

### 1.Alignment procedure (for function adjustment)

#### A. Preparation:

1. Setup input timing VGA\_60Hz, Cross-Hatch (General-1) pattern.
2. The monitor power on at first time that will enter Factory OSD mode. (If not, Please press “Menu” and “Exit” plus “Power” buttons at the same time. A “Factory” word will be showed on the upper left hand side of OSD Main menu.) Burn in mode have already started. (See Fig 1.). If it hasn’t started, Please choose “BURN IN MODE” tag and select “On” to enable burn-in mode.
3. Setup unit and keep it warm up at least 30 minutes

#### B. Timing adjustment:

1. Enter factory setting area (if it isn’t at factory mode, Please press “Menu” and “Exit” plus “Power” buttons at the same time to enter factory mode.).
2. Burn-In Mode “off”. See Fig 2.
3. Select timing from Table 1. The timing marked with star sign (\*) have to be adjusted.
4. Execute “Recall All” (press “Yes”) to clear user area in EEPROM
5. The cursor moves to “AUTO Adjust ” or press “I-Key” to run “AUTO adjustment” function.
6. Check the phase of the image; if phase is not perfect adjust it to the best condition.
7. Adjust the settings to following values:  
CONTRAST = 50  
BRIGHTNESS = 90  
OSD TIME = 20  
COLOR = sRGB
8. When Factory mode is disable (burn-in mode “off”) then power off after power on will enter user mode.

#### C. Color balance adjustment:

1. Setup input timing VGA\_60Hz, cross-hatch (General-1) pattern.
2. Enter factory setting area (if it isn’t at factory mode, Please press “Menu” and “Exit” plus “Power” buttons at the same time to enter factory mode.).
3. Setup the “Burn-in mode” is “On”
4. Select the color to user-preset mode.
5. At Main menu move cursor to “AUTO Adjust ” tag then press the “ENTER” or “I-Key” to run “AUTO Color balance” function.
6. Checking if the picture is no good, reject this monitor.

#### D. Color adjustment:

1. Setup input timing VGA\_60Hz, cross-hatch (General-1) pattern.
2. Enter factory setting area (if it isn’t at factory mode, Please press “Menu” and “Exit” plus “Power” buttons at the same time to enter factory mode.).
3. Move cursor into “BUR-IN MODE” tag and select “On” to enable burn-in mode. (If it wants to do “Auto Color balance”, please select the color to user-preset mode.)
4. Measure color temperature by Minolta CA-110 (or equivalent equipment).
5. The monitor has already set default value to monitor (just for 56.91L53.001)  
If it can’t meet color temperature spec. upper default value. Please use Auto Alignment to calibrate the color temperature; Bluish, & Reddish and sRGB. The color temperature specification as follows:

White Balance (Reddish, 5800K set on OSD)	X+-	0.326+(-) 0.03	220 cd/m <sup>2</sup>
	Y+-	0.342+(-) 0.03	
White Balance (sRGB, 6500K set on OSD)	X+-	0.313+(-) 0.03	220 cd/m <sup>2</sup>
	Y+-	0.329+(-) 0.03	
White Balance (Bluish, 9300K set on OSD)	X+-	0.283+(-) 0.03	190 cd/m <sup>2</sup>
	Y+-	0.297+(-) 0.03	

6. Move cursor into “BURN IN MODE” tag and select “Off” to disable burn-in mode.
7. Turns off the monitor power.

### E. Writing EDID file :

1. Setup a PC with DDC card.
2. Connect PC to monitor with a D-sub signal cable.
3. Please refer to the C212 for the correct EDID file.
4. Runs the writing program to write the EDID file into EEPROM for analog input, ie. 15-pin D-sub.
5. Read both EEPROM data and confirm it to match with the C212 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 Bluish(9300K) R-Gain Data to NVRAM	AA	3C	Data	checksum
Write Bluish(9300K) G-Gain Data to NVRAM	AA	3D	Data	checksum
Write Bluish(9300K) B-Gain Data to NVRAM	AA	3E	Data	checksum
Write sRGB(6500K) R-Gain Data to NVRAM	AA	4C	Data	checksum
Write sRGB(6500K) G-Gain Data to NVRAM	AA	4D	Data	checksum
Write sRGB(6500K) B-Gain Data to NVRAM	AA	4E	Data	checksum
Write Reddish(5800K) R-Gain Data to NVRAM	AA	5C	Data	checksum
Write Reddish(5800K) G-Gain Data to NVRAM	AA	5D	Data	checksum

Write Reddish(5800K) 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 Bluish(9300K) R-Gain data from NVRAM	A3	3C	XX	checksum
Read Bluish(9300K) G-Gain data from NVRAM	A3	3D	XX	checksum
Read Bluish(9300K) B-Gain data from NVRAM	A3	3E	XX	checksum
Read sRGB(6500K) R-Gain data from NVRAM	A3	4C	XX	checksum
Read sRGB(6500K) G-Gain data from NVRAM	A3	4D	XX	checksum
Read sRGB(6500K) B-Gain data from NVRAM	A3	4E	XX	checksum
Read Reddish(5800K) R-Gain data from NVRAM	A3	5C	XX	checksum
Read Reddish(5800K) G-Gain data from NVRAM	A3	5D	XX	checksum
Read Reddish(5800K) 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 Bluish	CC	1	XX	checksum
Change Color Temperature to sRGB	CC	2	XX	checksum
Change Color Temperature to Reddish	CC	3	XX	checksum
Change C/T 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
Off burn in mode	CE	2	XX	checksum
Change Language Setting	66	0~7	XX	checksum

Note A: Byte4(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

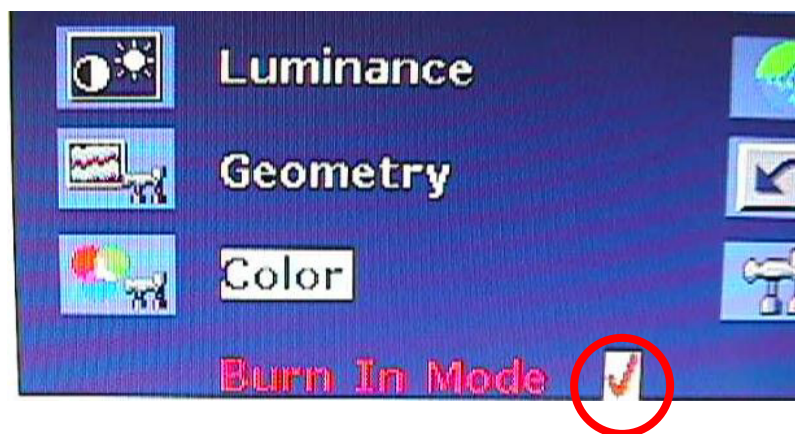
The Table is for alignment machine to read data from EEPROM to check if the alignment process and write data are correct.

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

**Table 1.**

Incoming display mode (Input timing)					Multi-scan operation
Resolution	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Dot Clock Frequency (MHz)	Remark	Actual display resolution
*720x400	31.47(N)	70.08(P)	28.32	DOS	Full Screen 1024x768
*640x480	31.47(N)	60.00(N)	25.18	DOS	
*640x480	37.50(N)	75.00(N)	31.5	VESA	
*800x600	37.88(P)	60.31(P)	40.00	VESA	
*800x600	46.87(P)	75.00(P)	49.5	VESA	
*1024x768	48.36(N)	60.00(N)	65.00	VESA	
*1024x768	60.02(P)	75.00(P)	78.75	VESA	
*1152x864	67.50(P)	75.00(P)	108.00	VESA	
*1280x1024	64.00(P)	60.00(P)	108.00	VESA	
*1280x1024	80.00(P)	75.00(P)	135.00	VESA	

**Table 2**



**Fig 1. Burn-In Mode “On”**

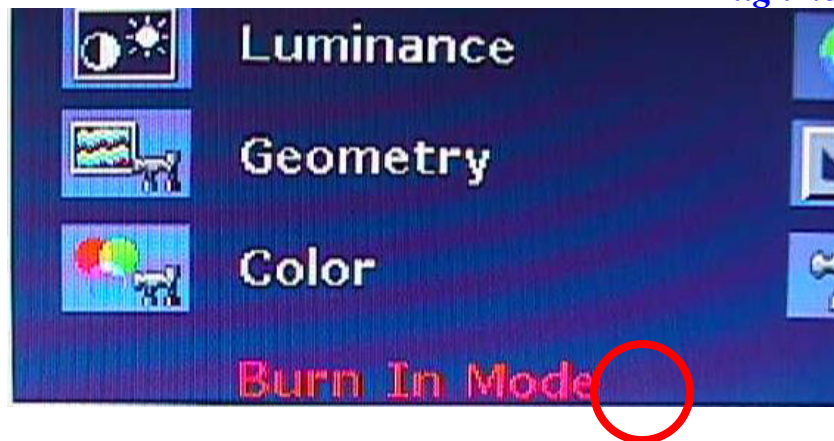
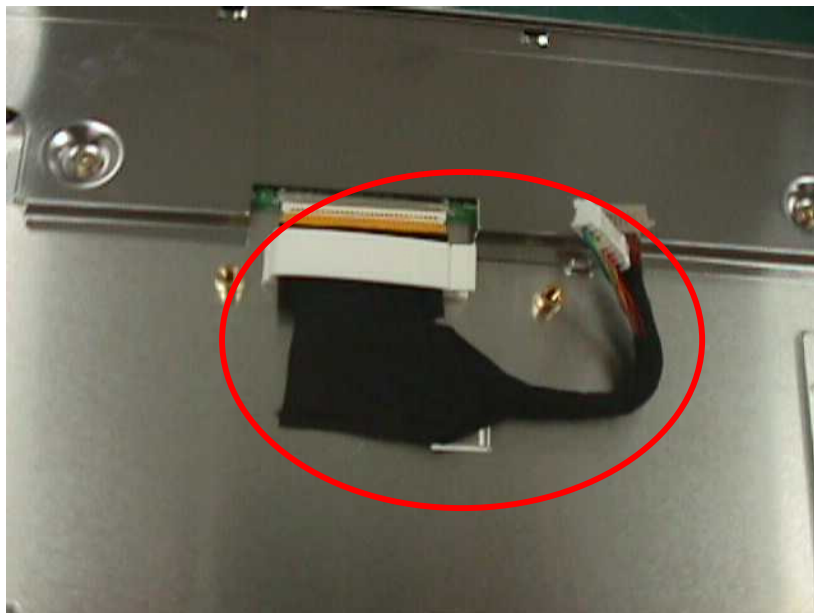


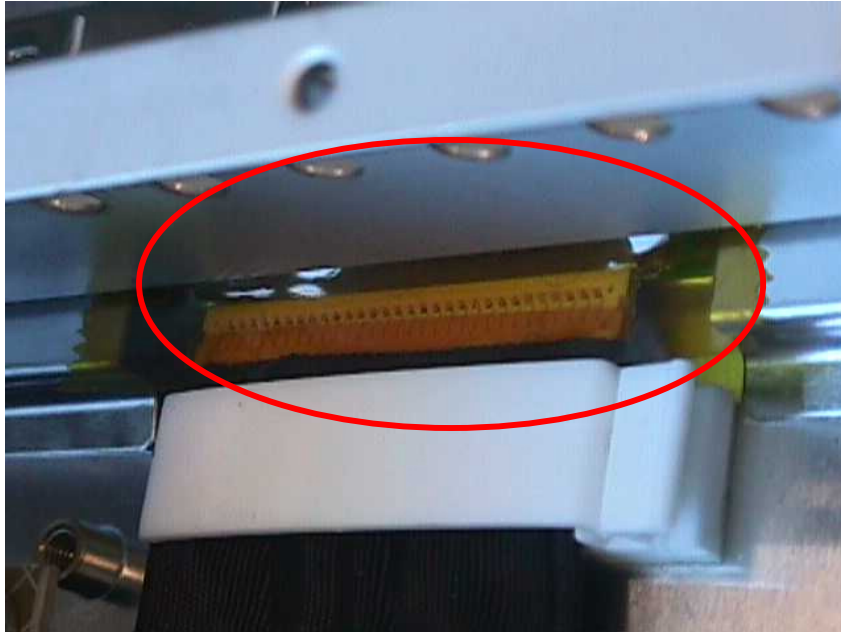
Fig 2. Burn-In Mode “Off”

## 2.Wire Dressing

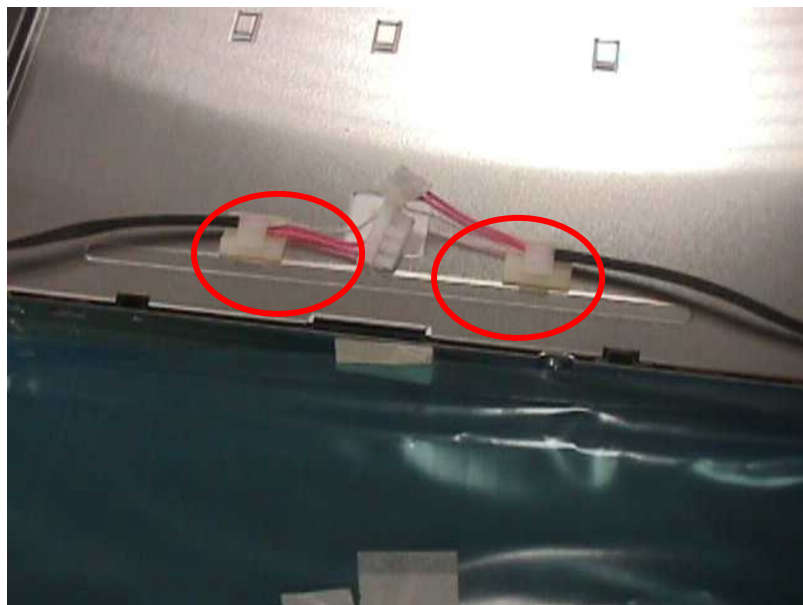
### a. LVDS Cable with clip



**b. LVDS Cable with tape**

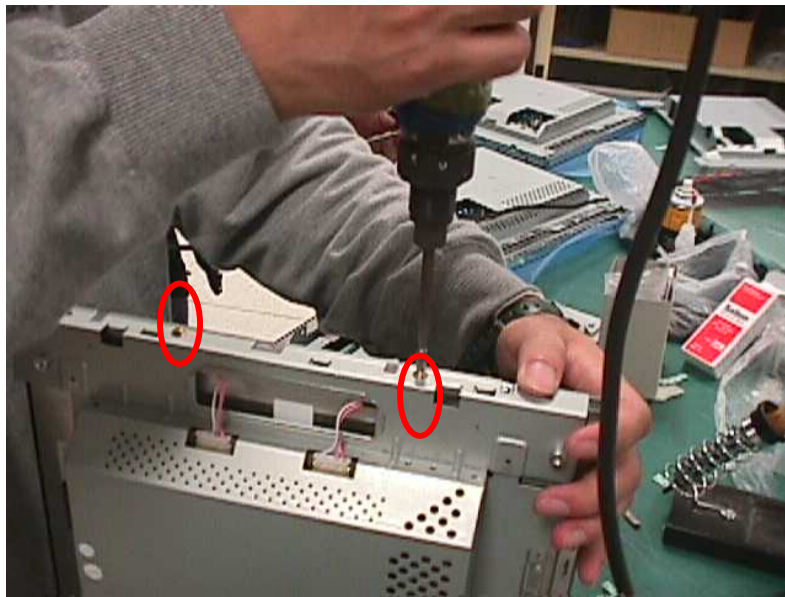


**c. Lamp wire with clip**





- d. Add 4 Pcs crew to BKT between panel grounding



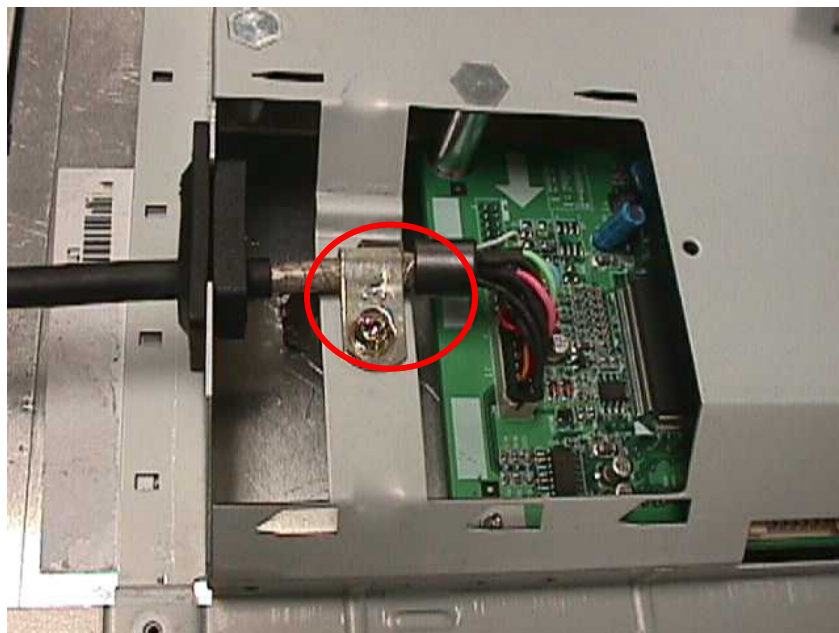
- e. Al-Foil-Mylar on the shielding cover



**f. Spacer**

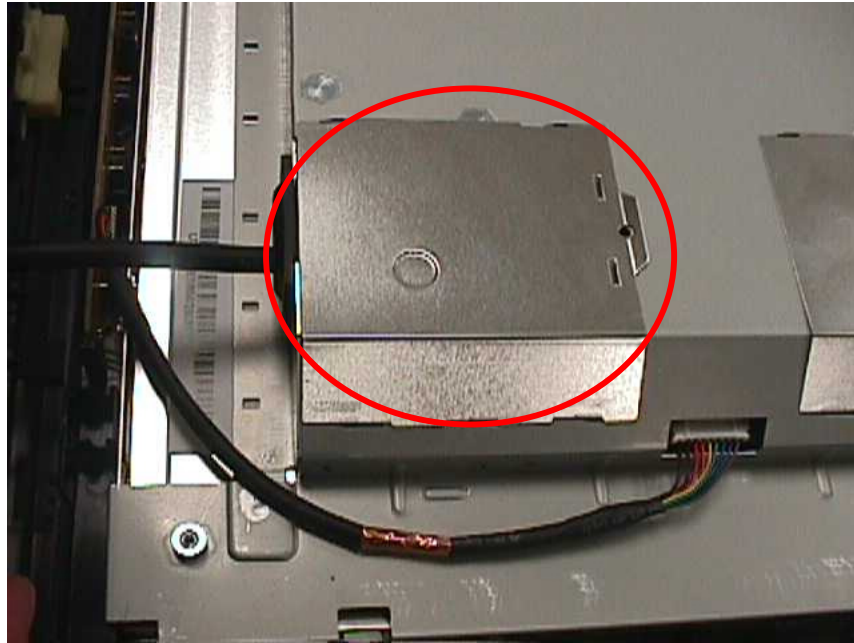


**g. Signal cable with clip**

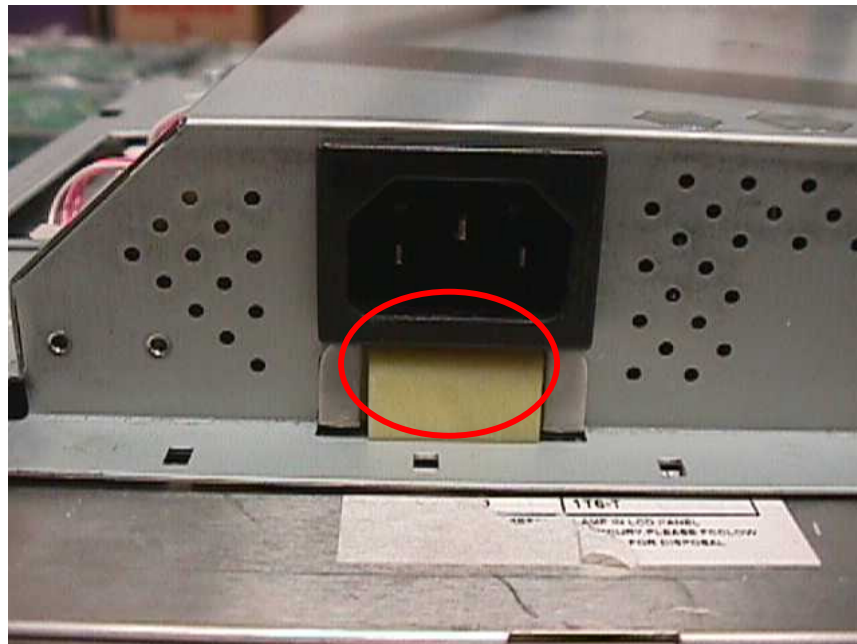




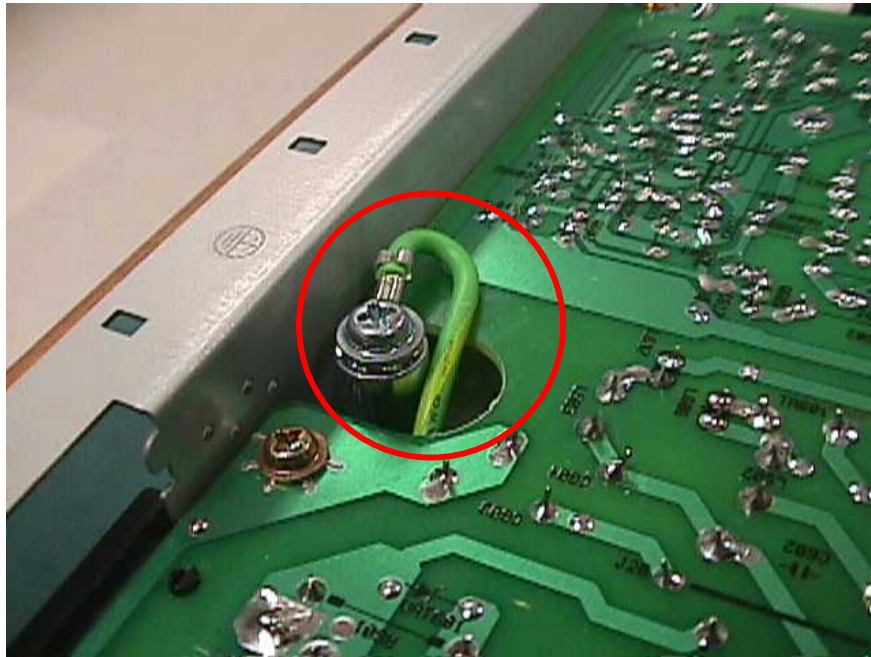
**h. Bracket Cover**



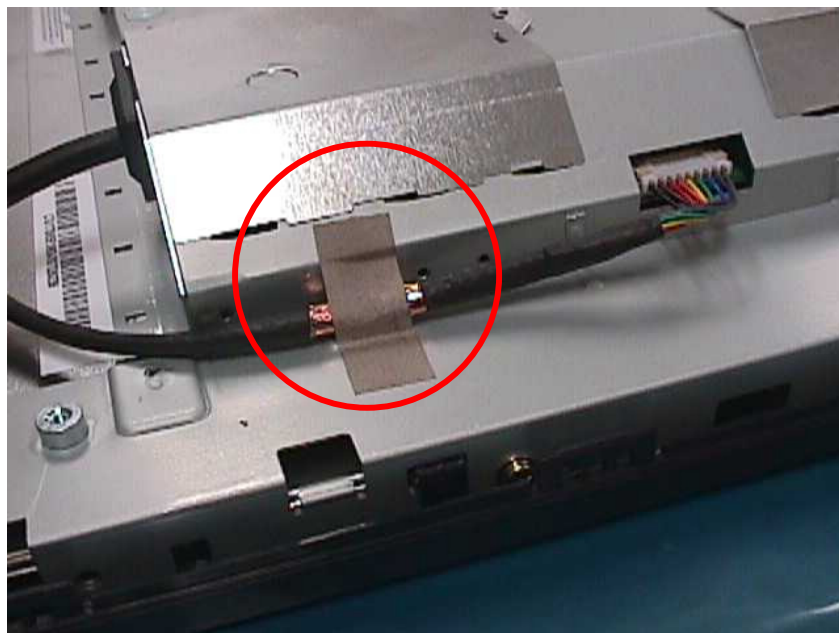
**i. Plug under AC socket**



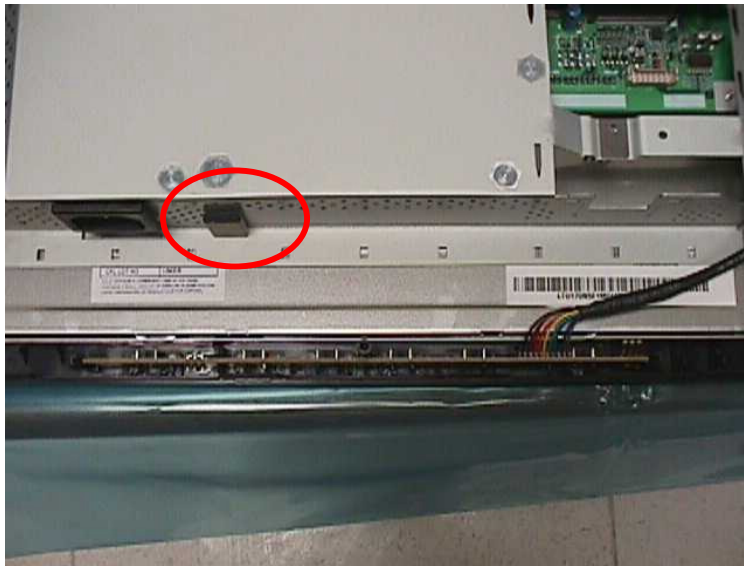
**j. Main Grounding Wire**



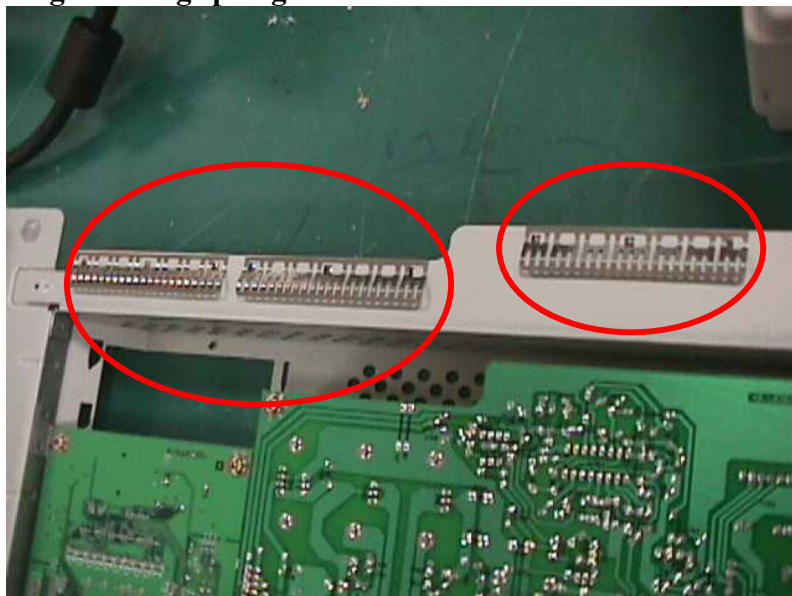
**k. Control BD wire: conductive tape change to Clip**



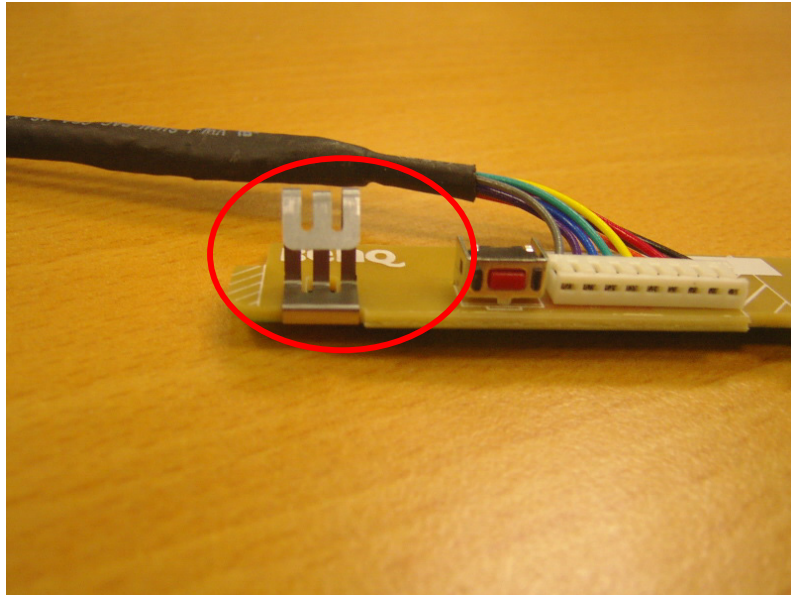
**l. Shielding cover: conductive tape**



**m. Bracket with panel grounding spring**



n. Ctrl BD with panel grounding spring



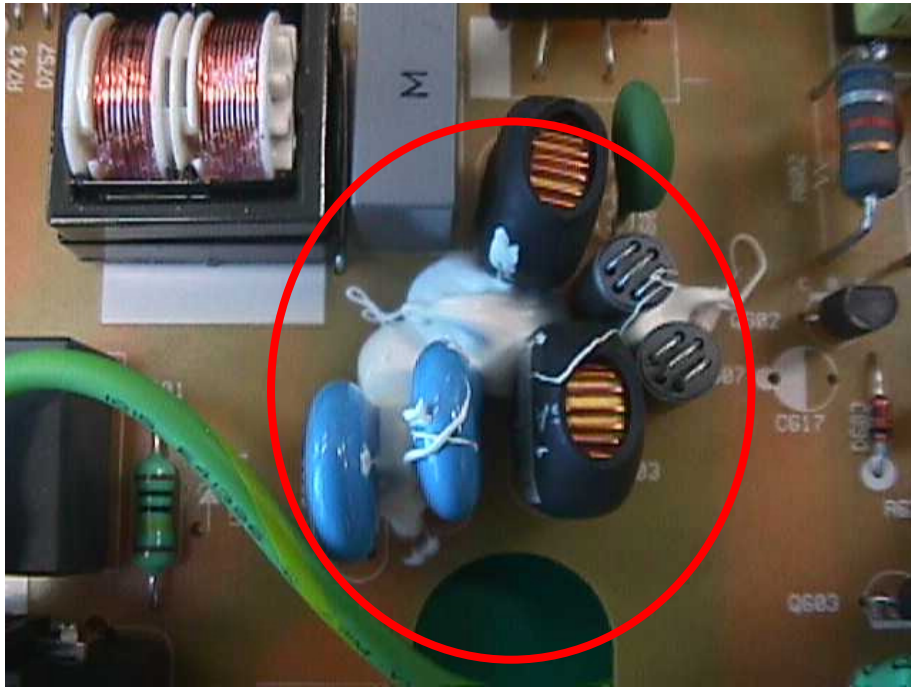
### 3. Add Glue

a. C605





b. C603, C604, L606, L607



c. C615

