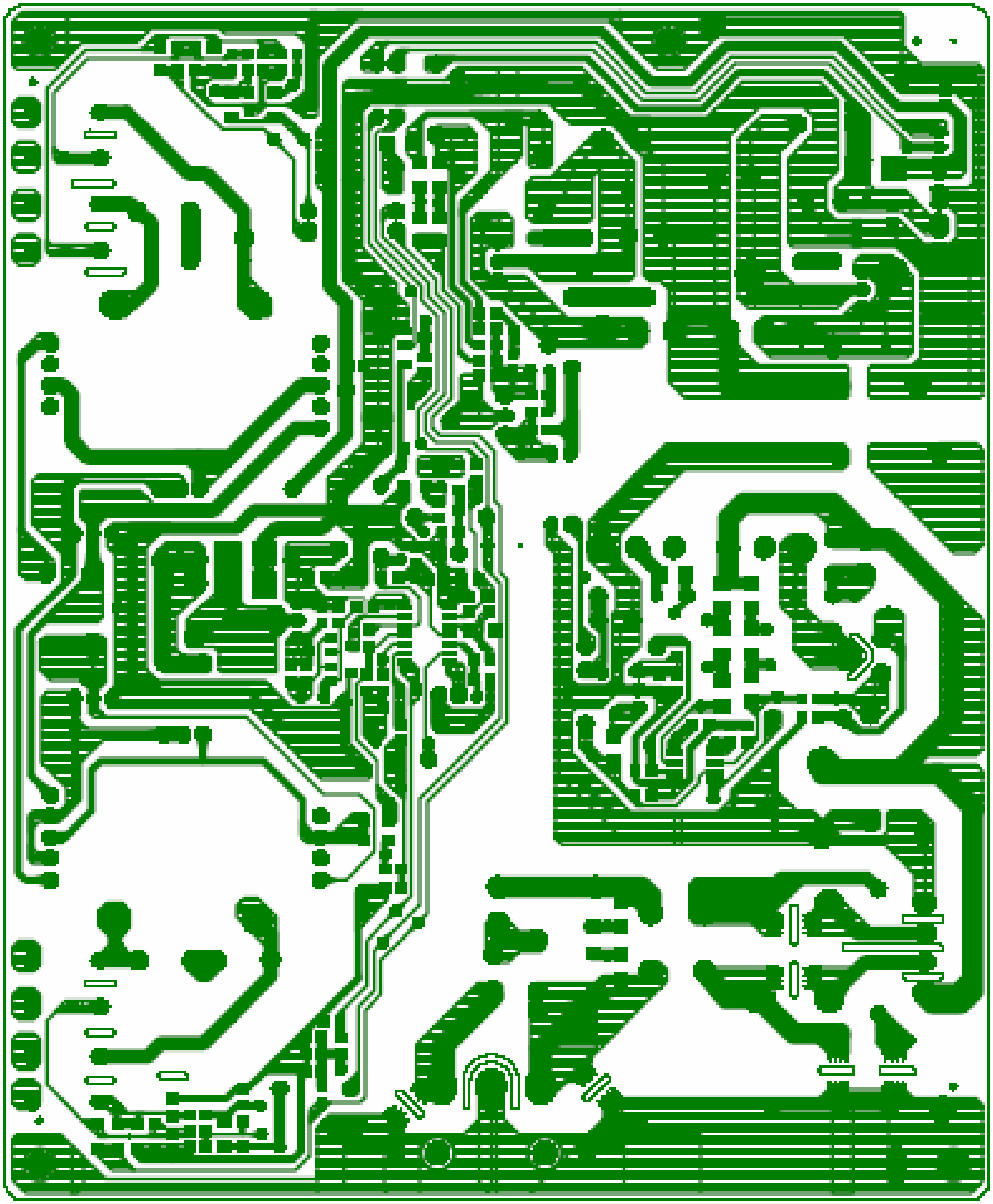
12.4 KEYBOARD BUTTON VIEW



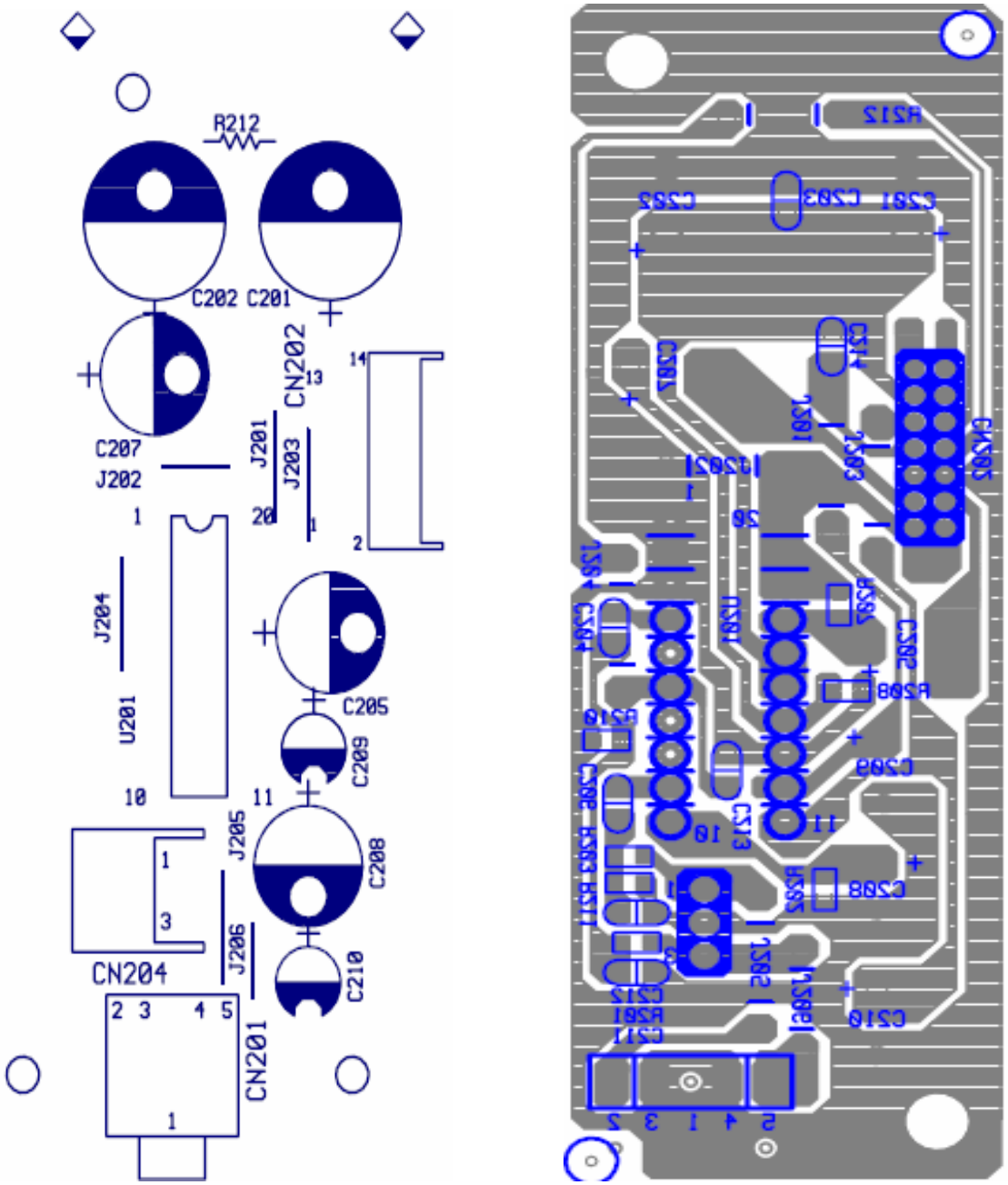
12.5 POWER PCB TOP VIEW



12.6 POWER PCB BUTTON VIEW



12.6 AUDIO PCB TOP VIEW & BUTTON VIEW



* *Reader's Response**

Dear Readers:

Thank you in advance for you feedback on our Service Manual, which allows continuous improvement of our products. We would appreciate your completion of the Assessment Matrix below, for return to ViewSonic Corporation.

Assessment

A. What do you think about the content after reading **VA712b-2** Service Manual?

Unit	***Excellent***	***Good***	***Fair***	***Bad***
1. Precautions And Safety Notice				
2. Specification				
3. Front Panel Control and Indicators				
4. Circuit Description				
5. Adjust Procedure				
6. Troubleshooting Flow Chart				
7. Recommended Spare Parts List				
8. Exploded Diagram And Spare Parts List				
9. Block Diagram				
10. Schematic Diagram				
11. PCB Layout Diagram				

B. Are you satisfied with the **VA712b-2** Service Manual?

Item	***Excellent***	***Good***	***Fair***	***Bad***
1. Service Manual Content				
2. Service Manual Layout				
3. The form and listing				

C. Do you have any opinion and suggestion about this Service Manual?

Reader's Basic Data:

Name:		Title:	
Company:			
Add:			
Tel:		Fax :	
E-Mail:			

After completing this form, please return it to ViewSonic Quality Assurance in the USA at facsimile 1-909-839-7943. You may also e-mail any suggestion to the Director, Quality System & Process (marc.maupin@viewsonic.com)