

1. Alignment procedure (for function adjustment)

A. Preparation:

1. Setup input timing ICL-605(1280x1024@75Hz), 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. Check the settings to following values:

Contrast = 50

Brightness = 90

OSD time = 20

Color = Normal

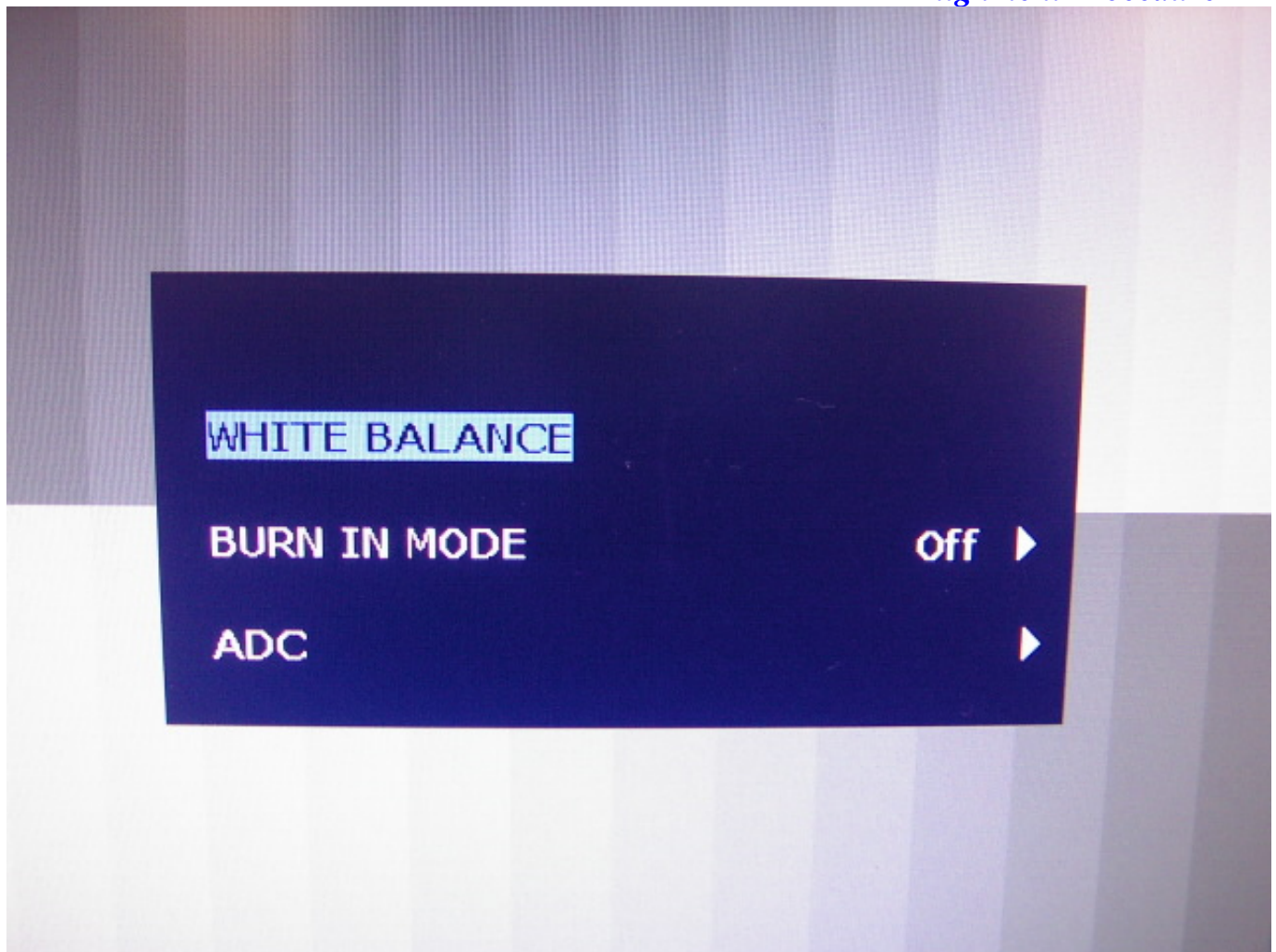
Language = English

Then, turn off the monitor power.

3. Turn on power enter user area.

C. Color balance adjustment:

1. Enter factory setting area (press “ENTER”, “I-Key” and then press “SOFTPOWER”).
2. Setup input timing ICL-605(1280x1024@75Hz), 32-Gray pattern (pattern 48) .
3. Press “I-KEY”, and than OSD will show “White Balance” item and than press “ENTER” button to do auto color.



D. Color adjustment:

1. Setup input timing ICL-605, white pattern .
2. Confirm auto color adjustment had already done.
3. Measure color temperature by Minolta CA-110 (or equivalent equipment).
4. Check the color temperature Bluish, Reddish & Normal. 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

5. Setup input timing , 32 -Gray pattern.

To check if there are any abnormal display problems of preset timing modes .

Check the following preset timings with General pattern:

No.	Mode	H	V
1	720×400 @ 70Hz	31.468	70.8
2	640×480 @ 60Hz	31.469	59.940
3	640×480 @ 75Hz	37.500	75.000
4	800×600 @ 60Hz	37.879	60.317
5	800×600 @ 75Hz	46.875	75.000
6	1024×768 @ 60Hz	48.363	60.004
7	1024×768 @ 75Hz	60.023	75.029
8	1152×864 @ 75Hz	67.500	75.000
9	1280×1024 @ 60Hz	63.981	60.020
10	1280×1024 @ 75Hz	79.976	75.025

6. Checking if the picture is no good, reject this monitor.
7. To check the power consumption by disabling “burn-in mode” setting
8. To clear user data and program complete DDC data to monitor by IIC bus communication.

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 .
5. Read 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	OK	N.A.	Remark
Write Contrast to MCU RAM	CA	55	Data	cksum	✓		Write data to MCU RAM and update the related register to refresh the screen immediately. Don't store data to EEPROM.
Write Brightness to MCU RAM	CA	56	Data	cksum	✓		
Write Red Gain to MCU RAM	CA	57	Data	cksum	✓		
Write Green Gain to MCU RAM	CA	58	Data	cksum	✓		
Write Blue Gain to MCU RAM	CA	59	Data	cksum	✓		Base on current color index to read back the right gain value.
Read Contrast from MCU RAM	C3	55	XX	cksum	✓		
Read Brightness from MCU RAM	C3	56	XX	cksum	✓		
Read Red Gain from MCU RAM by color index	C3	57	XX	cksum	✓		
Read Green Gain from MCU RAM by color index	C3	58	XX	cksum	✓		
Read Blue Gain from MCU RAM by color index	C3	59	XX	cksum	✓		
Write C1 (Bluish) R-Gain Data to EEPROM	AA	3C	Data	cksum	✓		
Write C1 (Bluish) G-Gain Data to EEPROM	AA	3D	Data	cksum	✓		
Write C1 (Bluish) B-Gain Data to EEPROM	AA	3E	Data	cksum	✓		
Write C2 (sRGB) R-Gain Data to EEPROM	AA	4C	Data	cksum	✓		
Write C2 (sRGB) G-Gain Data to EEPROM	AA	4D	Data	cksum	✓		
Write C2 (sRGB) B-Gain Data to EEPROM	AA	4E	Data	cksum	✓		

Write C3 (Reddish) R-Gain Data to EEPROM	AA	5C	Data	cksum	✓		
Write C3 (Reddish) G-Gain Data to EEPROM	AA	5D	Data	cksum	✓		
Write C3 (Reddish) B-Gain Data to EEPROM	AA	5E	Data	cksum	✓		
Write User R-Gain Data to EEPROM	AA	6C	Data	cksum	✓		
Write User G-Gain Data to EEPROM	AA	6D	Data	cksum	✓		
Write User B-Gain Data to EEPROM	AA	6E	Data	cksum	✓		
Write Cx R-Gain Data to EEPROM	AA	7C	Data	cksum		✓	Reserved for some model have extra color temperature
Write Cx G-Gain Data to EEPROM	AA	7D	Data	cksum		✓	
Write Cx B-Gain Data to EEPROM	AA	7E	Data	cksum		✓	
Write Contrast to EEPROM	AA	92	Data	cksum	✓		
Write Brightness to EEPROM	AA	93	Data	cksum	✓		
							1=C1/9300/Bluish, 2=C2/6500/sRGB/, 3=C3/5800/Reddish, 4=User, 5=Cx
Write C/T index to EEPROM	AA	94	0~4	cksum	✓		
Write OSD-Hpos to EEPROM	AA	95	Data	cksum	✓		
Write OSD-Vpos to EEPROM	AA	96	Data	cksum	✓		
							0=DE, 1=EN, 2=ES, 3=FR, 4=IT, 5=JA, 6=繁中, 7=簡中 (Also Update MCU RAM)
Write Language to EEPROM	AA	97	0~7	cksum	✓		
Write EEPROM OSD Timer	AA	98	Data	cksum	✓		
Write EEPROM Volume	AA	99	Data	cksum	✓		
Write EEPROM Gamma index	AA	9A	Data	cksum		✓	For model with Gamma curve selection function
Write OSD Transparency to EEPROM	AA	9E	Data	cksum		✓	
Write OSD Rotation to EEPROM	AA	9F	Data	cksum		✓	
Read C1 (Bluish) R-Gain data from EEPROM	A3	3C	XX	cksum	✓		
Read C1 (Bluish) G-Gain data from EEPROM	A3	3D	XX	cksum	✓		
Read C1 (Bluish) B-Gain data from EEPROM	A3	3E	XX	cksum	✓		
Read C2 (sRGB) R-Gain data from EEPROM	A3	4C	XX	cksum	✓		
Read C2 (sRGB) G-Gain data from EEPROM	A3	4D	XX	cksum	✓		
Read C2 (sRGB) B-Gain data from EEPROM	A3	4E	XX	cksum	✓		
Read C3 (Reddish) R-Gain data from EEPROM	A3	5C	XX	cksum	✓		
Read C3 (Reddish) G-Gain data from EEPROM	A3	5D	XX	cksum	✓		
Read C3 (Reddish) B-Gain data from EEPROM	A3	5E	XX	cksum	✓		
Read User R-Gain data from EEPROM	A3	6C	XX	cksum	✓		
Read User G-Gain data from EEPROM	A3	6D	XX	cksum	✓		
Read User B-Gain data from EEPROM	A3	6E	XX	cksum	✓		
Read Cx R-Gain data from EEPROM	A3	7C	XX	cksum		✓	Reserved for some model have extra color temperature
Read Cx G-Gain data from EEPROM	A3	7D	XX	cksum		✓	
Read Cx B-Gain data from EEPROM	A3	7E	XX	cksum		✓	
Read Contrast from EEPROM	A3	92	XX	cksum	✓		
Read Brightness from EEPROM	A3	93	XX	cksum	✓		

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Alignment Procedure

							1=C1/9300/Bluish, 2=C2/6500/sRGB/ 3=C3/5800/Reddish, 4=User, 5=Cx
Read C/T index from EEPROM	A3	94	XX	cksum	✓		
Read OSD-Hpos EEPROM	A3	95	XX	cksum	✓		
Read OSD-Vpos from EEPROM	A3	96	XX	cksum	✓		
Read Language from EEPROM	A3	97	XX	cksum	✓		0=DE, 1=EN, 2=ES, 3=FR, 4=IT, 5=JA, 6=繁中, 7=簡中
Read OSD Timer from EEPROM	A3	98	XX	cksum	✓		
Read Volume from EEPROM	A3	99	XX	cksum	✓		
Read Gamma index from EEPROM	A3	9A	XX	cksum		✓	For model with Gamma curve selection function
Read OSD Transparency from EEPROM	A3	9E	XX	cksum		✓	
Read OSD Rotation from EEPROM	A3	9F	XX	cksum		✓	
Change Color Temp. to C1/9300K/Bluish	CC	01	XX	cksum	✓		Change C/T immediately. And store C/T index to EEPROM.
Change Color Temp. to C2/6500K/sRGB	CC	02	XX	cksum	✓		
Change Color Temp. to C3/5800K/Reddish	CC	03	XX	cksum	✓		
Change Color Temp. to User	CC	04	XX	cksum	✓		
Change Color Temp. to Cx	CC	05	XX	cksum		✓	Reserved
Change Input Source to D-Sub	CD	01	XX	cksum		✓	
Change Input Source to DVI	CD	02	XX	cksum		✓	
On burn in mode	CE	01	XX	cksum	✓		Store data to EEPROM
Off burn in mode	CE	XX*	XX	cksum	✓		XX* = Non "1" value Store data to EEPROM
Monitor is forced power saving	CF	01	XX	cksum		✓	
Monitor wake up from power saving	CF	XX*	XX	cksum		✓	XX* = Non "1" value
User mode to factory mode	1A	5A	XX	cksum	✓		
Auto Color (Offset1, Offset2, Gain)	1B	5A	XX	cksum		✓	
Copy EDID Serial number to EEPROM	1C	5A	XX	cksum		✓	For specified "Industry Customer" model.
Factory mode to User mode	1E	5A	XX	cksum	✓		
Clear user mode and factory recall	1F	5A	XX	cksum	✓		Store data to EEPROM
Write EDID data to MCU DDC RAM	55	NA	NA	NA	✓		For MTV312 MCU type
Copy DDC RAM data to EEPROM	BB	NA	NA	NA	✓		For MTV312 MCU type
Drive WP pin to low to enable write DDC IC	55	NA	NA	NA		✓	For stand alone DDC IC
Drive WP pin to high to disenable write function	BB	NA	NA	NA		✓	For stand alone DDC IC
EEPROM Bank R/W (For Debug using only, not for Production Line Write EEPROM directly)							
Read EEPROM Bank 0	B0	Address	XX	cksum	✓		
Read EEPROM Bank 1	B1	Address	XX	cksum	✓		
Read EEPROM Bank 2	B2	Address	XX	cksum		✓	(For 24C08 type)
Read EEPROM Bank 3	B3	Address	XX	cksum		✓	(For 24C08 type)
Write EEPROM Bank 0	B8	Address	Data	cksum	✓		
Write EEPROM Bank 1	B9	Address	Data	cksum	✓		
Write EEPROM Bank 2	BA	Address	Data	cksum		✓	(For 24C08 type)
Write EEPROM Bank 3	BB	Address	Data	cksum		✓	(For 24C08 type)

Note A: Byte4 (cksum) = Byte1 + Byte2 + Byte3

Note B: Data = The value write to MCU or EEPROM

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

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

4. Wire Dressing and assembling concern

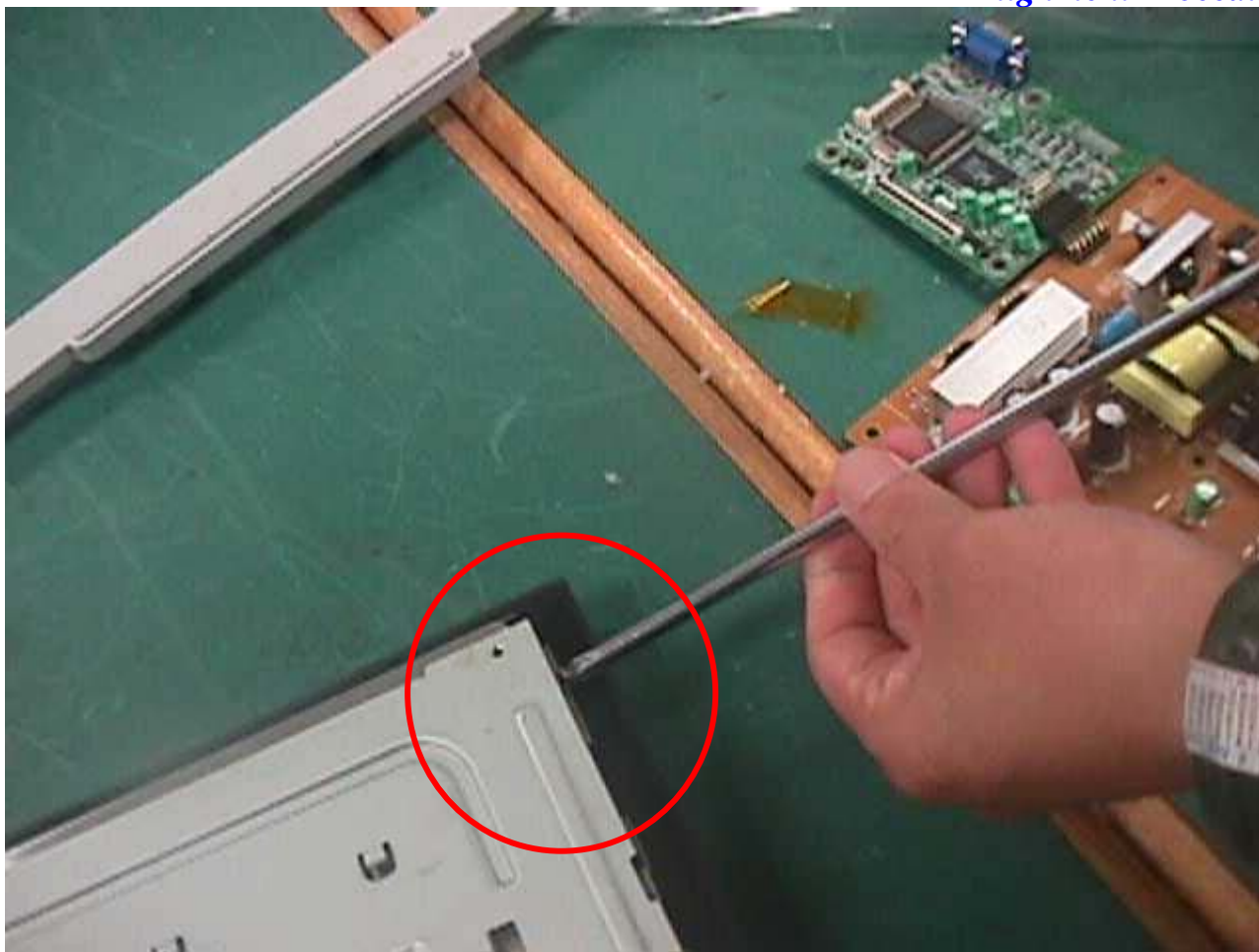
Prepare 1 panel



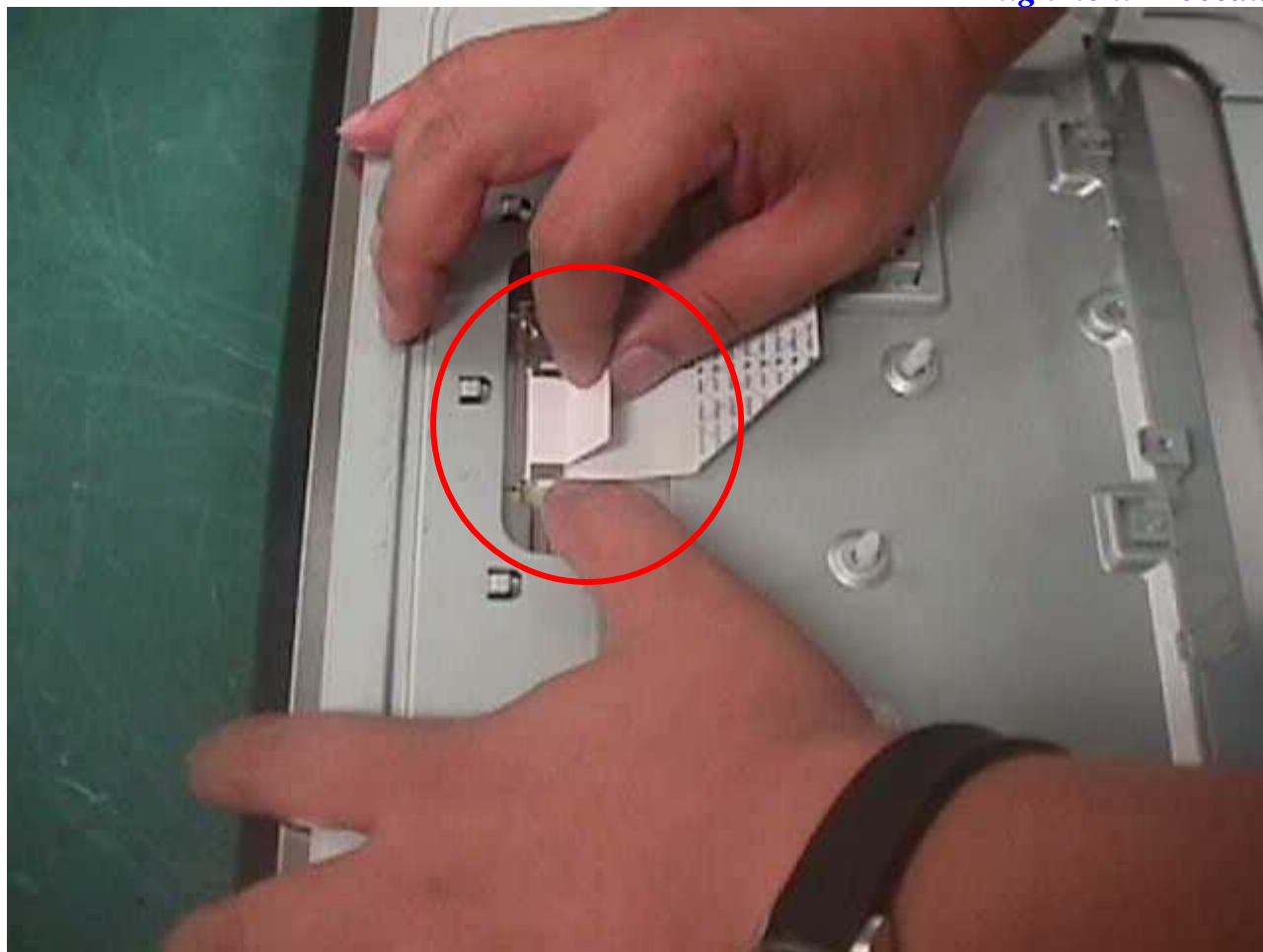
Assembly panel and main BKT



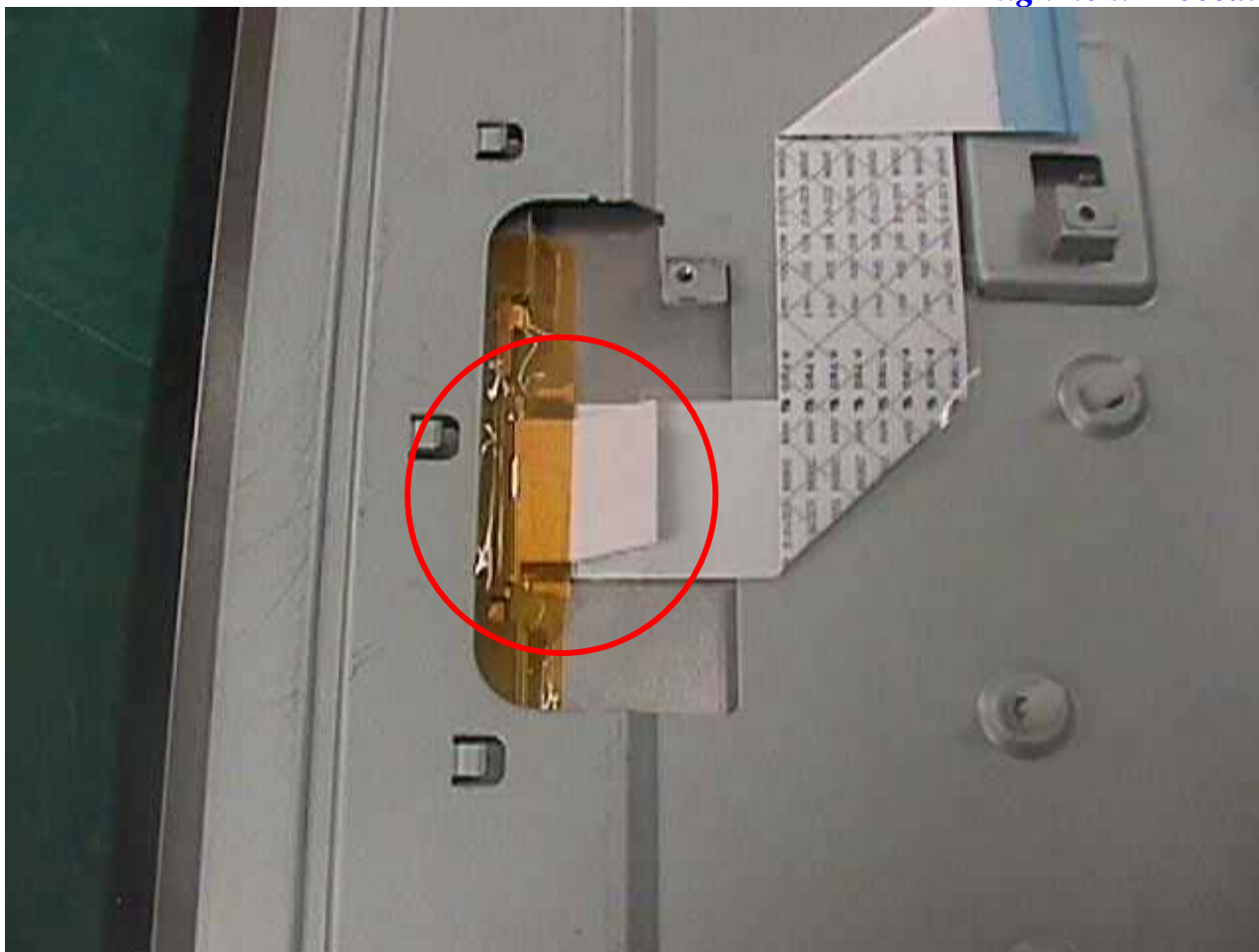
Add 4 screw between panel and main BKT



Add FFC



Add Tape



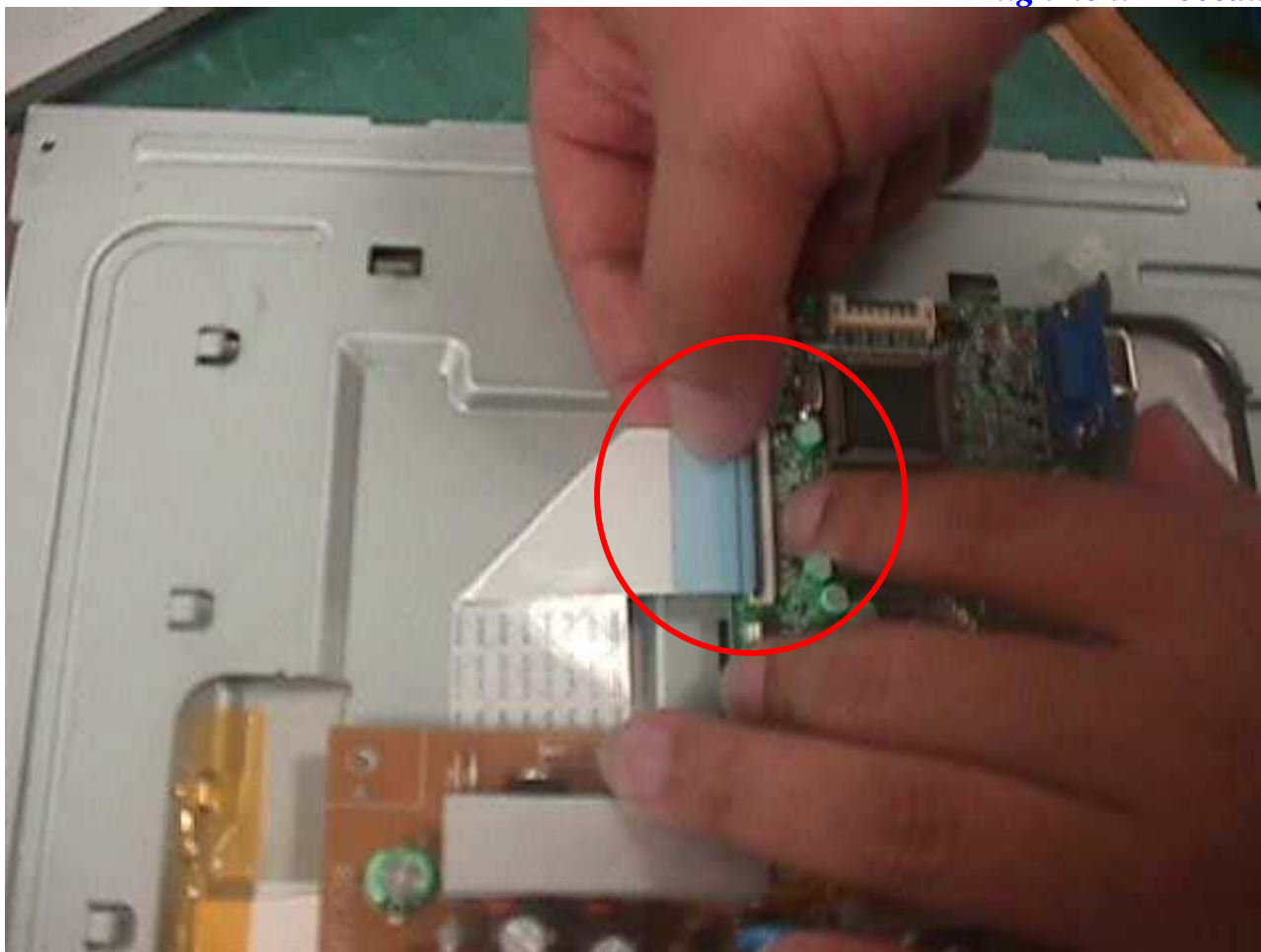
Assembly IF board and Power Board



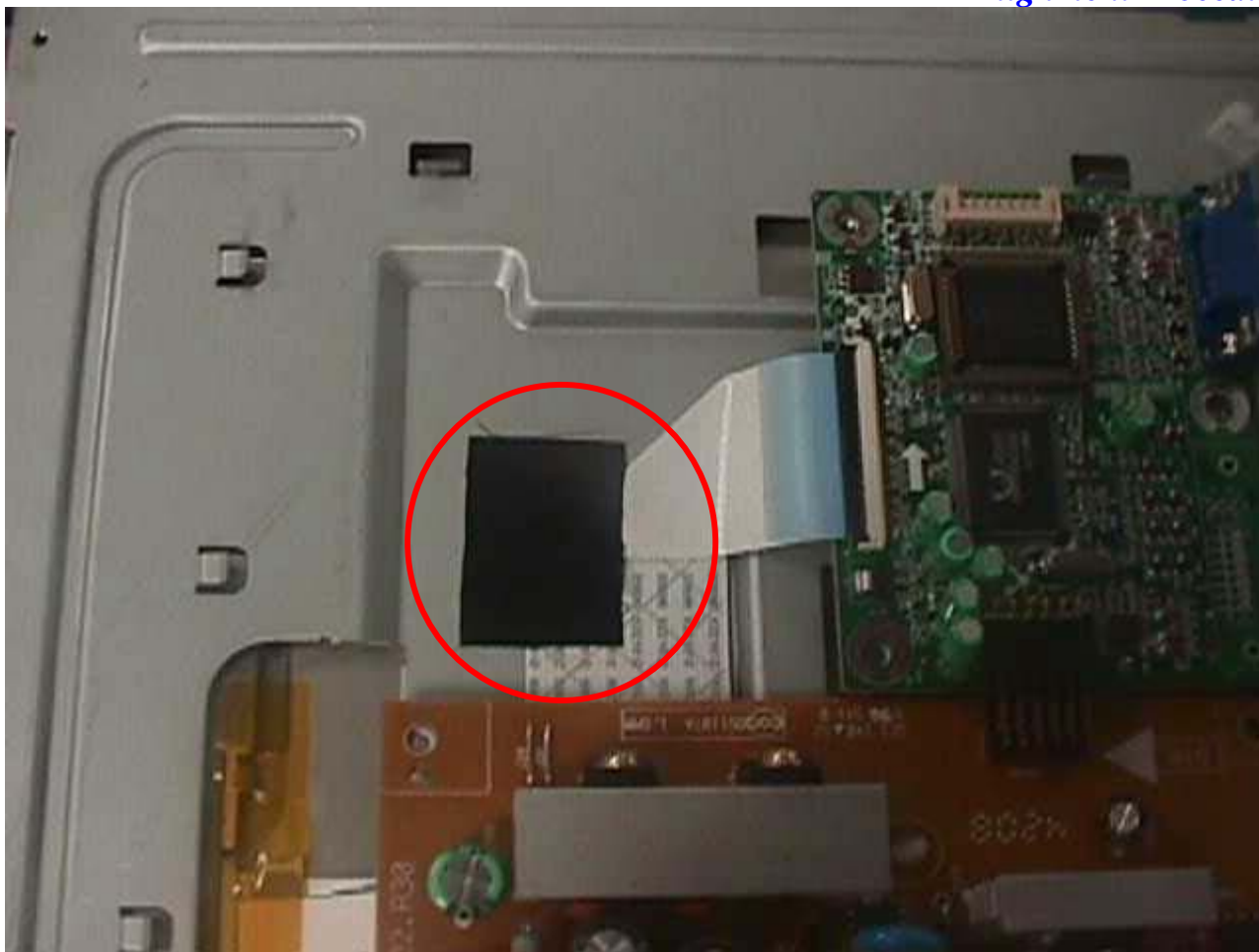
Assembly PCB module and main BKT



Assembly IF board and FFC



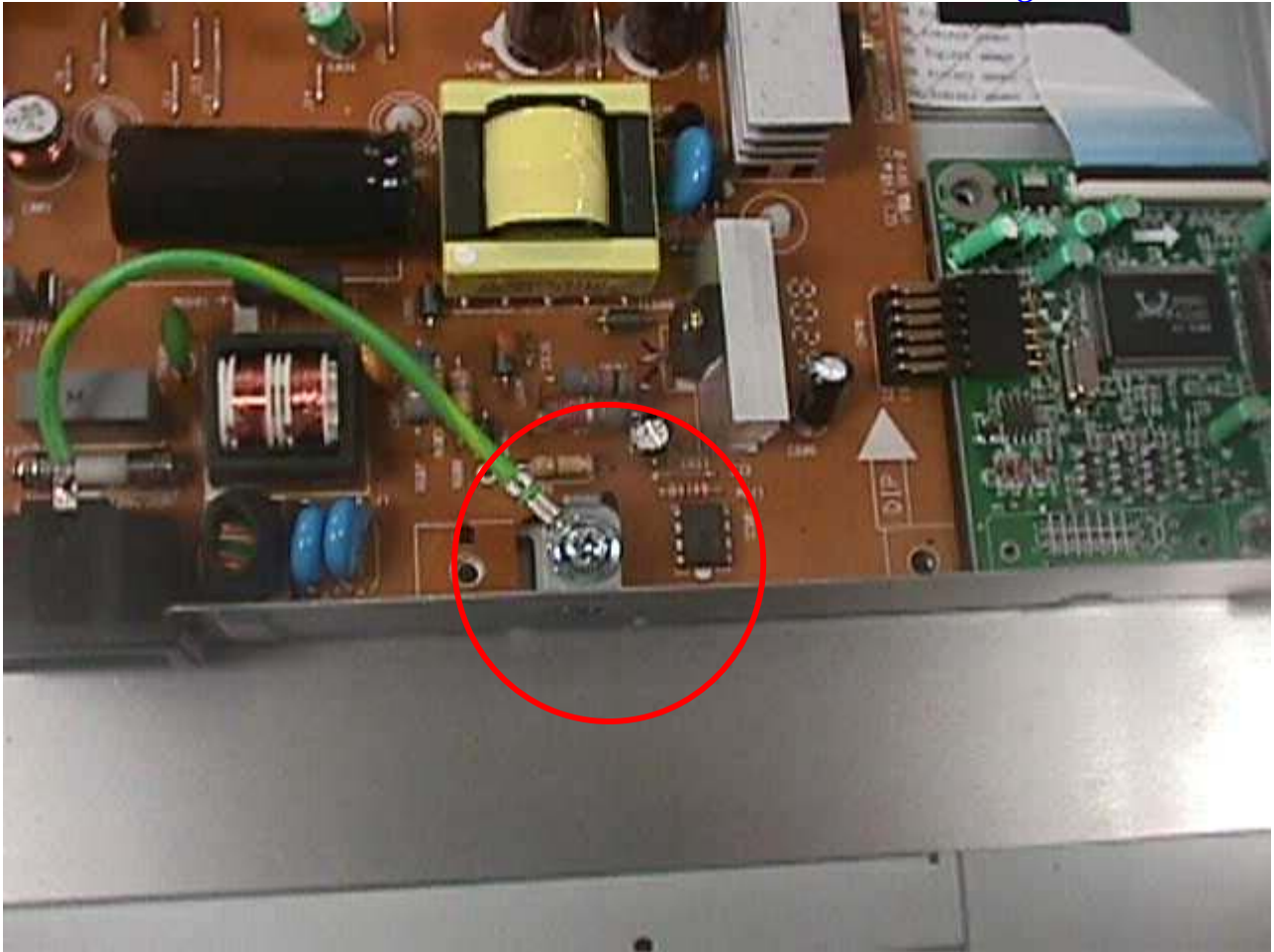
Add one tape



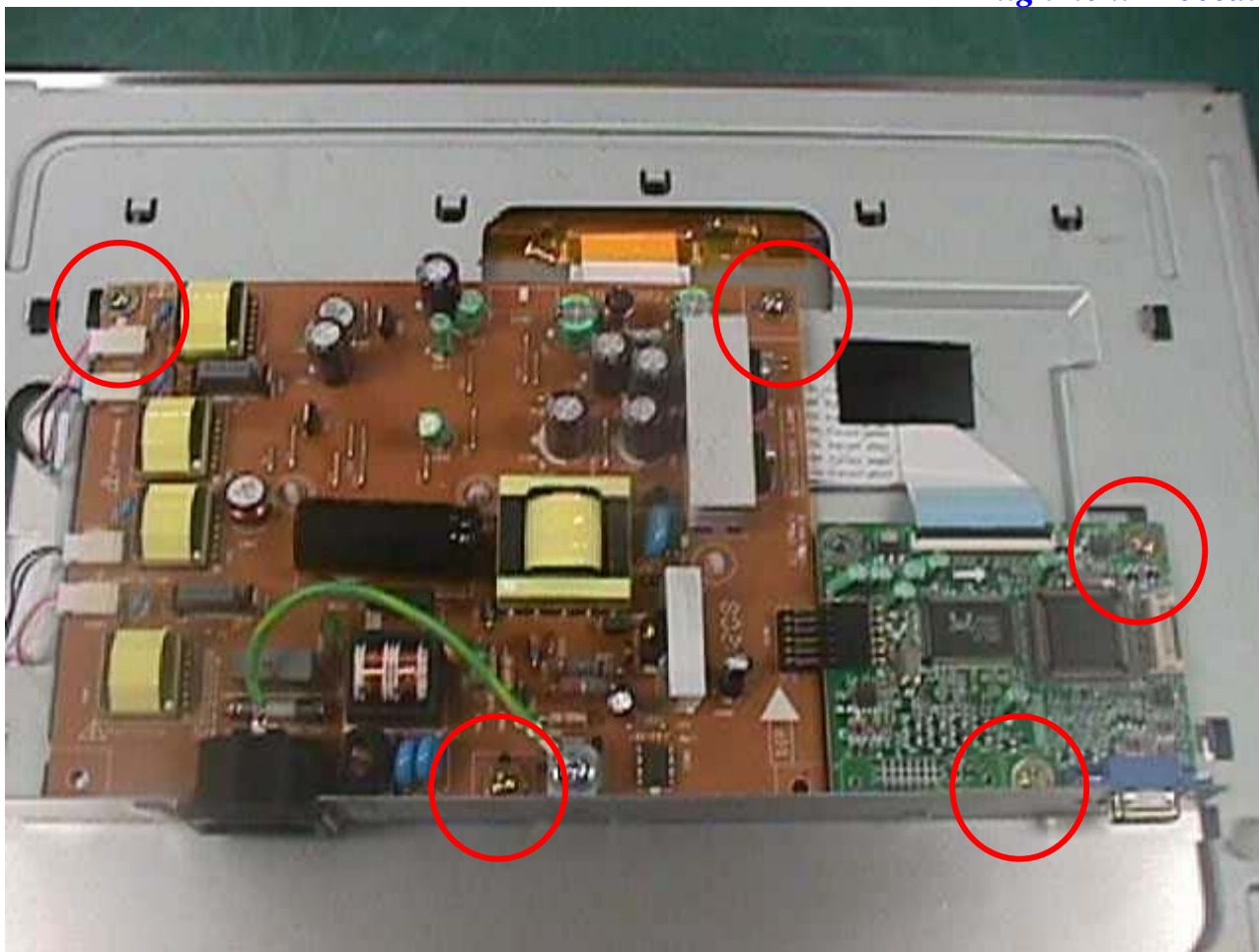
Assembly lamp wire and Power Board



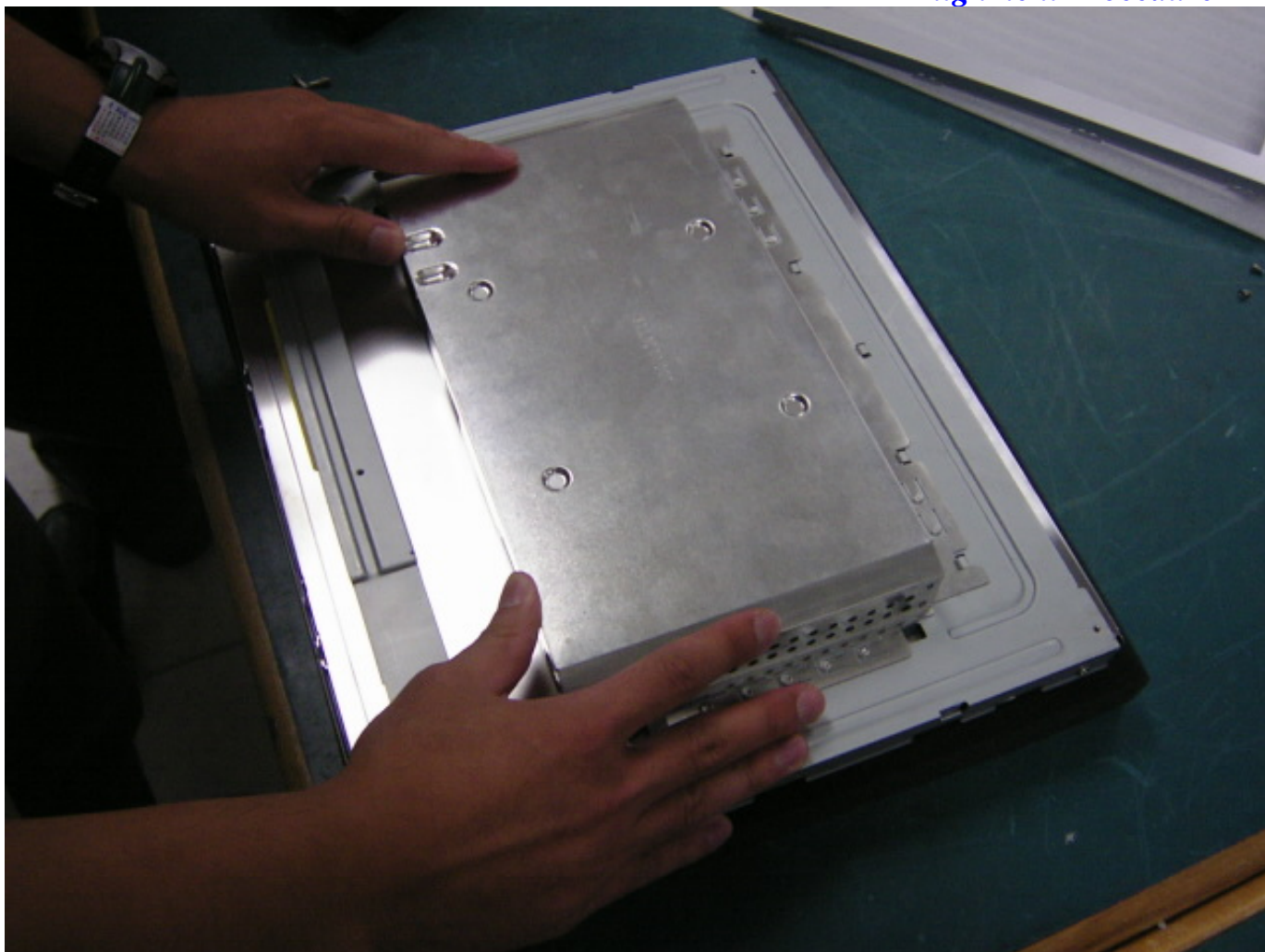
Add one screw



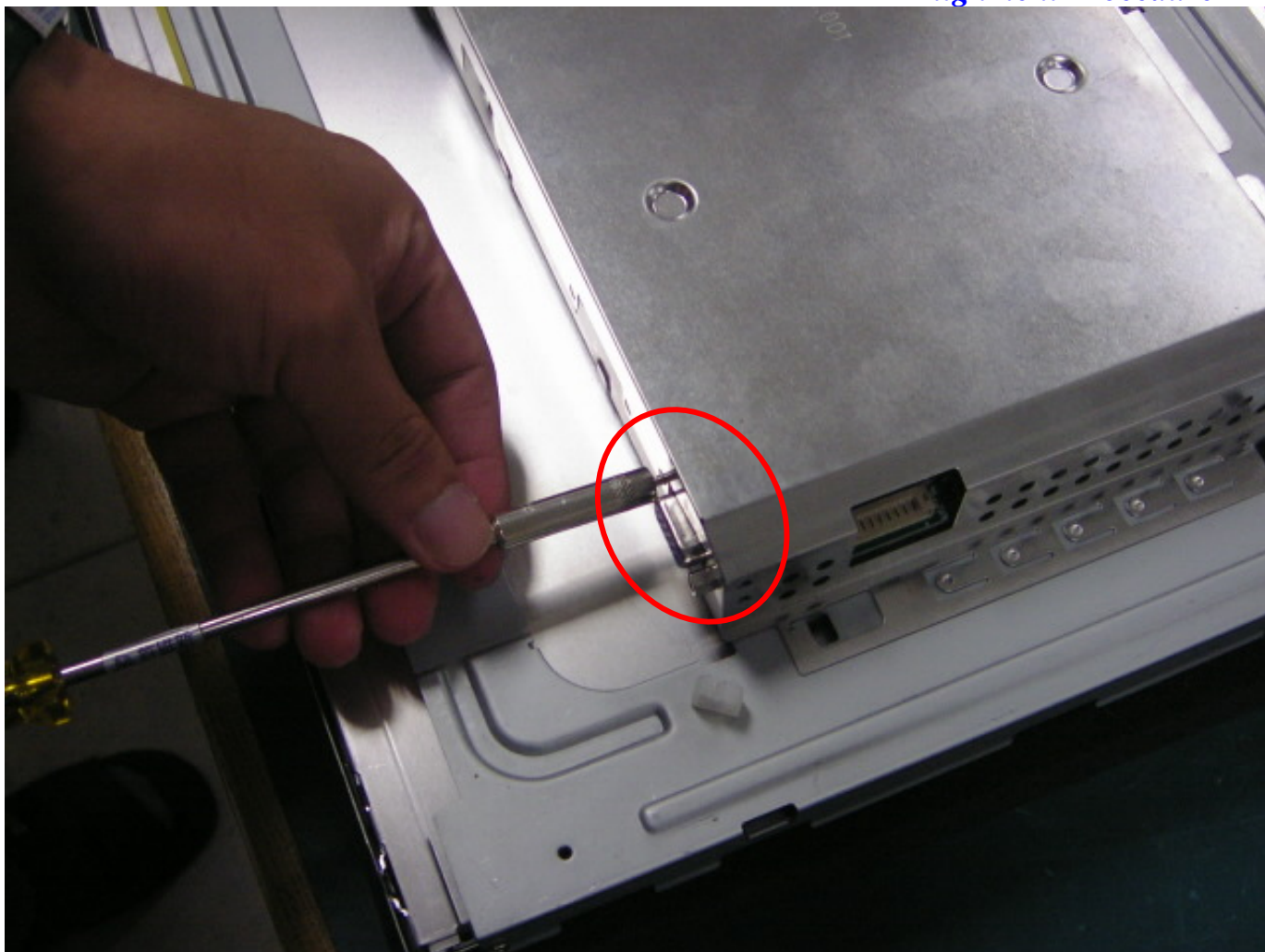
Add 5 screw



Assembly main shielding and main BKT

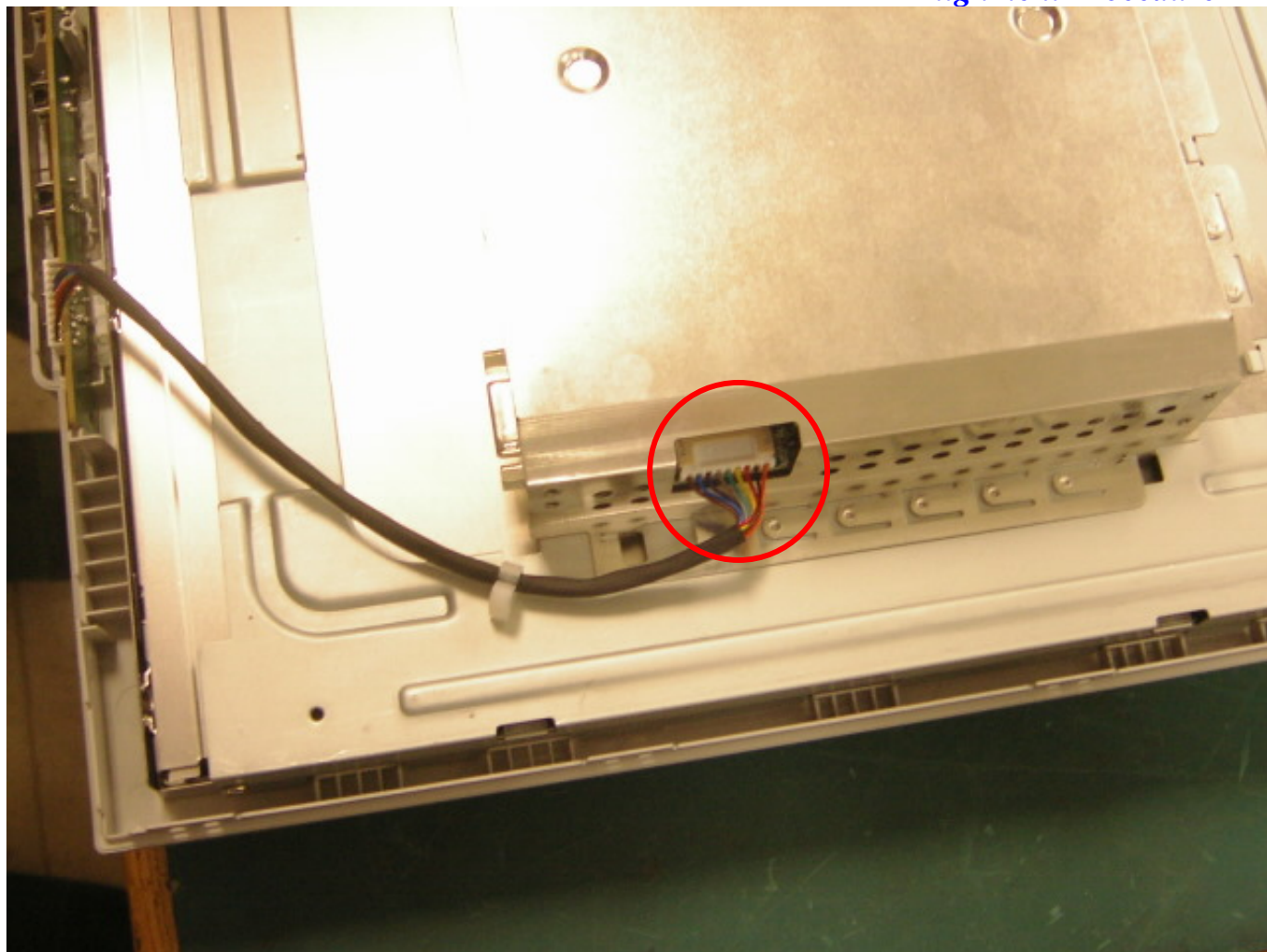


Add 2 screw

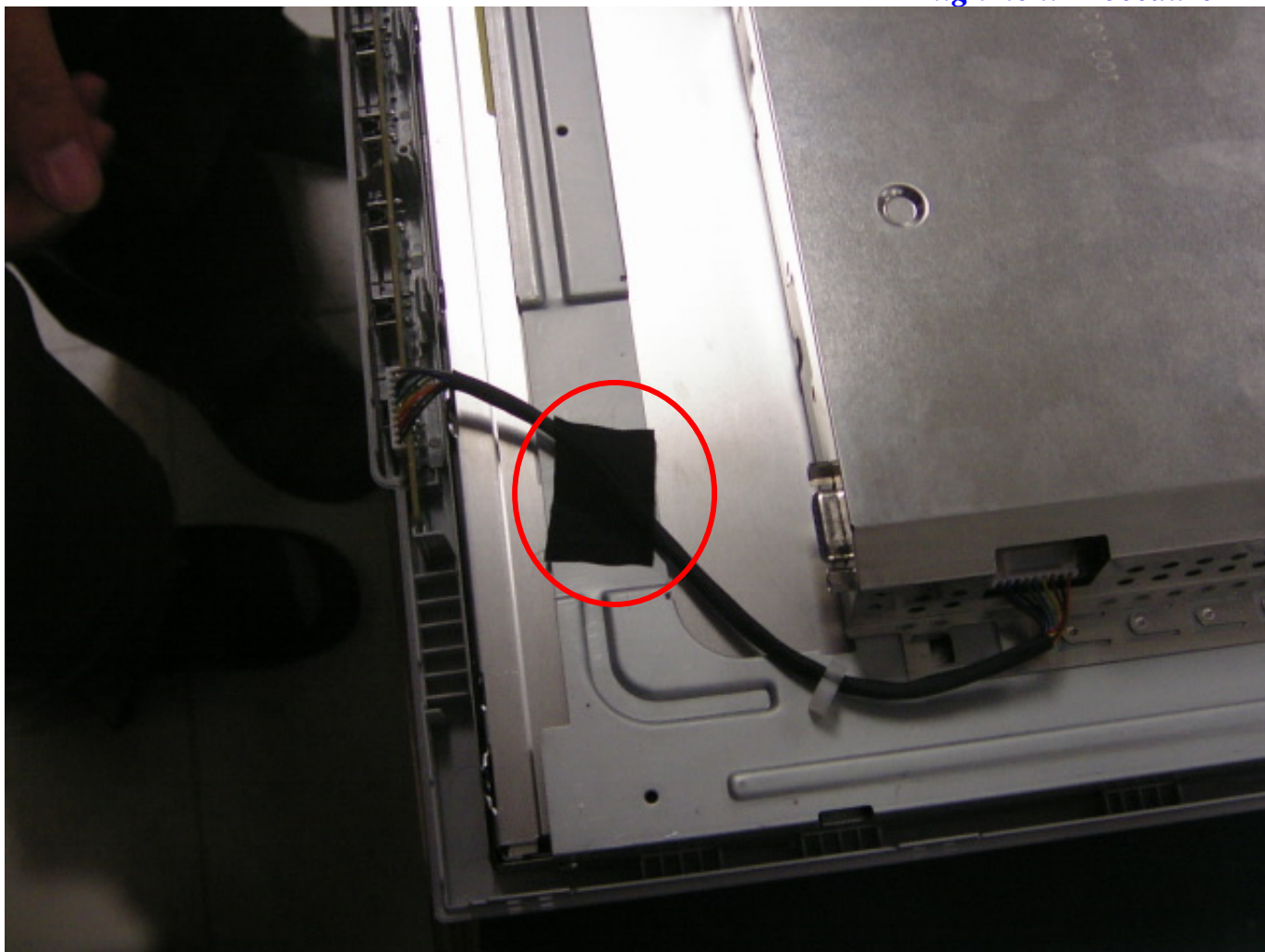


Assembly control board wire and IF board





Add one tape



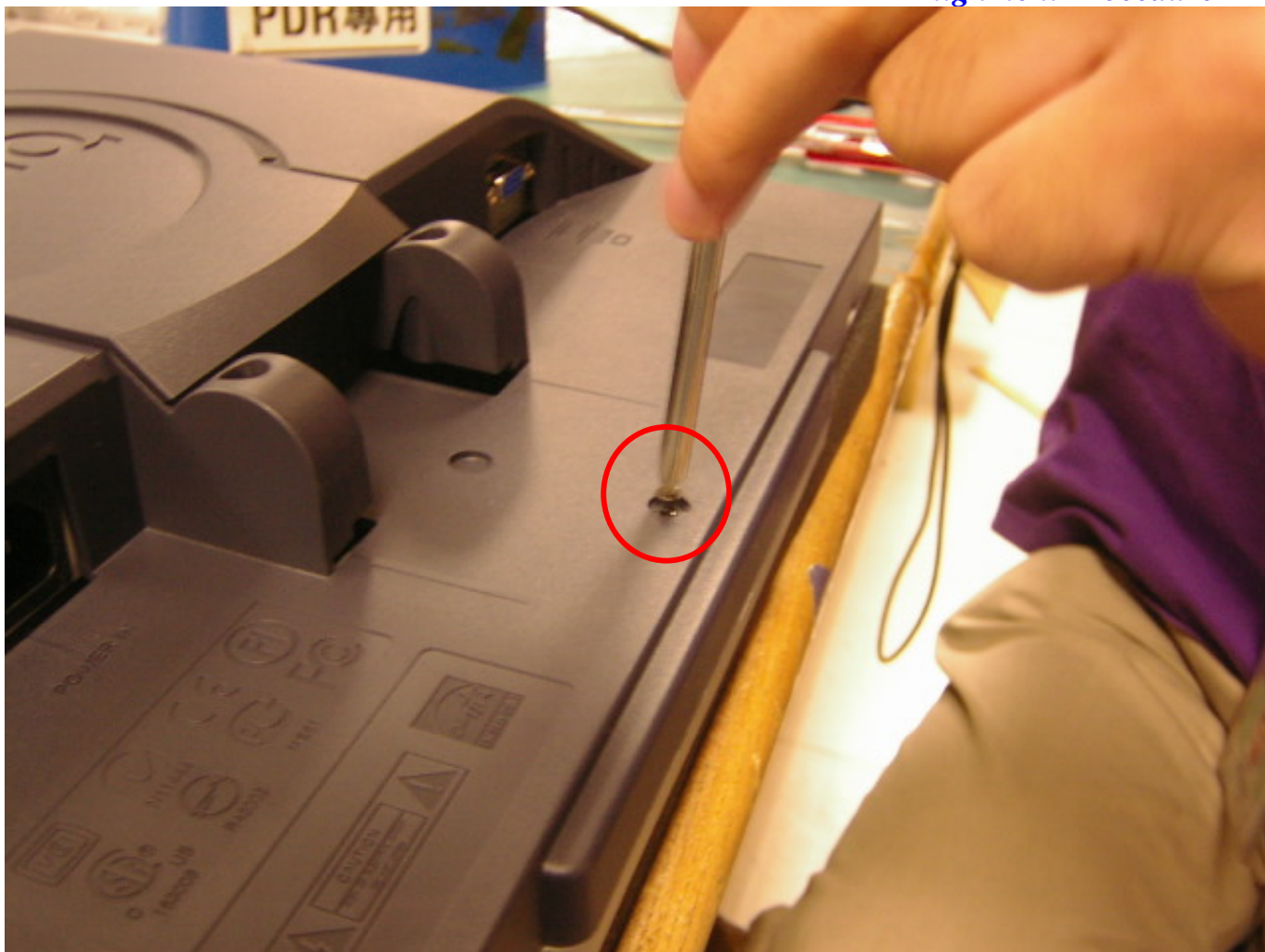
Assembly Bezel and Rear Cover



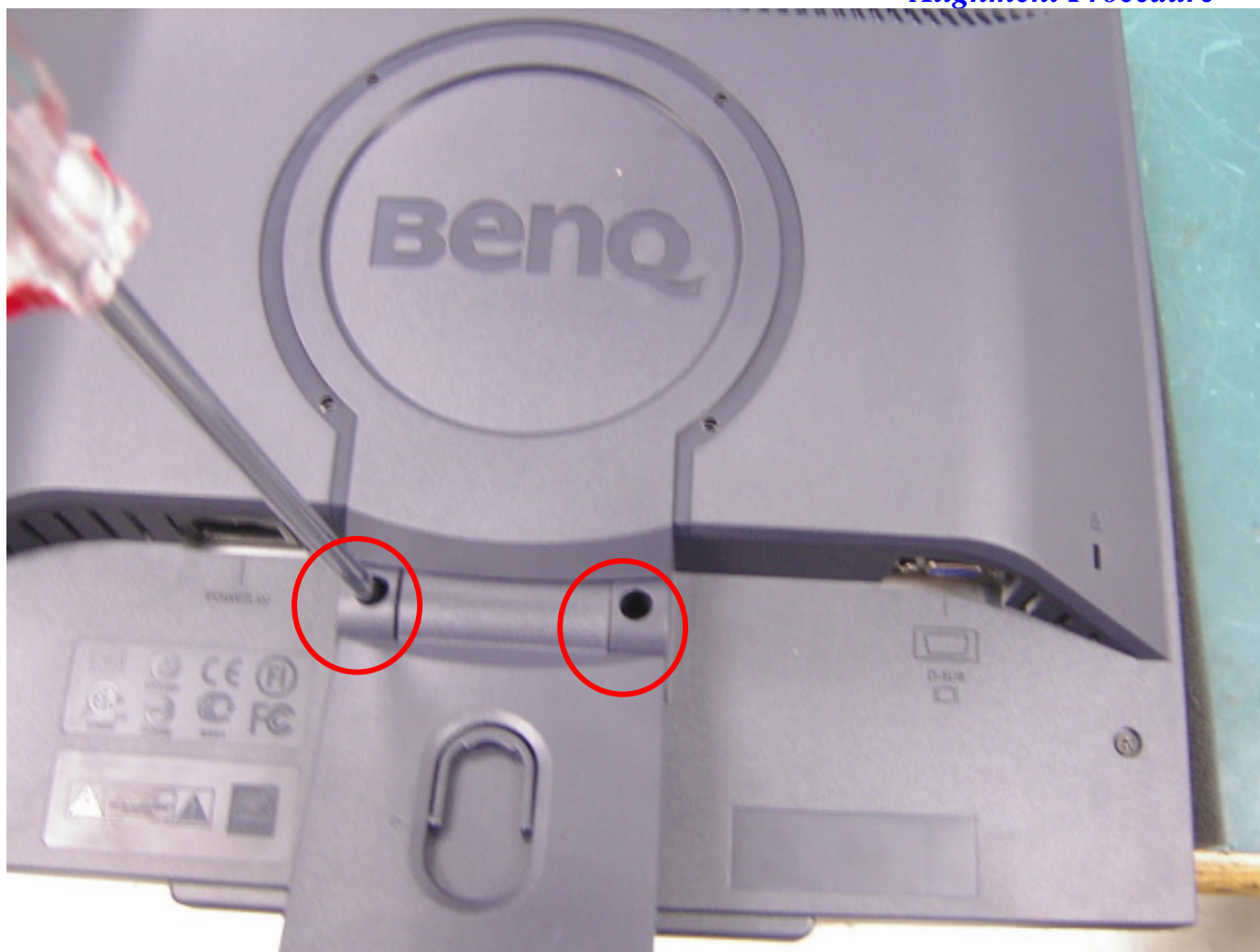
Add 4 screw



Add 1 screw



Assembly Base and Rear cover



Finished



