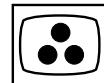




THOMSON

TV



SERVICE MANUAL
DOCUMENTATION TECHNIQUE
TECHNISCHE DOKUMENTATION
DOCUMENTAZIONE TECNICA
DOCUMENTACION TECNICA

42WB03SW

Plasma



WARNING : Before servicing this chassis please read the safety recommendations.

ATTENTION : Avant toute intervention sur ce châssis, lire les recommandations de sécurité.

ACHTUNG : Vor jedem Eingriff auf diesem Chassis, die Sicherheitsvorschriften lesen.

ATTENZIONE : Prima di intervenire sullo chassis, leggere le norme di sicurezza.

IMPORTANTE : Antes de cualquier intervención, leer las recomendaciones de seguridad.

Wysius® - 0604



Do not disconnect modules when they are energized!
Repairs on power supply section are to be carried out only with isolating transformer.
Ne pas retirer les modules lorsqu' ils sont sous tension. N'effectuer les travaux de maintenance sur la partie reliée au secteur (Switch Mode) qu'au travers d'un transformateur d'isolation.
Module nicht bei eingeschaltetem Gerät entfernen!
Servicearbeiten am Netzteil nur unter Verwendung eines Regel trenntrafos durchführen.
Non scollegare le piastre quando sono alimentate!
Per le riparazioni sulla sezione alimentatore, utilizzare un trasformatore isolatore.
No desconectar los módulos cuando están activados. Las reparaciones en la sección de alimentación de energía deben ser ejecutadas solamente con un transformador de separación.



Indicates critical safety components, and identical components should be used for replacement. Only then can the operational safety be guaranteed.

Le remplacement des éléments de sécurité (repérés avec le symbole) par des composants non homologués selon la Norme CEI 65 entraîne la non-conformité de l'appareil. Dans ce cas, la responsabilité du fabricant n'est plus engagée.

Wenn Sicherheitsteile (mit dem Symbol gekennzeichnet) nicht durch Original - Ersatzteile ersetzt werden, erlischt die Haftung des Herstellers.

La sostituzione dei componenti di sicurezza (evidenziati con il segno) con componenti non omologati secondo la norma CEI 65 comporta la non conformità dell'apparecchio. In tal caso è "esclusa la responsabilità " del costruttore.

La sustitución de elementos de seguridad (marcados con el simbolo) por componentes no homologados segun la norma CEI 65, provoca la no conformidad del aparato. En ese caso, el fabricante cesa de ser responsable.

MEASUREMENT CONDITIONS - CONDITIONS DE MESURES - MESSBEDINGUNGEN CONDIZIONI DI MISURA - CONDICIONES DE MEDIDAS

RECEIVER :

On UHF, input level : 1 mV, bar test pattern :
- PAL, I standard, 100% white.

Via the scart socket, input level : 1 Vpp, bar test pattern :

Colour, contrast and brightness at mid-position, sound at minimum.
Programme selected : PR 01.

DC voltages measured between the point and earth using a digital voltmeter.

RECEPTEUR :

En UHF, niveau d'entrée 1 mV mire de barres
- SECAM, Norm L, Blanc 100%.

Par la prise Péritelévision, niveau d'entrée 1 Vcc, mire de barres .

Couleur, contraste, lumière à mi-course, son minimum.
Programme affecté PR 01.

Tensions continues relevées par rapport à la masse avec un voltmètre numérique.

EMPFÄNGER :

Bei UHF Eingangspiegel 1 mV, Farbbalken :
- PAL, Norm G, Weiss 100%.

Über die Scartbuchse : Eingangspiegel 1 Vss, Farbbalken :

Farbe, Kontrast, Helligkeit in der Mitte des Bereichs, Ton auf Minimum.
Zugeordnetes Programm PR 01.

Gleichspannungen mit einem digitalen Voltmeter zur Masse gemessen.

RICEVITORE :

In UHF, livello d'entrata 1 mV, monoscopio barre :
- PAL, norma G, bianco 100%.

Via SCART, livello d'entrata 1 Vpp, monoscopio barre :

Colore, Contrasto, Luminosità media, Suono minimo.
Programma selezionato PR 01.

Tensioni continue rilevate rispetto alla massa con un voltmetro digitale.

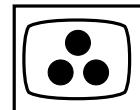
RECEPTOR :

En UHF, nivel de entrada 1 mV, mira de barras :
- PAL, norma G, blanco 100%.

Por la toma Peritelevision, nivel de entrada 1 Vpp mira de barra.

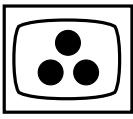
Color, Contraste, luz a mitad de carrera, Sonido minimo.
Programa afectado PR 01.

Tensiones continuas marcadas en relacion a la masa con un voltmetro digital.



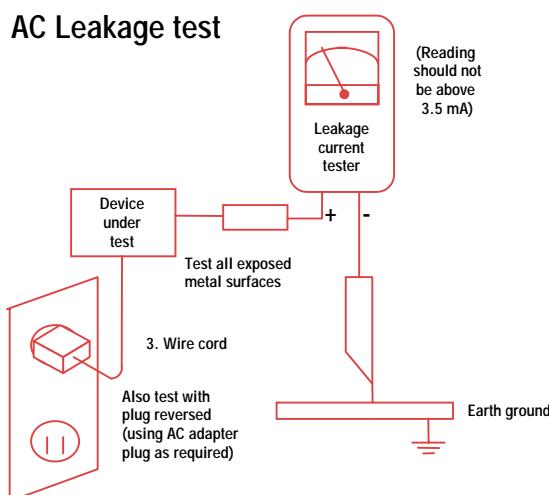
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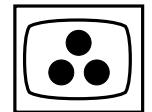


IMPORTANT SAFETY PRECAUTIONS

1. Before returning an instrument to the customer, always make a safety check of the entire instrument, including the following items, but not limited to them.
 - a. Be sure that no built-in protective devices are defective and/or have been defeated during servicing. (1) Protective shields are provided on this chassis to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience. (2) When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including, but not limited to, non-metallic control knobs, insulating fishpapers, adjustment and compartment covers/shields, and isolation resistor/capacitor networks. **Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning.**
 - b. Be sure that there are no cabinet openings through which an adult or child might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to (1) spacing between the picture tube and the cabinet mask, (2) excessively wide cabinet ventilation slots, and (3) an improperly fitted and/or incorrectly secured cabinet back cover.
 - c. Leakage Current Hot Check: With the instrument completely reassembled, plug the AC line cord directly into a 230V AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester or a metering system. With the instrument AC, first switch ON and then OFF. Measure from a known earth ground (metal waterpipe, conduit, etc.) to all exposed metal parts of the instrument (antennas, handle bracket, metal cabinet, screwheads, metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 3.5 mA. Reverse the instrument power cord plug in the outlet and repeat test. **ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE INSTRUMENT TO THE CUSTOMER.**



2. Read and comply with all caution and safety-related notes on or inside the Monitor cabinet, on the Projection Monitor chassis or on the picture tube.



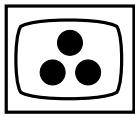
3. Design Alteration Warning: Do not alter or add to the mechanical or electrical design of this unit. Design alterations and additions, including, but not limited to, circuit modifications and the addition of the items such as auxiliary audio and/or video output connections might alter the safety characteristics of this Projection Monitor and create a hazard to the user. Any design alterations or additions will void the manufacturer's warranty and will make you, the service, responsible for personal injury or property damage resulting therefrom.

4. Hot Chassis Warning:

- a. Some Monitor chassis are electrically connected directly to one conductor of the AC power cord and may be safely serviced without an isolation transformer only if the AC power plug is inserted so that the chassis is connected to the ground side of the AC power source. To confirm that the AC power plug is inserted correctly, with an AC voltmeter measure between the chassis and a known earth ground. If a voltage reading in excess of 1.0V is obtained, remove and reinsert the AC power plug in opposite polarity and again measure the voltage potential between the chassis and a known earth ground.
- b. Some Monitor chassis normally have 85V AC (RMS.), between chassis and earth ground regardless of the AC plug polarity. These chassis can be safely serviced only with an isolation transformer inserted in the power line between the receiver and the AC power source, for both personnel and test equipment protection.
- c. Some Projection Monitor chassis have a secondary ground system in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. Insulating material that must not be defeated or altered electrically separates the two ground systems.

5. Observe original lead dress. Take extra care to assure correct lead dress in the following areas:

- a. near sharp edges,
 - b. near thermally hot parts (be sure that leads and components do not touch thermally hot parts),
 - c. the AC supply,
 - d. high voltage,
 - e. antenna wiring. Always inspect in all areas for pinched, out-of-place, or frayed wiring. Do not change spacing between components and between components and the printed-circuit board. Check AC powers cord for damage.
6. Components, parts, and/or wiring that appear to have overheated or are otherwise damaged should be replaced with components, parts, or wiring that meet original specifications. Additionally, determine the cause of overheating and/or damage and, if necessary, take corrective action to remove any potential safety hazard.
7. PRODUCT SAFETY NOTICE: Many Monitor electrical and mechanical parts have special safety-related characteristics some of which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified in this service data by shading with a mark on schematics. Use of a substitute replacement part that does not have the same safety characteristics as the recommended replacement part in this service data parts list might create shock, fire, and/or other hazards.



HOW TO EXCHANGE THE MASK & PANEL PROCEDURE

1. Removing the Leg Tube Assembly

Unscrew 4 screws from "Leg Tube Assembly." (Specification of screw driver is $15\pm 2\text{kg}$), see fig.1



Fig. 1

Push the "Leg Tube Assembly." downward to unlock and pull it away from unit, then unscrew 4 screws from rear cover. (Specification of screw -driver is $15\pm 2\text{ kg}$),

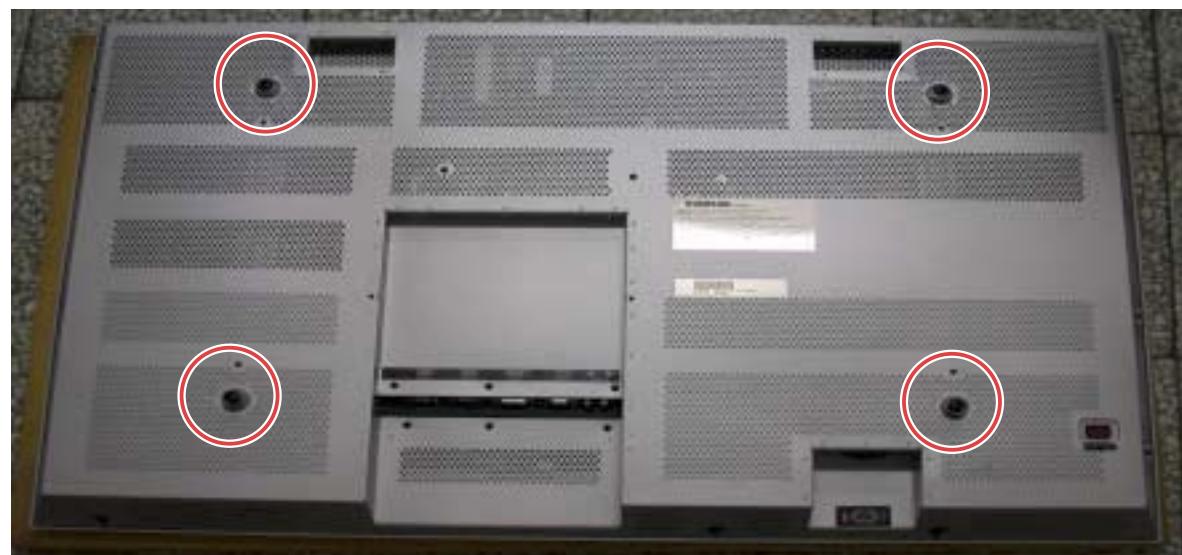
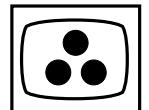


Fig. 2



2. Removing the rear cover

Unscrew 12 screws from rear cover, see red arrow (Specification of screw driver is 15 ± 2 kg)

Unscrew 8 screws from rear cover, and unscrew 2 screws from AC power socket, see red arrow (Specification of screw driver is 9 ± 1 kg)

Unscrew 4 screws from rear cover, see red circle (Specification of screw driver is 15 ± 2 kg)

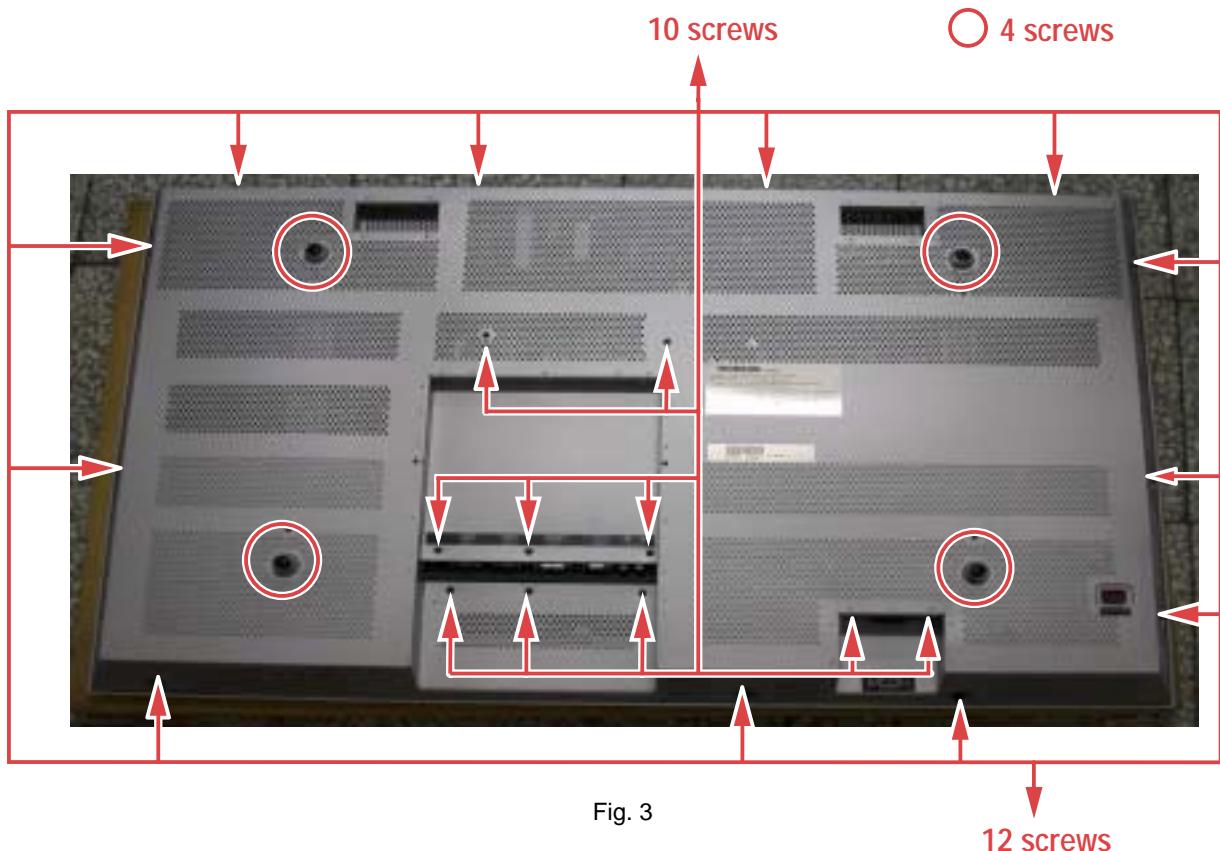
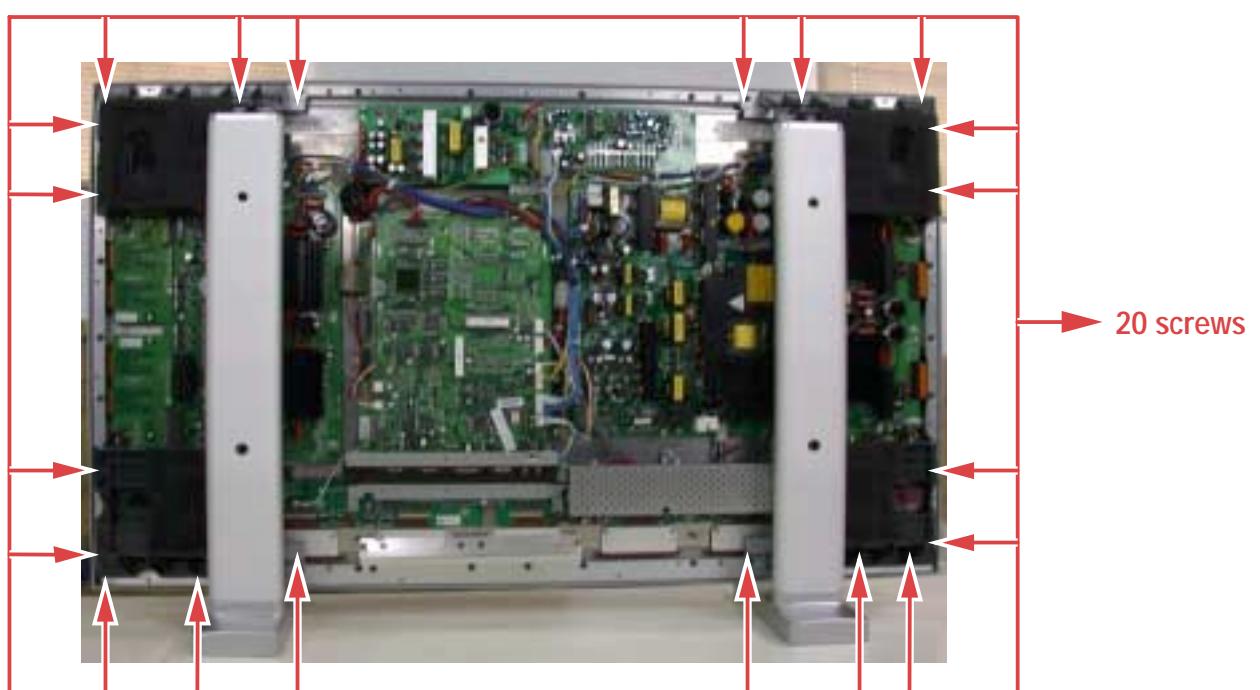


Fig. 3

12 screws

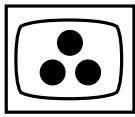
10 screws

4 screws



20 screws

Fig. 4



4. Removing the Mask and the J5 cable from PCB

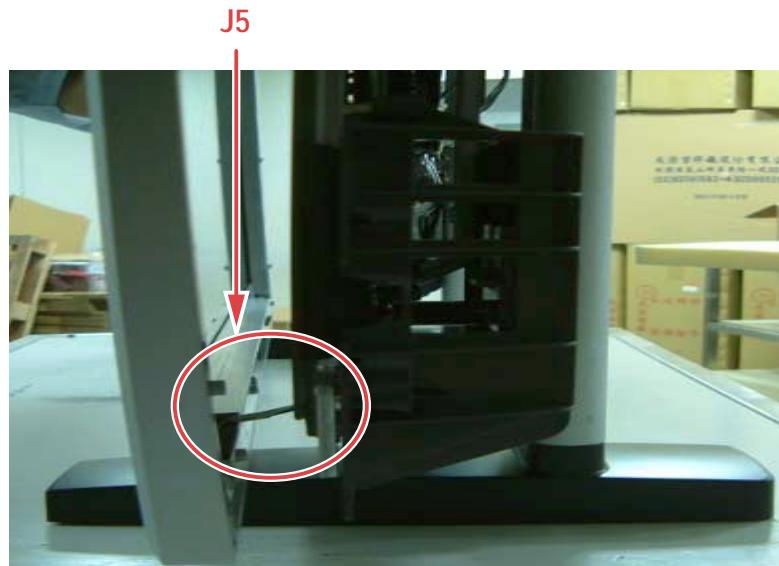


Fig. 5

5. Removing the filter

Unscrew 10 screws from mask (Specification of screw driver is 15 ± 2 kg), then remove four angles that hold the PDP filter. (Be careful: Please do not bump or scrape when handling the PDP filter.)

Before putting panel back clean PDP filter make sure it's free from dust.

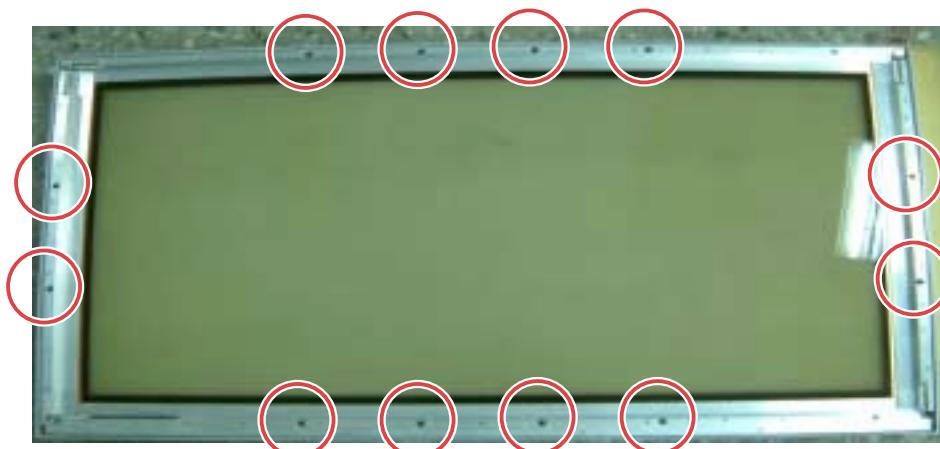


Fig. 6

Unscrew 3 screws and remove control board

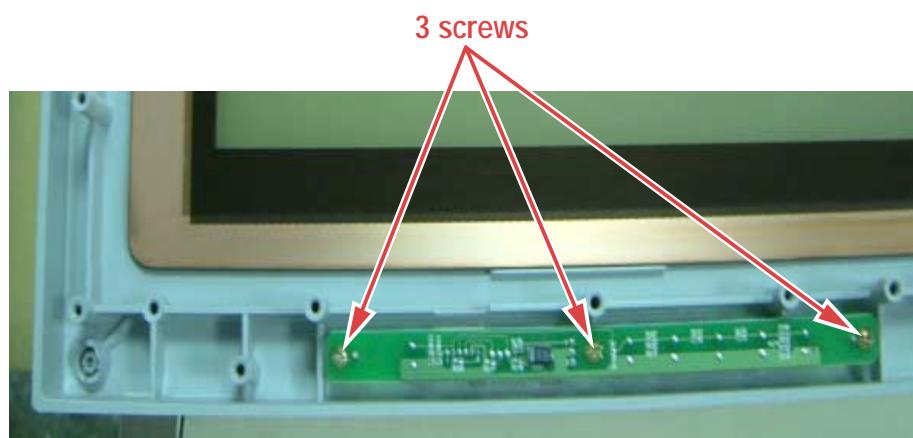
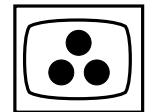


Fig. 7



Remove the Control buttons from old Mask and reinstall them on the new Mask.

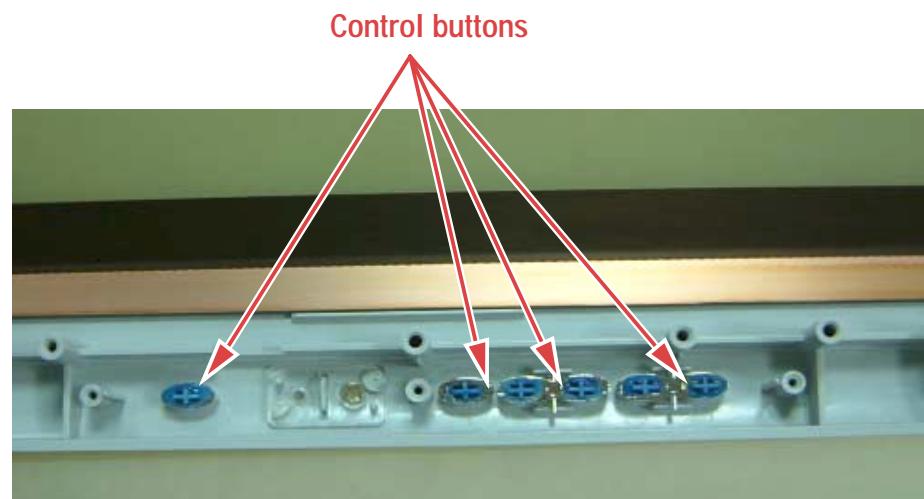


Fig. 8

Please to aim at red arrow to guide and there is have a channel when you put down glass back to new mask

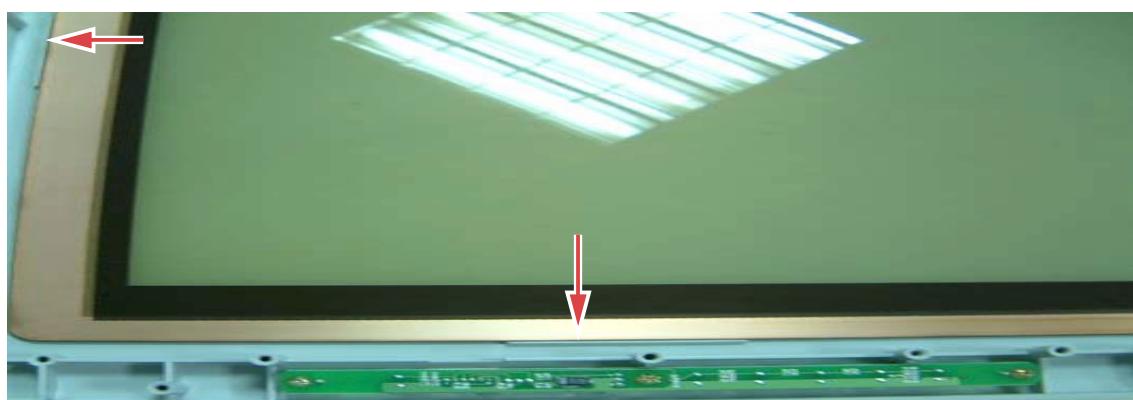
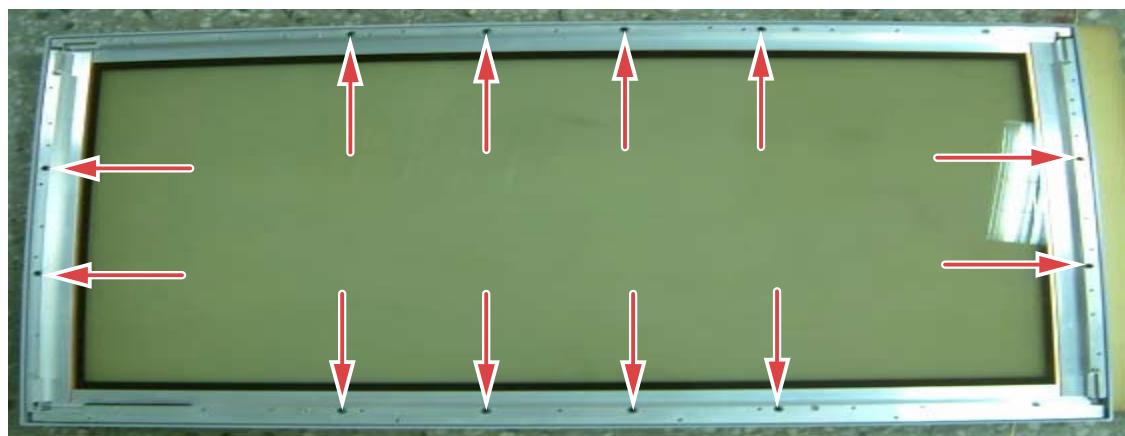


Fig. 9

Assemble 4 irons back to mask. Be careful: When you lock up 4 irons that screws should be to lock up on "SL&G" point.

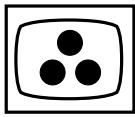
Top side



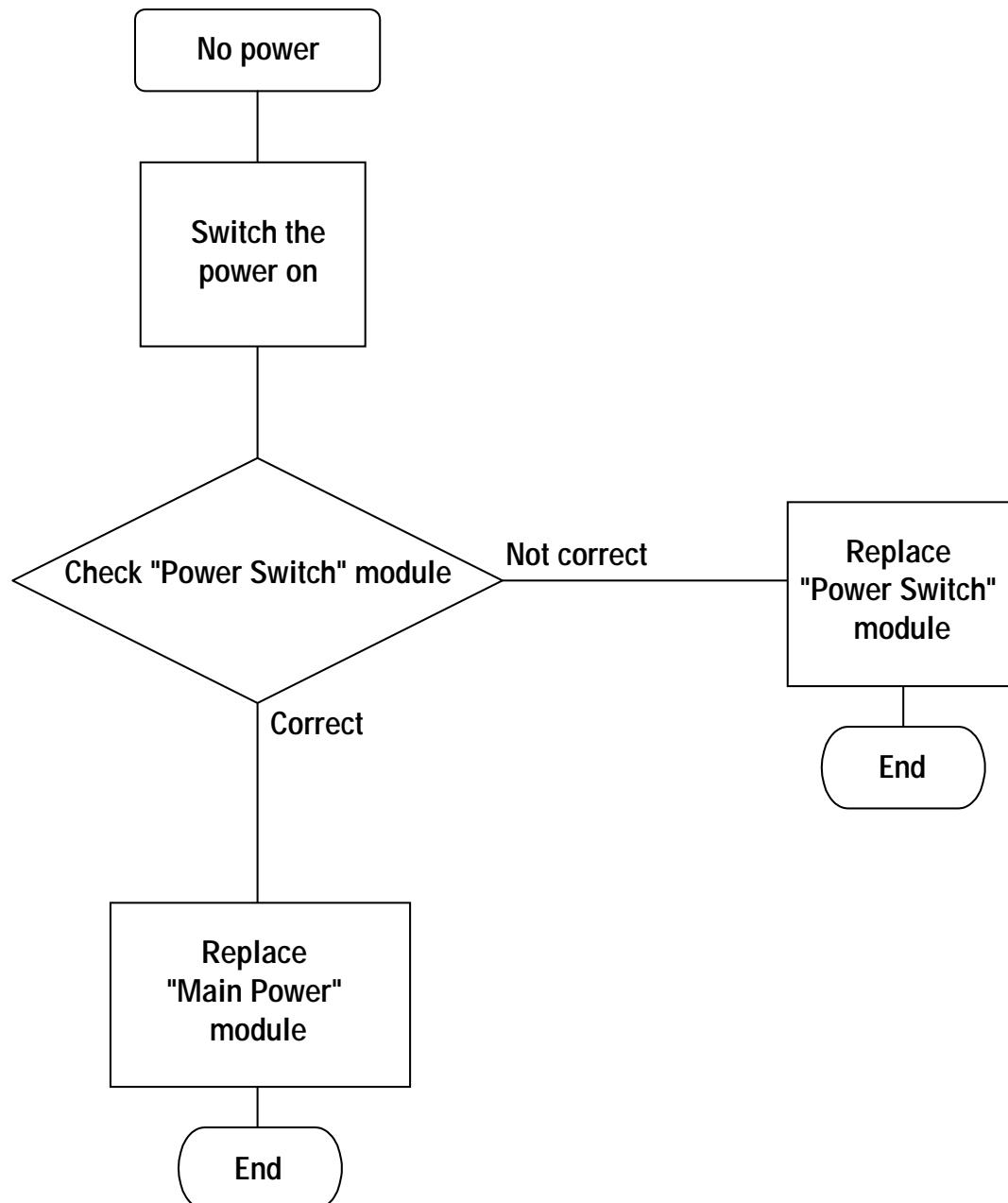
Top bottom

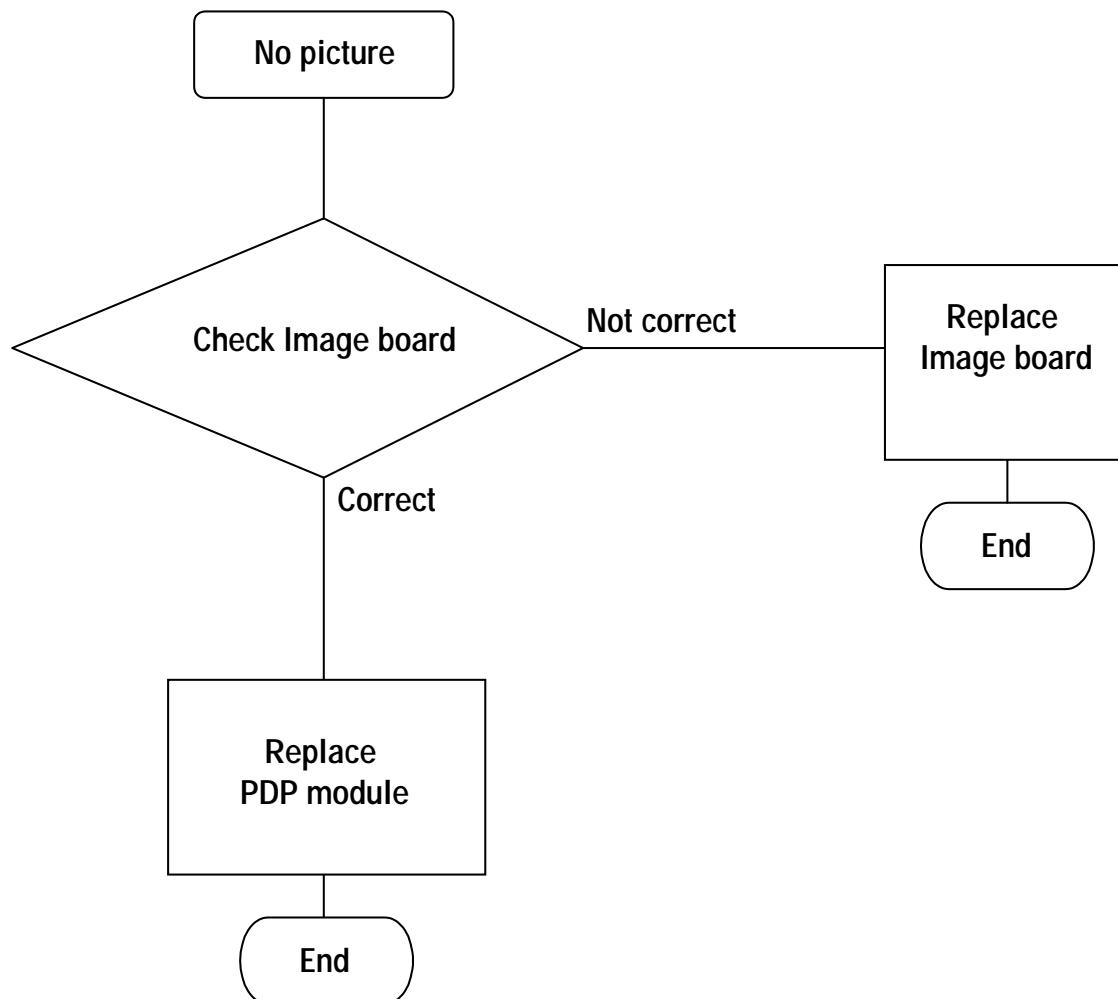
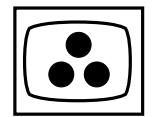
Fig. 10

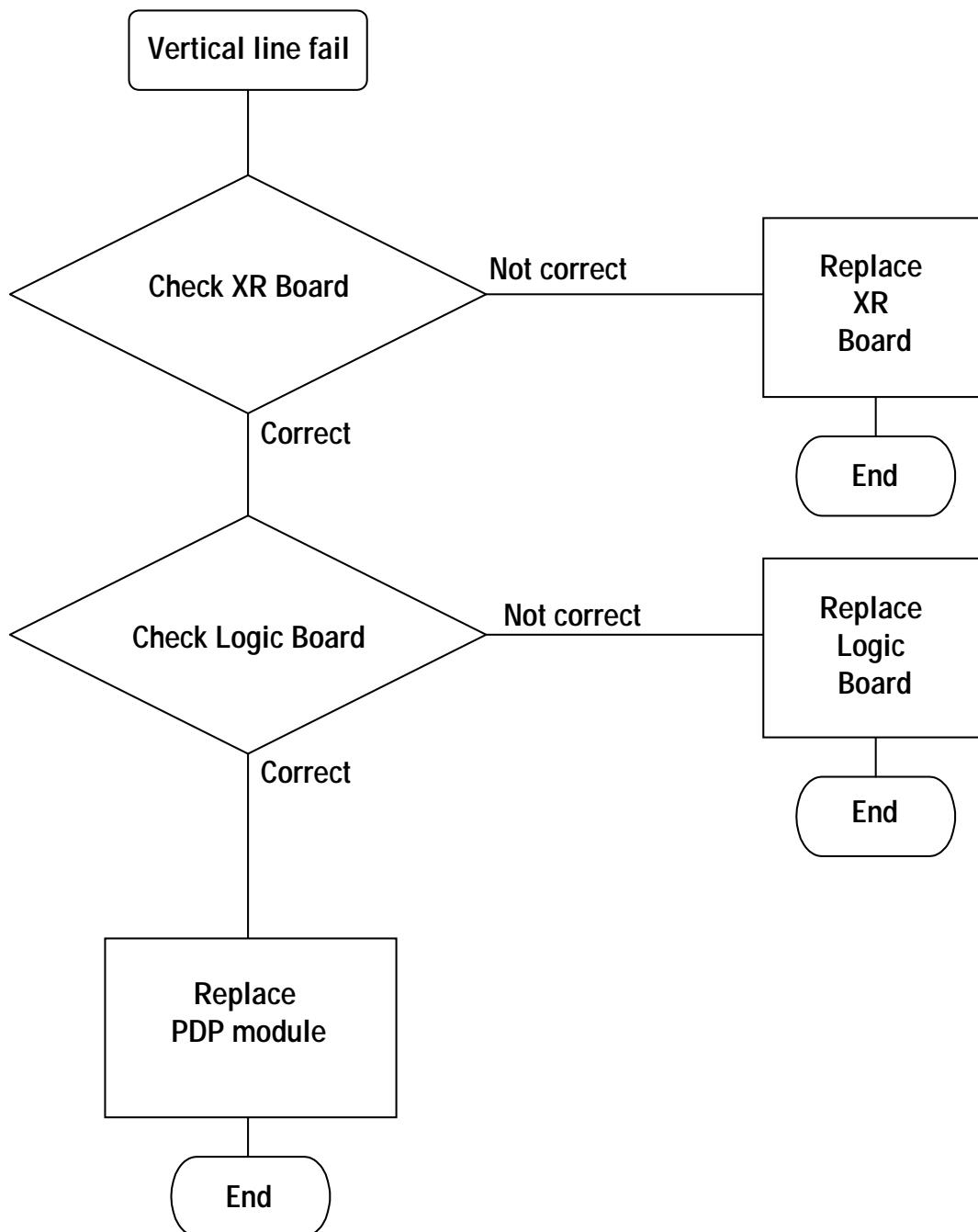
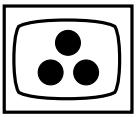
6. Proceed in reverse order to re-assemble

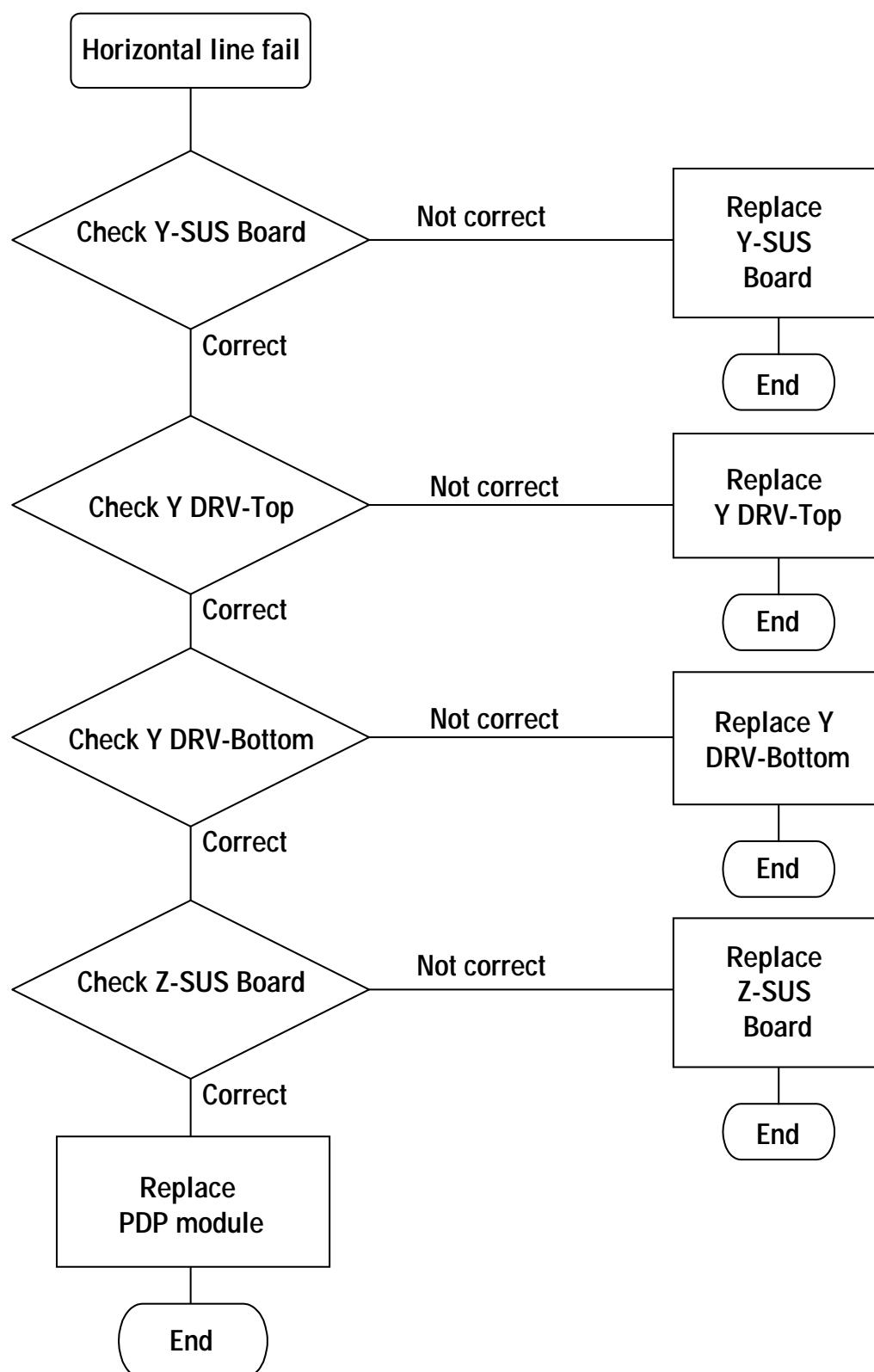
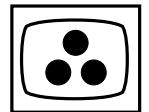


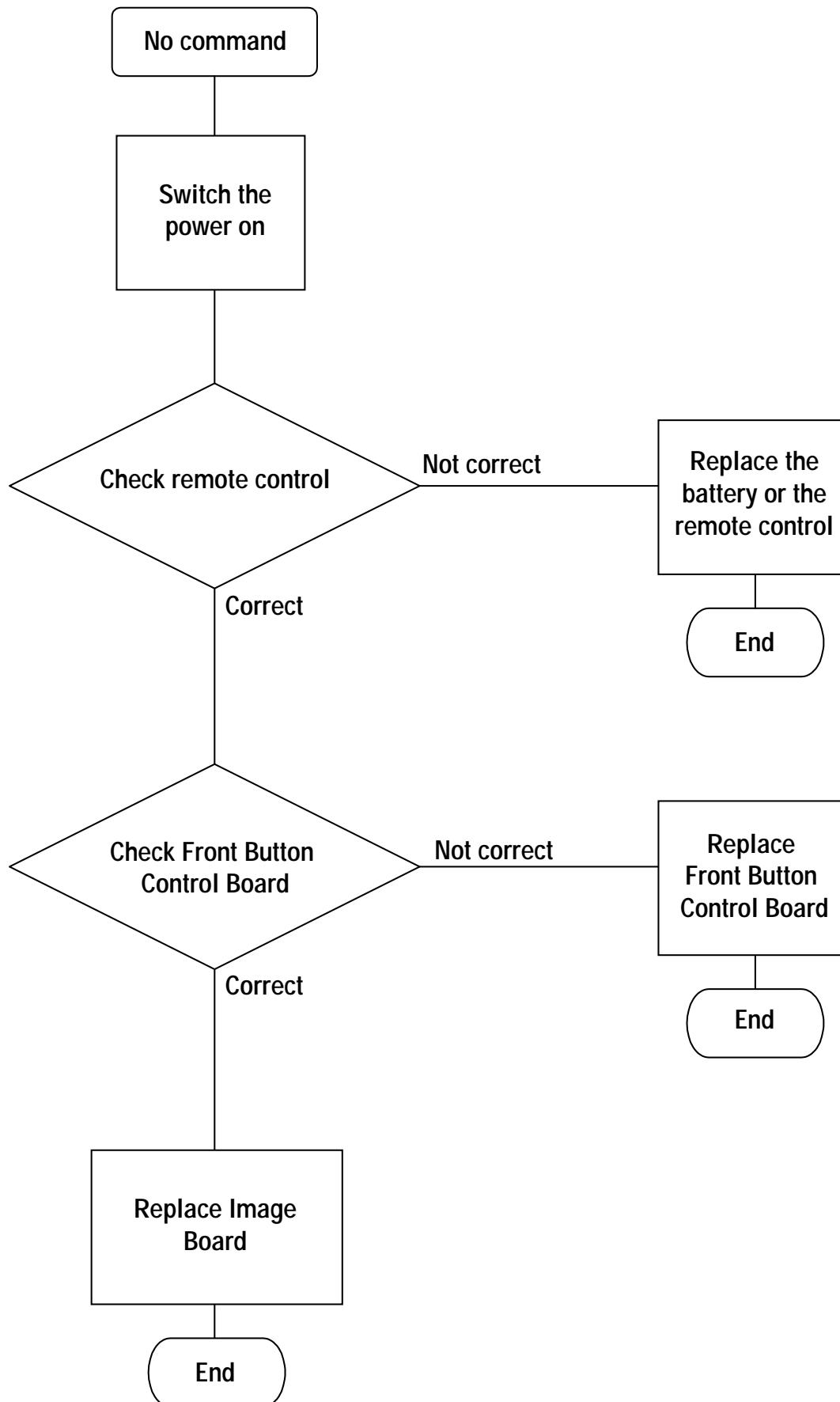
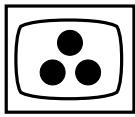
TROUBLESHOOTING

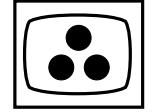








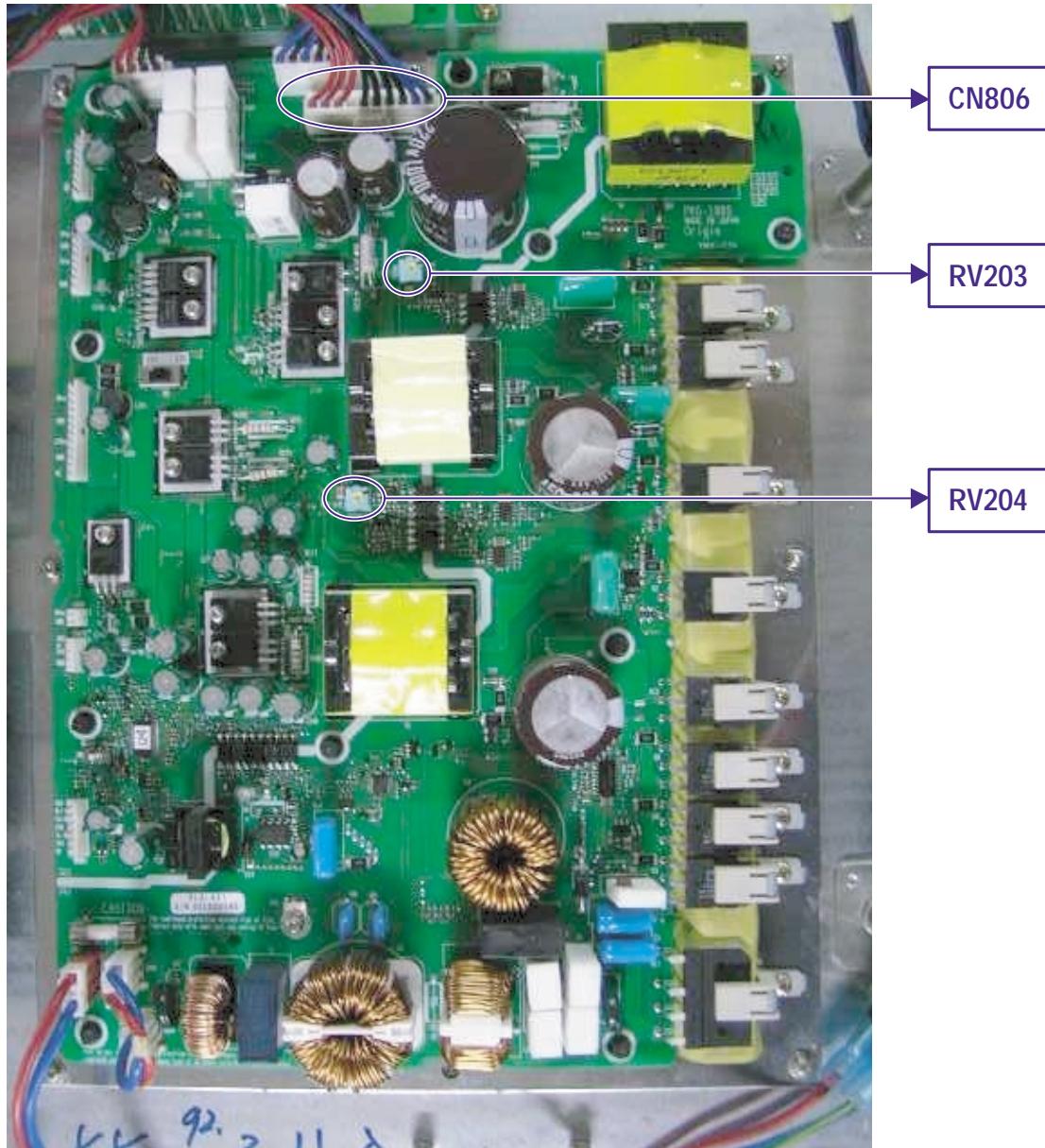




ADJUSTMENTS

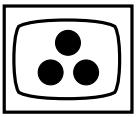
PANEL voltage adjustment

1.1 Origin Power (PLG-421)

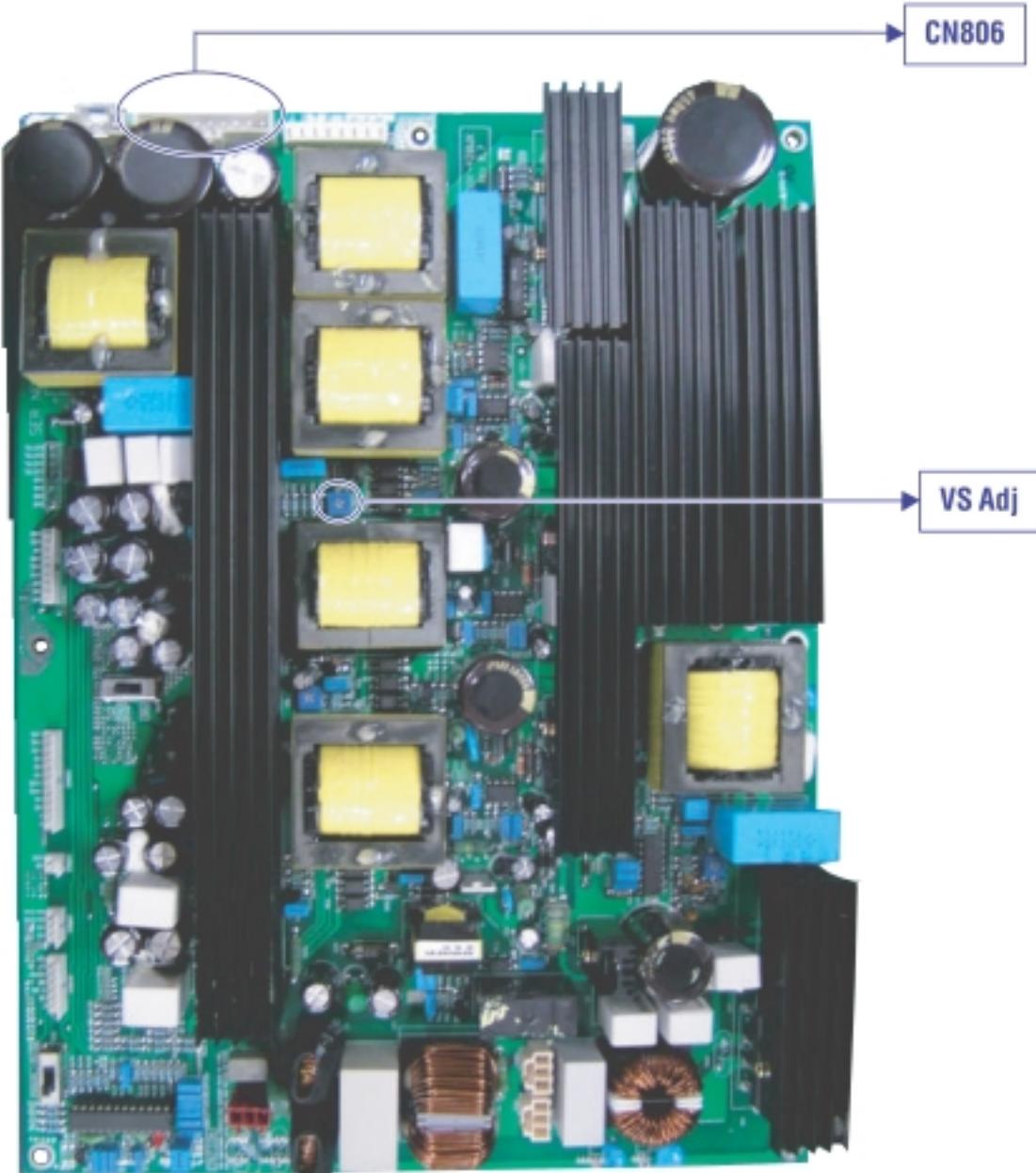


1. POWER ON
2. Signal Source: No (black screen).
3. Connect Digital Voltage Meter (-) to Panel GND. Connect Digital Voltage Meter (+) to Plug CN806 Pin#10 and adjust the VA (Variable Resistor RV204) value to the VA value recorded on the Panel Voltage Label $\pm 0.5\text{VDC}$ ($\text{VA} \pm 0.5\text{VDC}$ = value adjusted).
4. Connect Digital Voltage Meter (-) to Panel GND. Connect Digital Voltage Meter (+) to Plug CN806 Pin#1 and adjust the VS (Variable Resistor RV203) value to the VS value recorded on the Panel Voltage Label $\pm 0.5\text{VDC}$ ($\text{VS} \pm 0.5\text{VDC}$ = value adjusted).

Remark: The Panel Voltage Label is located at the upper-right corner of the panel.



1.2 Dae Gil Power (DGK-420W)



1. POWER ON

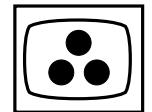
2. Signal Source: No (black screen).
3. Connect Digital Voltage Meter (-) to Panel GND. Connect Digital Voltage Meter (+) to Plug CN806 Pin#10 and adjust the VA (Variable Resistor) value to the VA value recorded on the Panel Voltage Label $\pm 0.5\text{VDC}$ ($\text{VA} \pm 0.5\text{VDC}$ = value adjusted).
4. Connect Digital Voltage Meter (-) to Panel GND. Connect Digital Voltage Meter (+) to Plug CN806 Pin#1 and adjust the VS (Variable Resistor) value to the VS value recorded on the Panel Voltage Label $\pm 0.5\text{VDC}$ ($\text{VS} \pm 0.5\text{VDC}$ = value adjusted).

Remark: The Panel Voltage Label is located at the upper-right corner of the panel.

Color Temperature Adjustment

1.1 Color Temperature setting in DVI Mode

1. Turn on PDP set and warm up for over 30 minutes.



2. Turn on Color Analyzer CA-100 and reset CA-100.
3. Switch PDP input signal source to DVI mode.
4. Set up Video Pattern Generator (Astro, Model= VG-828H).
Timing set = 640 x 480 @ 60Hz;
Video = Panel Link (the DVI output mode)
Connect PDP DVI input connector with Astro to receive DVI signal.

5. Dark level and bright level center block definition:

- A. Dark level center block definition:

[WINDOW]
Mode %
Format 1 Window
Flicker None
Size H/V 28.5/34.0 (%)
Analog R/G/B 25/25/25 (10 IRE white output pattern)

- B. Bright level center block definition:

[WINDOW]
Mode %
Format 1 Window
Flicker None
Size H/V 28.5/34.0 (%)
Analog R/G/B 153/153/153 (60 IRE white output pattern)

6. There are 2 different modes (DVI and RGB) color temperature setting; there are 3 different color temperatures (7180K, 8680K and 10180K) in each mode. Each color temperature needs to adjust dark level, bright level, and R, G, B.

The OSD menu for color temperature factory setting can be viewed by following the "Factory Setting Procedure".

Factory Setting Procedure:

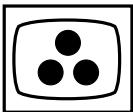
- A. Press (Zoom -) key for over 5 seconds and release.
- B. Press (Zoom+) key for over 5 seconds and release.
- C. Press "ok" key.
- D. Factory setting OSD menu shows up. The values shown up on the OSD menu are the factory default setting values.

The factory default setting values differ from each PDP panel module. The color temperature factory setting OSD menus are as the following:

A. 7180K										B. 8680K																					
D	V	I	-	C	T	:	7	1	8	0	°K	D	V	I	-	C	T	:	8	6	8	0	°K								
							[x	:	3	0	8					y	:	2	9	8]	[x	:	2	8	8		y	:	3	0	1]
G	A	I	N				B	I	A	S		G	A	I	N		B	I	A	S											
R	G		B				R	G		B		R	G		B		R	G		B											
XX	XX	XX		XX	XX		XX	XX	XX			XX	XX	XX		XX	XX	XX	XX	XX											

C. 10180K																					
D	V	I	-	C	T	:	1	0	1	8	0	°K									
							[x	:	2	7	0					y	:	2	9	2]	
G	A	I	N				B	I	A	S		G	A	I	N		B	I	A	S	
R	G		B				R	G		B		R	G		B		R	G		B	
XX	XX	XX		XX	XX		XX	XX	XX			XX	XX	XX		XX	XX	XX	XX	XX	

7. Put the color analyzer CA-100 in the center of the screen.



1.2 Adjusting procedure

1. Receive Astro VG-828H DVI dark level center block signal (10 IRE), follow the "Factory Setting Procedure" to go into factory setting mode and you will see the 7180K color temperature setting OSD menu.
2. 7180K dark level center block adjustment procedure:
 - A. Press (Zoom -) or (Zoom+) key in remote control to select G-BIAS, and adjust $Y=0.35 \text{ FL}\pm 0.1\text{FL}$
 - B. Press (Zoom -) or (Zoom+) key in remote control to select R-BIAS, and adjust $x=308\pm 15\text{FL}$
 - C. Press (Zoom -) or (Zoom+) key in remote control to select B-BIAS, and adjust $y=298\pm 15\text{FL}$
 - D. Adjust R/G/B-BIAS, make sure the final value $x=308\pm 15\text{FL}$, $y=298\pm 15\text{FL}$, $Y=0.35\text{FL}\pm 0.1\text{FL}$
3. 7180K bright level center block adjustment procedure:
(Please set Astro VG-828H DVI bright level center block signal to 60 IRE)
 - A. Press (Zoom -) or (Zoom+) key in remote control to select G-GAIN, and adjust $Y=40\pm 2\text{FL}$
 - B. Press (Zoom -) or (Zoom+) key in remote control to select R-GAIN, and adjust $x=308\pm 15\text{FL}$
 - C. Press (Zoom -) or (Zoom+) key in remote control to select B-GAIN, and adjust $y=298\pm 15\text{FL}$
 - D. Adjust R/G/B-GAIN, make sure the final value $x=308\pm 15\text{FL}$, $y=298\pm 15\text{FL}$, $Y=40\pm 2\text{FL}$.
 - E. Press (Zoom+) key in remote control to select GAIN Gamma, and then press (Zoom -) or (Zoom+) key to adjust to $Y=40$
 - F. Press (Zoom+) key in remote control to select BIAS Gamma, and then press (Zoom -) or (Zoom+) key to adjust to $Y=0.35$
4. When you want to go ahead for next color temperature setting, double check the Gamma values, make sure GAIN Gamma and BIAS Gamma values are correct, and then press the "ok" key in remote control. For each color temperature setting, please repeat the procedure (1)-(3). Only x and y value will change in different color temperature mode (in 8680K, $x=288$, $y=301$; in 10180K, $x=270$, $y=292$) and Y values are all the same in each color temperature mode (dark level $Y=0.35$, bright level $Y=40$).

2.1 Color Temperature setting in RGB Mode

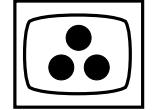
1. Turn on Color Analyzer CA-100 and reset CA-100.
2. Switch PDP input signal source to RGB mode.
3. Set up Video Pattern Generator (Astro, Model= VG-828H).
Timing set = 640 x 480 @ 60Hz;
Video = Analog (the RGB output mode)
Connect PDP RGB input connector with Astro to receive RGB signal.
4. Dark level and bright level center block definition:
 - A. Dark level center block definition:

[WINDOW]

Mode	%
Format	1 Window
Flicker	None
Size H/V	28.5/34.0 (%)
Analog R/G/B	25/25/25 (10 IRE white output pattern)
 - B. Bright level center block definition:

[WINDOW]

Mode	%
Format	1 Window
Flicker	None
Size H/V	28.5/34.0 (%)
Analog R/G/B	153/153/153 (60 IRE white output pattern)
5. There are 2 different modes (DVI and RGB) need color temperature setting; there are 3 different color temperatures (7180K, 8680K and 10180K) in each mode. Each color temperature needs to adjust dark level, bright level, and R, G, B. The OSD menu for color temperature factory setting can be viewed by following the "Factory Setting Procedure".



Factory Setting Procedure:

- A. Press (Zoom -) key for over 5 seconds and release.
- B. Press (Zoom+) key for over 5 seconds and release.
- C. Press "ok" key.
- D. Factory setting OSD menu shows up.

The values showed up on the OSD menu are the factory default setting values. The factory default setting values differ from each PDP panel module. The color temperature factory setting OSD menus are as the following:

A. 7180K									
R	G	B	-	C	T	:	7	1	8 0 °K
[x : 3 0 8				y :	2 9 8]				
G A I N				B I A S					
R G B				R G B					
xx xx Xx				xx xx xx					
				xx					

*Note: GAIN Gamma and BIAS Gamma have no function under RGB mode.

*Note: When adjusting the color temperature, please note what is the input source and what input the PDP is, the input source and the PDP input mode should be the same.

B. 8680K									
R	G	B	-	C	T	:	8	6	8 0 °K
[x : 2 8 8				y :	3 0 1]				
G A I N				B I A S					
R G B				R G B					
Xx xx Xx				xx xx xx					
				xx					

C. 10180K									
R	G	B	-	C	T	:	10	1	8 0 °K
[x : 2 7 0				y :	2 9 2]				
G A I N				B I A S					
R G B				R G B					
xx xx xx				x xx xx					
				xx					

(GAIN Gamma)

(BIAS Gamma)

6. Put the color analyzer CA-100 in the center of the screen.

2.2 Adjusting procedure:

1. Receive Astro VG-828H RGB dark level center block signal (10 IRE), follow the "Factory Setting Procedure" to go into factory setting mode and you will see the 7180K color temperature setting OSD menu.

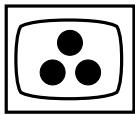
2. 7180K dark level center block adjustment procedure:

- A. Press (Zoom -) or (Zoom+) key in remote control to select G-BIAS, and adjust Y=0.35 FL±0.1FL
- B. Press (Zoom -) or (Zoom+) key in remote control to select R-BIAS, and adjust x=308±15FL
- C. Press (Zoom -) or (Zoom+) key in remote control to select B-BIAS, and adjust y=298±15FL
- D. Adjust R/G/B-BIAS, make sure the final value x=308±15FL, y=298±15FL, Y=0.35FL±0.1FL

3. 7180K bright level center block adjustment procedure:

- (Please set Astro VG-828H RGB bright level center block signal to 60 IRE)
- A. Press (Zoom -) or (Zoom+) key in remote control to select G-GAIN, and adjust Y=40±2FL
 - B. Press (Zoom -) or (Zoom+) key in remote control to select R-GAIN, and adjust x=308±15FL
 - C. Press (Zoom -) or (Zoom+) key in remote control to select B-GAIN, and adjust y=298±15FL
 - D. Adjust R/G/B-GAIN, make sure the final value x=308±15FL, y=298±15FL, Y=40±2FL.

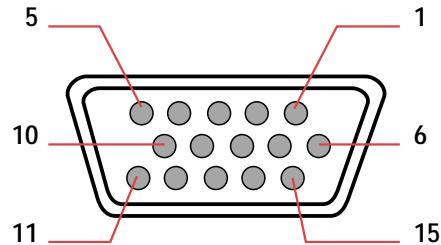
4. When you want to go ahead for next color temperature setting, double check the Gamma values, make sure GAIN Gamma and BIAS Gamma values are correct, and then press the "ok" key in remote control. For each color temperature setting, please repeat the procedure (1)-(3). Only x and y value will change in different color temperature mode (in 8680K, x=288, y=301; in 10180K, x=270, y=292) and Y values are all the same in each color temperature mode (dark level Y=0.35, bright level Y=40).



SPECIFICATIONS

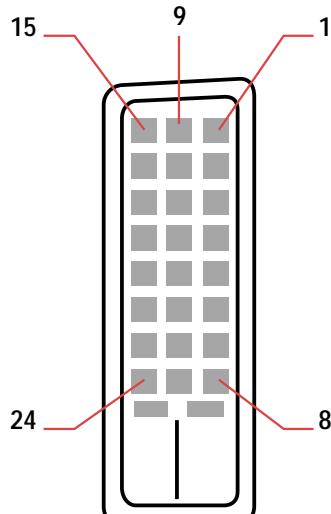
Pin assignments

D-SUB Connector

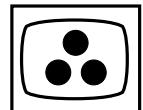


Pin	Signal	Pin	Signal	Pin	Signal
1	RED	6	RED GND	11	GND
2	GREEN	7	GREEN GND	12	SDA
3	BLUE	8	BLUE GND	13	H_SYNC
4	GND	9	NC	14	V_SYNC
5	GND	10	GND	15	SCL

DVI-Connector



Pin	Signal	Pin	Signal	Pin	Signal
1	TMDS Data 2-	9	TMDS Data 1-	17	TMDS Data 0-
2	TMDS Data 2+	10	TMDS Data 1+	18	TMDS Data 0+
3	TMDS Data 2/4Shield	11	TMDS Data 1/3 Shield	19	TMDS Data 0/5 Shield
4	TMDS Data 4-	12	TMDS Data 3-	20	TMDS Data 5-
5	TMDS Data 4+	13	TMDS Data 3+	21	TMDS Data 5+
6	DDC Clock	14	+5V Power	22	TMDS Clock Shield
7	DDC Data	15	GND (for +5V)	23	TMDS Clock+
8	NC	16	Hot Plug Detect	24	TMDS Clock-

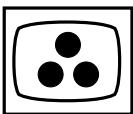


Mode list for RGB / DVI

Mode No	Resolution	Refresh Rate	Horizontal Frequency	Vertical Frequency	Vertical Sync Polarity	Horizontal Sync Polarity	Dot rate
		(Hz)	(K Hz)	(Hz)	(TTL)	(TTL)	(MHz)
1	640(VGA)x480	60	31.5	59.94	-	-	25.175
2	640(VGA)x480	72	37.9	72.81	-	-	31.500
3	640(VGA)x480	75	37.5	75	-	-	31.500
4	640(VGA)x480	85	43.3	85.01	-	-	36.000
5	800(SVGA)x600	56	35.1	56.25	+	+	36.000
6	800(SVGA)x600	60	37.9	60.317	+	+	40.000
7	800(SVGA)x600	72	48.1	72.19	+	+	50.000
8	800(SVGA)x600	75	46.9	75	+	+	49.500
9	800(SVGA)x600	85	53.7	85.06	+	+	56.250
10	1024(XGA)x768	60	48.4	60.01	-	-	65.000
11	1024(XGA)x768	70	56.5	70.07	-	-	75.000
12	1024(XGA)x768	75	60.0	75.03	+	+	78.750
13	1024(XGA)x768	85	68.7	84.99	+	+	94.500
14	1280(SXGA)x1024	60	63.98	60.02	+	+	108.00
15*	1280(SXGA)x1024	75	79.98	75.03	+	+	135.00
16*	1280(SXGA)x1024	85	91.15	85.02	+	+	157.50
18	720(DOS)x400	70	31.46	70.08	+	-	28.320
19	640(VGA)x480	50	31.5	50	-	-	25.175
20*	1280(HDTV)x720P	60	45.15	60	-	-	74.250
21*	1920(HDTV)x1080I	60(I)	33.75	60	-	-	74.250
22	640(VGA)x350	70	31.50	70	-	+	25.175
23	852(WGA)x480	60	31.413	59.835	-	-	30.00
24	640x480	67	35.00	66.67	-	-	30.240
25	832 x 624	75	49.73	74.55	-	-	57.283
26	1152 x 870	75	68.68	75.06	-	-	100.000

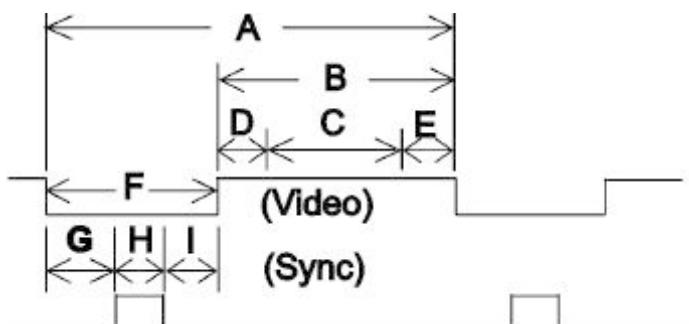
Note: 1. * : DVI is not supported.

2. Mode 24 to 26 are for use with Apple Macintosh computers.



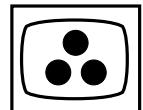
APPENDIX A :

Preset Timing Chart



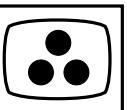
Item	Description:
A	Total time
B	Active display area including borders
C	Active display area excluding borders
D	Left/Top border
E	Right/bottom border
F	Blanking time
G	Front porch
H	Sync -width
I	Back porch

Mode No	1	2	3	4	5	6	7	8	9	
Resolution	640	640	640	640	800	800	800	800	800	
&	480	480	480	480	600	600	600	600	600	
Refresh Rate	60	72	75	85	56	60	72	75	85	Hz
Pixel	25.175	31.5	31.5	36	36	40	50	49.5	56.25	MHz
Horizontal visible	640	640	640	640	800	800	800	800	800	Dots
Horizontal total	800	832	840	832	1024	1056	1040	1056	1048	Dots
Horizontal front porch	16	24	16	56	24	40	56	16	32	Dots
Horizontal sync	96	40	64	56	72	128	120	80	64	Dots
Horizontal back porch	48	128	120	80	128	88	64	160	152	Dots
Horiz blanking time	160	192	200	192	224	256	240	256	248	Dots
Vertical visible	480	480	480	480	600	600	600	600	600	Lines
Vertical total	525	520	500	509	625	628	666	625	631	Lines
Vertical front porch	10	9	1	1	1	1	37	1	1	Lines
Vertical sync	2	3	3	3	2	4	6	3	3	Lines
Vertical back porch	33	28	16	25	22	23	23	21	27	Lines
Vertical blanking time	45	40	20	29	25	28	66	25	31	Lines
Horizontal frequency	31.469	37.9	37.5	43.3	35.1	37.9	48.1	46.9	53.7	KHz
Vertical frequency	59.94	72.81	75	85.01	56.25	60.317	72.19	75	85.06	Hz
Vertical sync polarity	-	-	-	-	+	+	+	+	+	TTL
Horiz sync polarity	-	-	-	-	+	+	+	+	+	TTL
Dot rate	25.175	31.5	31.5	36	36	40	50	49.5	56.25	MHz

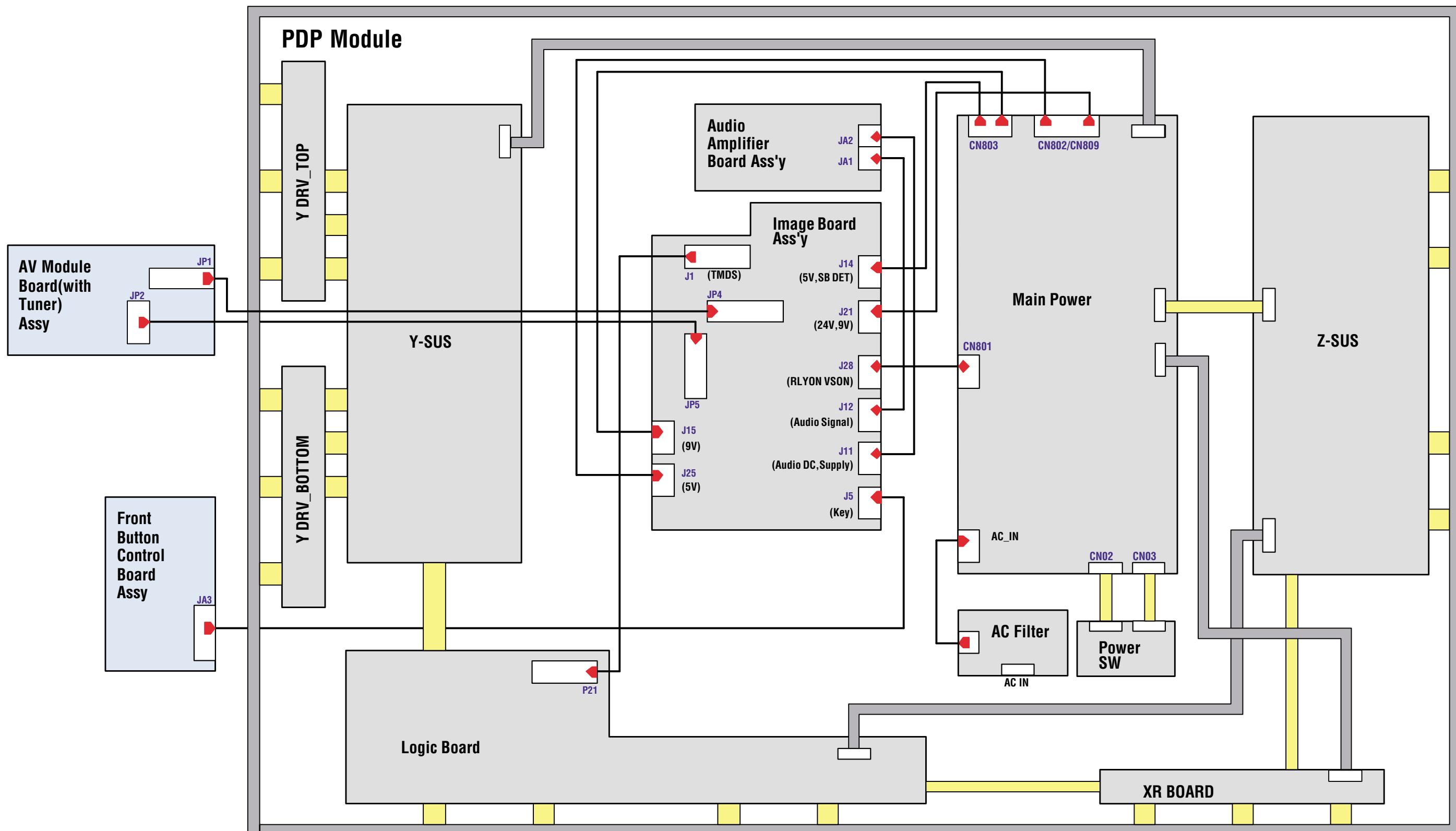


Mode No	10	11	12	13	14	15	16	18	19	
Resolution & Refresh Rate	1024 768 60	1024 768 70	1024 768 75	1024 768 85	1280 1024 60	1280 1024 75	1280 1024 85	720 400 70	640 480 50	Hz
Pixel	65	75	78.75	94.5	108	135	157.5	28.320	25.175	MHz
Horizontal visible	1024	1024	1024	1024	1280	1280	1280	720	640	Dots
Horizontal total	1344	1328	1312	1376	1688	1688	1728	900	800	Dots
Horizontal front porch	24	24	16	48	48	16	64	18	16	Dots
Horizontal sync	136	136	96	96	112	144	160	108	96	Dots
Horizontal back porch	160	144	176	208	248	248	224	54	48	Dots
Horiz blanking time	320	304	288	352	408	408	448	180	160	Dots
Vertical visible	768	768	768	768	1024	1024	1024	400	480	Lines
Vertical total	806	806	800	808	1066	1066	1072	449	629	Lines
Vertical front porch	3	3	1	1	1	1	1	12	62	Lines
Vertical sync	6	6	3	3	3	3	3	2	2	Lines
Vertical back porch	29	29	28	36	38	38	44	35	85	Lines
Vertical blanking time	38	38	32	40	42	42	48	49	149	Lines
Horizontal frequency	48.4	56.5	60	68.7	63.98	79.98	91.15	31.46	31.5	KHz
Vertical frequency	60.01	70.07	75.03	84.99	60.02	75.03	85.02	70.08	50	Hz
Vertical sync polarity	-	-	+	+	+	+	+	+	-	TTL
Horiz sync polarity	-	-	+	+	+	+	+	-	-	TTL
Dot rate	65	75	78.75	94.5	108	135	157.5	28.32	25.175	MHz

Mode No	20	21	22	23	24	25	26			
Resolution & Refresh Rate	1280 720P 60	1920 1080I 60I	640 350 70	852 480 60	640 480 67	832 624 75	1152 870 75			Hz
Pixel	74.250	74.25	25.175	30	30.240	57.283	100.000			MHz
Horizontal visible	1280	1920	640	852	640	832	1152			Dots
Horizontal total	1650	2200	800	955	864	1152	1456			Dots
Horizontal front porch	70	44	16	19	64	32	32			Dots
Horizontal sync	40	44	96	48	64	64	128			Dots
Horizontal back porch	260	192	48	36	96	224	144			Dots
Horiz blanking time	370	280	160	103	224	320	304			Dots
Vertical visible	720	540	350	480	480	624	870			Lines
Vertical total	750	562.5	449	525	525	667	915			Lines
Vertical front porch	5	3	37	10	3	1	3			Lines
Vertical sync	5	2	2	2	3	3	3			Lines
Vertical back porch	20	18	60	33	39	39	39			Lines
Vertical blanking time	30	23	99	45	45	43	45			Lines
Horizontal frequency	45.00	33.75	31.50	31.413	35	49.73	68.68			KHz
Vertical frequency	60	60	70	59.835	66.67	74.55	75.06			Hz
Vertical sync polarity	-	-	-	-	-	-	-			TTL
Horiz sync polarity	-	-	+	-	-	-	-			TTL
Dot rate	74.25	74.25	25.175	30	30.240	57.283	100.000			MHz



WIRING DIAGRAM



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