

1. Alignment procedure (for function adjustment)

A. Preparation:

1. Setup input timing ICL-605, 32-Grays pattern.
2. Setup unit and keep it warm up at least 30 minutes.

B. Timing adjustment:

1. Enter factory setting area (press “ENTER”, “EXIT” and then press “SOFTPOWER”).
2. The timing from Table 1. have to be adjusted.
3. Check the settings to following values:

Contrast = 50
 Brightness = 90
 OSD time = 20
 Color = sRGB
 Language = English

Then, turn off the monitor power.

4. Turn on power enter user area.

Incoming display mode (Input timing)				
Resolution	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Dot Clock Frequency (MHz)	Remark
720x400	31.47(N)	70.08(P)	28.32	DOS
800x600	46.86(P)	75.00(P)	49.50	VESA
1024x768	48.36(N)	60.00(N)	65.00	VESA
1024x768	60.02(P)	75.00(P)	78.75	VESA
1152x870	68.68(N)	75.06(N)	100.00	
1152x900	71.81(N)	76.14(N)	108.00	
1280x1024	80.00(P)	75.00(P)	135.00	VESA
1280x1024	81.18(N)	76.16(N)	135.09	SUN

Table 1.

C. Color balance adjustment:

1. Enter factory setting area (press “ENTER”, “EXIT” and then press “SOFTPOWER”).
2. Setup input timing UVGA7 (1024*768 /75Hz), 5-MOSAIC pattern (pattern 42).
3. Press ”AUTO” key to enter “White Balance” and “Burn In Mode” window.
4. Press “White Balance” to calibrate ADC.
5. Setup input timing ICL-605, 32 -Gray pattern.
6. Checking if the picture is no good, reject this monitor.

D. Color adjustment:

1. Setup input timing ICL-605, white pattern.
2. Measure color temperature by Minolta CA-110 (or equivalent equipment).
3. Alignment the color temperature Bluish, Reddish & sRGB. The color temperature specification as follows:

White Balance (Bluish, 9300K set on OSD)	X+-	0.283 +/- 0.03
	Y+-	0.297 +/- 0.03
White Balance (Reddish, 5800K set on OSD)	X+-	0.326 +/- 0.03
	Y+-	0.342 +/- 0.03
White Balance (sRGB, 6500K set on OSD)	X+-	0.313 +/- 0.03
	Y+-	0.329 +/- 0.03

- Turns off the monitor power.

E. Writing EDID file:

- Setup a PC with DDC card.
- Connect PC to monitor with a D-sub signal cable.
- Please refer to the C212 for the correct EDID file.
- Runs the writing program to write the EDID file into EEPROM for analog input, ie. 15-pin D-sub.
- Read both EEPROM data and confirm it to match with the C212 document definition.
- Connect PC to monitor with a DVI-D signal cable.
- Please refer to the C212 for the correct EDID file.
- Runs the writing program to write the EDID file into EEPROM for DVI input, ie. 24-pin DVI-D.
- Read both EEPROM data and confirm it to match with the C212 document definition.

F. Command definition:

PC Host will send 0x7C IIC slave address and then following 4 bytes command

I2C Send Command	Byte1	Byte2	Byte3	Byte4
Write Contrast	CA	55	Data	checksum
Write Brightness	CA	56	Data	checksum
Write Red Gain	CA	57	Data	checksum
Write Green Gain	CA	58	Data	checksum
Write Blue Gain	CA	59	Data	checksum
Read Contrast	C3	55	XX	checksum
Read Brightness	C3	56	XX	checksum
Read Red Gain	C3	57	XX	checksum
Read Green Gain	C3	58	XX	checksum
Read Blue Gain	C3	59	XX	checksum
Write C1 (Bluish) R-Gain Data to NVRAM	AA	3C	Data	checksum
Write C1 (Bluish) G-Gain Data to NVRAM	AA	3D	Data	checksum
Write C1 (Bluish) B-Gain Data to NVRAM	AA	3E	Data	checksum
Write C2 (sRGB) R-Gain Data to NVRAM	AA	4C	Data	checksum
Write C2 (sRGB) G-Gain Data to NVRAM	AA	4D	Data	checksum
Write C2 (sRGB) B-Gain Data to NVRAM	AA	4E	Data	checksum
Write C3 (Reddish) R-Gain Data to NVRAM	AA	5C	Data	checksum
Write C3 (Reddish) G-Gain Data to NVRAM	AA	5D	Data	checksum
Write C3 (Reddish) B-Gain Data to NVRAM	AA	5E	Data	checksum

Write User R-Gain Data to NVRAM	AA	6C	Data	checksum
Write User G-Gain Data to NVRAM	AA	6D	Data	checksum
Write User B-Gain Data to NVRAM	AA	6E	Data	checksum
Read C1 (Bluish) R-Gain data from NVRAM	A3	3C	XX	checksum
Read C1 (Bluish) G-Gain data from NVRAM	A3	3D	XX	checksum
Read C1 (Bluish) B-Gain data from NVRAM	A3	3E	XX	checksum
Read C2 (sRGB) R-Gain data from NVRAM	A3	4C	XX	checksum
Read C2 (sRGB) G-Gain data from NVRAM	A3	4D	XX	checksum
Read C2 (sRGB) B-Gain data from NVRAM	A3	4E	XX	checksum
Read C3 (Reddish) R-Gain data from NVRAM	A3	5C	XX	checksum
Read C3 (Reddish) G-Gain data from NVRAM	A3	5D	XX	checksum
Read C3 (Reddish) B-Gain data from NVRAM	A3	5E	XX	checksum
Read User R-Gain data from NVRAM	A3	6C	XX	checksum
Read User G-Gain data from NVRAM	A3	6D	XX	checksum
Read User B-Gain data from NVRAM	A3	6E	XX	checksum
Change Color Temperature to C1 (Bluish)	CC	1	XX	checksum
Change Color Temperature to C2 (sRGB)	CC	2	XX	checksum
Change Color Temperature to C3 (Reddish)	CC	3	XX	checksum
Change Color Temperature to User	CC	4	XX	checksum
User mode to factory mode	1A	5A	XX	checksum
Auto Color (Offset1, Offset2, Gain)	1B	5A	XX	checksum
Factory mode to User mode	1E	5A	XX	checksum
Clear user area data	1F	5A	XX	checksum
On burn in mode	CE	1	XX	checksum
Off burn in mode	CE	XX*	XX	checksum
Change Language Setting	66	0~7	XX	checksum

*: Any value except 1 can off burn-in mode

Read EEPROM Bank-0	B0	Address	XX	checksum
Read EEPROM Bank-1	B1	Address	XX	checksum
Read EEPROM Bank-2	B2	Address	XX	checksum
Read EEPROM Bank-3	B3	Address	XX	checksum
Read EEPROM Bank-4	B4	Address	XX	checksum
Read EEPROM Bank-5	B5	Address	XX	checksum
Read EEPROM Bank-6	B6	Address	XX	checksum
Read EEPROM Bank-7	B7	Address	XX	checksum
Write EEPROM Bank-0	B8	Address	Data	checksum
Write EEPROM Bank-1	B9	Address	Data	checksum
Write EEPROM Bank-2	BA	Address	Data	checksum
Write EEPROM Bank-3	BB	Address	Data	checksum

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Alignment Procedure

Write EEPROM Bank-4	BC	Address	Data	checksum
Write EEPROM Bank-5	BD	Address	Data	checksum
Write EEPROM Bank-6	BE	Address	Data	checksum
Write EEPROM Bank-7	BF	Address	Data	checksum

Note A: Byte 4(Checksum) = Byte1 + Byte2 + Byte3

Note B: Data = The value write to MCU

Note C: XX = don't care, any value (<=0xFF).

Note D: The Byte-2 definition of "Change Language Setting" is as below,

0=DE, 1=EN, 2=ES, 3=FR, 4=IT, 5=JA, 6=繁中, 7=簡中

When PC Host sends 0x7D command to MCU, MCU must return as following (2 bytes)

Return Code	R-Byte1	R-Byte2
Checksum error code	FC	AA
Normal return code	the above Byte3 (/data)	FC
If normal return code is exact FCh	FC	CF

The Table is for alignment machine to read data from EEPROM to check if the alignment process and write data are correct.

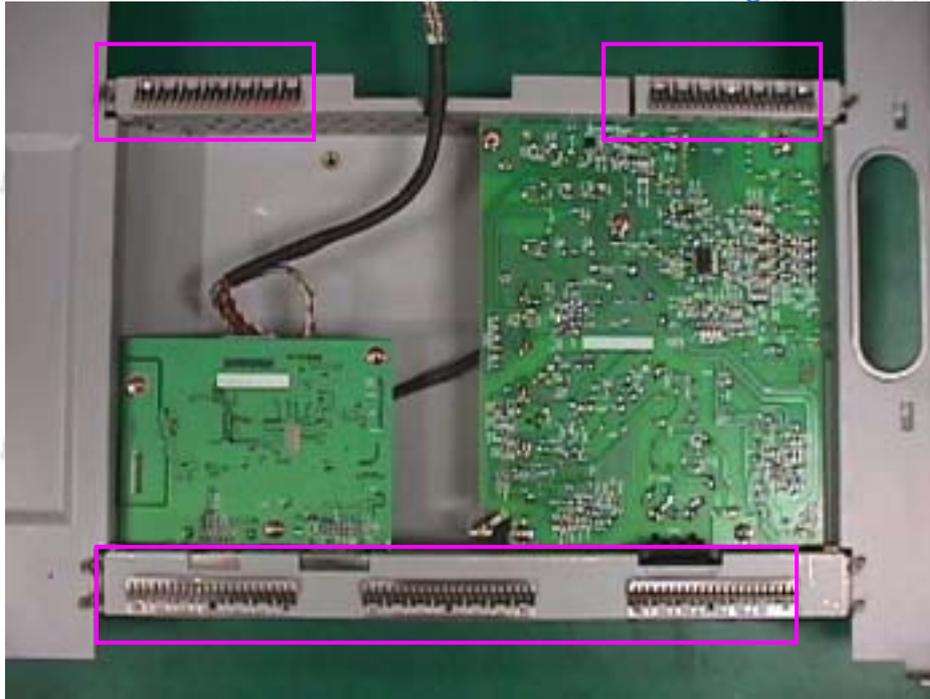
Read EEPROM Contrast	A3	92	XX	checksum
Read EEPROM Brightness	A3	93	XX	checksum
Read EEPROM C/T Point	A3	94	XX	checksum
Read EEPROM OSD-Hpos	A3	95	XX	checksum
Read EEPROM OSD-Vpos	A3	96	XX	checksum
Read EEPROM Language	A3	97	XX	checksum
Read EEPROM OSD Timer	A3	98	XX	checksum
Read EEPROM Volume	A3	99	XX	checksum

Additional define for OEM model, for reference only.

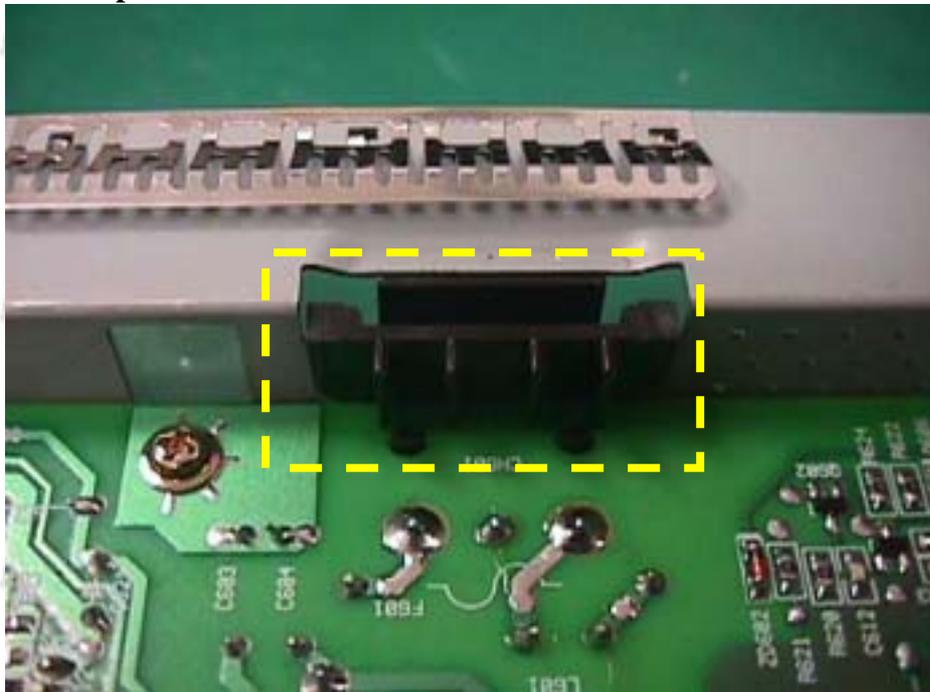
Write sRGB Contrast	CA	53	Data	checksum
Write sRGB Brightness	CA	54	Data	checksum
Write Serial number byte 0~9	AA	0~9	XX	checksum
Read Serial number byte 0~9	A3	0~9	XX	checksum

2. Dressing

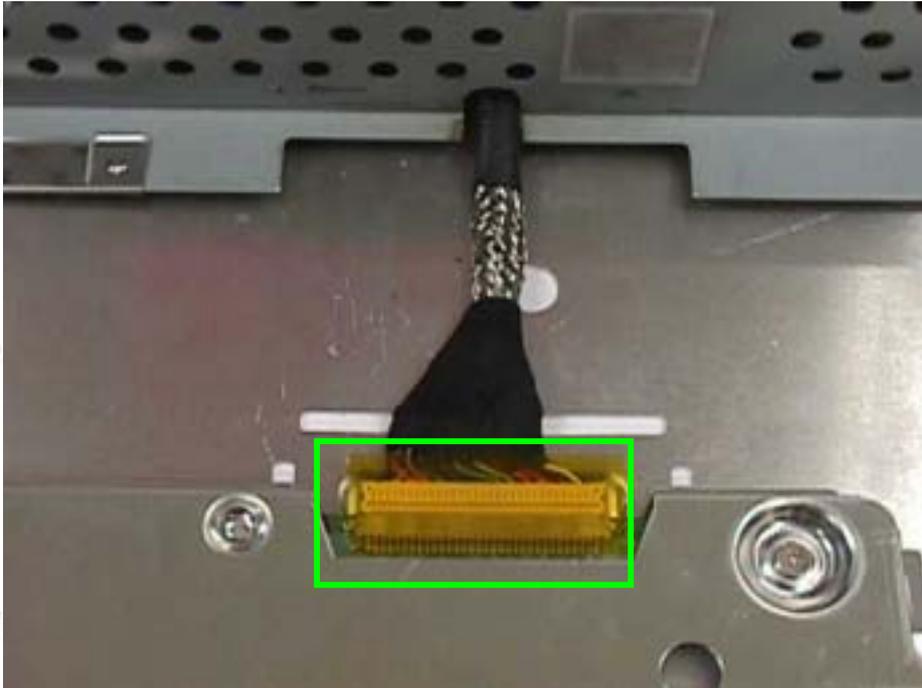
A. Attach 5 springs on main bracket:



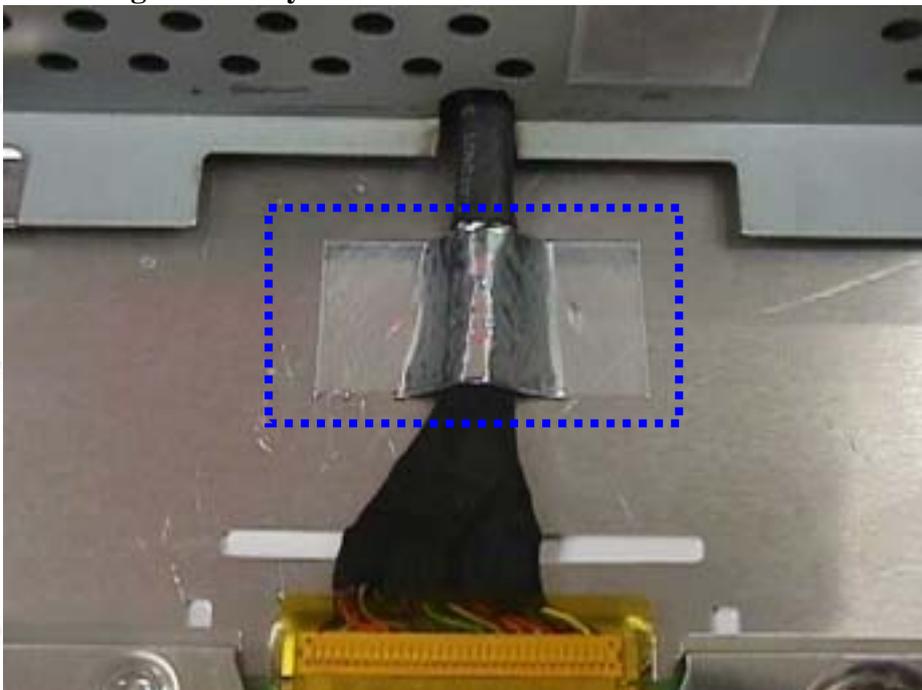
B. Block a holder to fix power board:



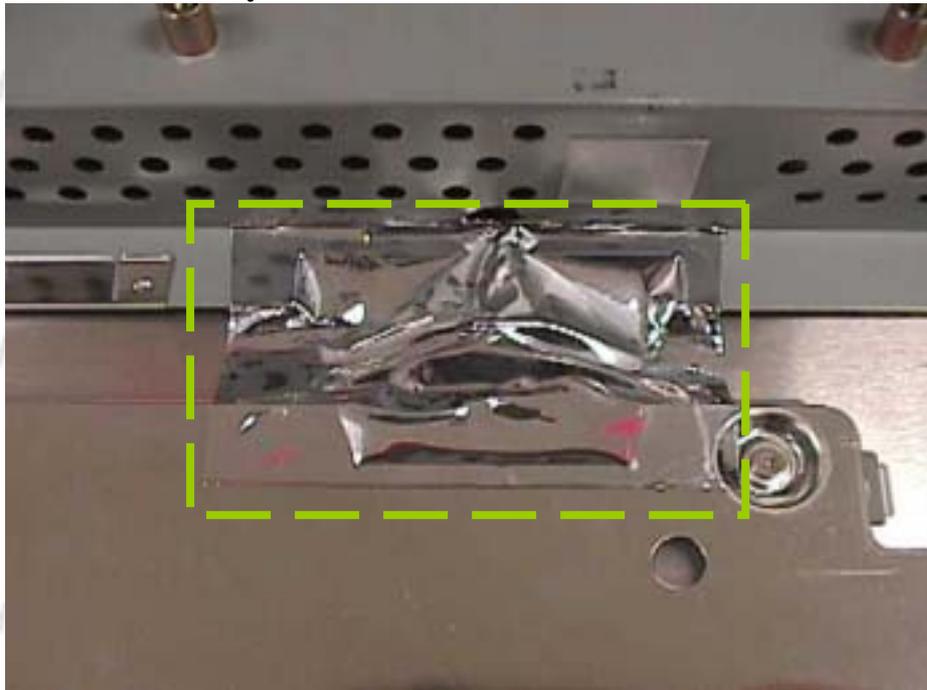
C. Cable-head fixation by yellow tap:



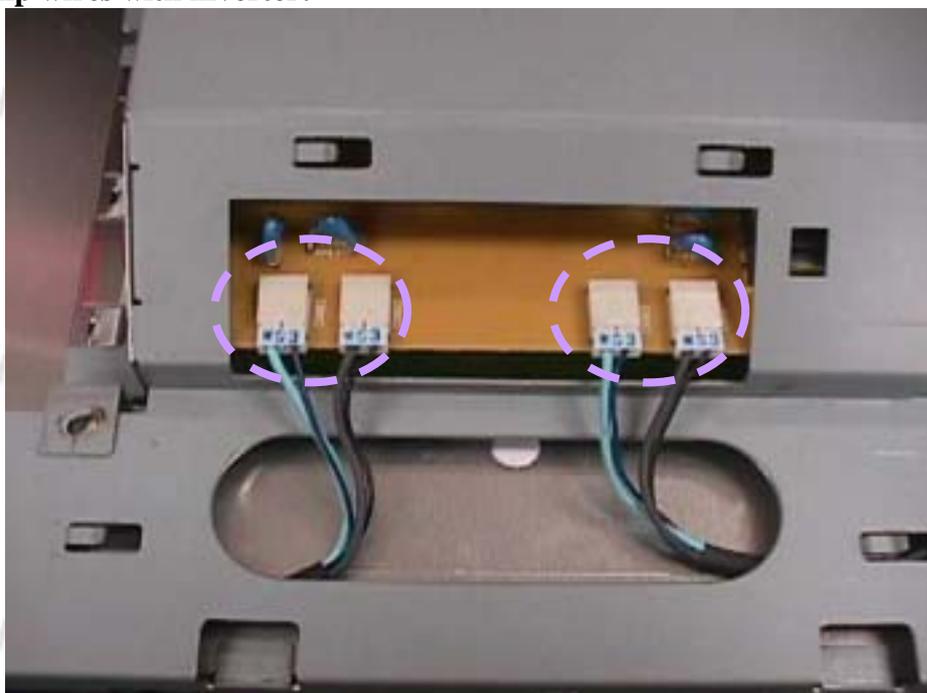
D. LVDS cable shielding to GND by 20*40cm aluminum foil:



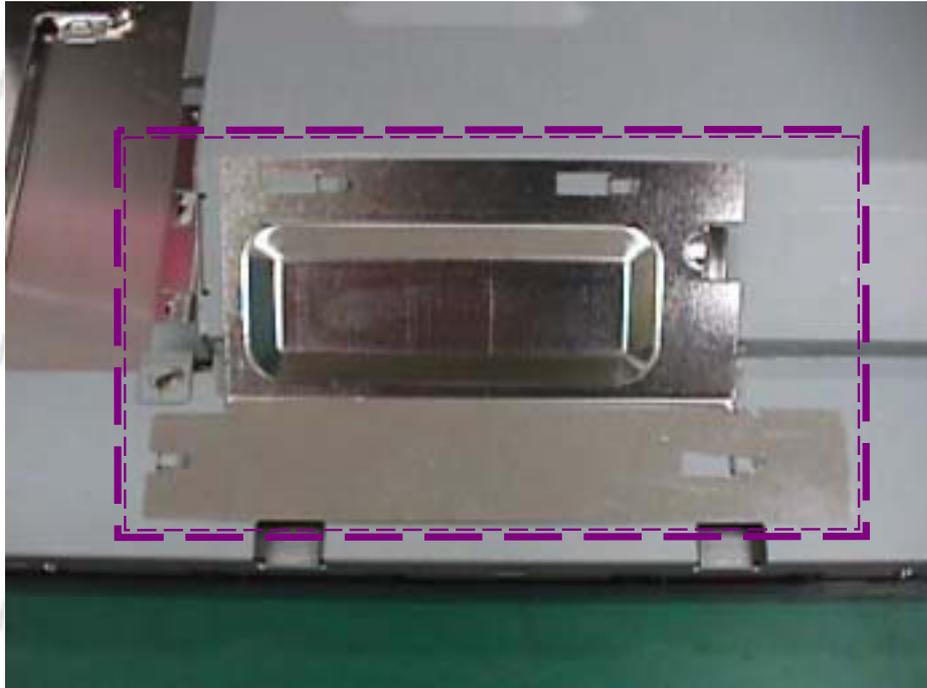
E. Shielding LVDS cable-head by 50*80cm aluminum foil:



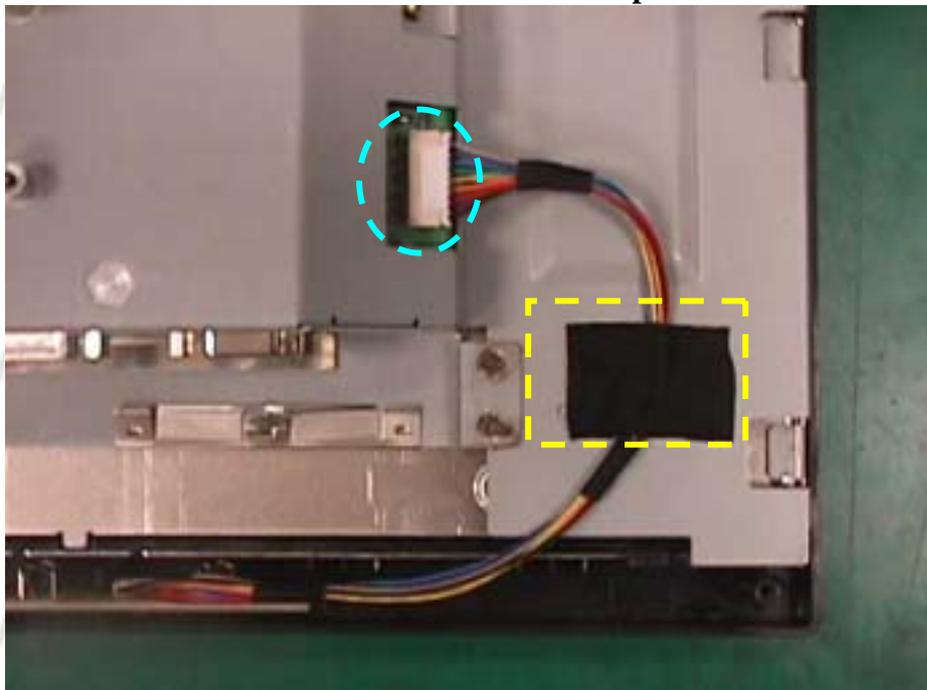
F. Connect lamp wires with inverter:



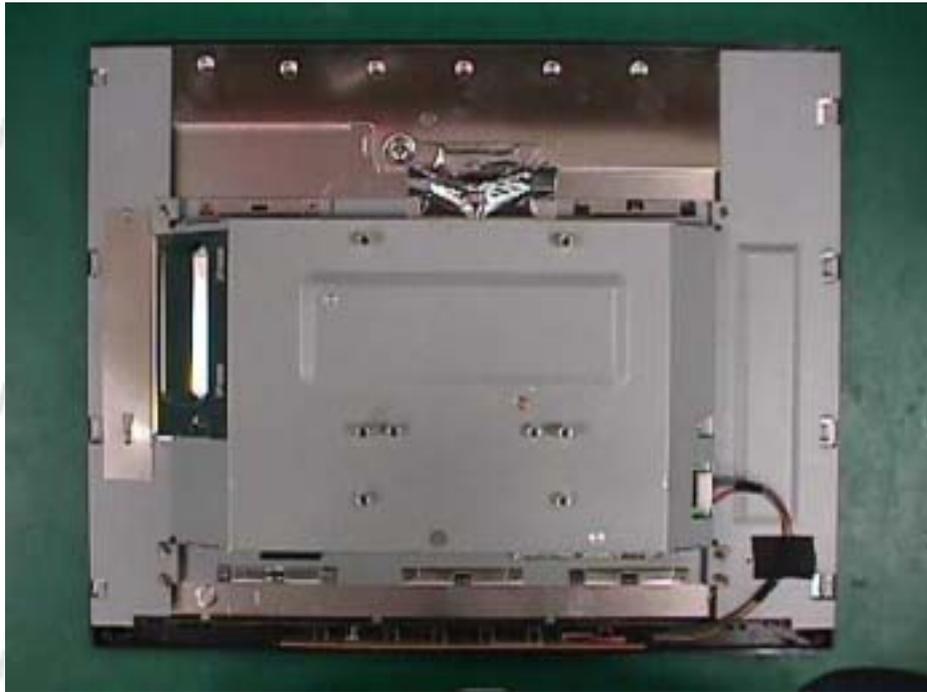
G. Lamp wire cover:



H. Connect control board wire with interface board and tap the wire:



I. Overall view:



**3. Add glue point
C605**

