Service Manual

ViewSonic VX2025wm-1

Model No. VS10859

20” Color TFT LCD Display

(VX2025wm-1_SM Rev. 1b Sep. 2006)

ViewSonic 381 Brea Canyon Road, Walnut, California 91789 USA – (800) 888-8583

Revision History

Revision	SM Editing Date	ECR Number	Description of Changes	Editor
1a	02/16/2006		Initial Release	Jamie Chang
1b	09/11/2006	VS-E060132	Add 2nd panel source	Jamie Chang

TABLE OF CONTENTS

1. Precautions and Safety Notices

1. Caution :

No modification of any circuit should be attempted . Service work should only be performed after you are thoroughly familiar with all of the following safety checks and servicing guide line

2. Safety Check :

Care should be taken while servicing this LCD display. Because of the high voltage used in the inverter circuit. These voltage are exposed in such areas as the associated transformer circuits .

3. POWER SUPPLY REQUIREMENTS

The external power converter for this display utilizes AC and DC cords , AC cord is detachable , but DC cord is permanently attached . Any attempt to replace another adapter could result in serious problem on the display .

4. LEAKAGE CURRENT HOT CHECK

4-1 Plug the AC cord directly into the AC outlet. Do not use an isolation transformer during this check.

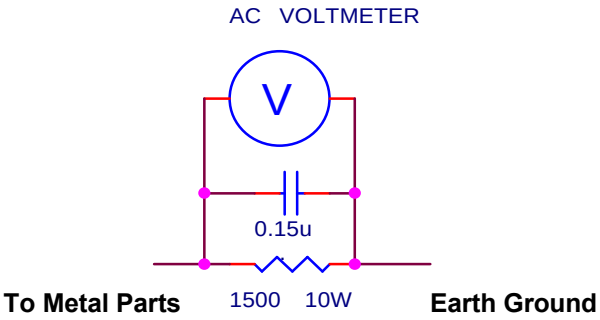
4-2 Connect a 1500 ohm , 10 watt resistor , paralleled by a 0.15uF capacitor between each metallic part and a good earth ground

4-3 Use an AC voltmeter with 1000 ohm / volt or more sensitivity and measure the AC voltage across the combination 1500 ohm resistor and 0.15uF capacitor.

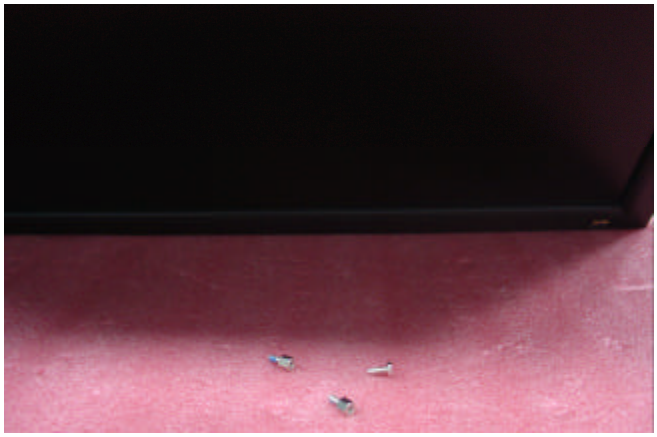
4-4 Move the resistor connection to each exposed metallic part and measure the voltage.

4-5 Reverse the polarity of the AC plug in the AC outlet and repeat the above measurement.

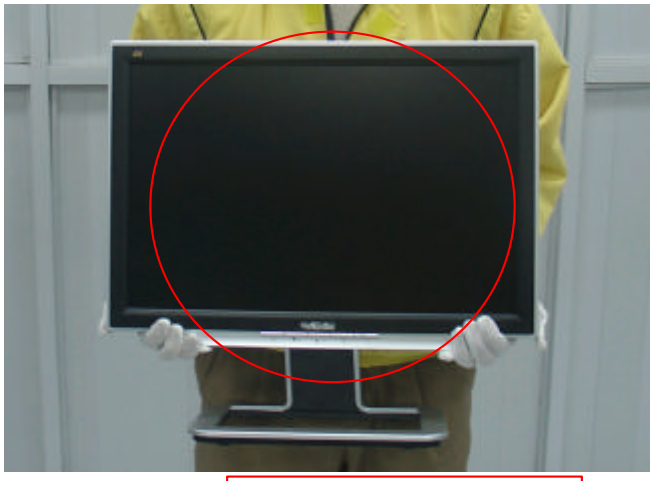
4-6 Voltage measured must not exceed 1.5 volt RMS, from any exposed metallic part to the ground. A leakage current tester may be used in the above hot check, in which case any circuit measured must not exceed 1.0 milliamp. In the case of a measurement exceeding the 1.0 milliamp value, a rework is required to eliminate the chance of a shock hazard .



Handing Methods

correct method	incorrect method
Take out the monitor with cushion	Take out the monitor by grasping the LCD panel.That may cause “ MURA“.
	
Place the monitor on a clean & soft foam pad	Place the monitor on foreign objects .That could scratch the surface of panel
	
Do not touch the surface of the polarizer .	Surface of the panel is pressed by fingers & this may cause “ MURA “
	

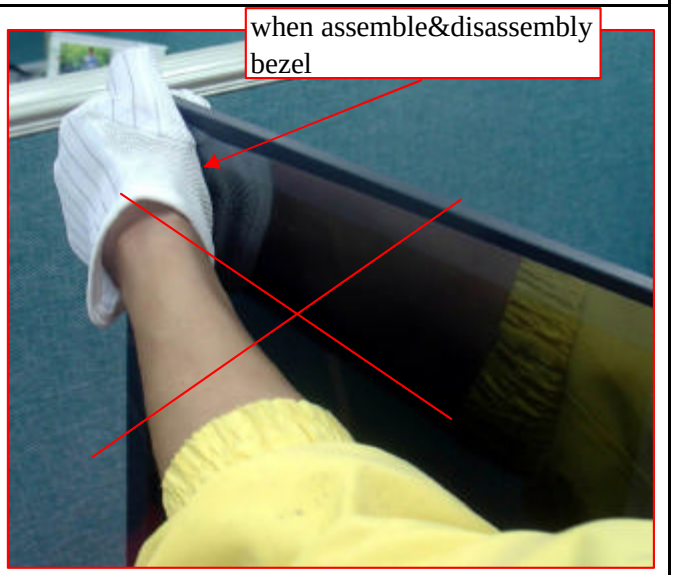
when you get the lcd monitor



when you get the lcd monitor

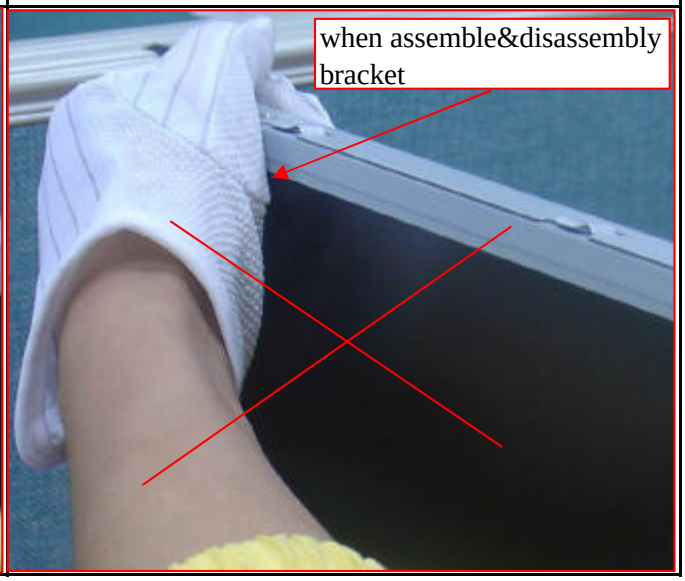
when assemble&disassembly bezel

when assemble&disassembly bezel



when assemble&disassembly bracket

when assemble&disassembly bracket



2. Specification

GENERAL specification

Test Resolution & Frequency	1680x1050 @ 60Hz
Test Image Size	Full Size
Contrast and Brightness Controls	Factory Default: Contrast = 70%, Brightness = 100%

VIDEO INTERFACE

Analog Input Connector	DB-15 (Analog), refer the appendix A
Digital Input Connector	DVI-D (Digital), refer the appendix B
Default Input Connector	Defaults to the first detected input
Video Cable Strain Relief	Equal to twice the weight of the monitor for five minutes
Video Cable Connector DB-15 Pin out	Compliant DDC 1/2B
Video Signals	1. Video RGB (Analog) Separate, Composite, and Sync on Green 2. TMDS (Digital)
Video Impedance	75 Ohms (Analog), 100 Ohms (Digital)
Maximum PC Video Signal	950 mV with no damage to monitor
Maximum Mac Video Signal	1250 mV with no damage to monitor
Sync Signals	LVDS
DDC 1/2B	Compliant with Revision 1.3
Sync Compatibility	Separate Sync, Composite Sync, SOG
Video Compatibility	Shall be compatible with all PC type computers, Macintosh computers, and after market video cards
Resolution Compatibility	640 x 350*, 640 x 480, 720 x 400* (640 x 400*), 800 x 600, 832 x 624, 1024 x 768, 1152 x 864, 1152 x 870, 1280 x 720, 1280 x 960, 1280 x 1024, 1680 x 1050 * The image vertical size might not be full screen. But the image vertical position should be at the center.
Exclusions	Not compatible with interlaced video

POWER SUPPLY

Internal Power Supply	Part Number: EAPD-64CF
Input Voltage Range	90 TO 264 VAC
Input Frequency Range	47.5 TO 63 HERTZ
Short Circuit Protection	Output can be shorted without damage
Over Current Protection	10 A typical
Leakage Current	3.5mA (Max) at 264VAC / 50Hz
EFFICIENCY	80 % typical at 115VAC Full Load
Fuse	Internal and not user replaceable
Power Dissipation	64 Watts (typ)
Max Input AC Current	1.5Arms @ 90VAC
INRUSH CURRENT (COLD START)	80 A @ 230VAC
Power Supply Cold Start	Shall start and function properly when under full load, with all combinations of input voltage, input frequency, and operating temperature
Power Supply Transient Immunity	Shall be able to withstand an ANSI/IEEE C62.41-1980 2000V 200 ampere ring wave transient test with no damage
Power Supply Line Surge Immunity	Shall be able to withstand 1.5 times nominal line voltage for one cycle with no damage
Power Supply Missing Cycle Immunity	Shall be able to function properly, without reset or visible screen artifacts, when ½ cycle of AC power is randomly missing at nominal input
Power Supply Acoustics	The power supply shall not produce audible noise that would be detectable by the user. Audible shall define to be in compliance with ISO 7779 (DIN EN27779:1991) Noise measurements of machines acoustics. Power Switch noise shall not be considered
US Type Power Cable	Separate 3-prong NEMA 5-15P type plug. Length = 1.8m. Connects to display. Color = Black
European Type Power Cable	Schuko CEE7-7 type plug. Length = 1.8m, Connects to display. Color = Black
CCC Type Power Cable	Separate 3-prong type plug. Length = 1.8m. Connects to display. Color = Black
PSE Type Power Cable	Separate 2-prong NEMA 1-15P type plug. Length = 1.8m. Connects to display. Color = Black
Power Saving Operation(Method)	VESA DPMS Signaling ON Mode < 50W (Max) / 49W (Typ)
Power Consumption	On Mode < 50 W (Max) / 49W (Typ) Saving Mode < 2 W, Off Mode < 1 W
Recovery Time	On Mode = N/A, Active Off < 3 sec

ELECTRICAL REQUIREMENT

Horizontal / Vertical Frequency

Horizontal Frequency	30 – 82 KHZ
Vertical Refresh Rate	50 – 75 HZ
Maximum Pixel Clock	Digital: 165 MHz Analog: 205 MHz
Sync Polarity	Independent of sync polarity.

Timing Table

Item	Timing	Analog	Digital
1	640 x 350 @ 70Hz, 31.5kHz	Yes	Yes
2	640 x 400 @ 60Hz, 31.5kHz	Yes	Yes
3	640 x 400 @ 70Hz, 31.5kHz	Yes	Yes
4	640 x 480 @ 50Hz, 24.7kHz	No	No
5	640 x 480 @ 60Hz, 31.5kHz	Yes	Yes
6	640 x 480 @ 67Hz, 35.0kHz	Yes	Yes
7	640 x 480 @ 72Hz, 37.9kHz	Yes	Yes
8	640 x 480 @ 75Hz, 37.5kHz	Yes	Yes
9	640 x 480 @ 85Hz, 43.27kHz	No	No
10	720 x 400 @ 70Hz, 31.5kHz	Yes	Yes
11	800 x 600 @ 56Hz, 35.1kHz	Yes	Yes
12	800 x 600 @ 60Hz, 37.9kHz	Yes	Yes
13	800 x 600 @ 75Hz, 46.9kHz	Yes	Yes
14	800 x 600 @ 72Hz, 48.1kHz	Yes	Yes
15	800 x 600 @ 85Hz, 53.7kHz	No	No
16	832 x 624 @ 75Hz, 49.7kHz	Yes	Yes
17	1024 x 768 @ 60Hz, 48.4kHz	Yes	Yes
18	1024 x 768 @ 70Hz, 56.5kHz	Yes	Yes
19	1024 x 768 @ 72Hz, 58.1kHz	Yes	Yes
20	1024 x 768 @ 75Hz, 60.0kHz	Yes	Yes
21	1024 x 768 @ 85Hz, 68.67kHz	No	No
22	1152 x 864 @ 75Hz, 67.5kHz	Yes	Yes
23	1152 x 870 @ 75Hz, 68.7kHz	Yes	Yes
24	1280 x 1024 @ 60Hz, 63.4kHz	Yes	Yes
25	1280 x 1024 @ 75Hz, 79.97kHz	Yes	Yes
26	1280x 720 @ 60Hz, 45kHz	Yes	Yes
27	1680 x 1050 @ 60Hz, 65.3kHz	Yes	Yes
28	1680 x 1050 @ 75Hz, 82.3kHz	Yes	No
29	1680 x 1050 @ 85Hz, 93.9kHz	No	No

Primary Presets

1680x1050 @ 60Hz

AUDIO INTERFACE (SPEAKER SPECIFICATION)

Line input connection	3.5 mm stereo jack
Line input signal	1.3 Vrms
Line input impedance	10 kOhm
Maximum power output (Electric)	1 W @ < 5% distortion
Signal to Noise Ratio	72 dB
Frequency response	200 Hz – 20 Khz
Distortion	< 5 % THD (@1kHz)
Vibration	There should be no audible vibration with volume at 100% and treble / bass at default
Screen image	There should be no affect on the screen image stability under any conditions
Connector PC99 requirement Audio in	Lime Green pantone # 577C
Cable type / length	3.5mm stereo cable / 1.8m length
Audio DPMS	Speakers stay on when the rest of the monitor is in power saving Note: There is no guarantee <1 W power consumption in Active Off mode, when the Audio Cable is connected

Panel Characteristics:

1st Source Panel

Model number	AUO M201EW01 V0
Type	PMVA type with LVDS interface
Active Size	433.44 (H) x 270.9(V)
Pixel Arrangement	RGB Vertical Stripe
Pixel Pitch	0.258 mm
GLASS TREATMENT	Anti Glare (Hard coating 3H)
# OF BACKLIGHTS	6 CCFL
BACKLIGHT LIFE	50,000 Hours (Min)
Luminance (5-point) – Condition: CT = 6500K, Contrast = Max, Brightness = Max	300 cd/m2 (Typ after 30 minute warm up) 240 cd/m2 (Min after 30 minute warm up)
Brightness Uniformity	≧80% (Typ), 75% (Min),
Contrast Ratio	800:1 (typ), 400:1 (min)
Color Depth	16.7 million colors (8 bits)
Viewing Angle (Horizontal)	@ CR>10 Typical: 176º Minimum: 150º @ CR>5 Typical: T.B.D Minimum: T.B.D
Viewing Angle (Vertical)	@ CR>10 Typical: 176º Minimum: 150º @ CR>5 Typical: T.B.D Minimum: T.B.D
Response Time 10%-90% @ Ta=25°C	Tr = 25 ms,Tf = 15 ms Total = 40ms (max) Tr =11 ms,Tf = 5ms Total =16ms(typ) Without OD Board (gray –gray) (Average of Tr and Tf) = 8 ms (typ)
Panel Defects	Please see Panel Quality Specifications.

2nd Source Panel

Model number	AUO M201EW01 V3
Type	AMVA type with LVDS interface
Active Size	433.44 (H) x 270.9(V)
Pixel Arrangement	RGB Vertical Stripe
Pixel Pitch	0.258 mm
GLASS TREATMENT	Anti Glare (Hard coating 3H)
# OF BACKLIGHTS	6 CCFL
BACKLIGHT LIFE	40,000 Hours (Min)
Luminance (5-point) – Condition: CT = 6500K, Contrast = Max, Brightness = Max	300 cd/m2 (Typ after 30 minute warm up) 240 cd/m2 (Min after 30 minute warm up)
Brightness Uniformity	≧80% (Typ), 75% (Min),
Contrast Ratio	1000:1 (typ), 750:1 (min)
Color Depth	16.7 million colors (8 bits)
Viewing Angle (Horizontal)	@ CR>10 Typical: 178º Minimum: 150º @ CR>5 Typical: T.B.D Minimum: T.B.D
Viewing Angle (Vertical)	@ CR>10 Typical: 178º Minimum: 150º @ CR>5 Typical: T.B.D Minimum: T.B.D
Response Time 10%-90% @ Ta=25°C	Tr = 25 ms,Tf = 15 ms Total = 40ms (max) Tr =11 ms,Tf = 5ms Total =16ms(typ) Without OD Board (gray –gray) (Average of Tr and Tf) = 8 ms (typ)
Panel Defects	Please see Panel Quality Specifications.

MECHANICAL

Dimension (Desktop)

Width	484.6 mm (19 inch)
Height	441.3 mm (17.3inch)
Depth	201 mm (7.9 inch)
Monitor Weight	6.3 Kg (13.89 lbs)

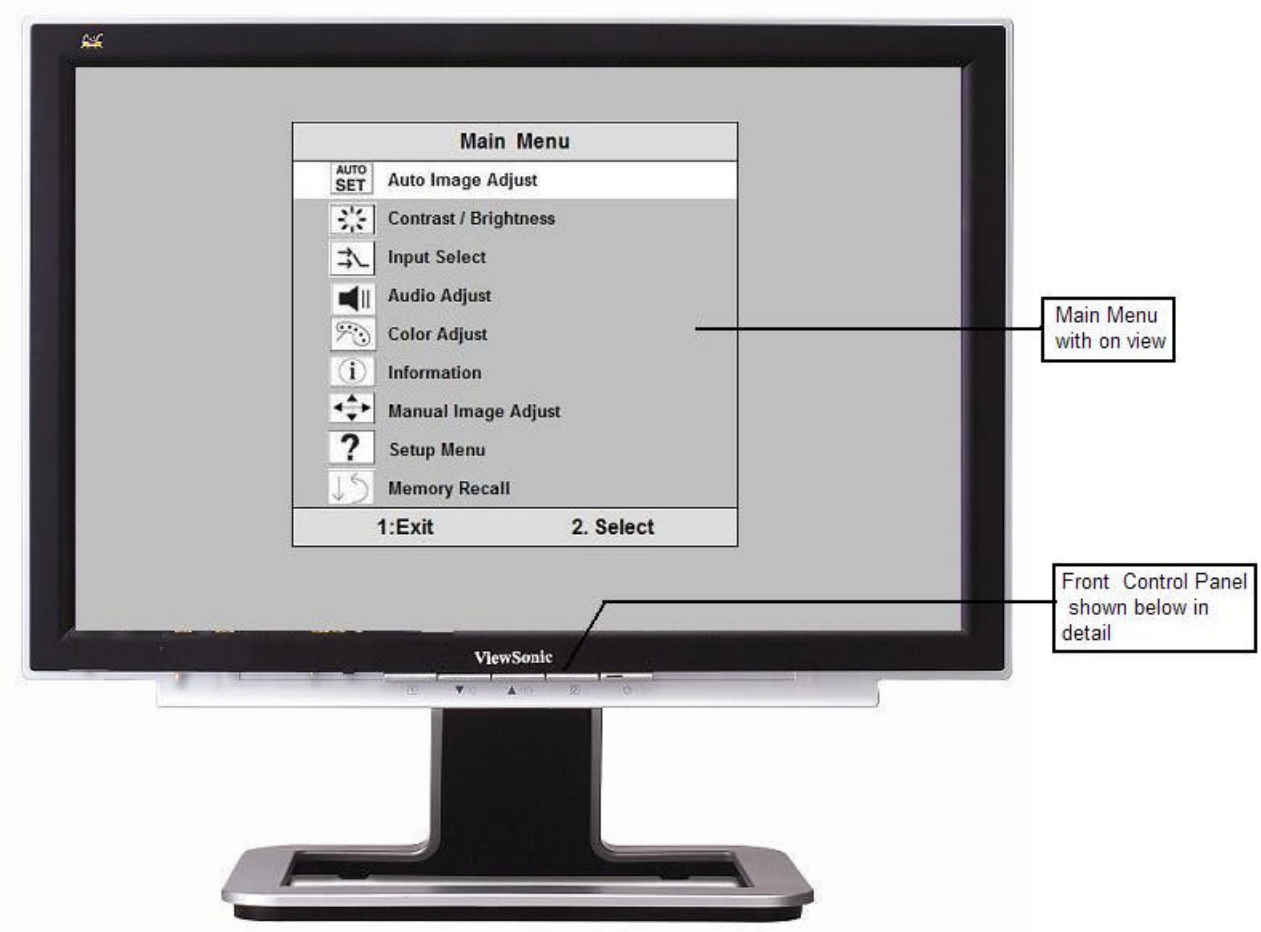
Dimension (Head Only / Wall Mount)

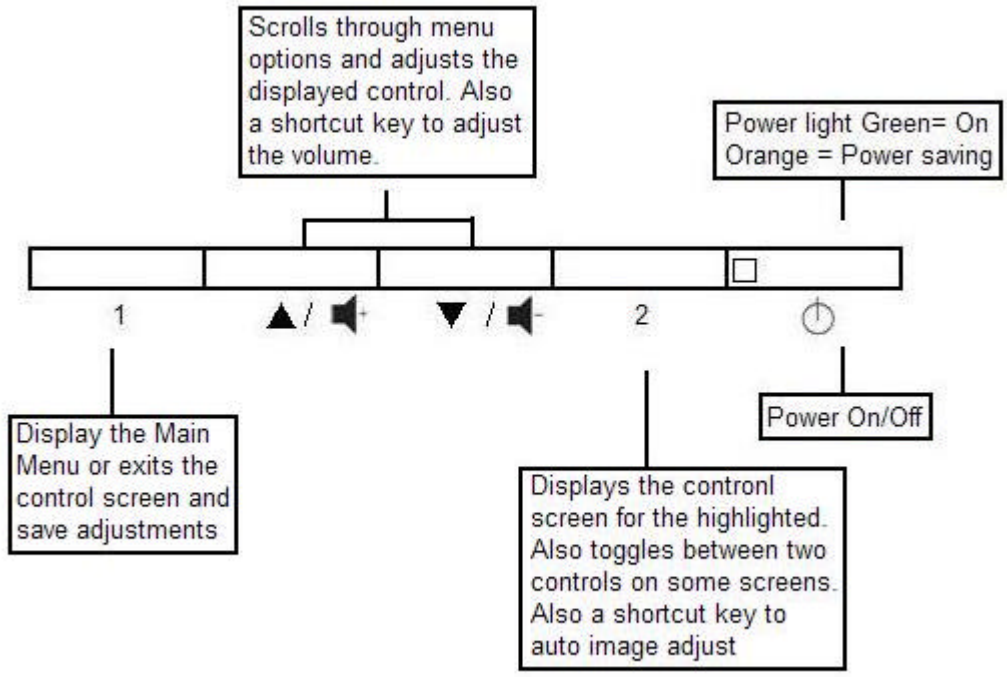
Width	484.6 mm (19 inch)
Height	340.1 mm (13.4 inch)
Depth	67.1 mm (2.6 inch)
Monitor Weight	5 Kg (11.02 lbs)

Ergonomics

Tilt Up	From 0º up to ≧20º
Tilt Down	From 0º down to -3º ~ -5 º

3. Front Panel Function Control Description





Main Menu Controls

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

A. **Auto Image Adjust** automatically sizes, centers, and fine tunes the video signal to eliminate waviness and distortion. Press the [2] button to obtain a sharper image.

NOTE: Auto Image Adjust works with most common video cards. If this function does not work on your LCD display, then

lower the video refresh rate to 60 Hz and set the resolution to its pre-set value.

B. **Contrast adjusts** the difference between the image background (black level) and the foreground (white level).

C. **Brightness adjusts** the lamps current to control the screen brightness.

D. **Input adjusts** the Analogue or the Digital input source

E. **Audio Adjust** the volume increase or decrease and mute function

F. **Color Adjust** provides several color options: preset color temperatures and Custom User Color which allows you to adjust 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).

5400K — Adds red to the screen image for warmer white and richer red.

Custom User Color — Individual adjustments for red, green, and blue.

1 To select color (R, G or B) press button [2].

2 To adjust selected color, press ▲ or ▼ .

3 When you are finished making all color adjustments, press button [1] twice.

G. **Information** displays the timing mode (video signal input) coming from the graphics card in your computer. See your graphic card's user guide for instructions on changing the resolution and refresh rate (vertical frequency). VESA 1680 x 1050 @ 60 Hz (recommended) means that the resolution is 1680 x 1050 and the refresh rate is 60 Hertz.

H. **Manual Image Adjust** controls are explained below:

H. Size (Horizontal Size) adjusts the width of the screen image.

NOTE: Vertical size is automatic with your LCD display.

H./V. Position adjusts horizontal and vertical position of the screen image. You can toggle between Horizontal and Vertical by pressing button [2]. Horizontal moves the screen image to the left or to the right. Vertical moves the screen image up and down.

Fine Tune sharpens focus by aligning the illuminated text and/or graphic characters.

Sharpness adjusts the clarity and focus of the screen image.

Setup Menu controls are explained below:

Language allows you to choose the language used in the menus and control screens.

Resolution Notice displays the recommended resolution for this LCD display.

Enable allows the Resolution Notice to appear on-screen.

Disable will not allow the Resolution Notice to appear on-screen.

OSD Timeout sets the length of time an on-screen display screen is displayed. For example, with a“15 second” setting, if a control is not pushed within 15 seconds, the display OSD disappears.

I. **OSD Position** allows you to move the on-screen display menus and control screens.

J. **Memory Recall** returns adjustments to the original factory settings if the display is operating in a factory Preset Timing Mode listed in this user guide.

4. Circuit Description

1. Outline

1.1 Power On/Off, (2) Enter button, up arrow button, down arrow button, (1) MENU button, n on the front panel.

1.2 D-sub 15pin connector, DVI-D connector, audio line-in receptacle, and AC-IN are located on the back side of the cabinet.

1.3 OSD menu includes the following function;

Auto Image Adjust (only active under analog input)

Contrast/Brightness

Input Select

Audio Adjust

Color Adjust

Information

Manual Image Adjust

Setup Menu

Memory Recall

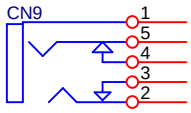
1.4 Contrast and Brightness can be directly controlled with UP / DOWN key.

1.5 Audio volume can be controlled with UP/DN key when Audio Adjust menu is active.

2. CONNECTORS

2.1 AC inlet : CEE22 typed connector

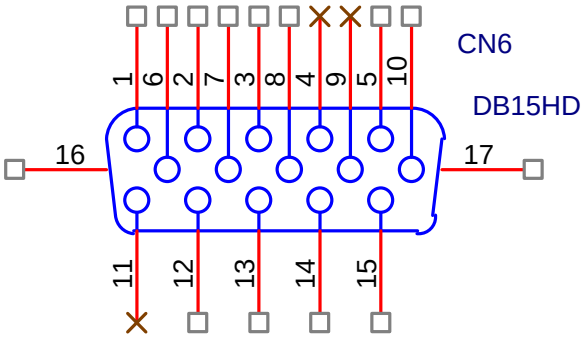
2.2 Audio : Line-in,



Line-in receptacle

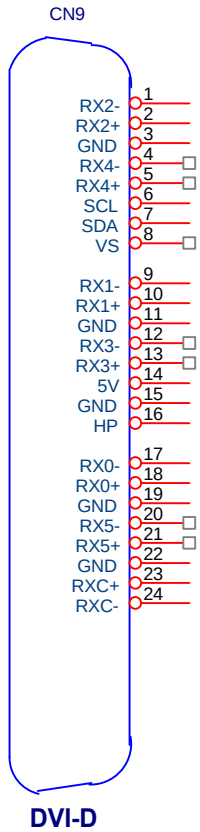
(Line-in receptacle is green)

2.3 Video signal connector for analog input: 15P Mini D-Sub



PIN	MNEMONI	SIGNAL
1	RV	Red Video
2	GV	Green Video
3	BV	Blue Video
4	NC	None
5	GND	Ground (DDC return)
6	RG	Red GND
7	GG	Green GND
8	BG	Blue GND
9	+5V	+5V (for DDC)
10	SG	Sync GND
11	NC	None
12	SDA	DDC Data
13	HS	Horizontal Sync
14	VS	Vertical Sync
15	SCL	DDC Clock

2.4 Video signal connector for digital input: 24pin DVI-D 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	RX4-	Reserved. No connection
5	RX4+	Reserved. No connection
6	SCL	DDC2B Clock
7	SDA	DDC2B Data
8	VS	Reserved. No connection
9	RX1-	TMDS negative differential input, channel 1
10	RX1+	TMDS positive differential input, channel 1
11	GND	Logic Ground
12	RX3-	Reserved. No connection
13	RX3+	Reserved. No connection
14	+5V	Power
15	GND	Logic Ground
16	HP	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	RX5-	Reserved. No connection
21	RX5+	Reserved. No connection
22	GND	Logic Ground
23	RXC+	TMDS positive differential input, reference clock
24	RXC-	TMDS negative differential input, reference clock

3. ELECTRICAL SPECIFICATIONS

3.1 Standard conditions

Display Area	**433.44 x 270.9 mm**
Video Signal	**0.7Vpp**
Contrast	**Default**
Brightness	**Default**
Ambient	**20 +/- 5 °C**
Input	**AC**
Warming up	**> 30 min**
Display	**1680 x 1050**

3.2 POWER

3.2.1 Power supply

Input voltage	100~240Vac
Power frequency	50~60Hz
Input current	<1.5Arms@90Vac
Inrush current	80A(Max) at 230Vac(cold start)
Power consumption	47W(typical);50Watts(Max)

3.2.2 Power Management

State	Power	Indicator
On	47Watts	Green
Standby	< 2Watts	Amber
Off	<2Watts	Off

3.3 Acceptable timing

If the timing is within following specification, this LCD display can automatically function with a certain position.

Horizontal: Sync frequency: 30~82 KHz (Analog: 205MHz, Digital:165MHz)

Vertical: Sync frequency: 50~75*Hz

3.4 Signal level and input impedance

3.4.1 Video Signal level: 0.7Vp-p Video signal.

3.4.2 Sync Signal level

H/V Separate: TTL level

3.4.3 Input impedance

Analog video input: 75 ohm

Digital video input: 100 ohm

Sync input: > 1 k ohm

Audio input: 10K ohm

4. SIGNAL CABLE: Signal cable with Mini D-Sub 15P connectors at both ends. Length: 1.8 meter.

5. EDID data

5.1. Analog EDID: Analog EDID is stored in IC4

EDID Block 0, Bytes 0-127

128 BYTES OF EDID CODE:

	0	1	2	3	4	5	6	7	8	9
0	00	FF	FF	FF	FF	FF	FF	00	5A	63
10	1D	E5	01	01	01	01	01	0F	01	03
20	0E	2B	1B	78	2E	CF	E5	A3	5A	49
30	A0	24	13	50	54	BF	EF	80	B3	0F
40	81	80	81	40	71	4F	01	01	01	01
50	01	01	01	01	21	39	90	30	62	1A
60	27	40	68	B0	36	00	B1	0F	11	00
70	00	1C	00	00	00	FF	00	51	36	59
80	30	35	30	31	30	30	30	30	31	0A
90	00	00	00	FD	00	32	4B	1E	52	15
100	00	0A	20	20	20	20	20	20	00	00
110	00	FC	00	56	58	32	30	32	35	77
120	0A	20	20	20	20	20	00	11		

(08-09) ID Manufacturer Name _____ = VSC

(11-10) Product ID Code _____ = E51D

(12-15) Last 5 Digits of Serial Number _____ = Not Used

(16) Week of Manufacture _____ = 01

(17) Year of Manufacture _____ = 2005

(10-17) Complete Serial Number _____ = See Descriptor Block

(18) EDID Version Number _____ = 1

(19) EDID Revision Number _____ = 3

(20) VIDEO INPUT DEFINITION:

Analog Signal

0.700, 0.300 (1.000 Vp-p)

Separate Syncs, Composite Sync, Sync on Green

(21) Maximum Horizontal Image Size _____ = 430 mm

(22) Maximum Vertical Image Size _____ = 270 mm

(23) Display Gamma _____ = 2.20

(24) Power Management and Supported Feature(s):

Active Off/Very Low Power, Standard Default Color Space,

Preferred Timing Mode

Display Type = R/G/B Color

(25-34) CHROMA INFO:

Red X - 0.640 Green X - 0.288 Blue X - 0.144 White X - 0.313

Red Y - 0.352 Green Y - 0.628 Blue Y - 0.076 White Y - 0.329

(35) ESTABLISHED TIMING I:

720 X 400 @ 70Hz (IBM,VGA)

640 X 480 @ 60Hz (IBM,VGA)

640 X 480 @ 67Hz (Apple,Mac II)

640 X 480 @ 72Hz (VESA)

640 X 480 @ 75Hz (VESA)

800 X 600 @ 56Hz (VESA)

800 X 600 @ 60Hz (VESA)

(36) ESTABLISHED TIMING II:

800 X 600 @ 72Hz (VESA)

800 X 600 @ 75Hz (VESA)

832 X 624 @ 75Hz (Apple,Mac II)

1024 X 768 @ 60Hz (VESA)

1024 X 768 @ 70Hz (VESA)

1024 X 768 @ 75Hz (VESA)

1280 X 1024 @ 75Hz (VESA)

(37) Manufacturer's Reserved Timing:

1152 X 870 @ 75Hz (Apple,Mac II)

(38-53) Standard Timing Identification:

1680 X 1050 @75Hz

1280 X 1024 @60Hz

1280 X 960 @60Hz
1152 X 864 @75Hz
Not Used
Not Used
Not Used
Not Used

(54-71) Detailed Timing / Descriptor Block 1:

1680x1050 Pixel Clock: 146.25 MHz

Horizontal Image Size: 433 mm Vertical Image Size: 271 mm
Refreshed Mode: Non-Interlaced Normal Display - No Stereo

Horizontal:

Active Time: 1680 pixels Blanking Time: 560 pixels
Sync Offset: 104 pixels Sync Pulse Width: 176 pixels
Border: 0 pixels Frequency: 65.29 KHz

Vertical:

Active Time: 1050 lines Blanking Time: 39 lines
Sync Offset: 3 lines Sync Pulse Width: 6 lines
Border: 0 lines Frequency: 59.95 Hz

Digital Separate, Horizontal Polarity (-) Vertical Polarity (+)

(72-89) Detailed Timing / Descriptor Block 2:

Monitor Serial Number:
Q6Y050100001

(90-107) Detailed Timing / Descriptor Block 3:

Monitor Range Limits:
Min Vertical Freq - 50 Hz
Max Vertical Freq - 75 Hz
Min Horiz. Freq - 30 KHz
Max Horiz. Freq - 82 KHz
Pixel Clock - 210 MHz
Secondary GTF - Not Supported

(108-125) Detailed Timing / Descriptor Block 4:

Monitor Name:
VX2025wm

(126) No Extension EDID Block(s)
(127) CheckSum OK
5.2. Digital EDID: Digital EDID is stored in IC4.

Appendix F : Digital EDID

EDID Block 0, Bytes 0-127
128 BYTES OF EDID CODE:

	0	1	2	3	4	5	6	7	8	9
0	00	FF	FF	FF	FF	FF	FF	00	5A	63
10	1D	E5	01	01	01	01	01	0F	01	03
20	80	2B	1B	78	2E	CF	E5	A3	5A	49
30	A0	24	13	50	54	BF	EF	80	B3	0F
40	81	80	81	40	71	4F	31	0A	01	01
50	01	01	01	01	21	39	90	30	62	1A
60	27	40	68	B0	36	00	B1	0F	11	00
70	00	1C	00	00	00	FF	00	51	36	59
80	30	35	30	31	30	30	30	30	31	0A
90	00	00	00	FD	00	32	4B	1E	52	11
100	00	0A	20	20	20	20	20	20	00	00
110	00	FC	00	56	58	32	30	32	35	77
120	0A	20	20	20	20	20	00	6A		

(08-09) ID Manufacturer Name _____ = VSC
(11-10) Product ID Code _____ = E51D
(12-15) Last 5 Digits of Serial Number _____ = Not Used
(16) Week of Manufacture _____ = 01
(17) Year of Manufacture _____ = 2005
(10-17) Complete Serial Number _____ = See Descriptor Block
(18) EDID Version Number _____ = 1
(19) EDID Revision Number _____ = 3
(20) VIDEO INPUT DEFINITION:
Digital Signal
Non - VESA DFP 1.x Compatible

(21) Maximum Horizontal Image Size _____ = 430 mm

(22) Maximum Vertical Image Size _____ = 270 mm

(23) Display Gamma _____ = 2.20

(24) Power Management and Supported Feature(s):

Active Off/Very Low Power, Standard Default Color Space,

Preferred Timing Mode

Display Type = R/G/B Color

(25-34) CHROMA INFO:

Red X - 0.640 Green X - 0.288 Blue X - 0.144 White X - 0.313

Red Y - 0.352 Green Y - 0.628 Blue Y - 0.076 White Y - 0.329

(35) ESTABLISHED TIMING I:

720 X 400 @ 70Hz (IBM,VGA)

640 X 480 @ 60Hz (IBM,VGA)

640 X 480 @ 67Hz (Apple,Mac II)

640 X 480 @ 72Hz (VESA)

640 X 480 @ 75Hz (VESA)

800 X 600 @ 56Hz (VESA)

800 X 600 @ 60Hz (VESA)

(36) ESTABLISHED TIMING II:

800 X 600 @ 72Hz (VESA)

800 X 600 @ 75Hz (VESA)

832 X 624 @ 75Hz (Apple,Mac II)

1024 X 768 @ 60Hz (VESA)

1024 X 768 @ 70Hz (VESA)

1024 X 768 @ 75Hz (VESA)

1280 X 1024 @ 75Hz (VESA)

(37) Manufacturer's Reserved Timing:

1152 X 870 @ 75Hz (Apple,Mac II)

(38-53) Standard Timing Identification:

1680 X 1050 @75Hz

1280 X 1024 @60Hz

1280 X 960 @60Hz

1152 X 864 @75Hz

640 X 400 @70Hz

Not Used

Not Used

Not Used

(54-71) Detailed Timing / Descriptor Block 1:

1680x1050 Pixel Clock: 146.25 MHz

Horizontal Image Size: 433 mm Vertical Image Size: 271 mm
Refreshed Mode: Non-Interlaced Normal Display - No Stereo

Horizontal:

Active Time: 1680 pixels Blanking Time: 560 pixels
Sync Offset: 104 pixels Sync Pulse Width: 176 pixels
Border: 0 pixels Frequency: 65.29 KHz

Vertical:

Active Time: 1050 lines Blanking Time: 39 lines
Sync Offset: 3 lines Sync Pulse Width: 6 lines
Border: 0 lines Frequency: 59.95 Hz

Digital Separate, Horizontal Polarity (-) Vertical Polarity (+)

(72-89) Detailed Timing / Descriptor Block 2:

Monitor Serial Number:
Q6Y050100001

(90-107) Detailed Timing / Descriptor Block 3:

Monitor Range Limits:
Min Vertical Freq - 50 Hz
Max Vertical Freq - 75 Hz
Min Horiz. Freq - 30 KHz
Max Horiz. Freq - 82 KHz
Pixel Clock - 170 MHz
Secondary GTF - Not Supported

(108-125) Detailed Timing / Descriptor Block 4:

Monitor Name:
VX2025wm

(126) No Extension EDID Block(s)
(127) CheckSum OK

6. THEORY OF OPERATION

This section describes the function of the LCD monitor per functional block.
This monitor includes MB board, power board, Inverter board and button board.

6.1 MB BOARD

The MB board is a two-layer, single-landed. 12V DC power from the power adapter enters the board through connector CN6. Other connectors on the board are for audio speaker and button board .The VGA cable is a signal cable that contains video signal, sync signal and DDC signal from PC VGA adapter. This system board consists of 4 functional areas: flat panel controller, flash ROM, power regulator and Audio amplifier

6.1.1 Flat panel controller… NT68563HF (IC2)

The heart of the system board is the scalar chip of NT68563HF. The scaler is a highly integrated flat panel display controller that interfaces analog, digital, and video inputs. It combines a triple ADC, a DVI compliant TMDS receiver, a multi-color on screen display (OSD) controller and many other functions in a single chip. It provides user a simple, flexible and cost-effective solution for various flat panel display products.

The NT68563HF operates at frequencies up to 205MHz (analog only), suitable for LCD monitor up to UXGA resolution. The NT68563HF also build-in noise reduction function to provide more stable video quality, spread spectrum to provide low EMI solution, sRGB for video color space convert, post pattern for manufacture test.

a) Clock Generation:

This is the input pair to an internal crystal oscillator and corresponding logic. A 12.000 MHz crystal is recommended.

b) Hardware Reset (Pin127):

Hardware Reset signal is provided by MCU (IC3), it is active high.

c) Analog to Digital Converter:

The NT68563HF chip has triple ADC's (analog-to-digital converters), one for each color (red, green and blue) .The analog RGB and synchronous signals are connected to NT68563 as described below:

Pin Name	Pin Number
Red +	25
Red -	26
Green +	23
Green -	24
Blue +	20
Blue -	21
H sync	39
V sync	40

d) Internal OSD: Internal SRAM allows up to 2048 characters, with programmable OSD frame size. Width is 64 columns, and Height is 32 row.

e) On chip TMDS receiver: The NT68563HF integrated TMDS receiver, which operates up to 165MHz and can directly connect to all DVI compliant TMDS transmitters. The TMDS signals are connected to NT68563HF as described bellow:

Pin Name	Pin NO.
TX0+	9
TX0-	8
TX1+	6
TX1-	5
TX2+	3
TX2-	2
TXC+	11
TXC-	12

6.1.2 Mcu flash ROM

This is an 8031 CPU core embedded micro-controller, which is design for high-performance low-cost LCD monitor control application. It contains an 8-bit 8031 micro-controller, on-chip 64 K bytes flash-type program ROM, 1,280-bytes internal data memory, four 7-bit resolution A/D Converter, 10-channel 8-bit resolution PWM DAC, two 16-bit timer/counters, and a UART.

a) PWM controlling function (Pin 8, Pin 9): The MCU 68F633 has two GPIO to control audio volume and back light brightness.

b) Serial interface ports pin 25~26(DVI) and pin 27~28(VGA): This serial interface ports communicate with MCU and support up to 400Kbit per second transmit rate.

6.1.2 Power Regulator AIC1563 (U1), AIC1117 (U3, U4, U5): The AIC1563 is a monolithic control IC containing the primary functions required for DC-to-DC converters. The device consists of an internal temperature compensated reference, comparator, controlled duty cycle.

Oscillator with an active current sense circuit, desired output voltage are determined by the equation,

Volt = 1.25 *(1 + R121 / R122), in this case, the output voltage are 5 Volts

AIC1117 (U3, U4, U5): The AIC1117 is a low dropout positive adjustable regulator with minimum of 800mA output current capability.

So it is well suited for 3.3 V and 2.5 V Regulator.

U5 as a 1.8V regulator, desired output voltage are determined by the equation

Volt=1.25 x (1 + R90/R88) = 1.8

U3 as a 3.3V regulator, desired output voltage are determined by the equation

Volt=1.255 x (1+ R86/R85) = 3.3

U4 as a 3.3V regulator, desired output voltage are determined by the equation

Volt=1.255 x (1+ R89/R87) = 3.3

6.2 Audio Amplifier UTC TDA7496L (U9)

The TDA7496L is a stereo 2W+2W class AB power amplifier; Features of the TDA7496L include linear volume control, Stand-by and mute functions.

6.3 Inverter Board

This is a specific inverter for VA2012 monitor 40W backlight which converters 20Vdc to drive 6 tubes cold cathode fluorescent tubes. Electrical specification described as below.

6.3.1 Inverter Electrical specification described as below.

INPUT	Rated Input Voltage	20Vdc
	Input Voltage Range	18.5~21.5Vdc
	Input Current	<2A
	Off state Input Power	<0.1W
	On / off control Voltage	2~5.25 for on, 0~0.2 for off
OUTPUT	Rated Output Strike-on Voltage	1500~2000Vrms
	Rated Output Voltage	710Vrms at 6mA
	Rated Output Frequency	40~50KHz
	Rated Output Current	6~7mA

6.4 This is a general purpose AC / DC adapter which converter 90~240 Vac to a stabilized DC voltage 20V for inverter and 12V for system board with rated output current of 4.16A

6.4.1 Power Electrical specification described as below.

INPUT	Rated Input Voltage	90~264Vac, 47~63Hz
	Operation Input Voltage	100~240Vac, 50~60Hz
	Input Current	<1.5A@90Vac
	Inrush Current	<80A @ 230Vac(Cold start)
OUTPUT	Output Voltage Regulation	+/-5%
	Output Ripple and Noise	300 mVp-p
	Rated Output Current	<4.16A
	Turn-on Delay	<3 seconds

5. Adjustment Procedure

1. Function test

(1) Test equipment

Color video signal and pattern generator (or PC with SXGV resolution)

(2) Test condition

Before function testing and alignment, the unit must warm up for at least 30 minutes under the following conditions:

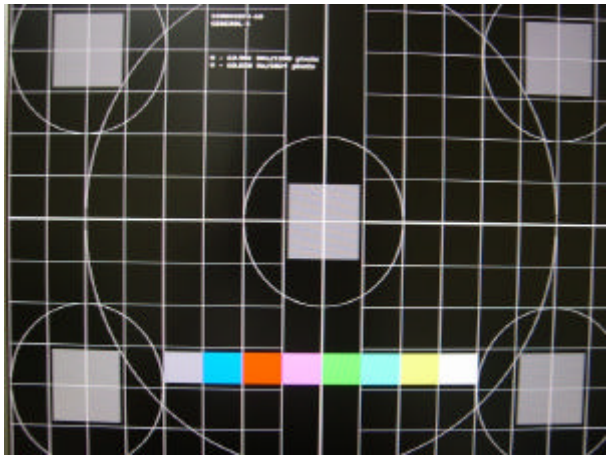
1. Room temperature
2. With full-white screen , RGB , black pattern
3. with cycled display modes.

2. Test display modes

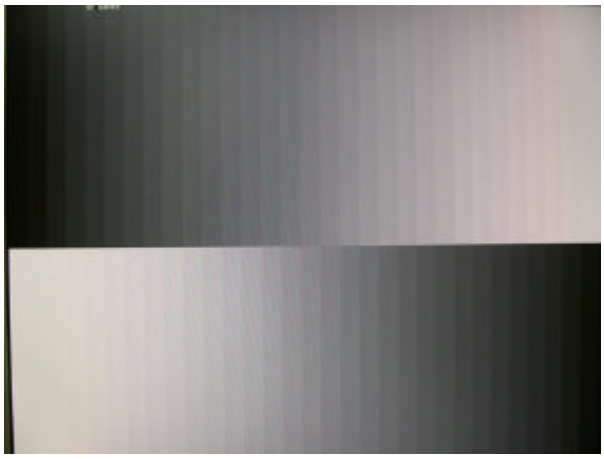
Item	Timing	Analog	Digital
1	640 x 350 @ 70Hz, 31.5kHz	Yes	Yes
2	640 x 400 @ 60Hz, 31.5kHz	Yes	Yes
3	640 x 400 @ 70Hz, 31.5kHz	Yes	Yes
4	640 x 480 @ 60Hz, 31.5kHz	No	Yes
5	640 x 480 @ 67Hz, 35.0kHz	Yes	Yes
6	640 x 480 @ 72Hz, 37.9kHz	Yes	Yes
7	640 x 480 @ 75Hz, 37.5kHz	Yes	Yes
8	640 x 480 @ 85Hz, 43.27kHz	No	No
9	720 x 400 @ 70Hz, 31.5kHz	Yes	Yes
10	800 x 600 @ 56Hz, 35.1kHz	Yes	Yes
11	800 x 600 @ 60Hz, 37.9kHz	Yes	Yes
12	800 x 600 @ 75Hz, 46.9kHz	Yes	Yes
13	800 x 600 @ 72Hz, 48.1kHz	Yes	Yes
14	800 x 600 @ 85Hz, 53.7kHz	No	No
15	832 x 624 @ 75Hz, 49.7kHz	Yes	Yes
16	1024 x 768 @ 60Hz, 48.4kHz	Yes	Yes
17	1024 x 768 @ 70Hz, 56.5kHz	Yes	Yes
18	1024 x 768 @ 72Hz, 58.1kHz	Yes	Yes
19	1024 x 768 @ 75Hz, 60.0kHz	Yes	Yes
20	1024 x 768 @ 85Hz, 68.67kHz	No	No
21	1152 x 870 @ 75Hz, 68.7kHz	Yes	Yes
22	1280 x 1024 @ 60Hz, 63.4kHz	Yes	Yes
23	1280 x 1024 @ 75Hz, 79.97kHz	Yes	Yes
24	1280 x 720 @ 60Hz, 45kHz	Yes	Yes
25	1680 x 1050 @ 60Hz, 65.3kHz	Yes	Yes
26	1680 x 1050 @ 75Hz, 82.3kHz	Yes	No

3. Test pattern

Item	Test condition	Pattern	Specification	Remark
1	Frequency & performance	Cross-hatch pattern	No noise is allowed, all colors must be clear	Pattern 1
2	Monitor saturation	16-gray scale pattern	3 to 4 levels must be saturated when brightness and contrast are set to 100%	Pattern 2
3	RGB color performance	RGB color	Check the color temperature of RGB signal color	Pattern 3, 4, 5
4	Sub-pixel defect	RGB color	Check the sub-pixel defect	Pattern 3, 4 , 5
5	Full white	Full white	Check the brightness and contrast ratio, and check for bright pixel defects	Pattern 6
6	Full black	Full black		Pattern 7
7.	5-cycle pattern	5-cycle pattern	Check the BU	Pattern 8
8.	1-dot pattern	1-dot pattern	Check the flicker	Pattern 9

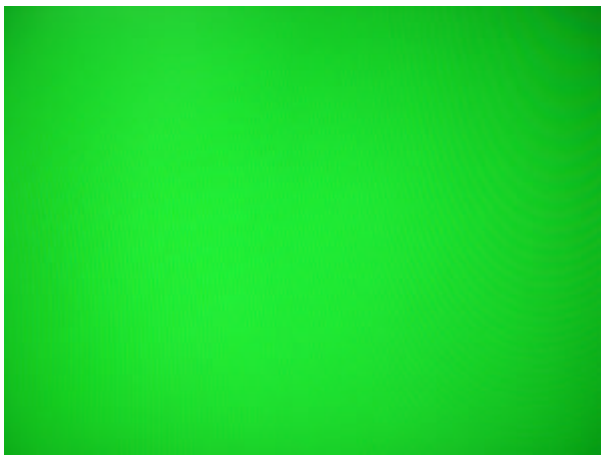


Pattern 1

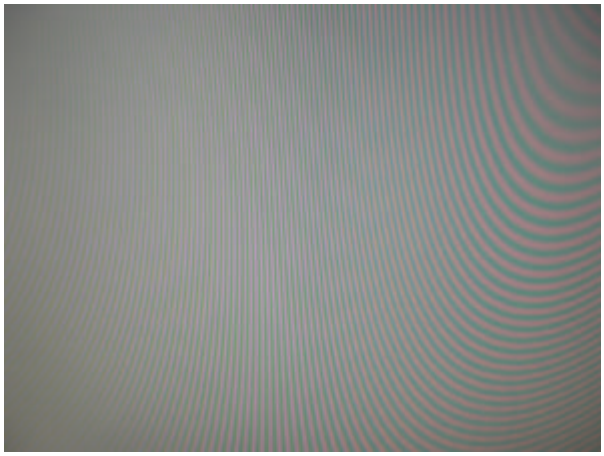
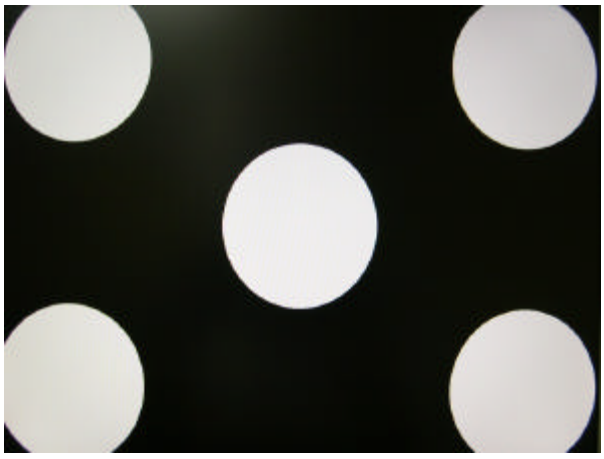


Pattern2

Pattern 3



Pattern4

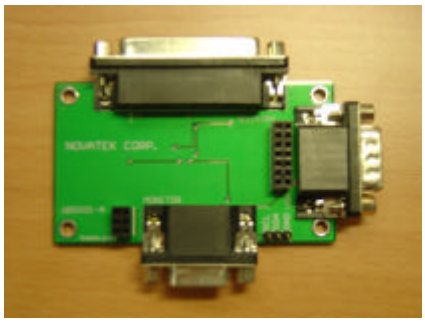
	
Pattern 5	Pattern6
	
Pattern 7	Pattern 8
	
Pattern 9	

Firmware update procedure:

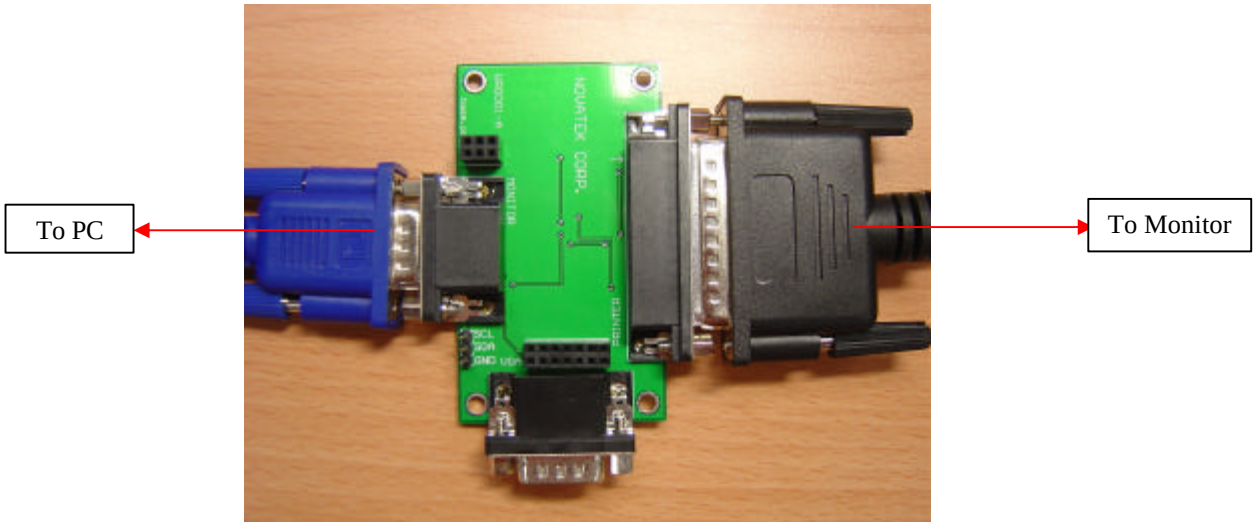
When you received a received monitor , please check whether the firmware version. If not , please following procedure to upgrade to the latest version .

1. Equipment needed :
   - VX2025wm
   - PC (Personal computer)
   - LPT cable (TWO FEMALE)
   - Fixture (ISP)
   - Firmware upgrade program



2. Connection :



Appendix A : How to install the software for ISP :

0. To setup ISP environment :

Hardware:

PC or notebook, parallel(printer) cable, ISP tooling.

Software:

If OS was Win2000 or WinXP , please install “PORT95NT.exe”

In order to ensure can execute ISP program, please set BIOS in PC or Notebook as Fig 0.0

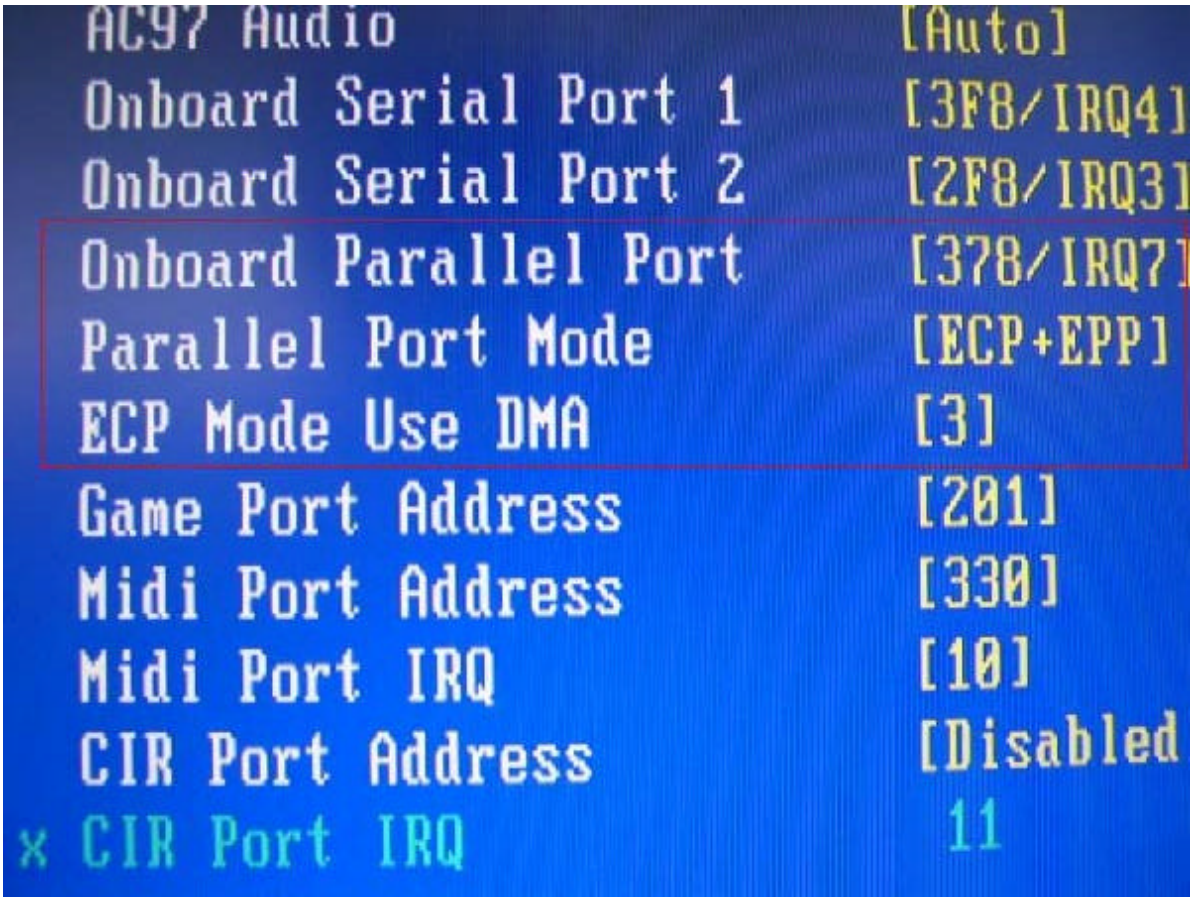


Fig 0.0

1. Install ISP

1.1 User could download ISP software - EasyWirter

1.2 double click the file of EasyWriterV2.10p2.exe to install.

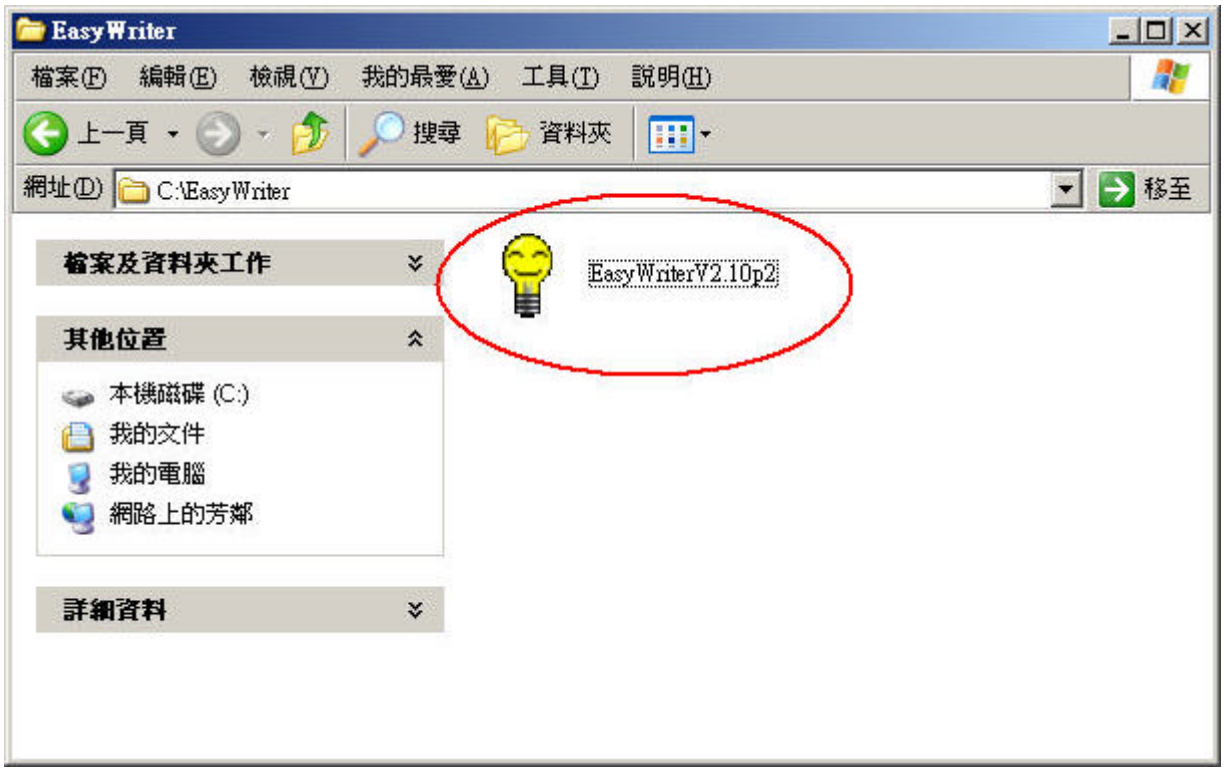


Fig 1.0

1.3 Press " Next " button to continue , see Fig 1.1

Fig 1.1

1.4 Keep default setting or press “ Change “ button for selecting the path that you want , and then press “Next “ button to continue , see Fig 1.2

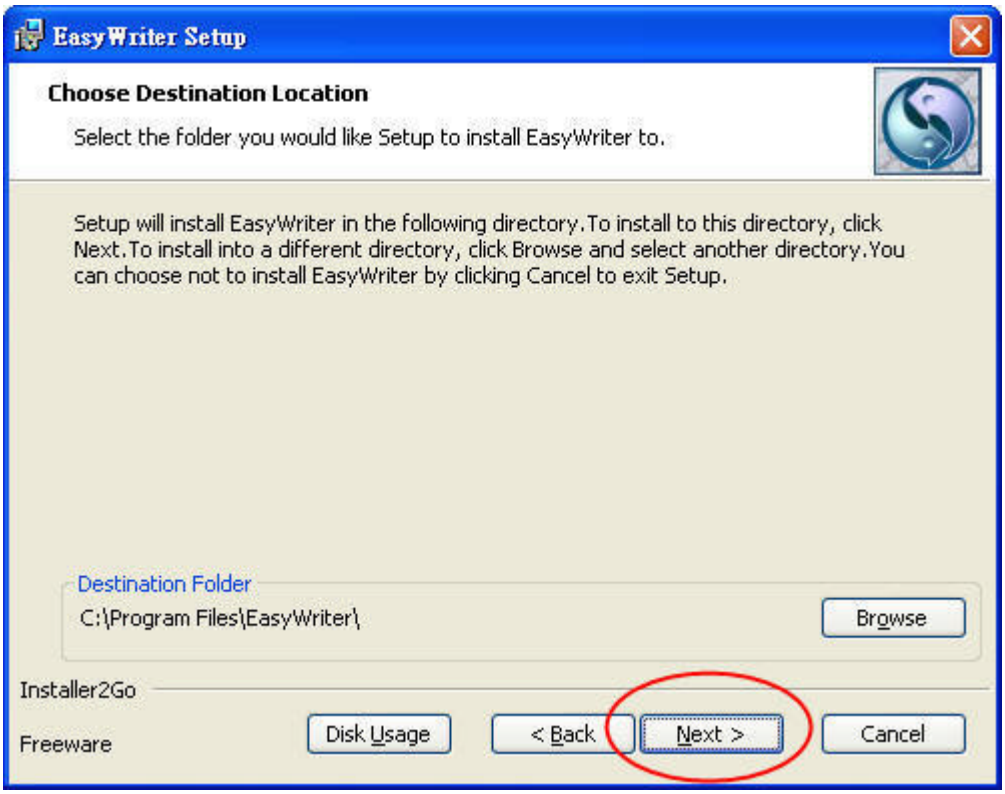


Fig 1.2

1.5 Press “ Install “ button to continue , see Fig 1.3

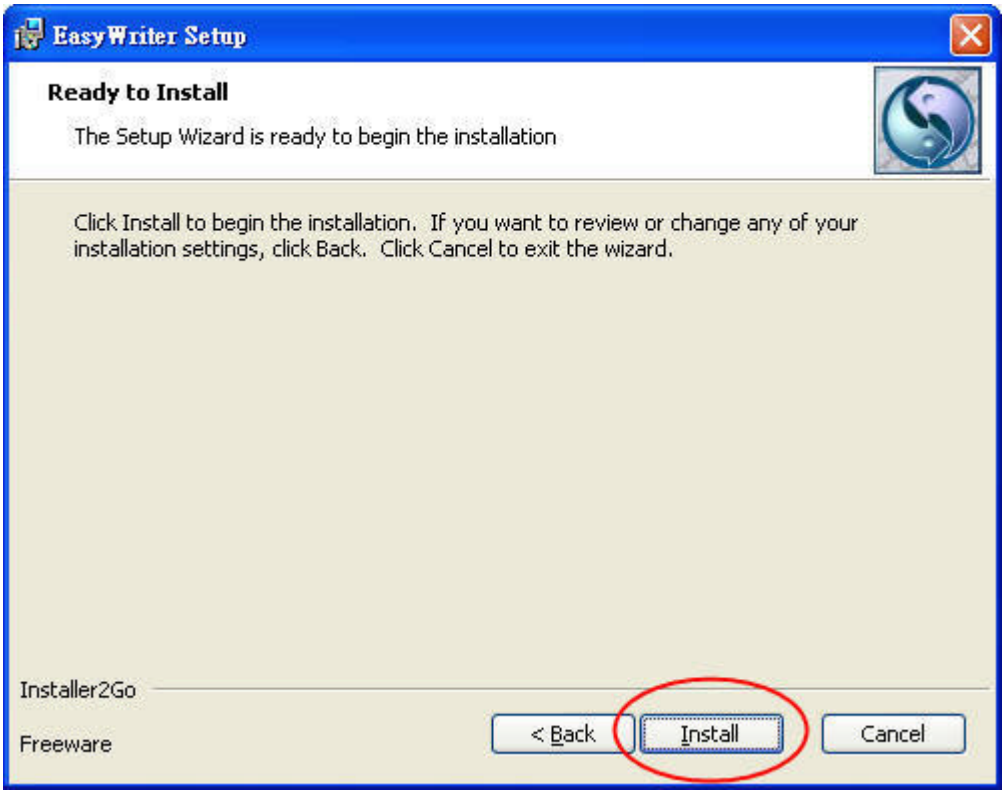


Fig 1.3

1.6 Press “ Next “ button to continue , see Fig 1.4

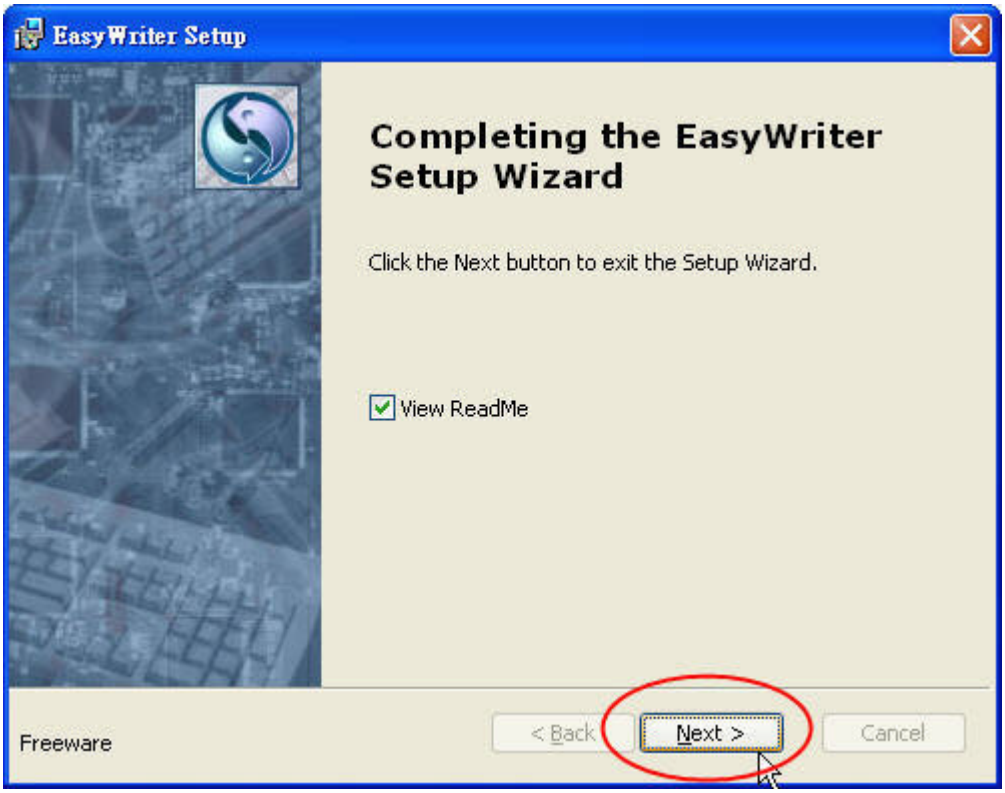


Fig. 1.4

1.7 Installation has finished , press “ Finish “ button , see Fig 1.5

Fig. 1.5

Appendix B : Use ISP to program MCU

2.1 press “ Load Hex “ button to load the hex file , see fig2.1

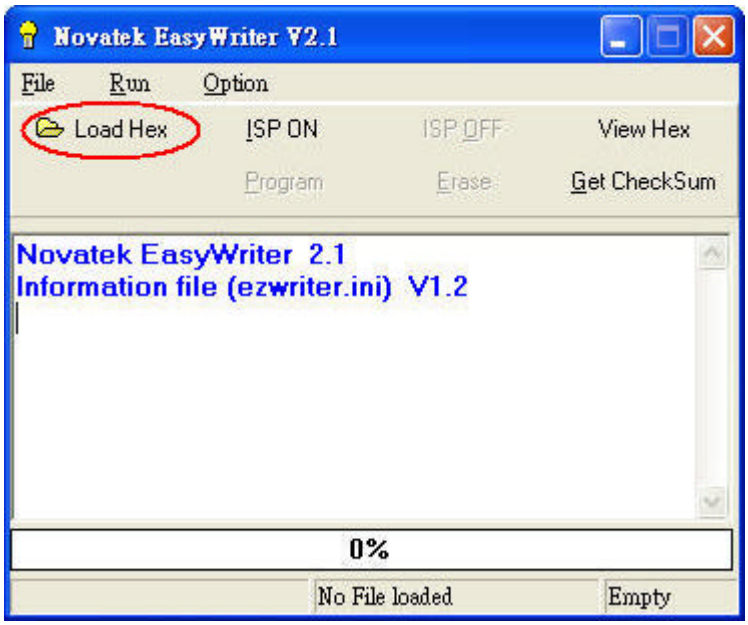


Fig.2.1

2.2 Select item 4“4.NT68F633(64k) IC , see fig2.2

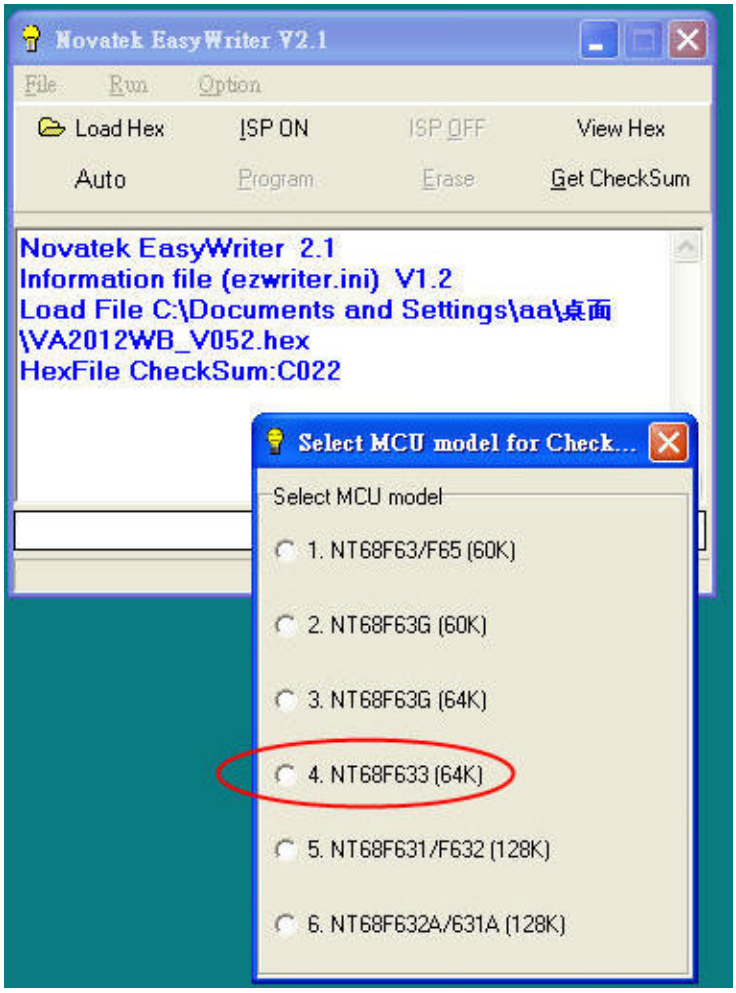


Fig.2.2

2.3 press “ Auto “ button to continue , see fig2.3

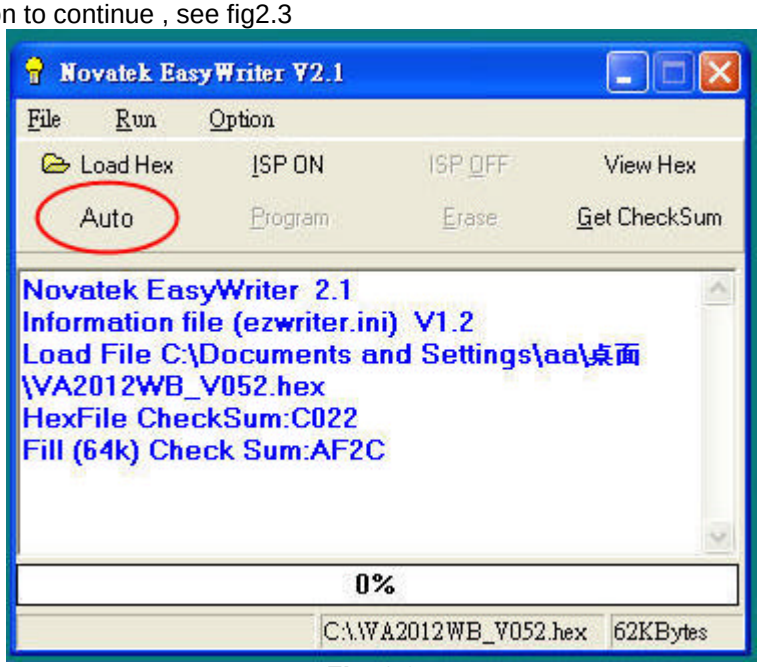


Fig. 2.3

2.4 Check the status is “Auto Process Finished” and show 100% in the bar, see fig2.4

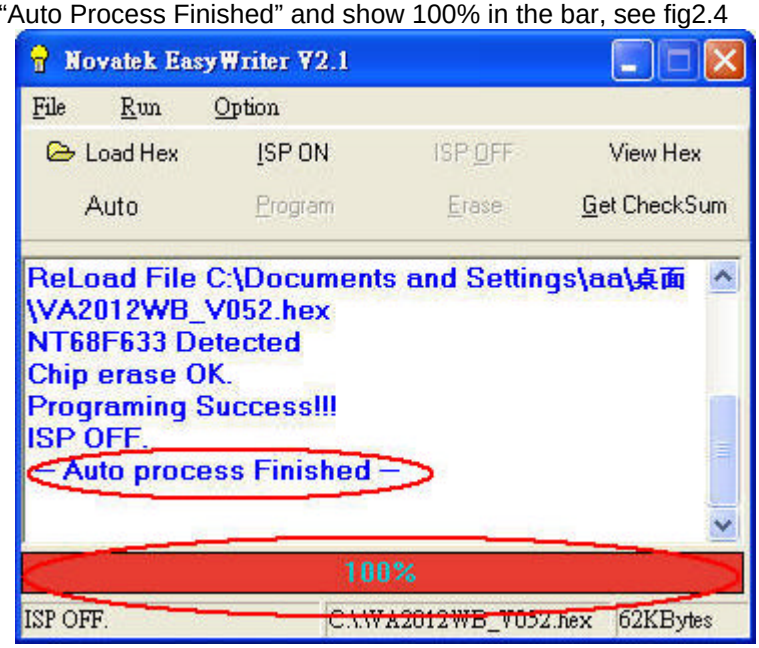


Fig. 2.4

2.4 If show “ Can’t enter ISP mode!” message, please re-check all ISP connection is ready, see fig2.5

Fig. 2.5

Disassembly procedure

take out LCD(1)

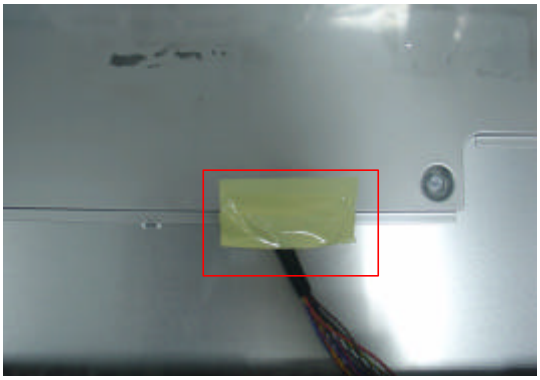
put lcd on the desk with sponge(2)

unlock stand screw(3)

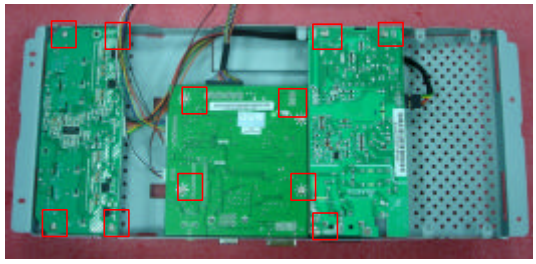
unlock stand screw(4)

unlade lcd cover with a fixture(5)

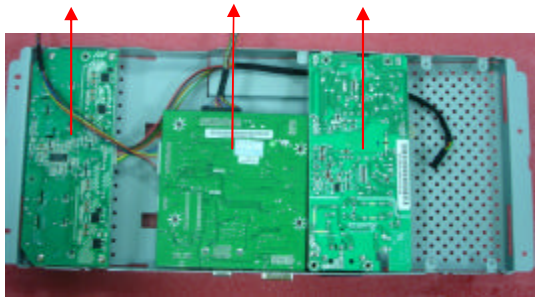
tear off yellow tape and uninsert lcd cabel(10)



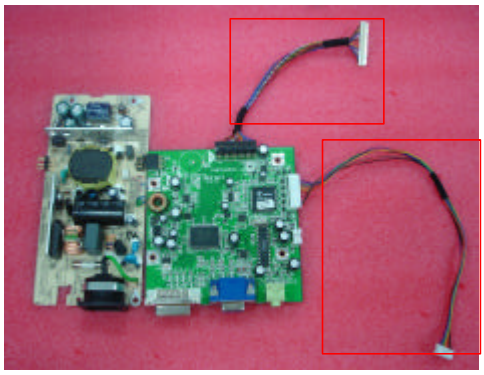
unlock pcb'a screw and uninsert power cabel(11)



take out pcb'a(12)



pull out cable from pcb'a(13)

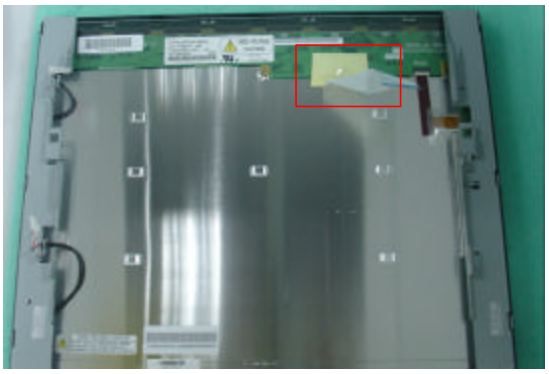


unlock gnd plate and take out pcb holder(14)

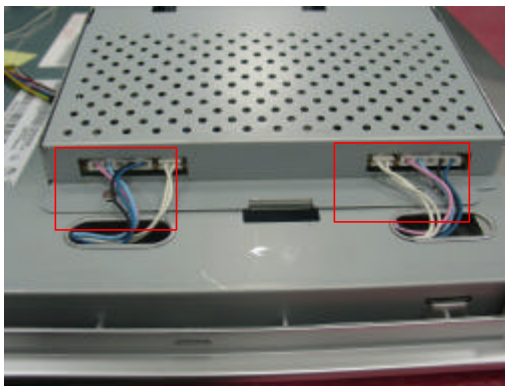
unlock shielding screw(6)

tear off yellow tape and uninsert lcd cabel(15)

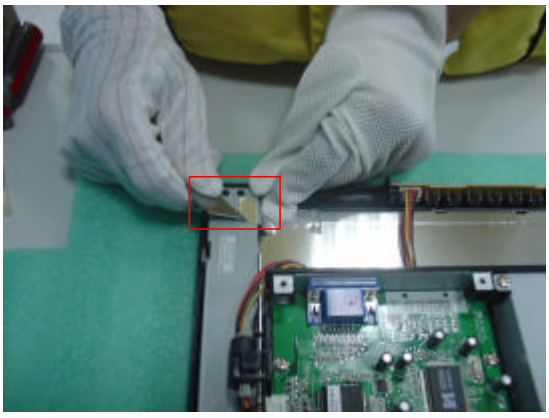
pull out CCFT CABLE(7)



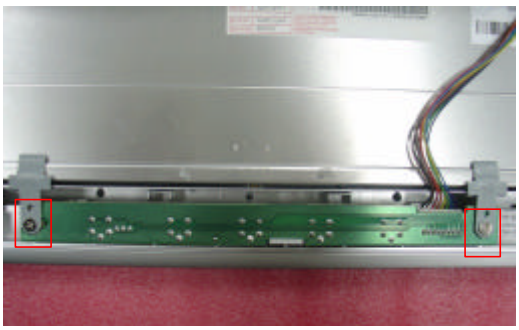
tear off AL FOIL(16)

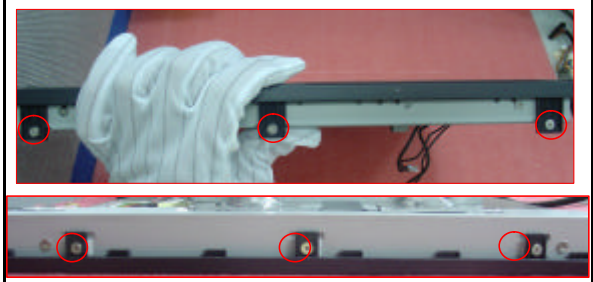


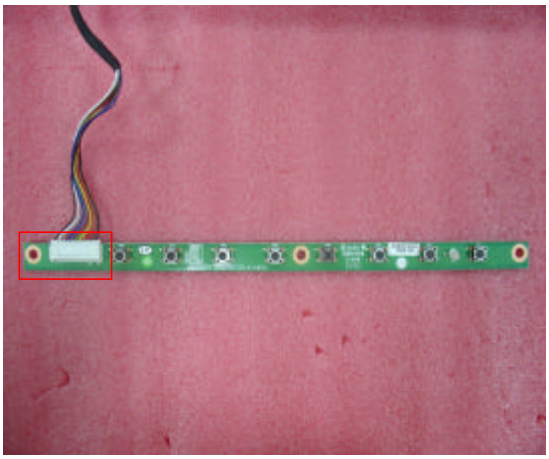
unlock button/b screw(8)



unlock bezel screw(17)





pull out button/b cable from button/b connector(9)	unlock bkt L/R screw(18)
	 

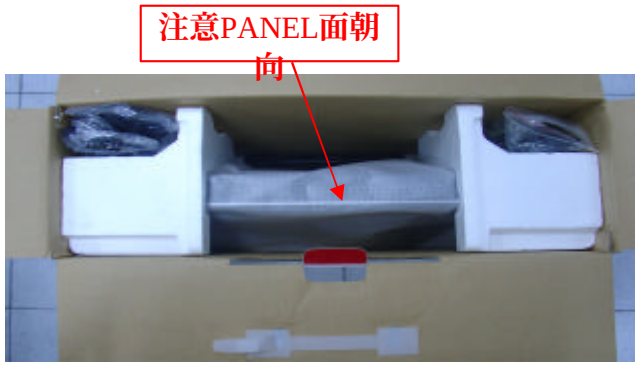
Packing method

(1) stick lcd film

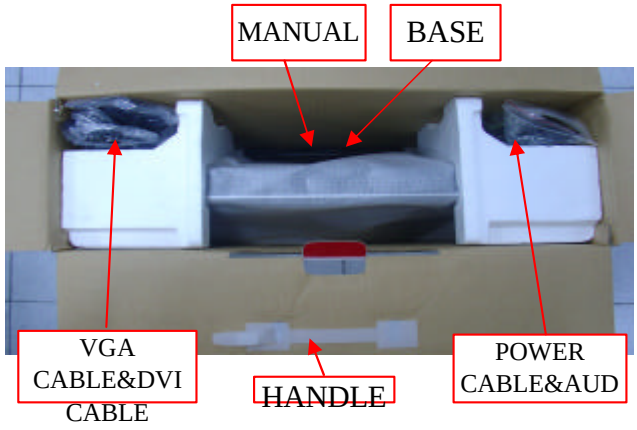
(2) cover PE BAG

(3) assemble END CAP R/L

(4) put lcd in carton



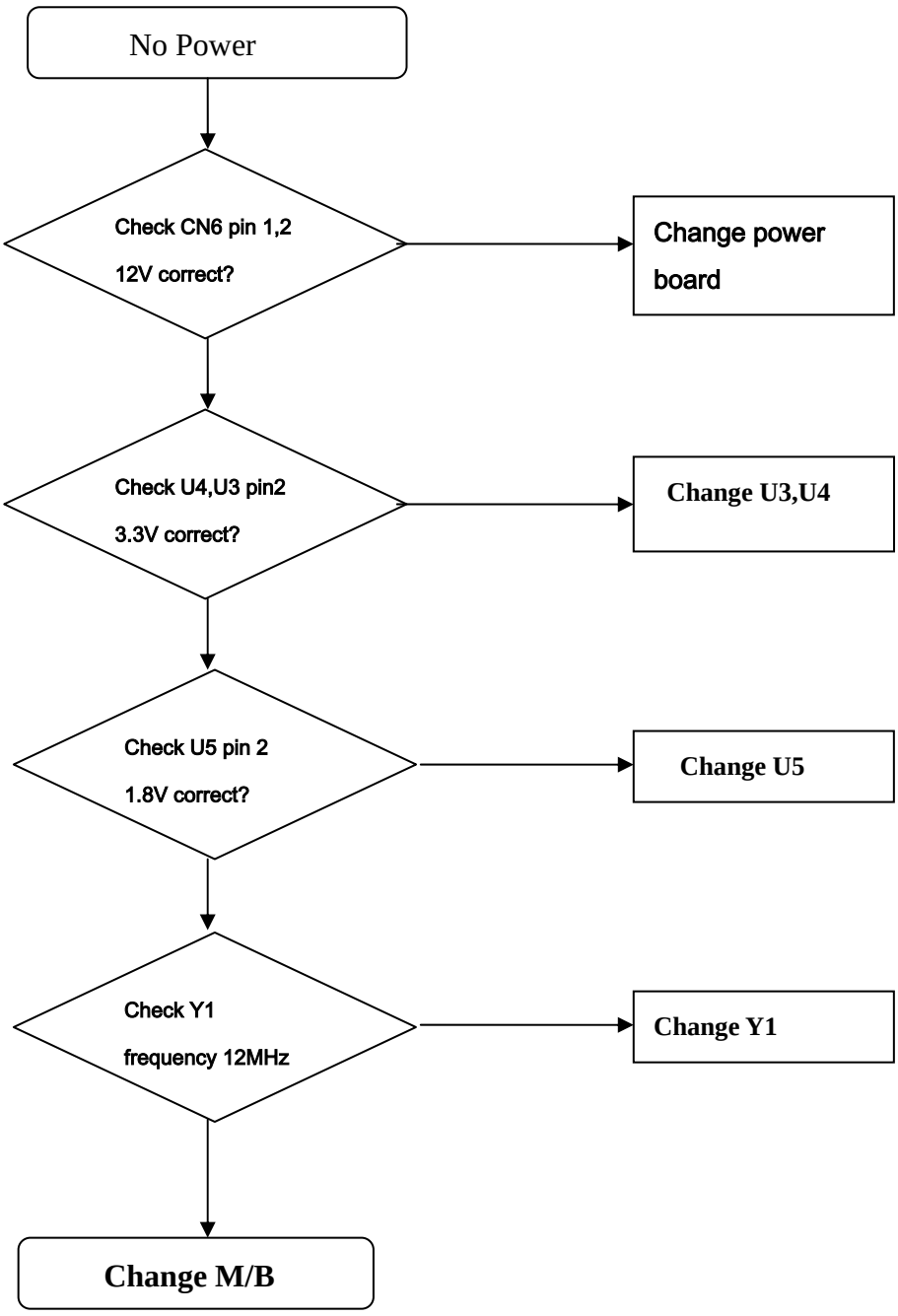
(5) put cable&base&manual&assemble handle



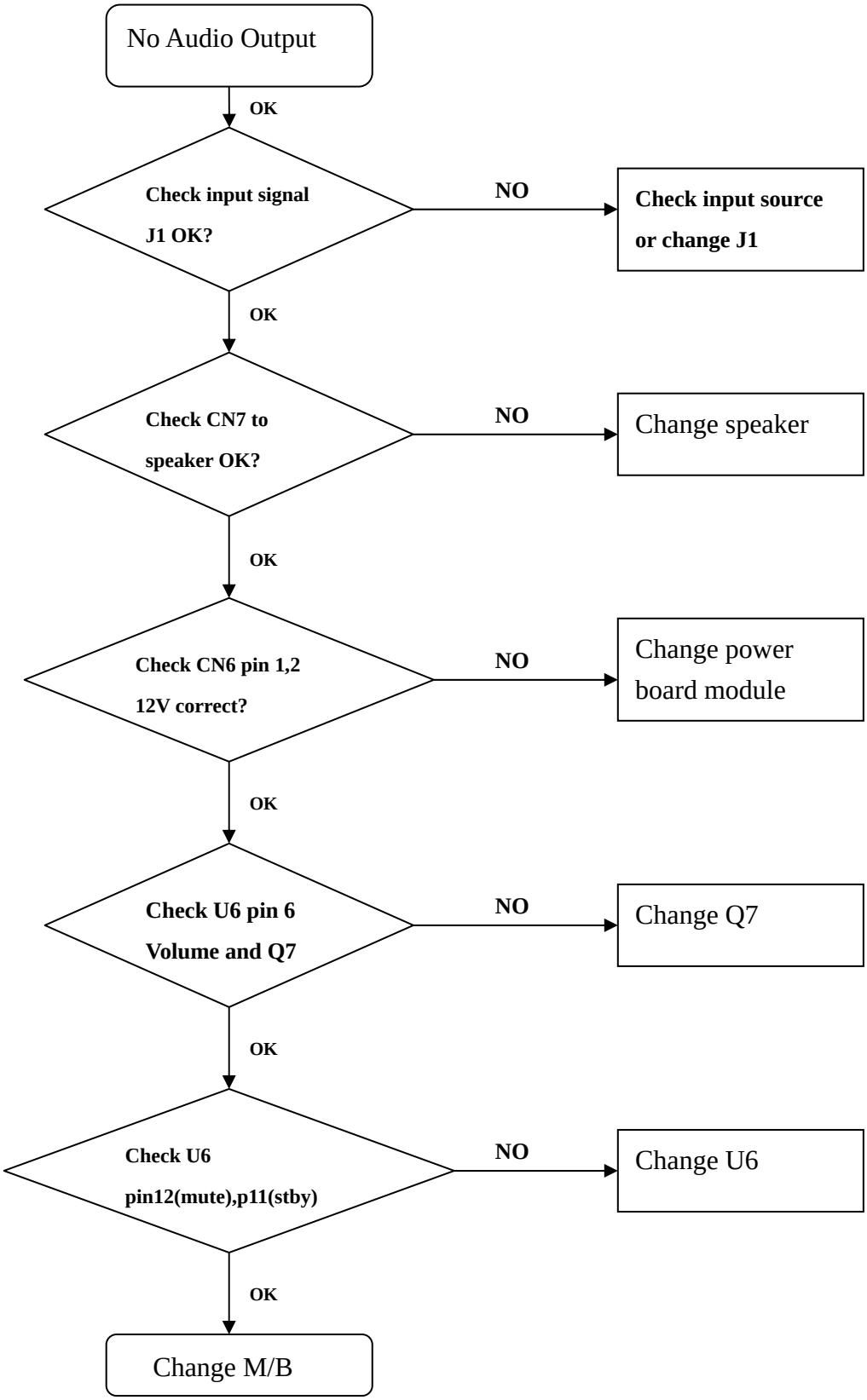
(6) accessories check&cover carton

6. Troubleshooting Flow Chart

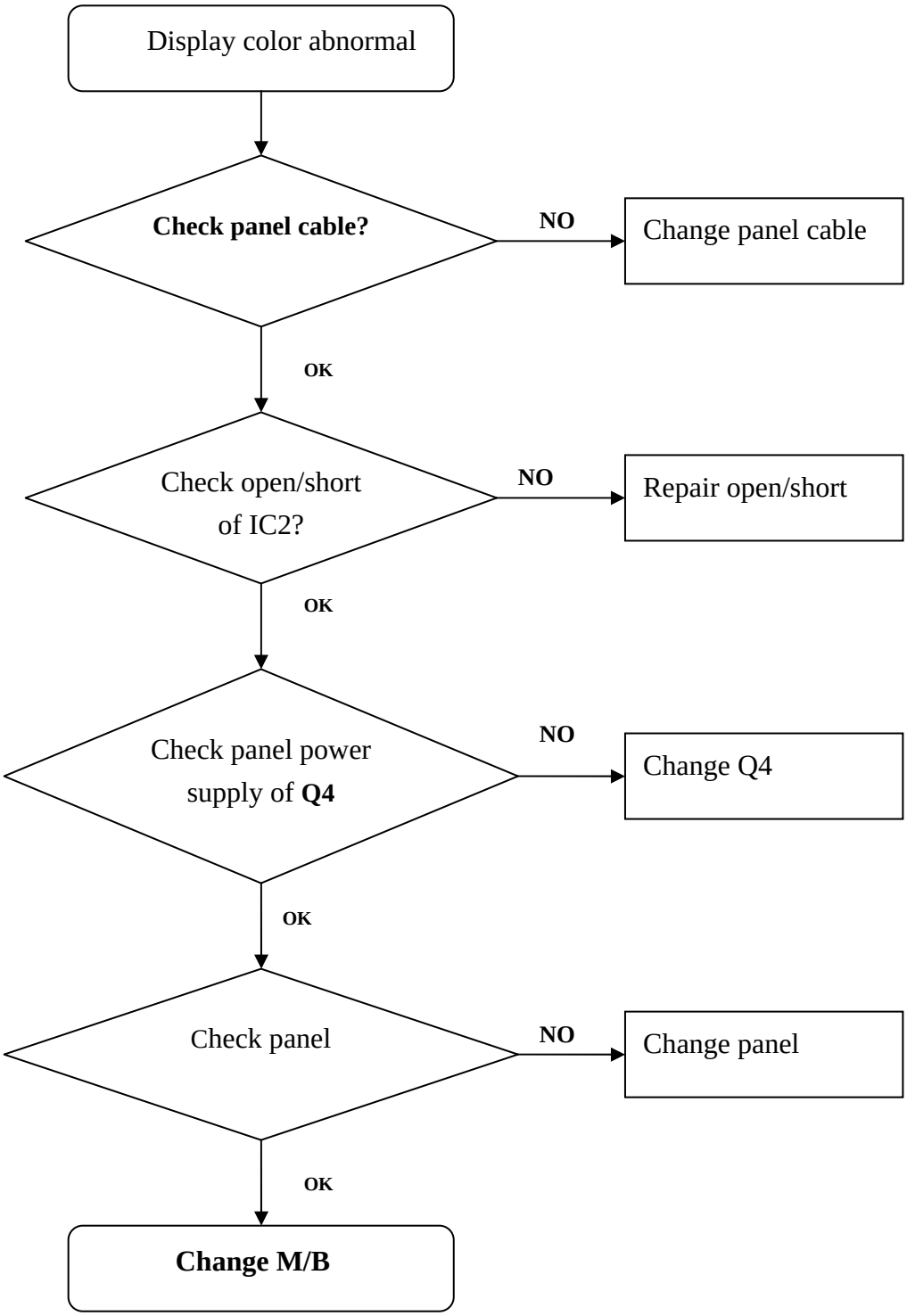
No Power



No Audio


No Audio Output
OK
Check input signal
J1 OK?
NO
Check input source
or change J1
OK
Check CN7 to
speaker OK?
NO
Change speaker
OK
Check CN6 pin 1,2
12V correct?
NO
Change power
board module
OK
Check U6 pin 6
Volume and Q7
NO
Change Q7
OK
Check U6
pin12(mute),p11(stby)
NO
Change U6
OK
Change M/B

Display color abnormal



7. Recommended Spare Parts List

RECOMMENDED SPARE PARTS LIST (VX2025wm-1)

ViewSonic Model Number: VS10859
Serial No. Prefix: Q6Y **Rev: 1b**

Item		Description	ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Universal number#
1	**Accessories:**	Power Cord 1.8M(USA)B	Added on 09/06/06	A-PC-0106-0224	DM333181G97	power cord	
2	**PC Board**	Button Board Assembly		B-00005207	1SL9V0BB003	button board	
3	**Assembly:**	Inverter Board (INV Module (SEL)W0E(20V,I=6MA) GP)		B-00005205	AS023360D18	Inverter board	
4		Main Board Assembly (W0VA M/B ASSY (Novatek 68563) GP)	Updated Vendor	B-00005206	~~1SW0VXMB016~~		
5			Part # on 09/07/06		10W0VXMB001	main board	
6		Power Supply Board		B-00006115	AS08B532017	power board	
7	**Cabinets:**	Front Panel (W0VX LCD Bezel Sub Assembly)		C-00005208	34W0VXLB009	front bezel assembly	
8		Back Cover		C-00005209	35W0VXLS008	back cover assembly	
9		Cover I/O Cover L9V(EBL9V003,Rev3A)		M-CV-0830-2593	EBL9V003011	I/O cover	
10			Update Vendor &	~~C-0006705~~	~~37W0VXSU001~~		
11		Base Cover-R/C ABS 41 S7RB1At	VS # on 09/07/06	C-00001778	EBL9V002015	stand cover	
12	**Cables:**	Audio Cable (ST,1.8M) Black W9ZA GP		CB-00005211	DDW9ZAPA009	audio cable	
13		Cable MB-BUTTON(8P/11P,240MM)W0VX GP		CB-00005210	DDW0VXBU006	Button-M cable	
14		Cable Assy (Cable Assembly MB-VGA)		CB-00002602	DDL7VDPC005	VGA cable	
15		Wire Cable (MB-INV)		CB-00004151	DD0W0EIV008	MB-INV cable	
16		Wire Cable (MB-LCD)		CB-00004152	DD0L9VLC023	MB-LCD cable	
17		DVI cable		CB-00003440	DD0L0TTH108	DVI cable	
18	**Documentation:**		Updated Vendor	DC-00005212	~~HGW0VX03015~~		
19		CD-Rom (W0VX-A(HGW0VX03,REV3A) GP)	Part # on 09/07/06		HGW0VX04011	user guide	
20	**Electronic**	LCD Module (TFT) 20" M201EW01 V.0 GP		E-00005214	AAM201EW007	LCD panel	
21	**Components:**	LCD Module (TFT) 20"M201EW01 V.3(WSXGA/8MS)	Added on 09/06/06	E-00008048	AAM201EW040	LCD panel	
22			Updated Vendor	E-00005213	~~DN0TE230F06~~		
23		SPEAKER ASSY WOVX-A FG-TE260 GP	Part # on 09/07/06		DN0TE260009	speaker assembly	
24	**Hardware:**	L9VDQ-4 HINGE COVER SUB ASSY GP		HW-00005216	3FL9V0HS002	hinge cover	
25		Screw (To Assemble the Cabinet)		M-SCW-0824-6802	MM30040IBJ9	panel to L/R bracket & bezel	
26		Screw (To Assembly The Cabinet)		M-SCW-0824-0813	MF30060BBJ6	PCBAs to metal shielding	
27		Nut-MBLI1004018 IO LI1 (MBLI1004,REV3A)		M-MS-0808-8986	MBLI1004018	DVI&D-SUB to shielding	
28	**Miscellaneous:**	Rubber Plug		M-MS-0808-9815	GAL9V002014	rubber plug vesa	
29		LCD Film Rev 3A		M-00004158	JXW0ZB01019	LCD panel	
30	**Packing Material:**		Update Vendor	P-00005217	~~HFW0VX03014~~		
31		CARTON W0VX-A(HFW0VX03,REV3A) GP	Part # 09/07/06		HFW0VX01011	carton	
32		Foam-End Cap (Left)		P-00005218	HBW0VX01018	cushion	
33		Foam-End Cap (Right)		P-00005219	HBW0VX02014	cushion	
34		EPE Bag-L9VD (HAL9V002,REV3A)		M-MS-0808-9817	HAL9V002014	PE bag	
35	**Plastics:**	Pedestal (FAL9V006,Rev.3A)	Added on 09/06/06	PL-00008022	FAL9V006010	base	

P-Model for VSI

Item		Description	ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Universal number#
1	**Accessories:**	POWER CORD SP-305+IS-14 3P 1.8M(TWN)B GP		A-00003642	DM33T181004	power cord	

G-Model for VSCN

Item		Description	ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Universal number#
1	**Accessories:**	POWER 3P 1.8M(CHN)Y546B300012180QD GP		A-PC-0106-0306	DM333181S01	power cord	
2	**Documentation:**	QC-PASS LABEL L7VC(HCL7V026,REV3A)GP		DC-00003444	HCL7V026017	QC-PASS LABEL	
3		VSCN WARRANTY CARD W0VA(HDW0VA01,R3A) GP		DC-00005215	HDW0VA01011	VSCN WARRANTY	
4		WARRANTY STICKER L7VC(HCL7V023,R3A)GP		M-00003446	HCL7V023018	WARRANTY STICKER	
5		ADDRESS LABEL L7VC(HCL7V024,REV3B)		DC-00003443	HCL7V024014	ADDRESS LABEL	

E-Model for VSE

Item		Description	ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Universal number#
1	**Accessories:**	POWER CORD SP-023+IS-14 1.8M(B)EU GP		A-PC-0106-0227	DM333181801	power cord	

Remark 1: Above listed items are examples, supplier can expand the rows to add more necessary items.
Remark 2: All revised RSPLs with newly added items or any change made should be highlighted and correlated with the ECN/ECR approved by ViewSonic Corporation. This is to eliminate repeated cross checks of each item between this version and prior versions.

BOM LIST (VX2025wm-1)

ViewSonic Model Number: VS10859

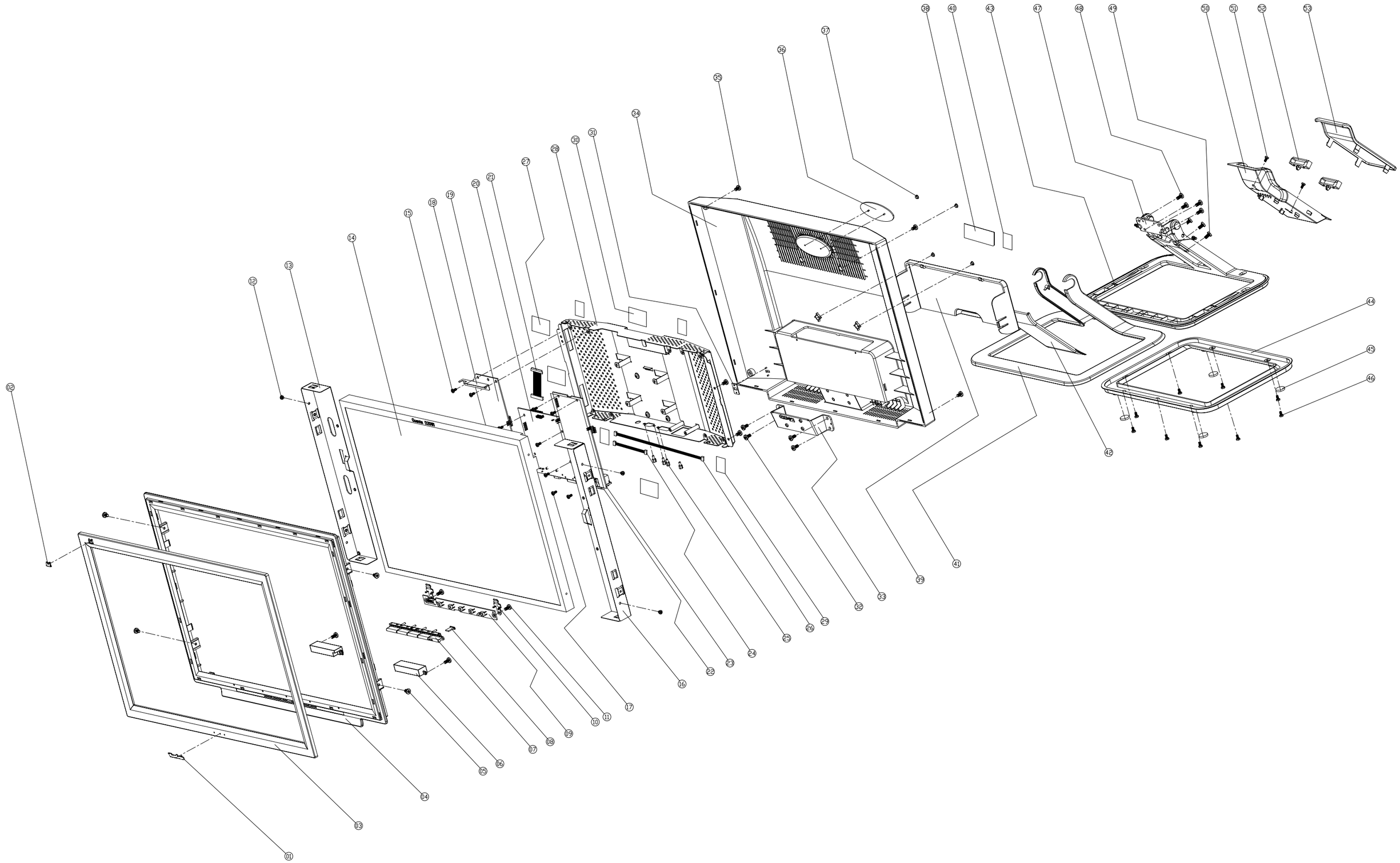
Rev: 1b

Serial No. Prefix: Q6Y

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
1	N/A	1LW0VXXVS47	W0VX LCD MONITOR(TWN) GP			
2	N/A	1LW0VXXVS21	W0VX LCD MONITOR(EU) GP			
3	N/A	1LW0VXXVS04	W0VX LCD MONITOR(USA) GP			
4	N/A	1LW0VXXVS39	W0VX LCD MONITOR(CHN) GP			
5	N/A	21W0VAMB029	W0VA-A M/B ASSY (NOVATEK 68563H) GP			1
6	N/A	31W0VASS024	W0VA-A M/B S/S ASSY (NT 68563H)GP			1
7	N/A	DFDS15FR041	CONN D-SUB 15P 3R FR(P1.15,H12.55) GP	CN1		1
8	N/A	DFDI30FR022	CONN DVI-I DIP30P 3R FR(P1.905 H10.04)GP	CN2		1
9	N/A	DFDI30FR103	CONN DVI-I DIP30P 3R FR(P1.905,H10.04)GP	CN2		1
10	N/A	DFHD11MR001	CONN DIP HEADER 11P 1R MR(P2.0,H4.1) GP	CN3		1
11	N/A	DFHD30MR267	CONN DIP HEADER 30P 2R MR(P2.0,H4.0) GP	CN4		1
12	N/A	DFHD08FR102	CONN DIP HEADER 8P 2R FR(P2.54,H5.0) GP	CN6		1
13	N/A	DFHD04MR132	CONN DIP HEADER 4P 1R MR(P2.0,H4.1) GP	CN7		1
14	N/A	CC647T1MD05	CAP EC 47U 10V(+-20%,105C,5*11,2000H)GP	C36		1
15	N/A	CC71004MD09	CAP ELEC DIP 100U 25V(+-20%,105C,6*7) GP	C68,C69,C70,C71		4
16	N/A	CC73303MD69	CAP ELEC DIP 330U 16V(+-20%,105C,8*9) GP	C30,C46,C53,C66,C67,C74,C76,C80,C82		9
17	N/A	CC810T1MD05	CAP EC 1000U6.3V(+-20%,105C,8*11.5) GP	C60		1
18	N/A	BG612000202	XTAL DIP 12MHZ(+-30PPM,HC-49/S TYPE) GP	Y1		1
19	N/A	DFTJ05FR037	CONN DIP PHONE JACK 5P FR(J303-1-A-G+)GP	J1		1
20	N/A	DC04725K011	CHOKE COIL 47UH(2.5A,+-10%,T07473 GP) GP	L14		1
21	N/A	AL007496D02	IC(20P) TDA7496L(DIP) GP	U6		1
22	N/A	AL007496D29	IC(20P) UTC TDA7496LK(DIP) GP	U6		1
23	N/A	23L7VDBB001	L7VD BUTTON/B ASSY GP			1
24	N/A	DFHD08MR319	CONN DIP HEADER 8P 1R MR(P2.0,H4.1) GP	CN1		1
25	N/A	BEYG0014DA0	LED(DIP) YELLOW/GREEN(L-3WYGW-F01) GP	LED1		1
26	N/A	DAL7VDTB113	PCB(BUTTON) L7VD TL(1L,180*15,REVA) GP			1
27	N/A	DHP0002B205	SWITCH PUCH BUTTON(PT-002-B2,50MA,12V)GP	SW1,SW2,SW3,SW4,SW5		5
28	B-00006115	AS08B532017	PWR MODULE(DTA)EADP-64CF BA,90~264V GP			1
29	B-00005205	AS023360D18	INV MODULE(SEL)W0E(20V,I=6MA) GP			1
30	N/A	24W0VXLB017	W0VX-A LCD BEZEL ASSY GP			1
31	C-00005208	34W0VXLB009	W0VX LCD BEZEL SUB ASSY GP			1
32	N/A	FBL9V011014	LCD PANEL LOCK METAL L9VDQ(R3A)GP			2
33	N/A	FAW0VX01017	PCB SHIELDING W0VX(FAW0VX01,REV3A) GP			1
34	N/A	FAW0VX02013	LCD BKT-R W0VX(FAW0VX02,REV3A) GP			1
35	N/A	FAW0VX03010	LCD BKT-L W0VX(FAW0VX03,REV3A) GP			1
36	M-MS-0808-9248	FCL7A001014	AL FOIL L7A(FCL7A001,REV3A) GP			4
37	M-SCW-0824-6802	MM30040IBJ9	SCREW M3.0*4.0-I(NI) GP			9
38	M-SCW-0824-0813	MF30060BBJ6	SCREW F3.0*6-B(NI)GP			10
39	N/A	MF30080IBJ0	SCREW F3.0*8-I(NI)GP			4
40	M-SCW-0824-6799	MM35080BBW2	SCREW M3.5*8-B (NI,WASHER)GP			1
41	M-MS-0808-8986	MBLI1004018	IO NUT LI1(MBLI1004,REV3A)GP			4
42	N/A	FBL5T009018	AL-FOIL(40-47) L5TD(FBL5T009,REV3A) GP			2
43	N/A	MM30030IBJ4	SCREW M3*3-I-NI GP			4
44	N/A	FCL7G001016	AL FOIL L7G(FCL7G001,REV3A)HAN GP			2
45	N/A	25W0VXLC006	W0VX LCD COVER ASSY			1
46	C-00005209	35W0VXLS008	W0VX LCD COVER SUB ASSY GP			1
47	N/A	26W0VXSA007	W0VX STAND ASSY GP			1
48	C-00006705	37W0VXSU001	W0VX STAND SUB ASSY GP			1
49	N/A	27W0VXCS013	W0VX-A CHASSIS ASSY GP			1
50	N/A	3FL9V0HS002	L9VDQ-4 HINGE COVER SUB ASSY GP			1
51	N/A	FCW0VX01019	POWER MYLAR W0VX(FCW0VX01,REV3A) GP			1
52	C-00001778	EBL9V002015	STAND COVER R L9V(EBL9V002,REV3A)GP			1
53	M-CV-0830-2593	EBL9V003011	I/O COVER L9V(EBL9V003,REV3B)GP			1
54	M-MS-0808-9815	GAL9V002014	RUBBER PLUG VESA L9V(GAL9V002,REV3A)GP			4
55	M-SCW-0824-6859	MM40060IL69	SCREW M4*6-I (BNI)(NYLOK))GP			4
56	M-SCW-0824-0795	MM40080BCI5	SCREW M4.0*8-B(NI,NYLOK)GP			4
57	M-SCW-0824-6894	MF30060BJ28	SCREW F3.0*6-B(BNI)GP			2
58	CB-00004152	DD0L9VLC023	CABLE LVDS(30P,140MM,LINKTEC,AU)L9VA GP			1
59	CB-00004151	DD0W0EIV008	CABLE MB-INV(7P/8P,320MM)W0E GP			1
60	E-00005213	DN0TE260009	SPEAKER ASSY WOVX-A FG-TE260 GP			1
61	CB-00005210	DDW0VXBU006	CABLE MB-BUTTON(8P/11P,240MM)W0VX GP			1
62	N/A	2AW0VXPTA12	W0VX PANEL DEPENDENT KIT(AUO)GP			1
63	E-00008048	AAM201EW040	LCD(TFT) 20"M201EW01 V3(WSXGA/8MS) GP			1
64	N/A	AAM201EW066	LCD 20" M201EW01 V.3 FOR VSC CON GP			1
65	N/A	AZW0VXBA011	W0VX SW BIOS(NOVATEK,W/AUDIO)FOR AUO			1
66	N/A	GAL7E002013	LCD RUBBER L7E(GAL7E002,REV3B)GP			1
67	N/A	28W0VXPK011	W0VX-A PACKING ASSY(VX2025W) GP			1
68	CB-00002602	DDL7VDPC005	CABLE MB-VGA (15/15P,1.8M)L7VD GP			1
69	CB-00005211	DDW9ZAPA009	CABLE AUDIO(ST,1.8M)BLACK W9ZA GP			1
70	CB-00003440	DD0L0TTH108	CABLE ASSY L0T MB-DVI(24P,REV2A) GP			1
71	M-MS-0808-9817	HAL9V002014	EPE BAG L9VD(HAL9V002,REV3A)GP			1
72	P-00005218	HBW0VX01018	END CAP(L) W0VX(HBW0VX01,R3A) GP			1
73	P-00005219	HBW0VX02014	END CAP(R) W0VX(HBW0VX02,R3A) GP			1
74	M-LB-0813-0747	HCL7V004013	CORE LABEL(HCL7V004,REV3A)GP			1
75	N/A	HCW0VX02015	ID LABEL W0VX-A(HCW0VX02,REV3A) GP			1
76	M-LB-0813-0745	HCL7V002011	SERIAL LEBAL L7V(HCL7V002,REV3A) GP			1
77	M-LB-0813-1042	HCL7V019011	CARTON LABEL L7VC(HCL7V019,REV3B) GP			1
78	P-00005217	HFW0VX03014	CARTON W0VX-A(HFW0VX03,REV3A) GP			1
79	DC-00005212	HGW0VX03015	CD+QSG W0VX-A(HGW0VX03,REV3A) GP			1
80	PL-00005198	JXLM5003011	HANDLE LM5S(JXLM5003,REV 3B) GP			1
81	M-00004158	JXW0ZB01019	LCD FILM W0ZB-A1(JXW0ZB01,REV3A)GP			1
82	M-LB-0813-1043	HCL70021011	HI-POT LABEL L70L(HCL70021,REV3A)GP			1
83	N/A	HFL7V009018	SPACE PLATE L7VC(HFL7V009,REV3B)GP			0.063
84	N/A	HDW0VX01010	ENERGY STAR NOTICE W0VX(HDW0VX01,R3A)GP			1
85	N/A	HCL7VC07016	BLANK LABEL L7VC(HCL7VC07,R3A)8*35MM GP			2
86	N/A	HCL9V020014	3C LABEL L9V(HCL9V020,REV3A)8MM			1
87	DC-00003444	HCL7V026017	QC-PASS LABEL L7VC(HCL7V026,REV3A)GP			1

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
88	N/A	HAW0VX01017	PE BAG-CHINA W0VX(HAW0VX01,REV3A) GP			1
89	DC-00005215	HDW0VA01011	VSCN WARRANTY CARD W0VA(HDW0VA01,R3A) GP			1
90	DC-00004814	HCL7V022011	CARTON STICKER L7VC(HCL7V022,REV3A)GP			1
91	M-00003446	HCL7V023018	WARRANTY STICKER L7VC(HCL7V023,R3A)GP			1
92	DC-00003443	HCL7V024014	ADDRESS LABEL L7VC(HCL7V024,REV3B)			1
93	**A-PC-0106-0306**	**DM333181S01**	**POWER 3P 1.8M(CHN)Y546B300012180QD GP**			**1**
94	**A-PC-0106-0224**	**DM333181G97**	**POWER CORD 3P 1.8M(USA)V04VS350012180 GP**			**1**
95	**A-PC-0106-0227**	**DM333181801**	**POWER CORD SP-023+IS-14 1.8M(B)EU GP**			**1**
96	**A-00003642**	**DM33T181004**	**POWER CORD SP-305+IS-14 3P 1.8M(TWN)B GP**			**1**

8. Exploded Diagram and Exploded Parts List



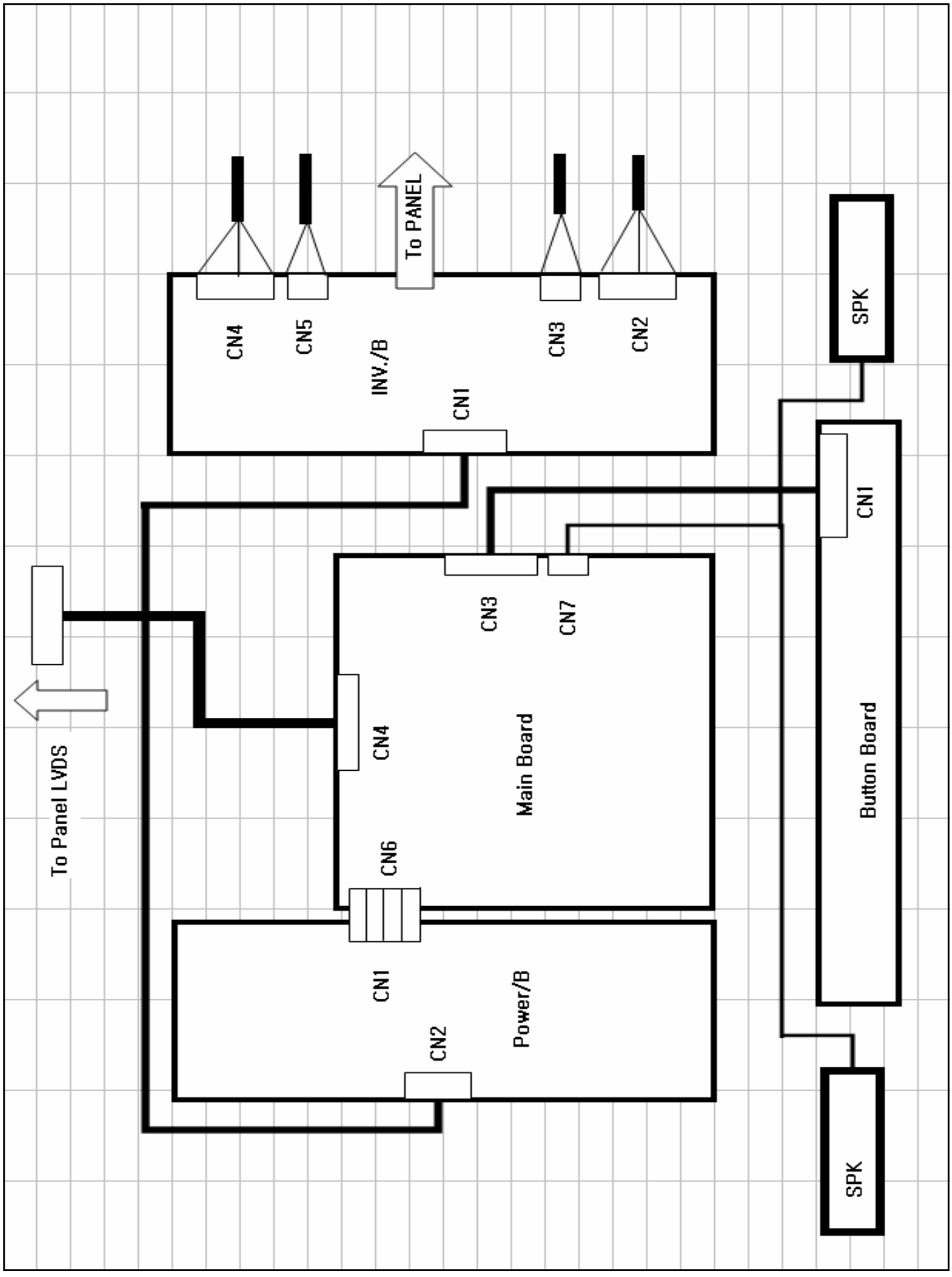
EXPLODED PARTS LIST (VX2025wm-1)

ViewSonic Model Number: VS10859

Rev: 1b

Serial No. Prefix: Q6Y

Item	ViewSonic P/N	Ref. P/N	Description	Q'ty
1	M-MS-0808-9243	FEL7V003019	LOGO FRONT-VSC-38MM L7VC(REV3A)GP	1
2	M-MS-0808-9402	FEL7V007014	BIRD LOGO L7VD(FEL7V007,REW3A)GP	1
3	N/A	EAW0VX01017	LCD MARK WOVX(EAW0VX01,REV3A)GP	1
4	N/A	EAW0VX02013	LCD BEZEL W0VX(EAW0VX02,REV3A) GP	1
5	M-SCW-0824-6802	MM30040IBJ9	SCREW M3.0*4.0-I(NI) GP	9
6	E-00005213	DN0TE230F06	SPEAKER ASSY L9VDQ FG-TE230 GP	
7	N/A	EBL9V004018	CONTROL BUTTON L9VDQ-4(EBL9V004,R3A) GP	1
8	M-MS-0808-9401	EBL7V028019	LENS L7VD(EBL7V028,REV3A)GP	1
9	N/A	23L7VDBB001	L7VD BUTTON/B ASSY GP	1
10	N/A	FBL9V011014	LCD PANEL LOCK METAL L9VDQ(R3A)GP	2
11	N/A	MF30080IBJ0	SCREW F3.0*8-I(NI)GP	4
12	N/A	MM30030IBJ4	SCREW M3*3-I-NI GP	4
13	N/A	FAW0VX02013	LCD BKT-R W0VX(FAW0VX02,REV3A) GP	1
14	N/A	AAM201EW066	LCD 20" M201EW01 V.3 FOR VSC CON GP	1
15	M-SCW-0824-0813	MF30060BBJ6	SCREW F3.0*6-B(NI)GP	10
16	N/A	FAW0VX03010	LCD BKT-LW0VX(FAW0VX03,REV3A) GP	1
17	M-SCW-0824-6799	MM35080BBW2	SCREW M3.5*8-B(NI,WASHER)GP	1
18	N/A	FCW0VA03012	INVETER MYLAR-DOWN W0VA GP	2
19	B-00005205	AS023360D18	INV MODULE(SEL)W0E(20V,I=6MA) GP	1
20	N/A	21W0VAMB029	W0VA-A M/B ASSY (NOVATEK 68563H) GP	1
21	CB-00002525	DD0L9VLC015	CABLE MB-LCD(30P,140MM)L9V-5 GP	1
22	N/A	FCW0VX01019	POWER MYLAR W0VX(FCW0VX01,REV3A) GP	1
23	B-00006115	AS08B532017	PWR MODULE(DTA)EADP-64CF BA,90~264V GP	1
24	CB-00005210	DDW0VXBU006	CABLE MB-BUTTON(8P/11P,240MM)W0VX GP	1
25	M-MS-0808-8986	MBLI1004018	IO NUT LI1(MBLI1004,REV3A)GP	4
26	CB-00004151	DD0W0EIV008	CABLE MB-INV(7P/8P,320MM)W0E GP	1
27	N/A	FBL5T009018	AL-FOIL(40-47) L5TD(FB5T009,REV3A) GP	2
28	N/A	FAW0VX01017	PCB SHIELDING W0VX(FAW0VX01,REV3A) GP	1
29	M-MS-0808-9248	FCL7A001014	AL FOIL L7A(FCL7A001,REV3A) GP	4
30	N/A	FCL7G001016	AL FOIL L7G(FCL7G001,REV3A)HAN GP	2
31	M-MS-0808-9411	FBL70008014	LOCK METAL L70B(FBL70008,REV3A) GP	1
32	M-SCW-0824-6895	MF40080IBJ1	SCREW F4.0*8-I(NI)GP	4
33	N/A	FAL9V003011	HINGE BKT L9VDQ-4(FAL9V003,REV3A) GP	1
34	N/A	EAW0VX03010	LCD COVER W0VX(EAW0VX03,REV3A) GP	1
35	M-SCW-0824-6859	MM40060IL69	SCREW M4*6-I(BNI)(NYLOK) GP	4
36	M-MS-0808-9253	FEL7V005011	LOGO PLATE ELLIPSE L7VC(REV3A)GP	1
37	M-MS-0808-9815	GAL9V002014	RUBBER PLUG VESA L9V(GAL9V002,REV3A)GP	4
38	N/A	HCW0VX02015	ID LABEL W0VX-A(HCW0VX02,REV3A) GP	1
39	M-CV-0830-2593	EBL9V003011	I/O COVER L9V(EBL9V003,REV3B)GP	1
40	M-LB-0813-0745	HCL7V002011	SERIAL LEBAL L7V(HCL7V002,REV3A) GP	1
41	C-BS-0303-0553	EAL9V004017	STAND BASE L9V(EAL9V004,REV3A) GP	1
42	M-MS-0808-9812	EBL9V001019	STAND COVER F L9V(EBL9V001,REV3A)GP	1
43	PL-00008022	FAL9V006010	STAND BASE L9VDQ-4(FAL9V006,REV3A) GP	1
44	N/A	EAL9V005013	STAND BKT COVER L9V(EAL9V005,REV3A)GP	1
45	M-MS-0808-9811	GAL5M002011	RUBBER FOOT L5M(GAL5M002,REV3B)GP	4
46	M-SCW-0824-0813	MF30060BBJ6	SCREW F3.0*6-B(NI)GP	11
47	N/A	FAW0VX04016	HINGE ASSY W0VX(FAW0VX04,REV3A) GP	1
48	M-SCW-0824-0795	MM40080BCI5	SCREW M4.0*8-B(NI,NYLOK)GP	4
49	N/A	MM40060BCI6	SCREW M4.0*6-B(NI,NYLOK) GP	4
50	N/A	EBL9V005014	HINGE COVER L9VDQ-4(EBL9V005,R3A) GP	1
51	M-SCW-0824-6894	MF30060BJ28	SCREW F3.0*6-B(BNI)GP	2
52	M-MS-0808-9404	EBL7V029015	WIRE CLAMP L7VD(EBL7V029,REV3A)GP	2
53	C-00001778	EBL9V002015	STAND COVER R L9V(EBL9V002,REV3A)GP	1


To PANEL
CN4
CN5
INV./B
CN3
CN2
CN1
SPK
CN1
Button Board
CN3
CN7
CN4
Main Board
To Panel LVDS
CN6
CN1
Power/B
CN2
SPK

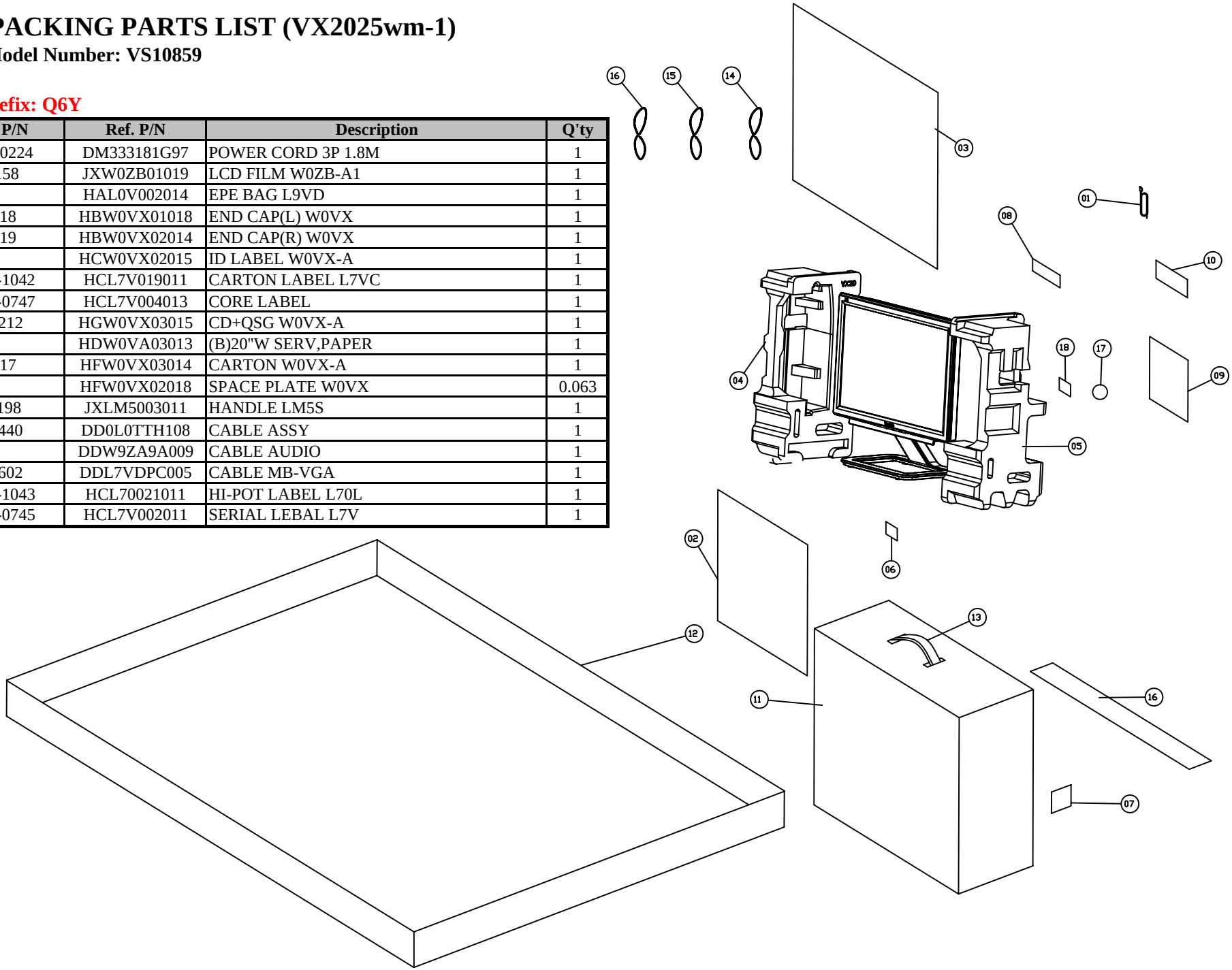
PACKING PARTS LIST (VX2025wm-1)

ViewSonic Model Number: VS10859

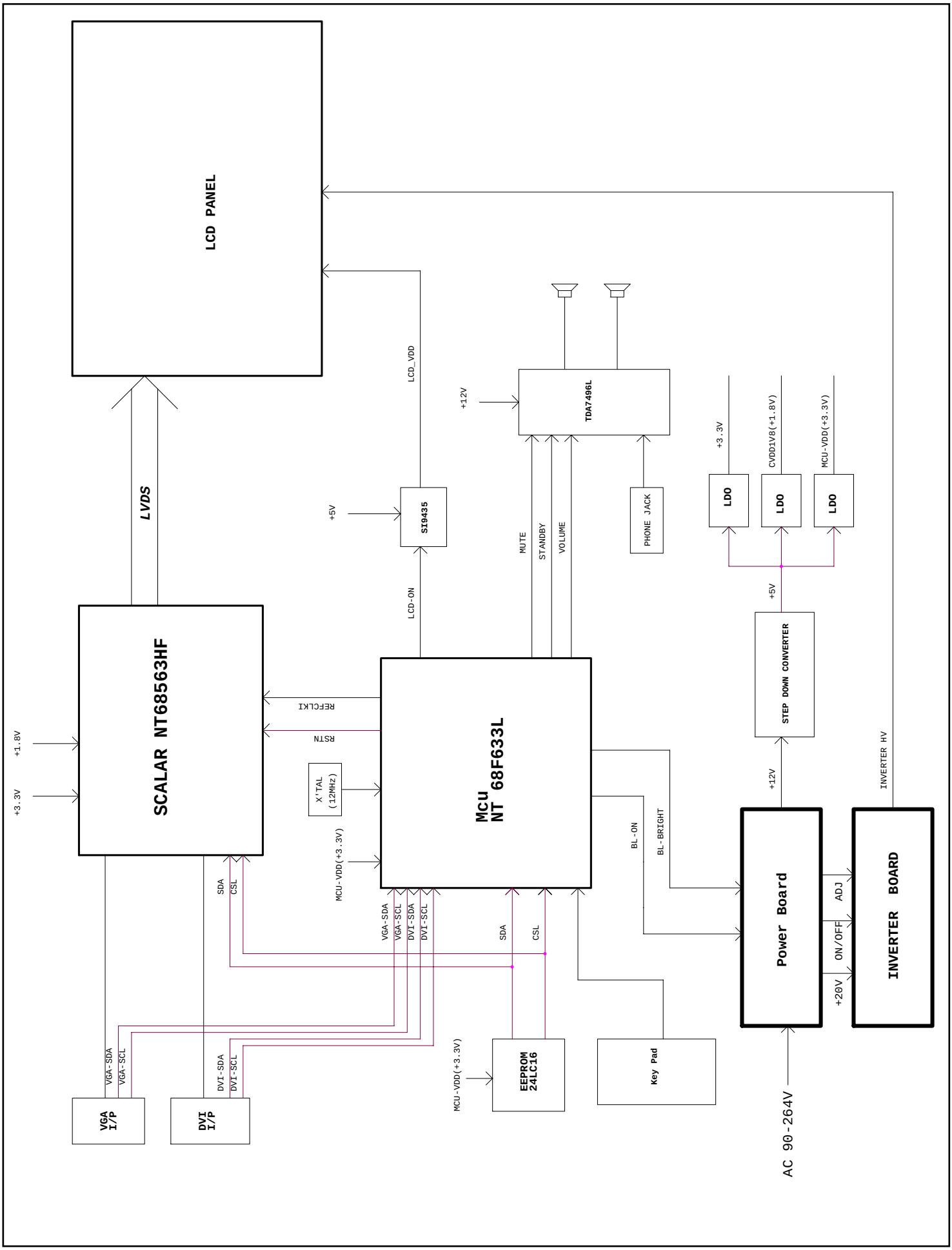
Rev: 1a

Serial No. Prefix: Q6Y

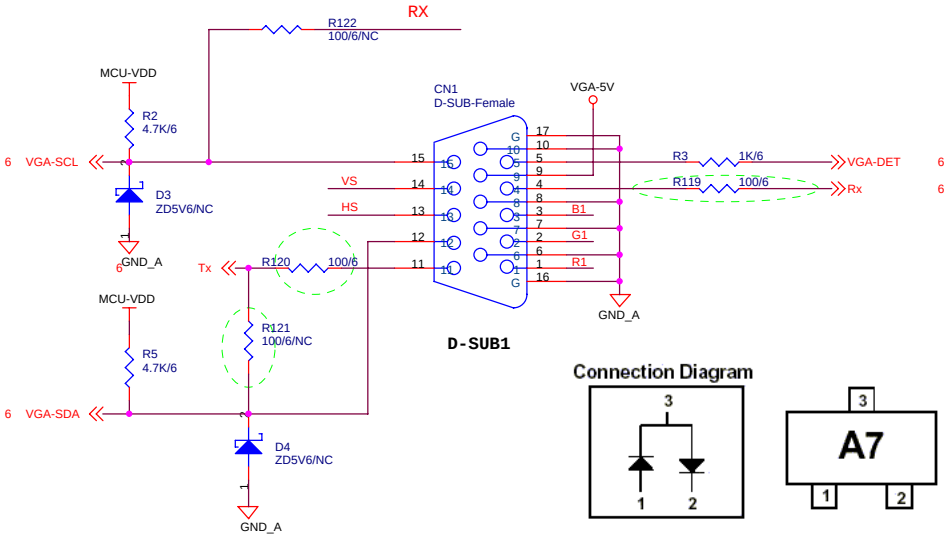
Item	ViewSonic P/N	Ref. P/N	Description	Q'ty
1	A-PC-0106-0224	DM333181G97	POWER CORD 3P 1.8M	1
2	M-00004158	JXW0ZB01019	LCD FILM W0ZB-A1	1
3	#N/A	HAL0V002014	EPE BAG L9VD	1
4	P-00005218	HBW0VX01018	END CAP(L) W0VX	1
5	P-00005219	HBW0VX02014	END CAP(R) W0VX	1
6	#N/A	HCW0VX02015	ID LABEL W0VX-A	1
7	M-LB-0813-1042	HCL7V019011	CARTON LABEL L7VC	1
8	M-LB-0813-0747	HCL7V004013	CORE LABEL	1
9	DC-00005212	HGW0VX03015	CD+QSG W0VX-A	1
10	#N/A	HDW0VA03013	(B)20"W SERV,PAPER	1
11	P-00005217	HFW0VX03014	CARTON W0VX-A	1
12	#N/A	HFW0VX02018	SPACE PLATE W0VX	0.063
13	PL-00005198	JXLM5003011	HANDLE LM5S	1
14	CB-00003440	DD0L0TTH108	CABLE ASSY	1
15	#N/A	DDW9ZA9A009	CABLE AUDIO	1
16	CB-00002602	DDL7VDPC005	CABLE MB-VGA	1
17	M-LB-0813-1043	HCL70021011	HI-POT LABEL L70L	1
18	M-LB-0813-0745	HCL7V002011	SERIAL LEBAL L7V	1



9. Block Diagram



10. Schematic Diagrams

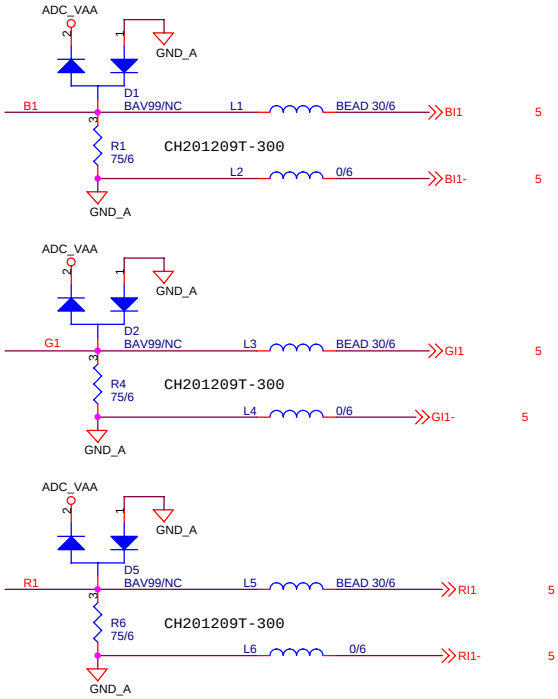


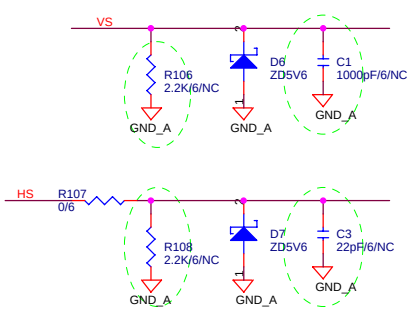
D-SUB1

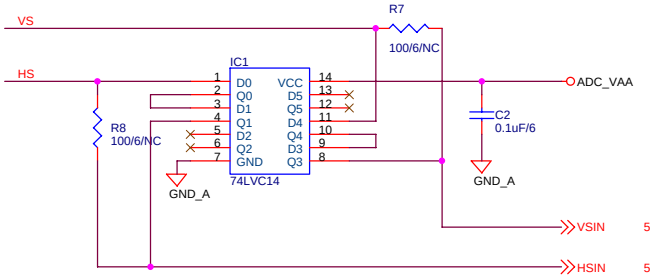
Connection Diagram

BAV99 3

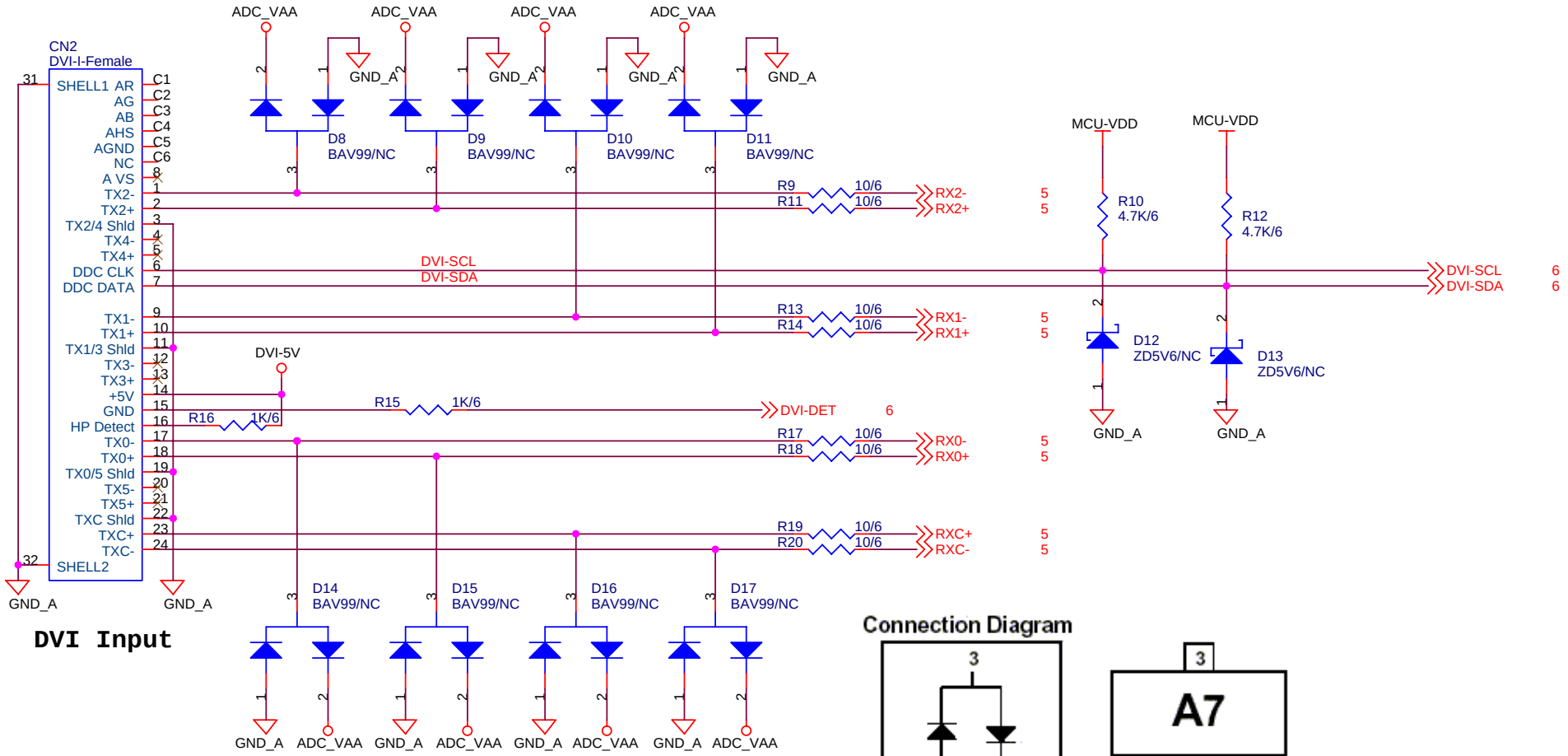
DB15	
1	R
2	G
3	B
4	NC
5	RETURN
6	RGND
7	GGND
8	BGND
9	+5V
10	SYNC.RETURN
11	NC
12	SDA
13	Hs
14	Vs
15	SCL





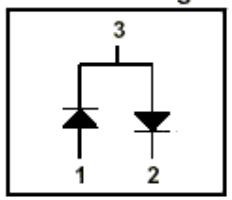


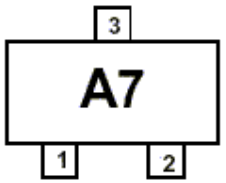
ViewSonic Corporation		
Model	ADC INPUT	
Title		
Date		Rev:



DVI Input

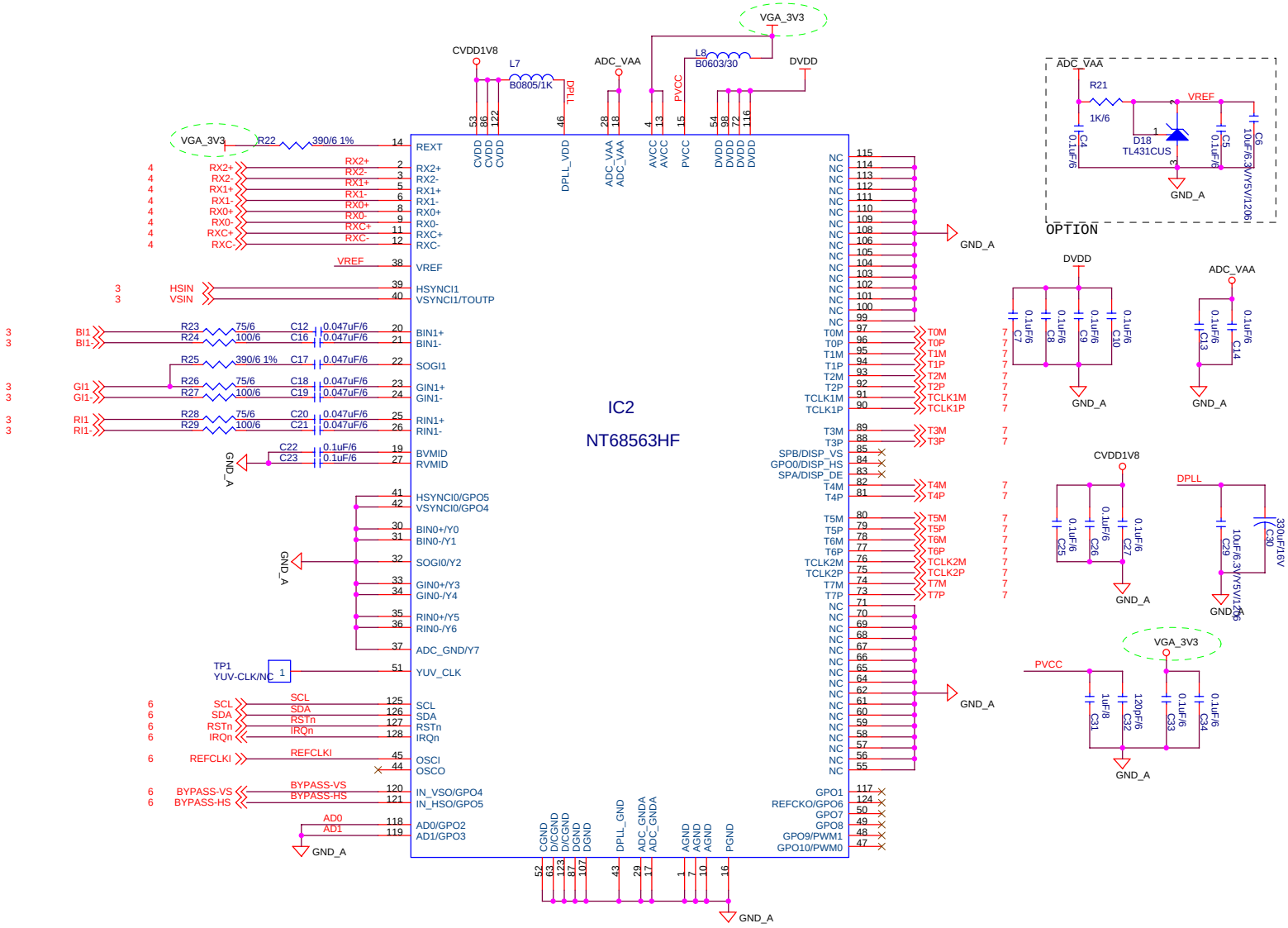
Connection Diagram



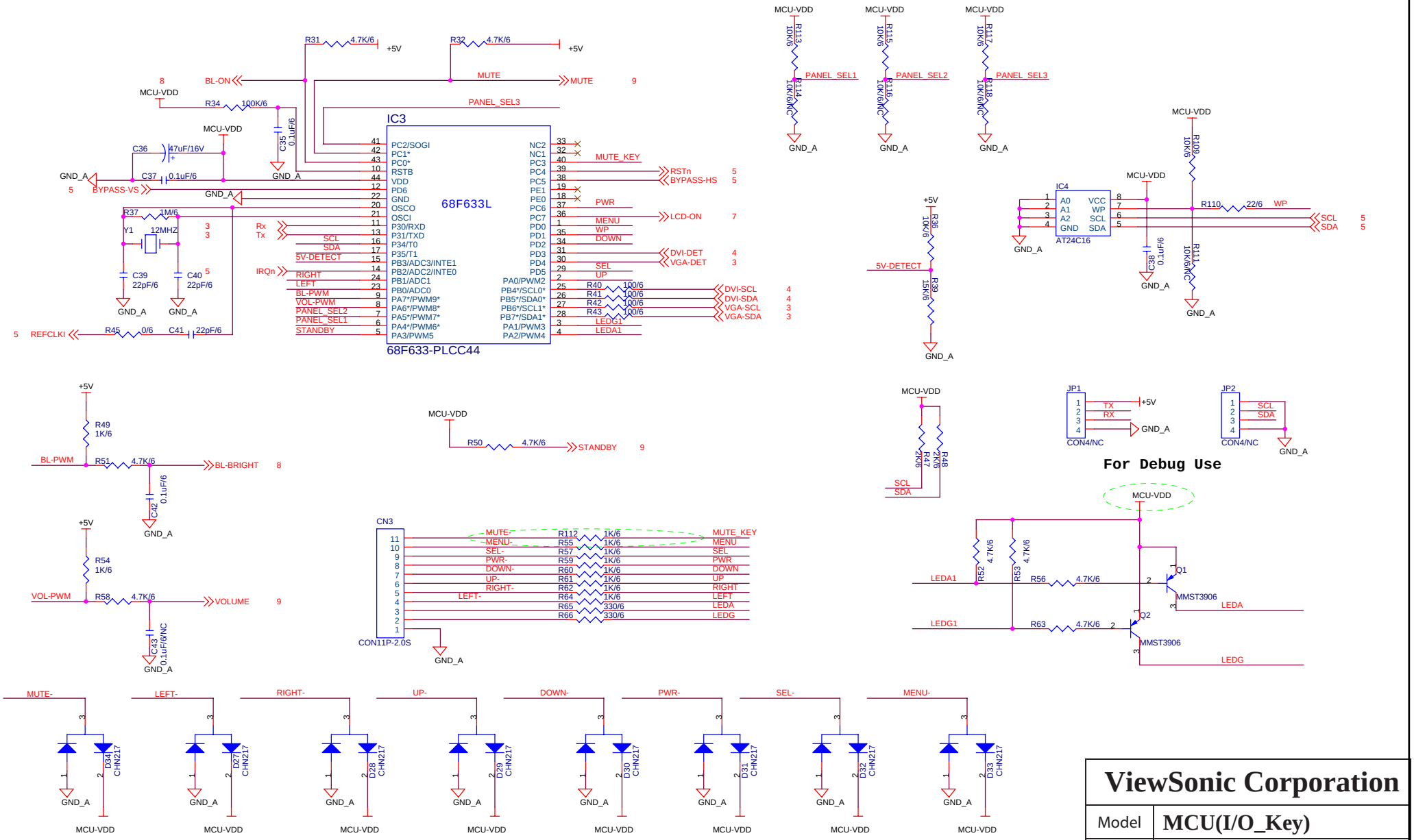


BAV99

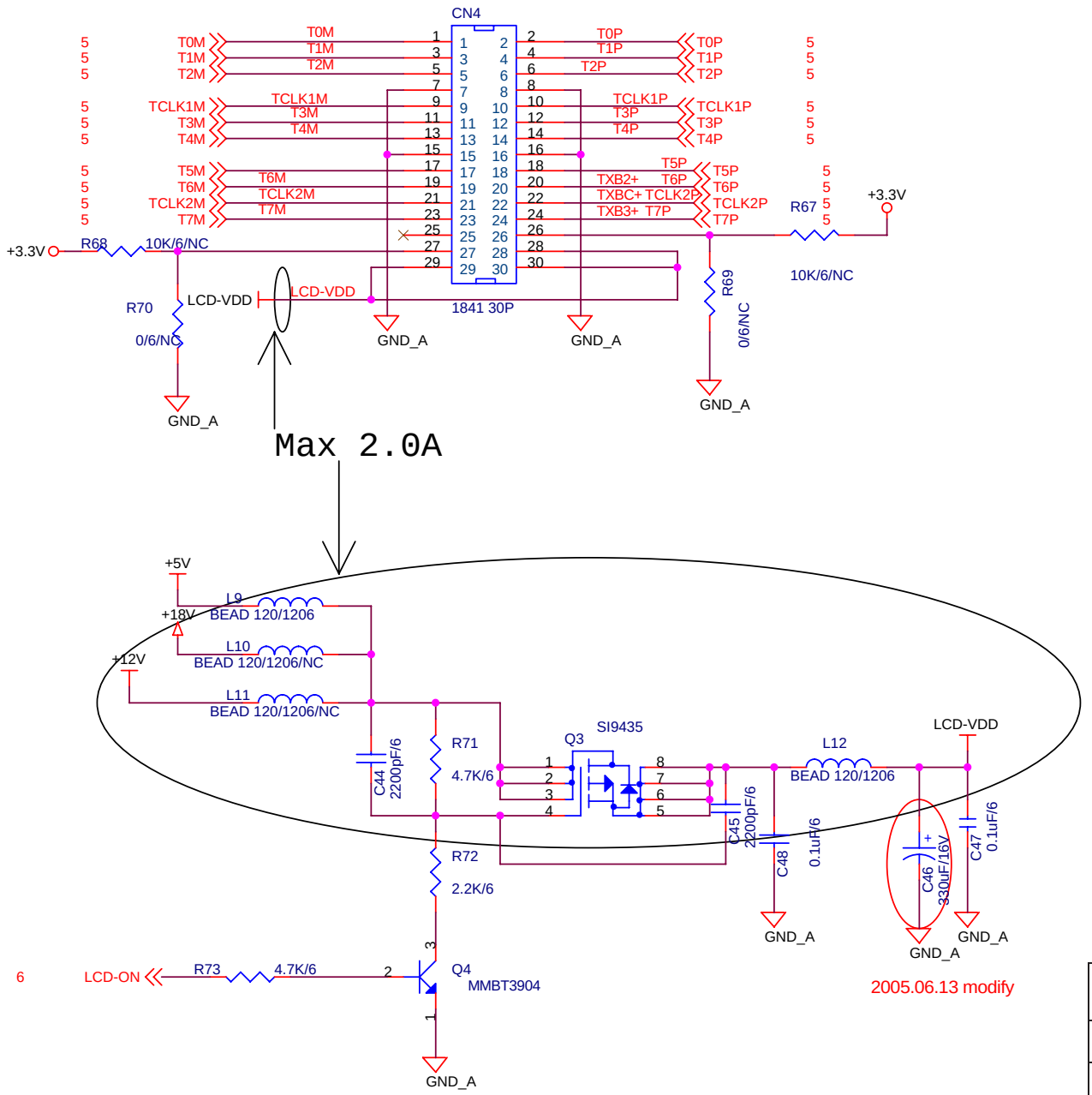
ViewSonic Corporation		
Model	DVI INPUT	
Title		
Date		Rev:



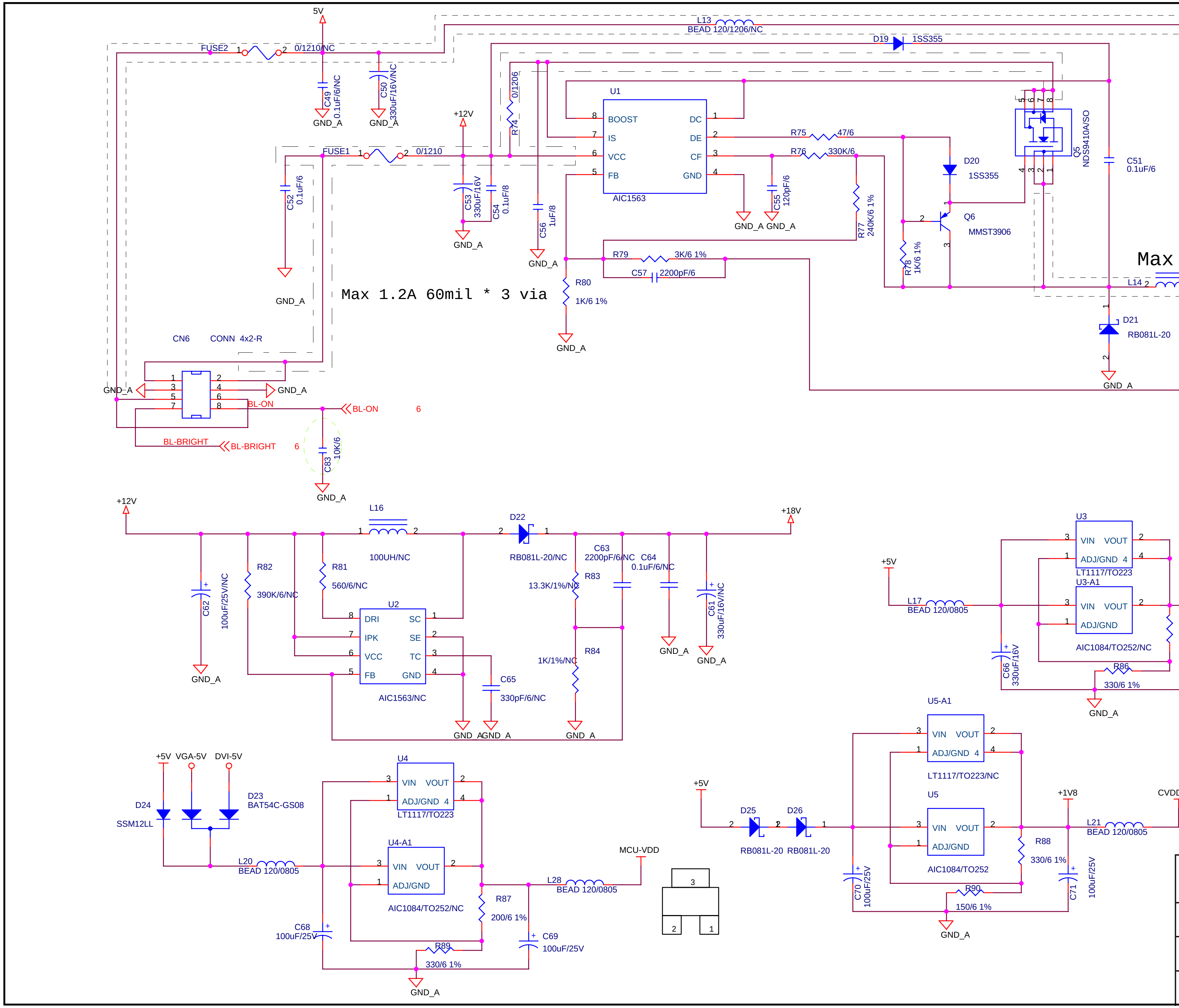
ViewSonic Corporation	
Model	NT68563
Title	
Date	Rev:



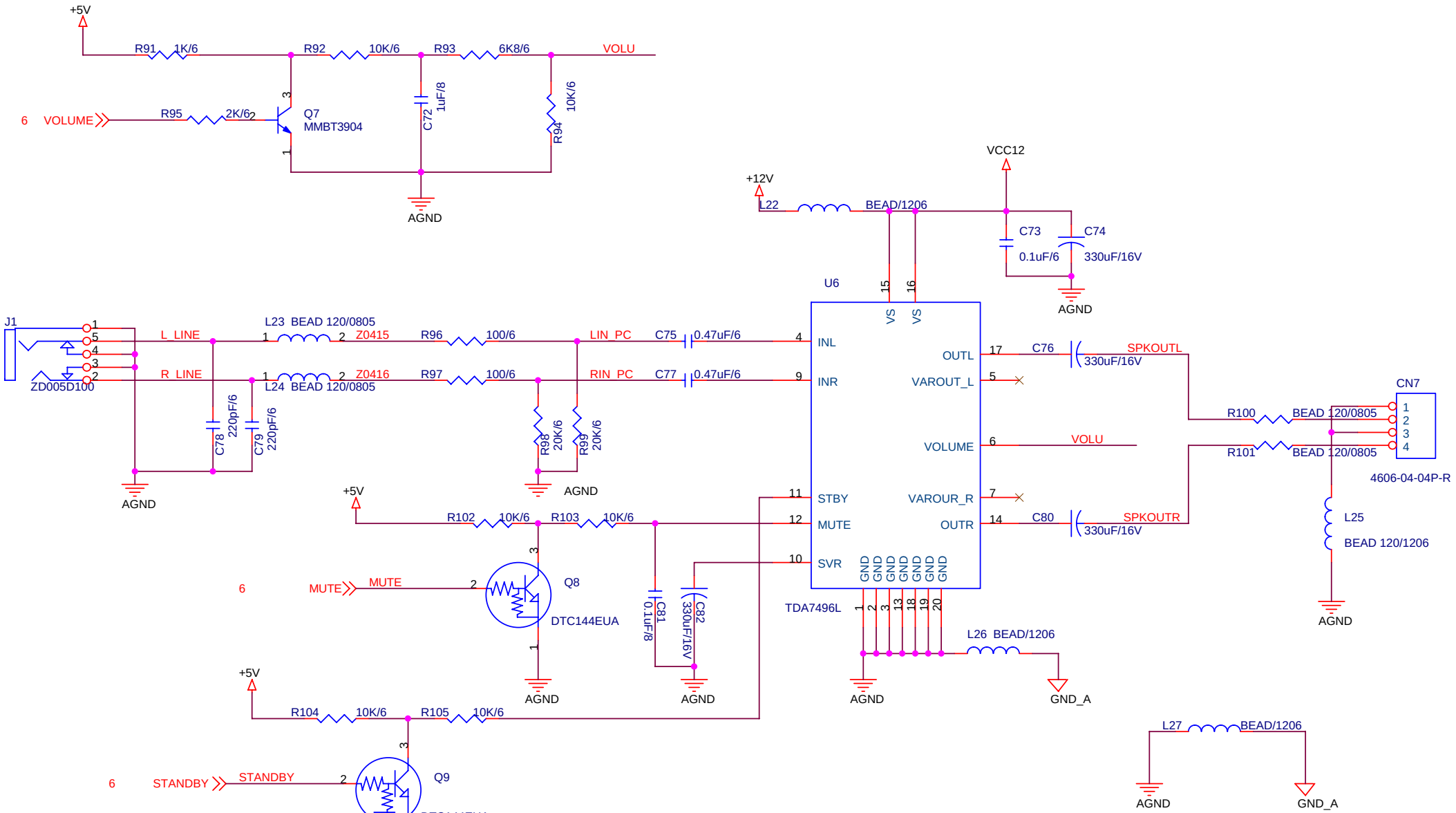
ViewSonic Corporation	
Model	MCU(I/O_Key)
Title	
Date	Rev:



ViewSonic Corporation		
Model	PANEL OUTPUT	
Title		
Date		Rev:



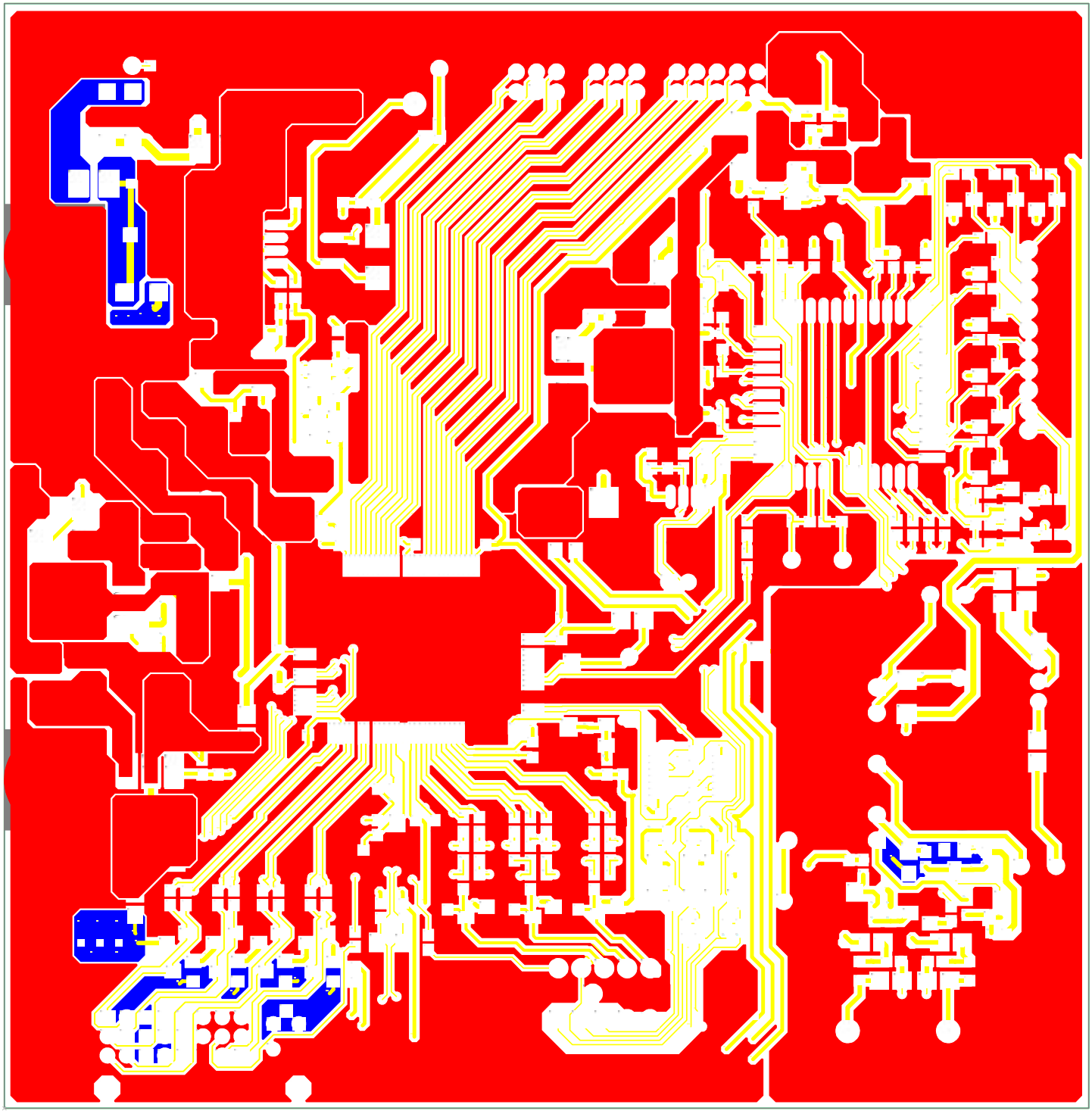
ViewSonic Corporation			
Model	Scaler Power		
Title			
Date		Rev:	



ViewSonic Corporation	
Model	AUDIO
Title	
Date	Rev:

11. PCB Layout Diagrams

11.1



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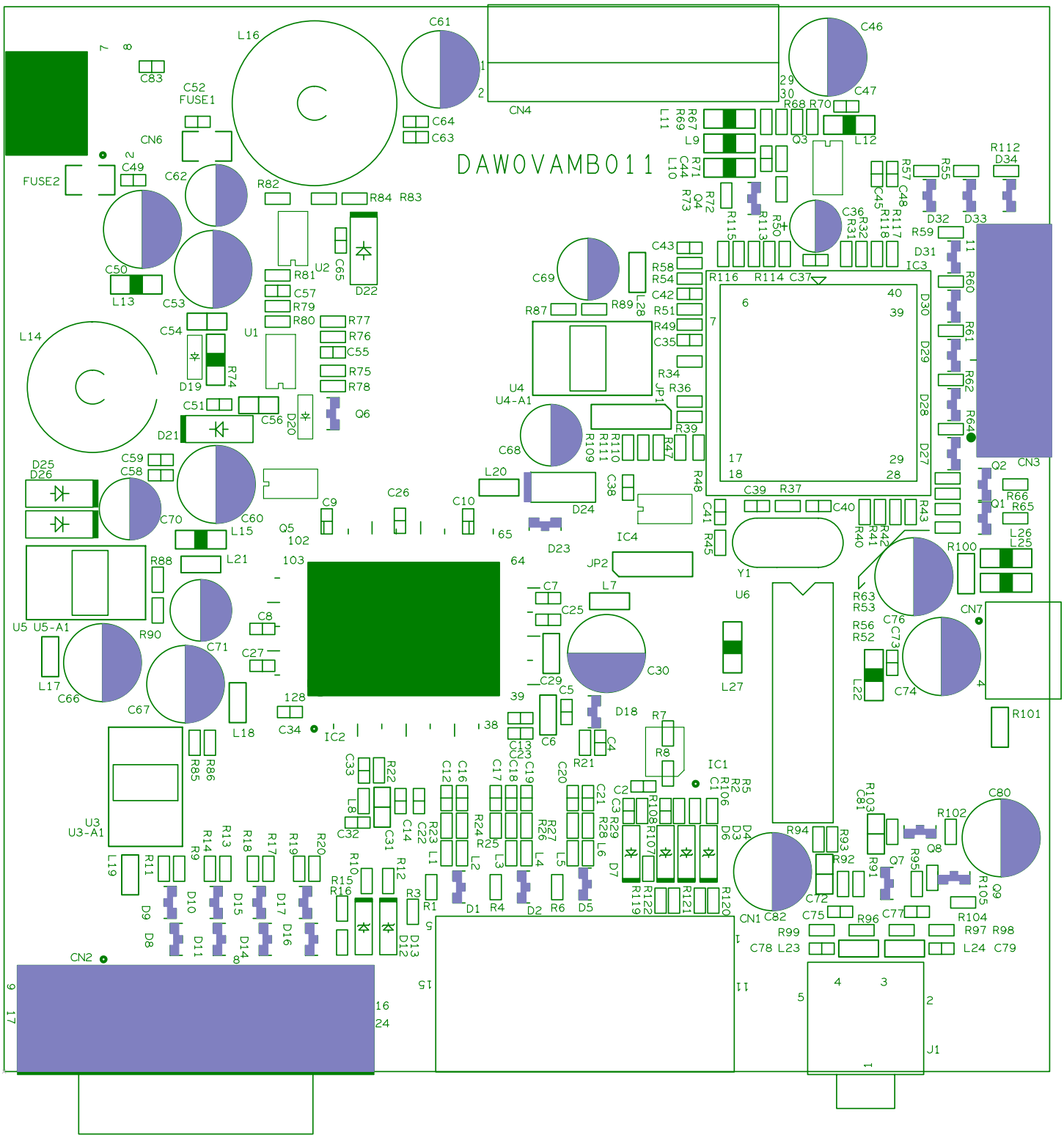

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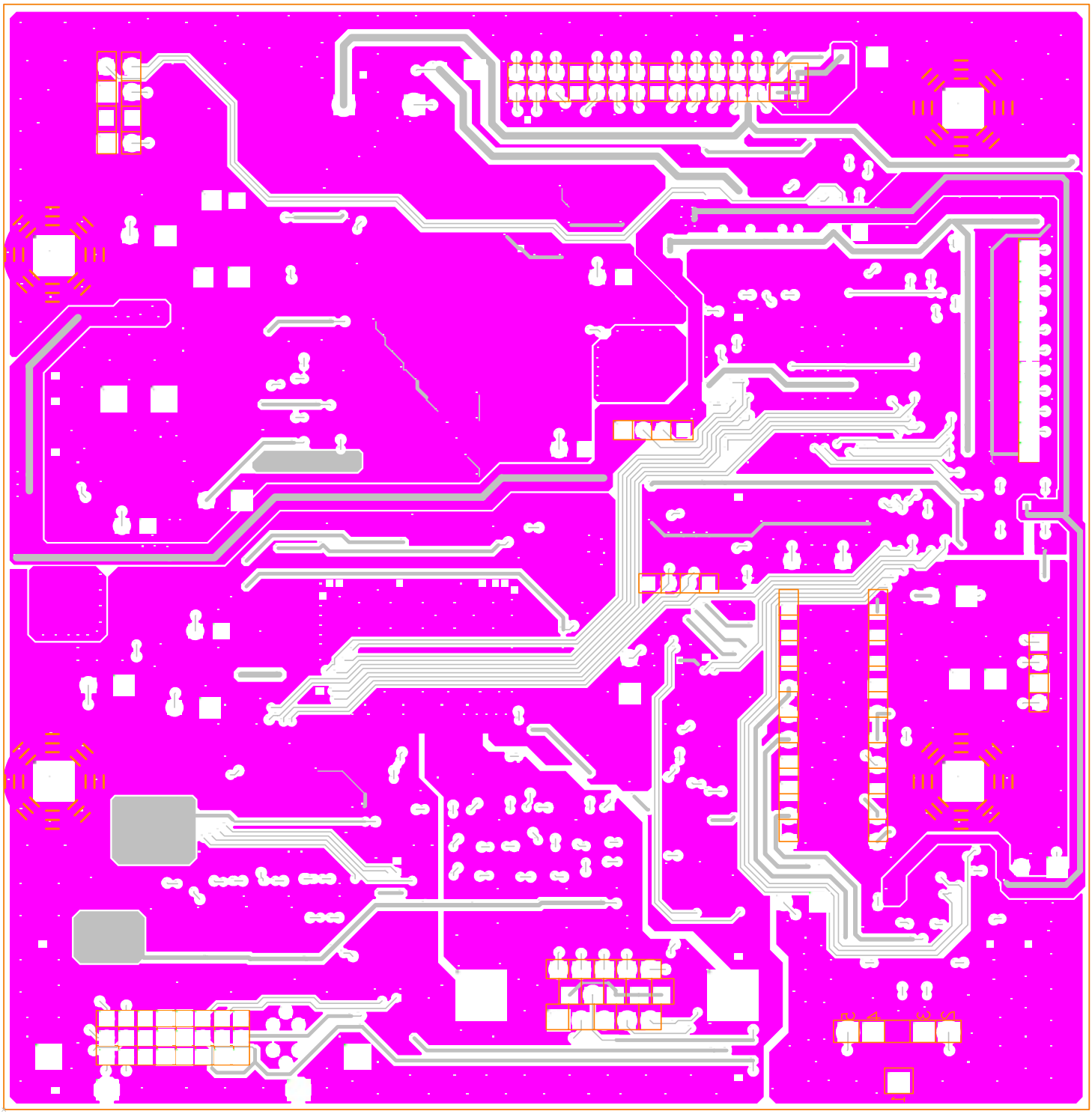

* Reader's Response*

Dear Readers:

Thank you in advance for your 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 of this Service Manual?

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

B. Are you satisfied with this 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 other opinions or suggestions regarding this service manual?

Reader's basic dada:

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 suggestions to the Director, Quality Systems & Processes (marc.maupin@viewsonic.com)