

Symptom & Possible Solution

Booting Problem

Display Problem

Operation Problem

Software Problem

Others

Troubleshooting

LC-TS7000_How to disassemble an UPPER COVER

LC-TS7001_How to check the voltage of SMPS and replace

LC-TS7002_How to judge an error during booting process

LC-TS7003_How to check the ARTIGO defectiveness and replace

LC-TS7004_How to replace INVERTER, LCD CtrA PCB ASS'Y

LC-TS7005_How to rub MEMORY MODULE with an eraser and replace

LC-TS7006_Replacement of RAON-7300B

LC-TS7007_Replacement of LVDS-Link cable

LC-TS7008_Replacement of SATA-DOM

LC-TS7009_Replacement of IR-RECEIVER

LC-TS7010_How to set up the channel of the remote controller

LC-TS7011_PDR-7000 and PLC-7000 Bluetooth Connectivity

LC-TS7012_Corrective action when noise occurs

LC-TS7013_PLC-7000 Linux Software Update

LC-TS7014_PLC-7000 Bluetooth Software Update

LC-TS7015_PLC-7000 Image Update

LC-TS7016_How to check CONNECTION MOUNT COVER ASS'Y Cable & Fuse

LC-TS7017_PLC-7000 Recovery

LC-TS7018_Solution for LCD Light Leakage

LC-TS7019_PLC-7000 RAON-7300B Replacement method

Booting Problem

Symptom	Possible solution
Booting Error	No light on POTECH Logo of the frame
	Q : Voltage check of SMPS
	A : No Power
	Solution : Check the voltage of LC-TS7001_SMPS and replace
	A : Normal operation ⇒ Move to the next question
No operation during booting process	Q : Charts dimly shown on the LCD
	A : It is ok ⇒ Replace of LC-TS7004_INVERTER and LCD CtrA PCB ASS'Y
	A : Invisible charts ⇒ Check the defectiveness of LC-TS7003_ARTIGO and replace
	Replace of LC-TS7006_RAON-7300B
	Q : No operation during booting process?
Beep sound during booting	A : If yes
	S : Check the condition if booting error of LC-TS7002 occurs
	Replace of LC-TS7008_SATA-DOM
Remote defectiveness	Q : No booting operation with beep sound during booting process?
	A : If yes
	S : Rub LC-TS7005_MEMORY MODULE with an eraser and Replace
Remote defectiveness	Not adjustable remote after booting process?
	S : Set up the channel of LC-TS7010 remote

Display Problem

Symptom	Possible solution
Unusual LCD screen	Unusual colors on LCD
	S : Replace LC-TS7004_INVERTER, LCD CtrA PCB ASS'Y
	Replace LC-TS7007_LVDS-Link cable

Operation Problem

Symptom	Possible solution
Control defectiveness of the remote	Not adjustable remote controller after booting process?
	S : Set up the channel of LC-TS7010_remote
	S : Replace LC-TS7009_IR-RECEIVER
IR-RECEIVER defectiveness	

Software Problem

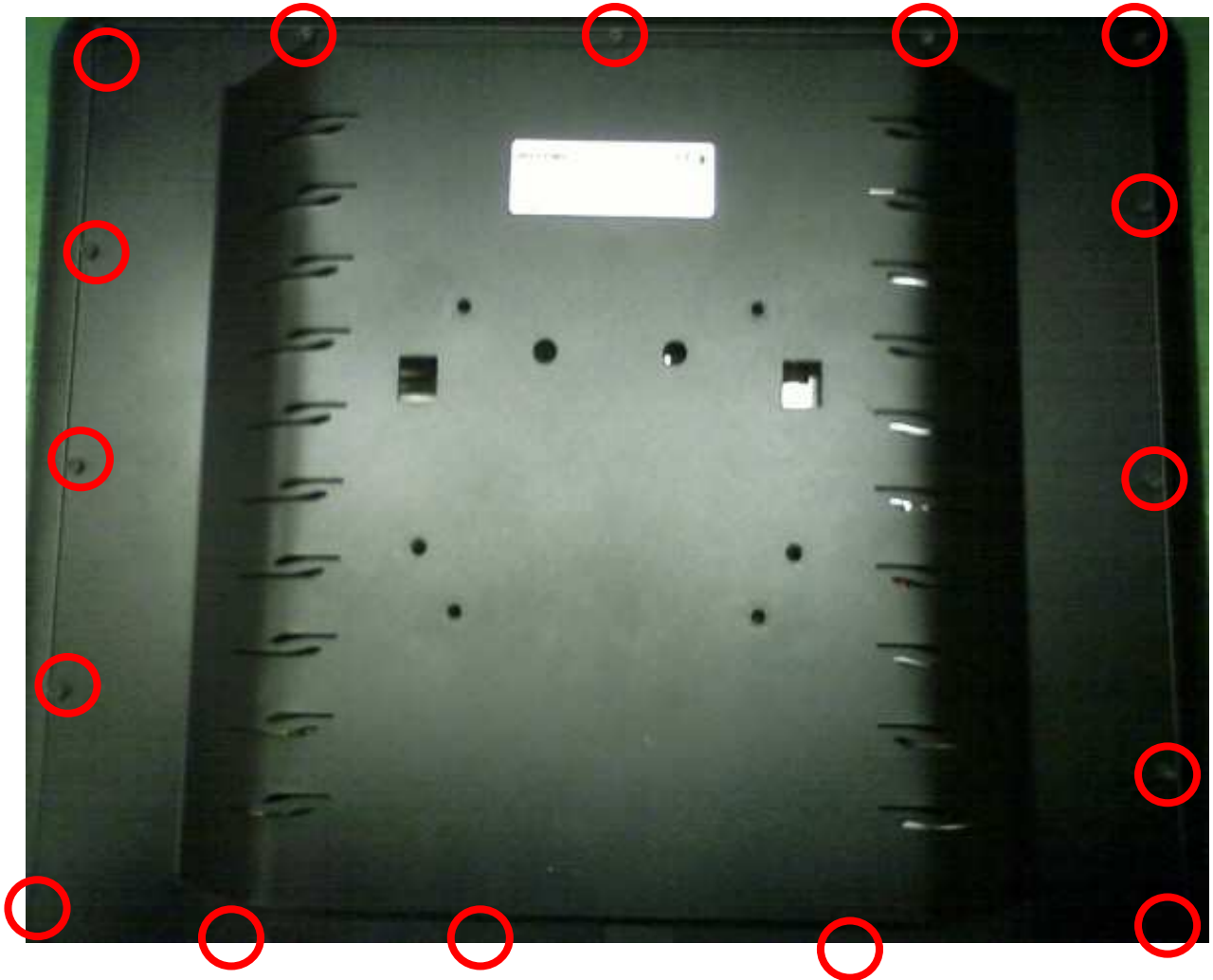
Symptom	Possible solution
Sleep mode	Q : No remote control after sleep mode? S : LC-TS7013_PLC-7000 Linux Software Update
Bluetooth communication	Q : Do you need Bluetooth communication with PDR-7000? S : LC-TS7014_PLC-7000 Bluetooth Software Update
Image Update	Q : Do users want to change the slide images? S : LC-TS7015_PLC-7000 Image Update

Others

Symptom	Possible solution
SMPS	Q : Does low frequency from the chart sound? S : Corrective action if LC-TS7012_sound occurs
Parts omission	Q : Parts omission in the package S : Request parts based on parts # in the Part List

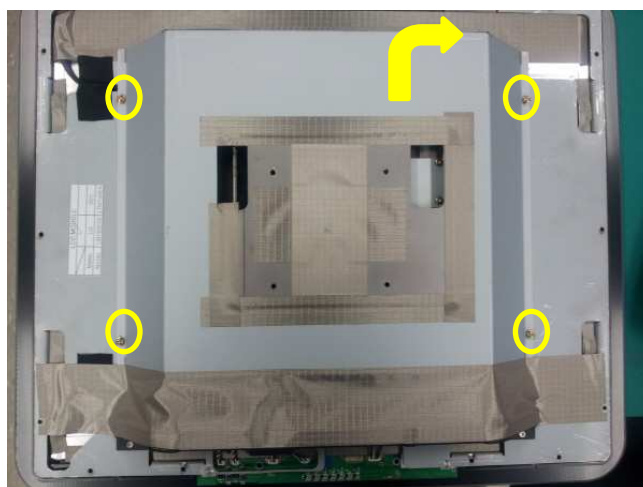
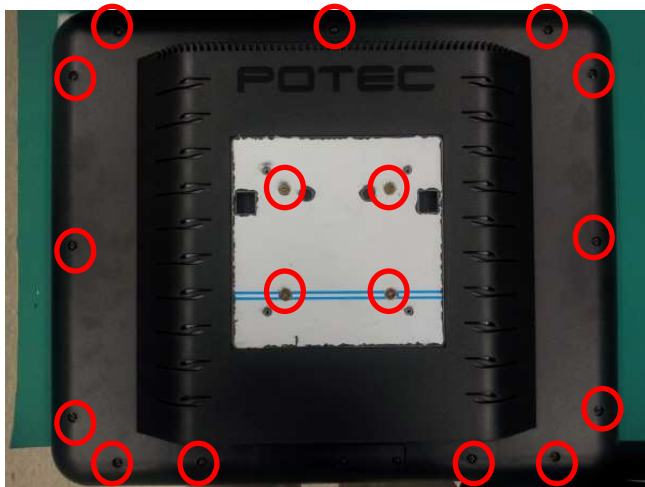
LC-TS7000_How to disassemble the UPPER COVER

- Please be sure that disassembly and assembly are different based on the materials of the external case
 - S/N of Metal case : D70B03AN ~ D7AC30BN
 - S/N of Plastic case : D7AC30CN ~
- Metal
 1. Unscrew the positions in red in the back of the PLC-7000 to take out the upper cover

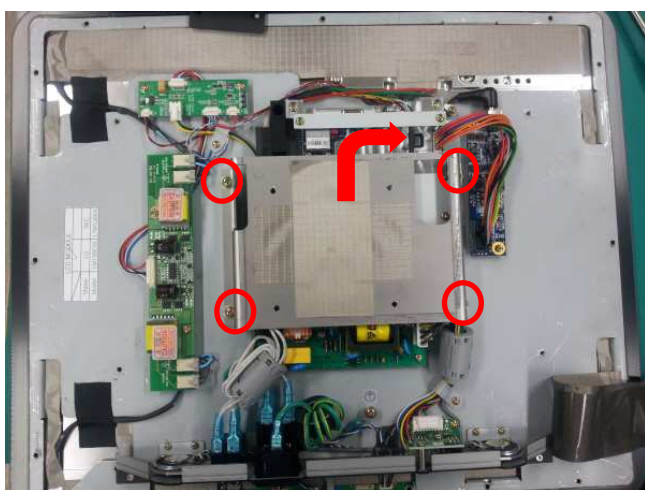


- Plastic case

1. Unscrew the positions in red in the back of the PLC-7000 to take out the upper cover
Then, loosen the screws in yellow and rip off the tape to take out the bracket



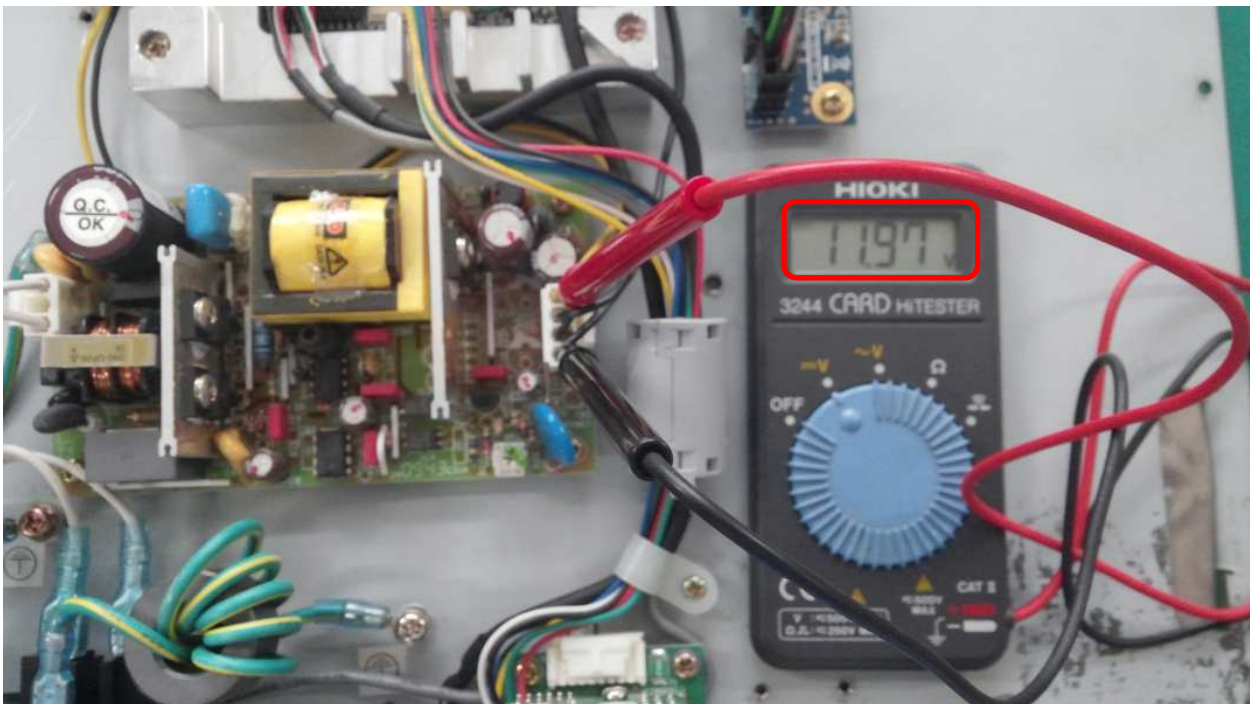
2. Unscrew the positions in red and take out the bracket



LC-TS7001_How to check the voltage of SMPS and replace

Ref No.	Name of Part	Code of Part	Description	Q'ty
	SMPS	E-EX00-C01	SUN-1205P	1

- Please be sure that disassembly and assembly are different based on the materials of the external case
 - S/N of Metal case : D70B03AN ~ D7AC30BN
 - S/N of Plastic case : D7AC30CN ~
1. Refer to "How to disassemble the LC-TS7000_UPPER COVER" for the upper cover disassembly
 2. Connect the tester with SMPS as in the following image, then Turn on the power and check the voltage of SMPS (Normal range : 11.40 ~ 12.60V)

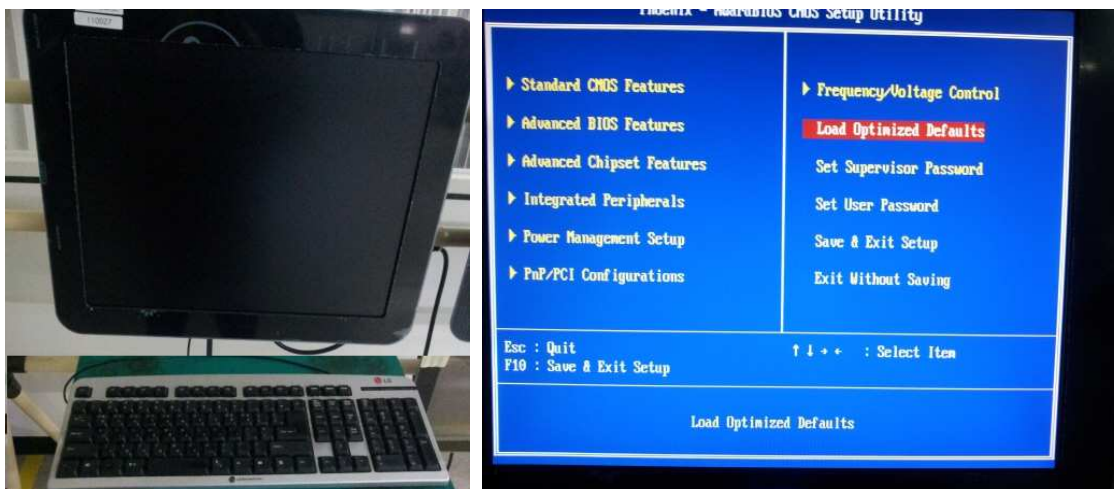


3. Replace SMPS if the voltage is out of the ordinary

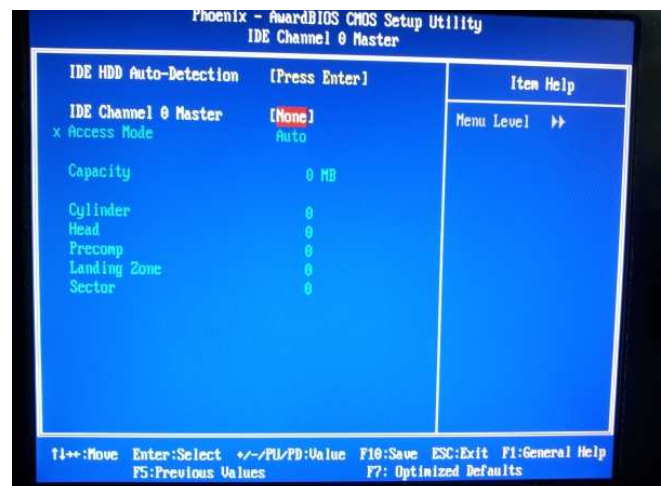
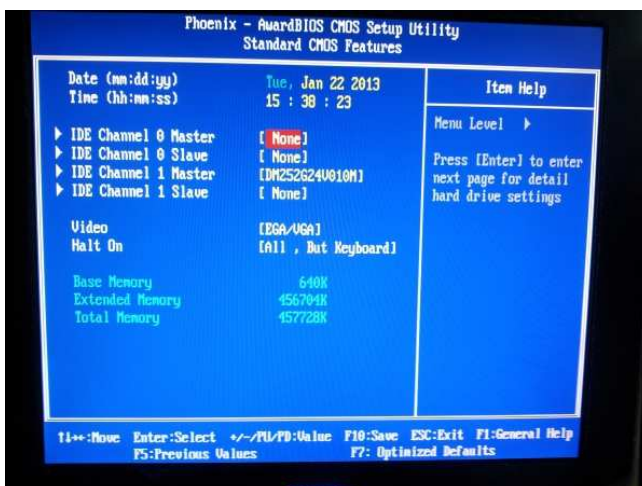
LC-TS7002_How to judge an error during booting process

- S/N of ARTIGO(EPOA-PX; VIA) Base
: D70B03AN ~ D7CC22DN, D7CI26AN ~ D7CI30FN, D7CJ01BN ~ D7CJ01DN
- S/N of RAON-7300B Base
: D7CI05AN ~ D7CI09AN, D7CJ29AN ~
- Output the message **"CMOS Chceksum Error"** during the booting process of ARTIGO base

1. Connect keyboard into the USB port at the bottom of PLC-7000, then turn on the power and press Del to access to the "CMOS Setup Utility". Go into "Load Optimized Defaults" mode, then press "Y" as in the following image.



2. Move to "IDE Channel 0 Master", then press enter, after that change the mode as "None" in the "IDE Channel 0 Master" as in the following image. Make the same condition for "IDE Channel 0 Slave" and "IDE Channel 1 Slave" as above. "DM252G24V010M" should be shown in "IDE Channel 1 Master". If "None" is shown, SATA DOM or ARTIGO is defective.

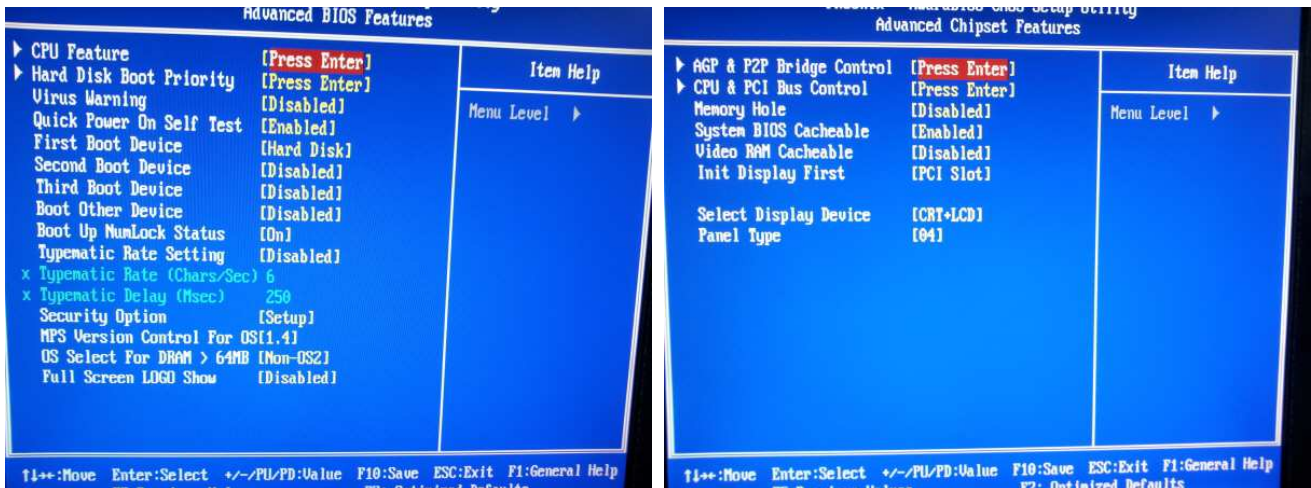


3. Please go back to "CMOS Setup Utility" and go into "Advanced BIOS Features", then change the modes as follows.

First Boot Device → Hard Disk
Second Boot Device → Disabled
Third Boot Device → Disabled
Boot Other Device → Disabled
Full Screen LOGO Show → Disabled

4. Please go back to "CMOS Setup Utility" and go into "Advance Chipset Features", then change the options as in the following image.

Select Display Device → CRT+LCD
Panel Type → 04



5. To save, please press F10 button, then reboot.

- If remote is not working after rebooting → Please refer to "How to set up the channel of the remote controller"

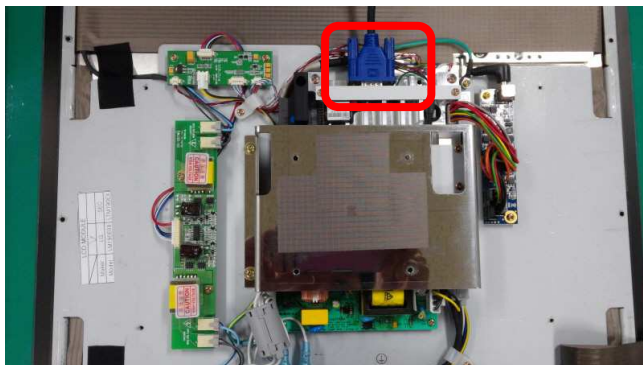


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LC-TS7003_How to check the ARTIGO defectiveness and replace

Ref No.	Name of Part	Code of Part	Description	Q'ty
	ARTIGO	E-EB00-A02	EPIA-PX; VIA	1
	PWB-N550PG; VIA	E-EB00-A03		1

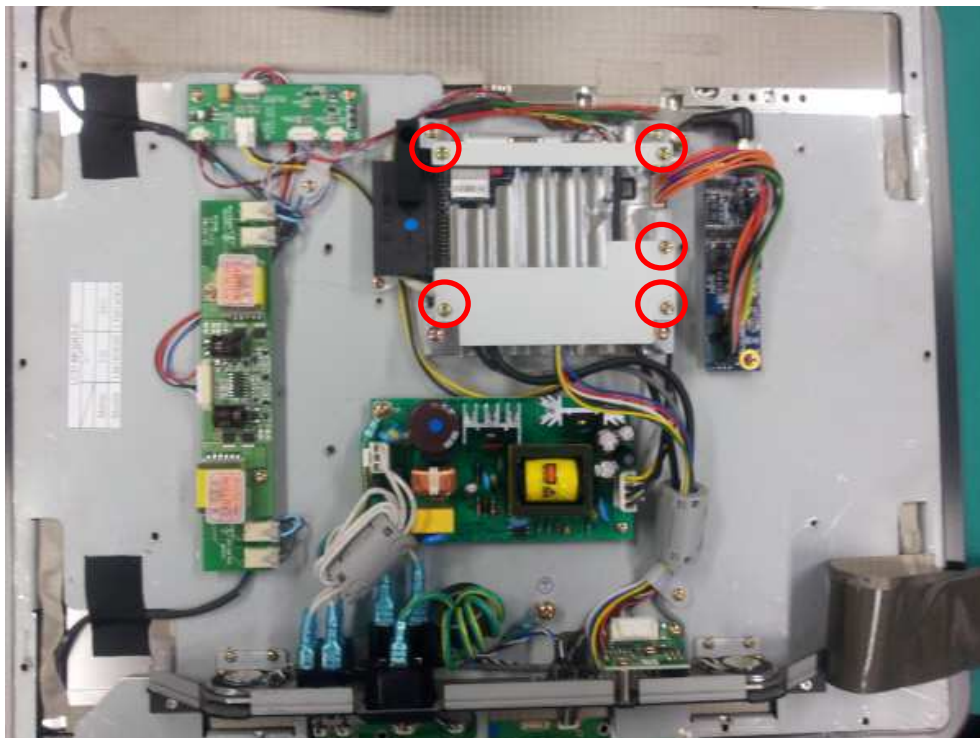
- Please be sure that disassembly and assembly are different based on the materials of the external case
 - S/N of Metal case : D70B03AN ~ D7AC30BN
 - S/N of Plastic case : D7AC30CN ~
- S/N of ARTIGO(EPOA-PX; VIA) Base
 - : D70B03AN ~ D7CC22DN, D7CI26AN ~ D7CI30FN, D7CJ01BN ~ D7CJ01DN
- How to check the ARTIGO defectiveness
 1. Refer to "How to disassemble the upper cover" for the upper cover disassembly
 2. Connect the socket in red with RGB cable
 3. Turn on the power, then check the monitor condition



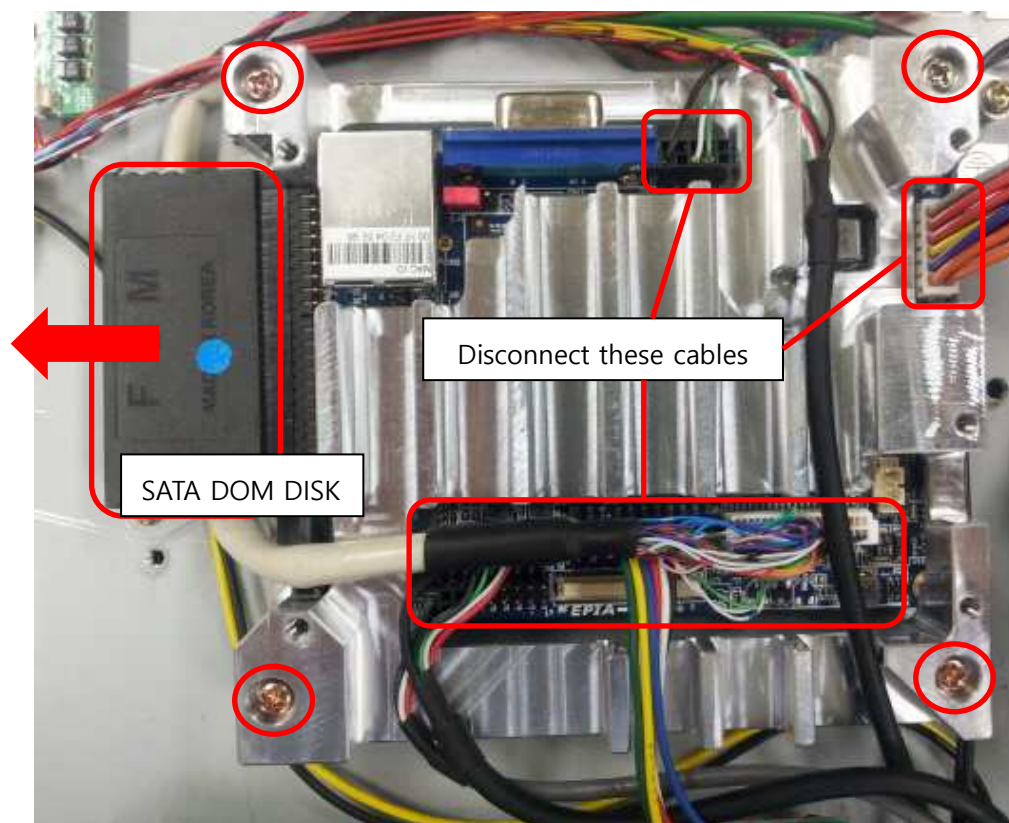
4. If the external monitor doesn't work, = ARTIGO defectiveness
 - 1) If the external monitor works = INVERTER, LCD CtrA PCB ASS'Y, or LVDS cable defectiveness assumption
 - 2) No signal on the external monitor with no LED flicker next to the USB port after power on -> SMPS defectiveness assumption

- How to replace ARTIGO

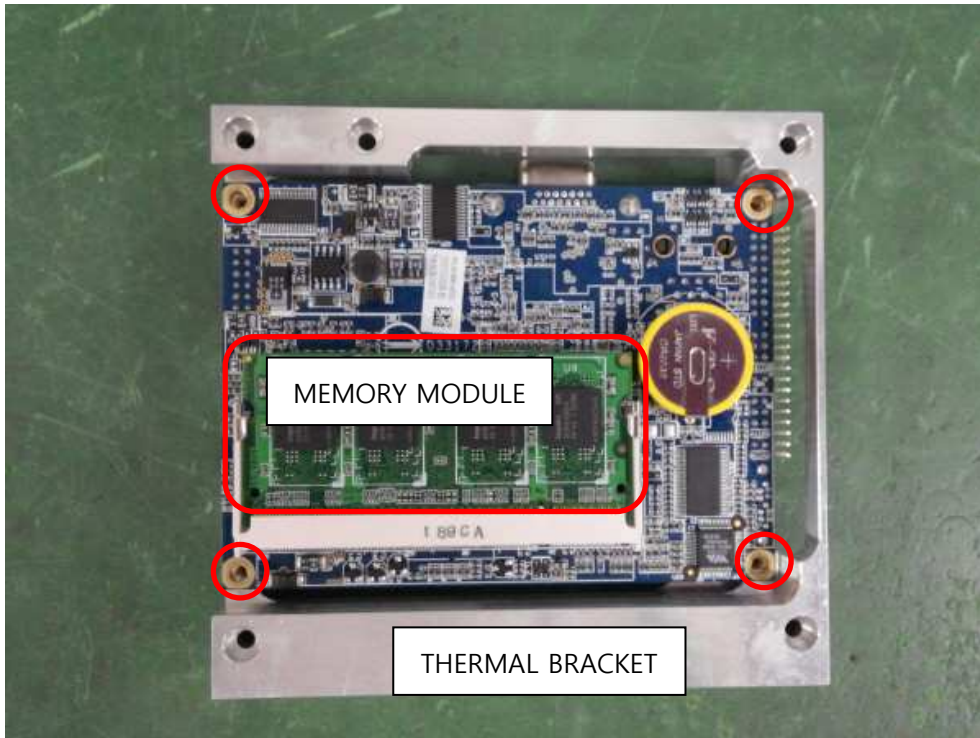
1. Refer to "How to disassemble the upper cover" for the inner bracket disassembly
2. Unscrew the positions in red, then take out the two brackets as in the following image



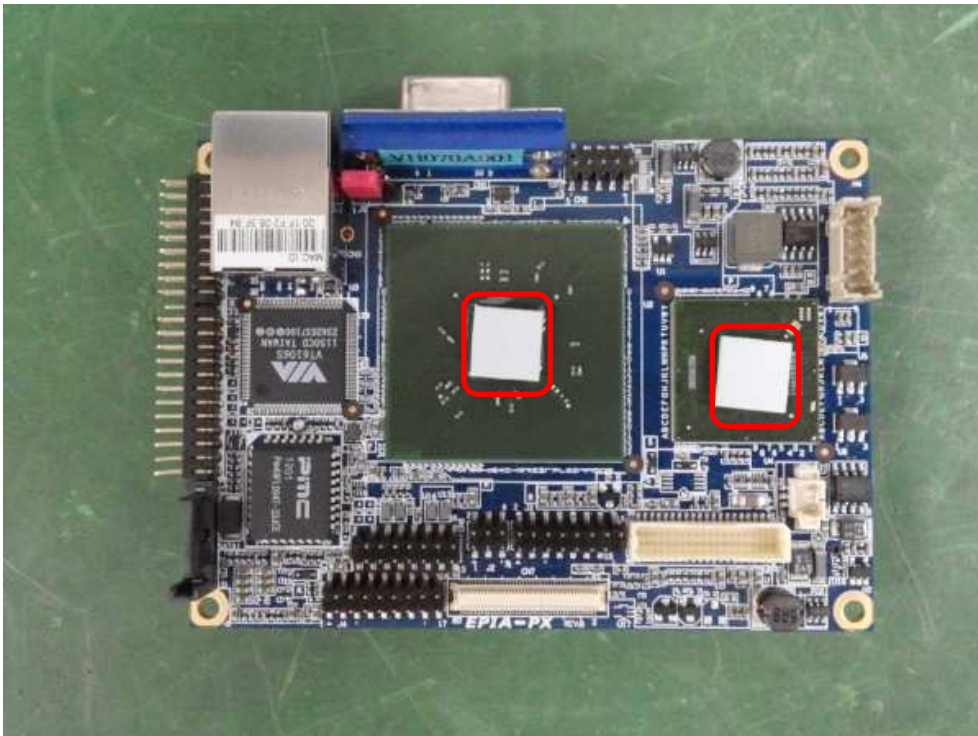
3. Disconnect the below cable and remove the SATA DOM DISK by the below arrow, then loosen the screws in red for ARTIGO disassembly



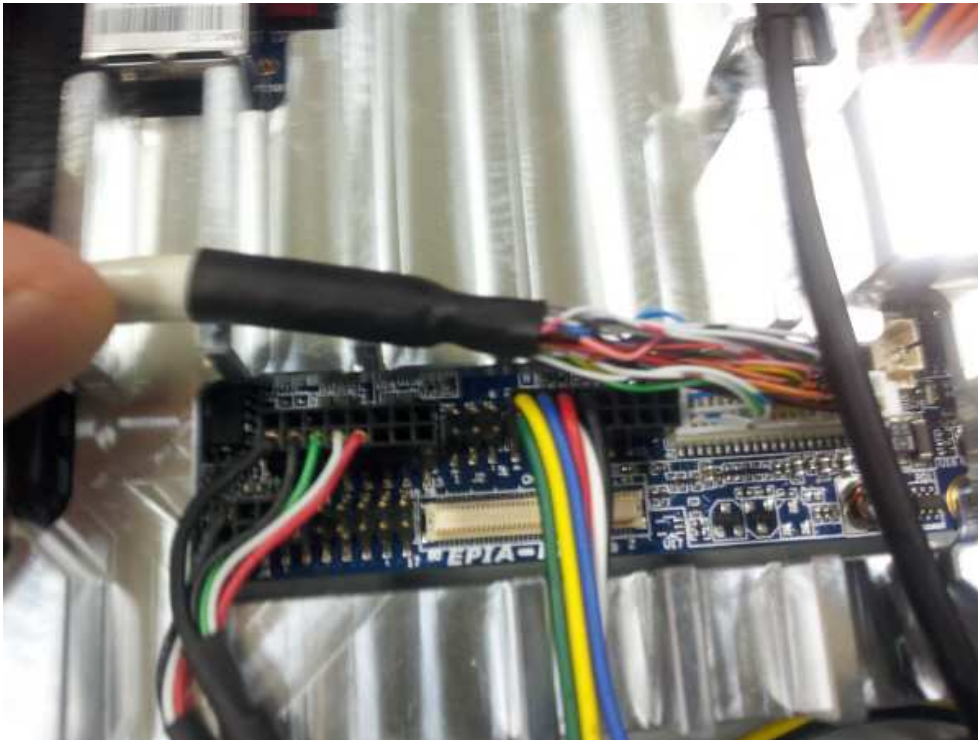
4. Remove the defective ARTIGO from PLC-7000, then remove the MEMORY MODULE and screws



5. Remove the defective ARTIGO from THERMAL BRACKET, then assemble a new ARTIGO
Please be sure that the Thermal Pads in the below image should NOT be removed when assembling a new ARTIGO



6. Assembly can be followed in reverse to disassembly. Please be sure that the cables should be connected with the correct positions as below image

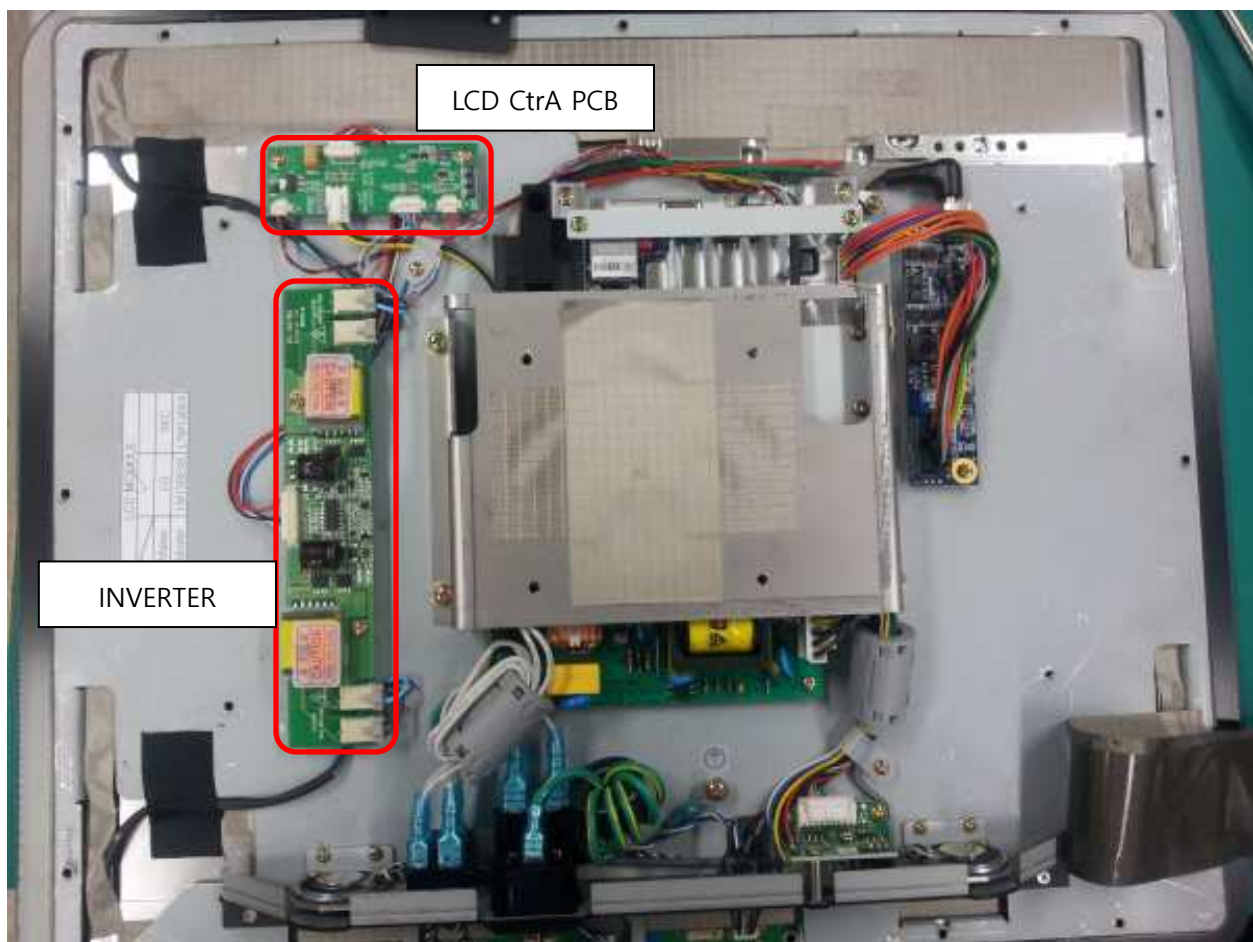


LC-TS7004_How to replace INVERTER, LCD CtrA PCB ASS'Y

Ref No.	Name of Part	Code of Part	Description	Q'ty
	INVERTER	E-EB00-A12		1
	LCD CtrA PCB	E-EY00-A05		1

- Only the below S/Ns can be applied with Inverter and LCD CtrA PCB based on LCD
: D70B03AN ~ D7DF24AN

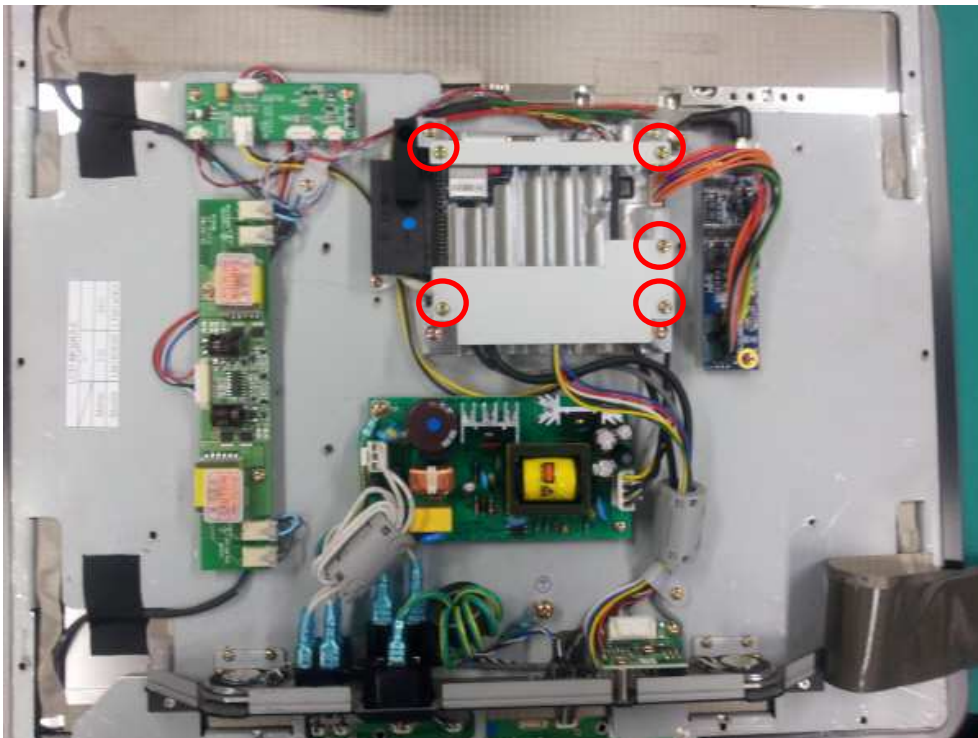
1. Refer to "How to disassemble the upper cover" for the upper cover disassembly
2. Replace the below parts of the image with new ones
 - 1) LCD CtrA PCB – If monitor doesn't work
 - 2) INVERTER – No power supply into the LCD Backlight



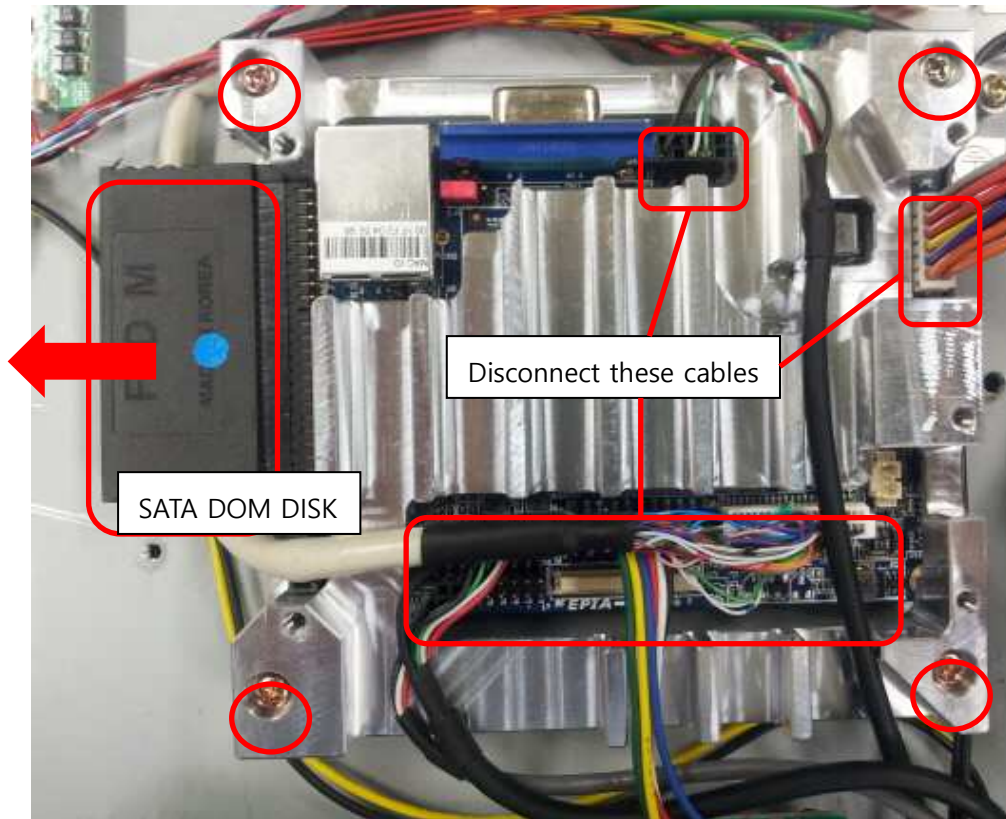
LC-TS7005_How to rub MEMORY MODULE with an eraser and replace

Ref No.	Name of Part	Code of Part	Description	Q'ty
	MEMORY MODULE	E-EB00-A06	SO-DIMM, 1GB DDR2-800 PC6400	1

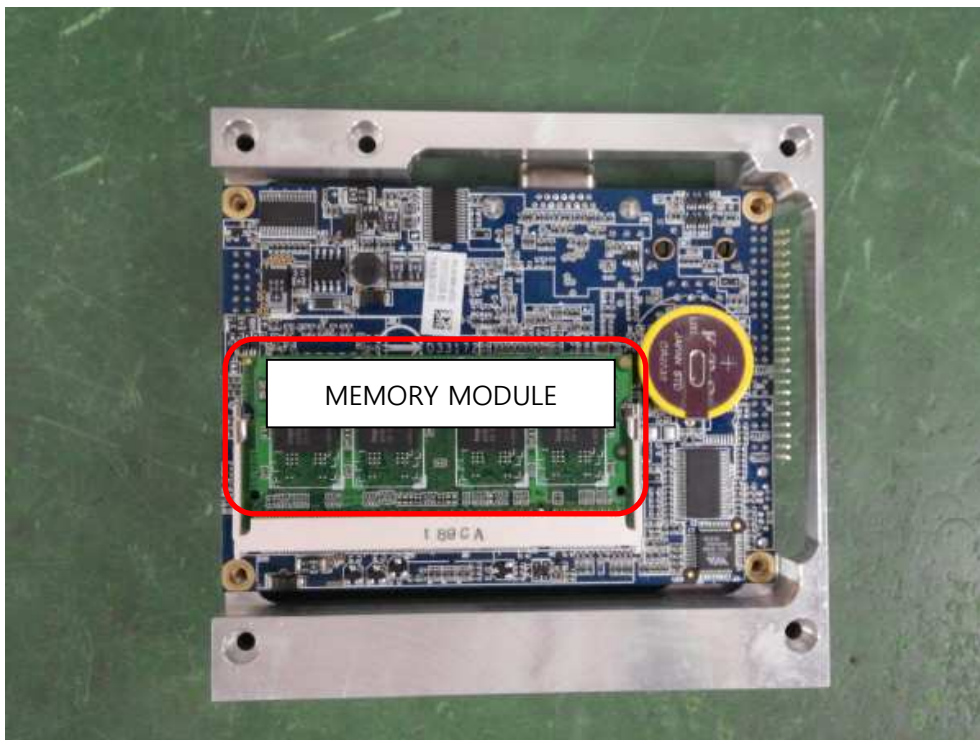
- Beef sound occurs if MEMORY MODULE(RAM) is defective after power on
In this case,
 - 1) Rub off the MEMORY MODULE
 - 2) If the condition on the PLC-7000 is same, replace the MEMORY MODULE as in the following steps
- PLC-7000 with ARTIGO
 1. Refer to "How to disassemble the upper cover" for the upper cover disassembly
 2. Remove the screws in red, then disassemble the two brackets



3. Disconnect the below cable and remove the SATA DOM DISK by the below arrow, then loosen the screws in red for ARTIGO disassembly



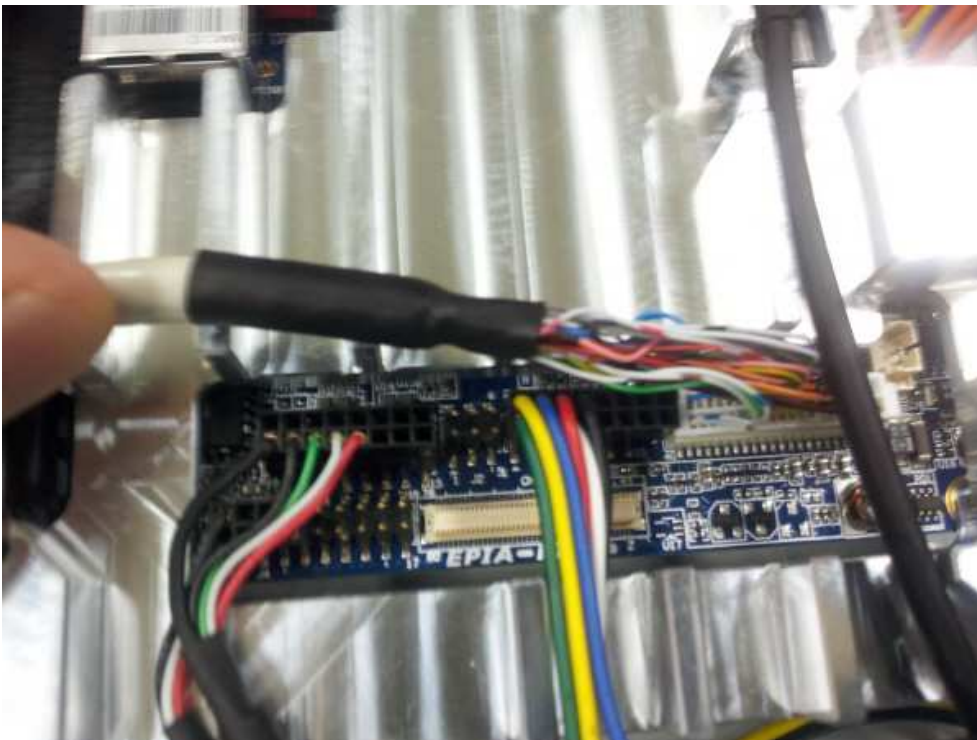
4. Remove the defective ARTIGO from PLC-7000, then remove the MEMORY MODULE



5. Rub off the contact surface by an eraser



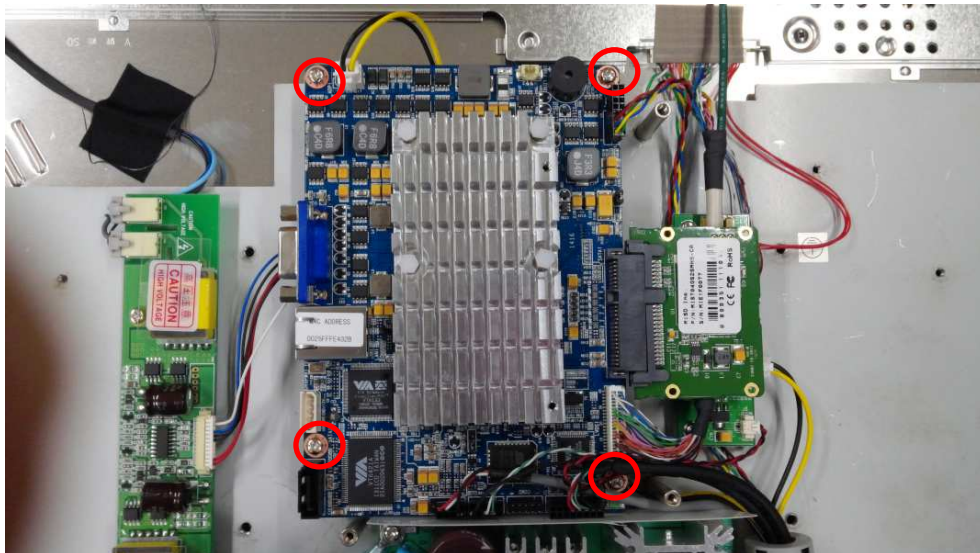
6. Assembly can be followed in reverse to disassembly. Please be sure that the cables should be connected with the correct positions as below image



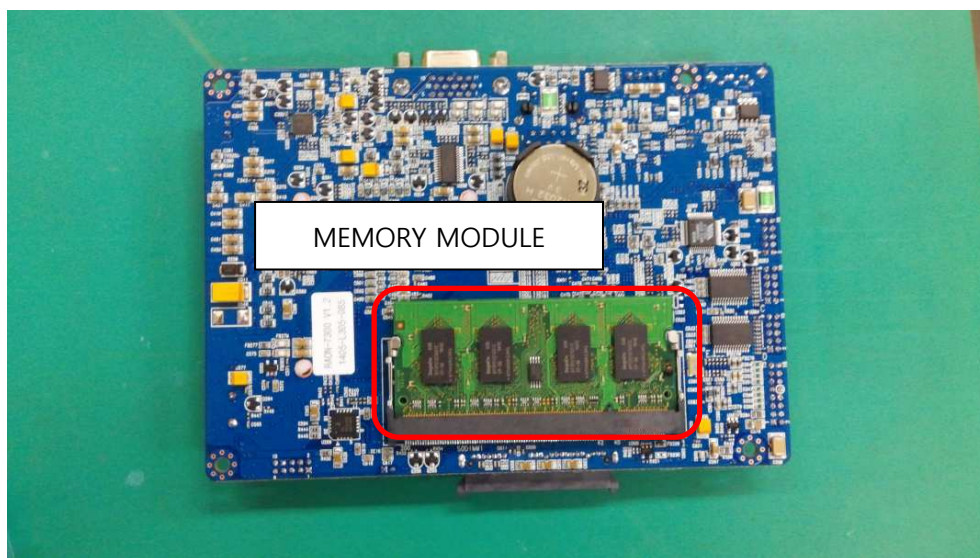
7. If the PLC-7000 has the same problem after assembly, the MEMORY MODULE is defective and MEMORY MODULE should be replaced.

- PLC-7000 with RAON-7300

1. Refer to "How to disassemble the upper cover" for the upper cover disassembly
2. Remove the cables from the RAON-7300 board and remove the screws in red



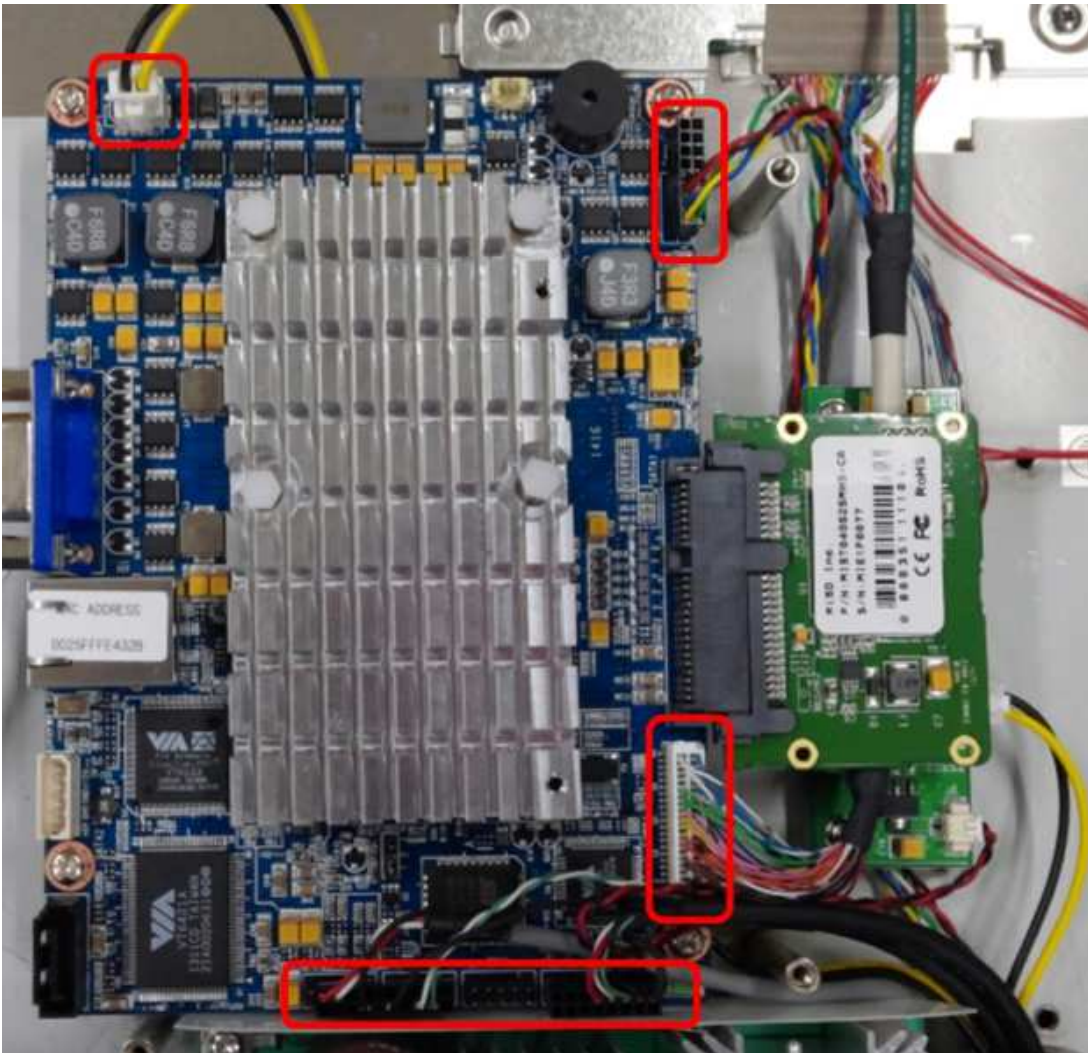
3. Remove the RAON-7300 board from the PLC-7000, then remove the MEMORY MODULE



4. Rub off the contact surface of the MEMORY MODULE by an eraser



5. Assembly can be followed in reverse to disassembly. Please be sure that the cables should be connected with the correct positions as below image

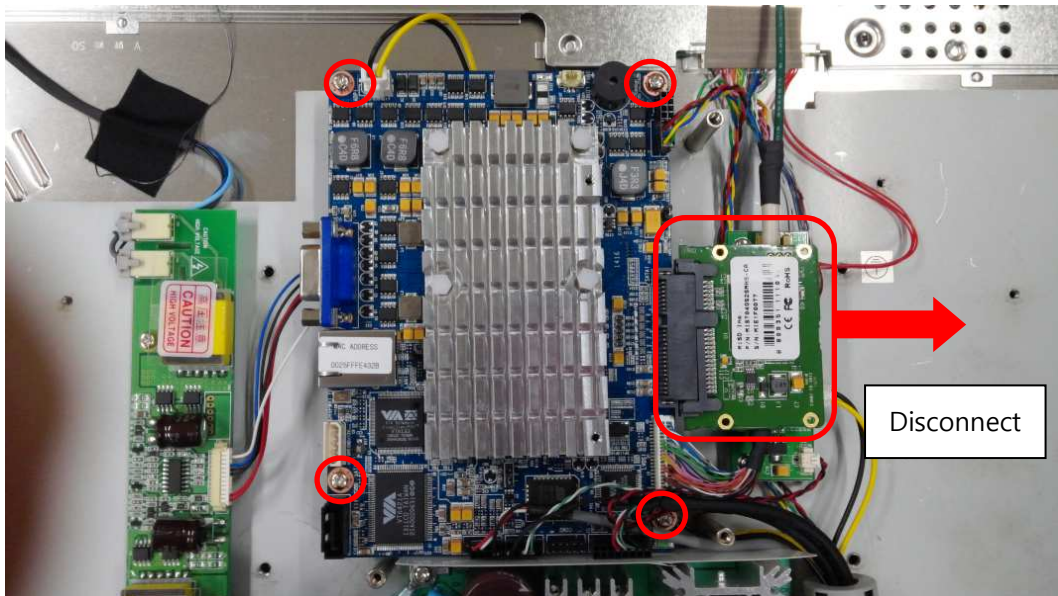


6. If the PLC-7000 has the same problem after assembly, the MEMORY MODULE is defective and MEMORY MODULE should be replaced

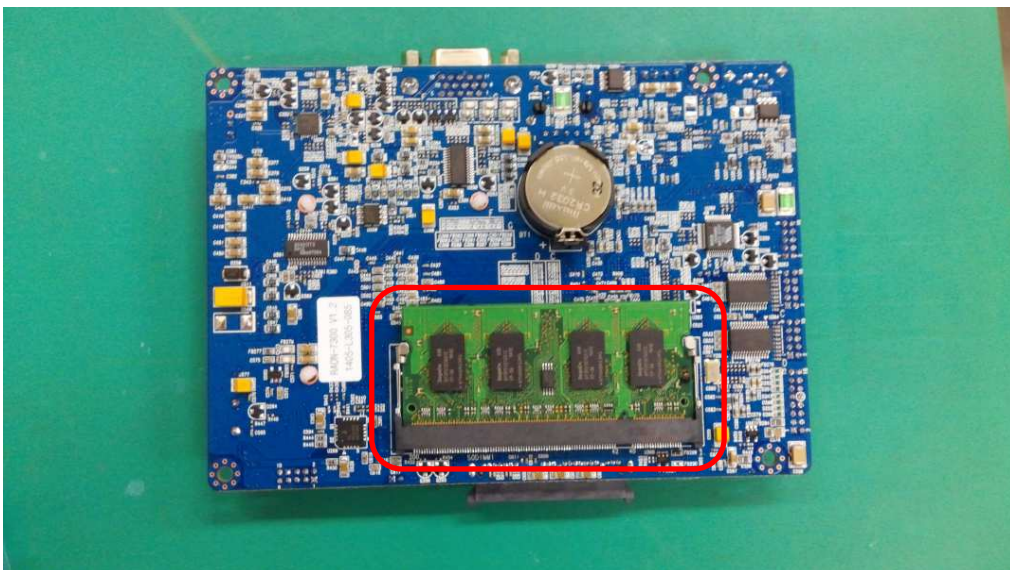
LC-TS7006_Replacement of RAON-7300B

Ref No.	Name of Part	Code of Part	Description	Q'ty
	PCB ASS'Y	E-EB00-A02	RAON-7300B	1

- S/N of PLC-7000 with RAON-7300B : D7CI05AN ~ D7CI09AN, D7CJ29AN ~
- Replacement of RAON-7300B
 1. Refer to "How to disassemble the upper cover" for the inner bracket disassembly
 2. Disconnect the below cable and remove the SATA DOM DISK by the below arrow, then remove the screws in red for RAON-7300B disassembly



3. Replace the defective RAONPLC-7000 with new one

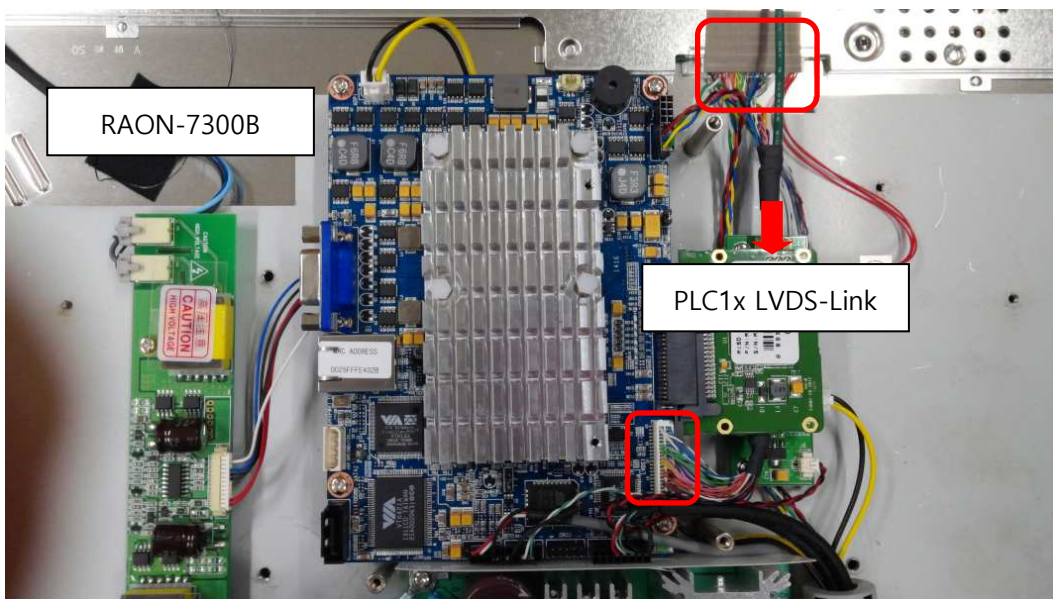
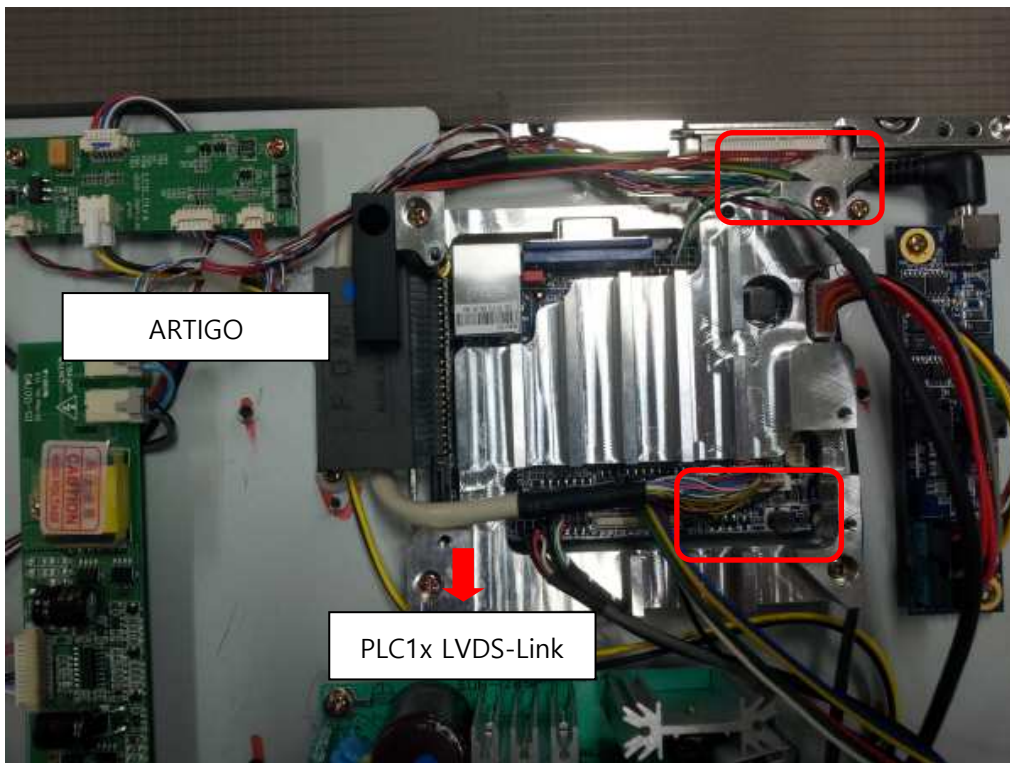


4. Assembly for RAON-7300B can be followed in reverse to disassembly.

LC-TS7007_Replacement of LVDS-LINK cable

Ref No.	Name of Part	Code of Part	Description	Q'ty
	CABLE HARNESS	E-EZ00-A21	PLC1x LVDS-Link	1

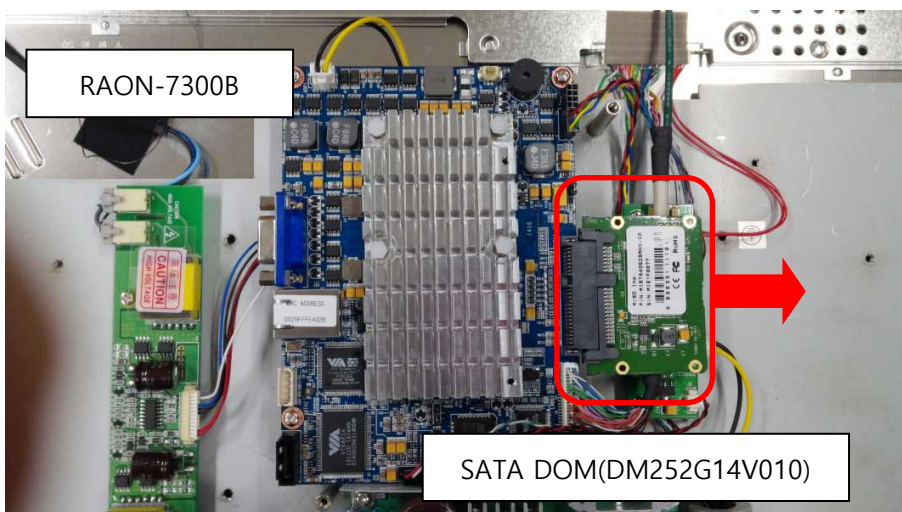
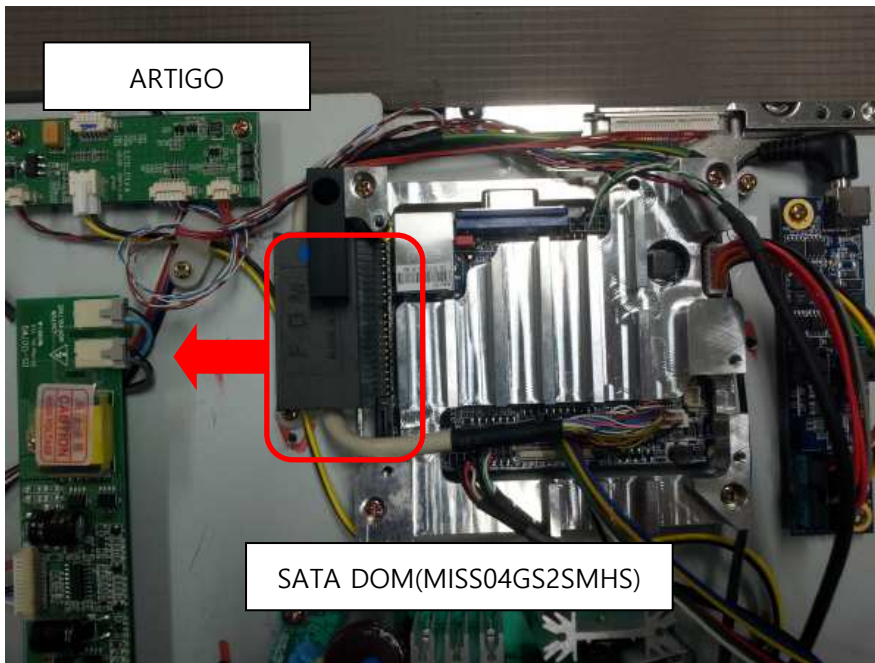
- PLC1x LVDS-Link cables for ARTIGO and RAON-7300B differ from each other
 - Replacement of PLC1x LVDS-Link
1. Refer to "How to disassemble the upper cover" for the inner bracket disassembly, then replace the below cables



LC-TS7008_Replacement of SATA DOM

Ref No.	Name of Part	Code of Part	Description	Q'ty
	SATA-DOM 2GB/4GB	E-EB00-A10	ARTIGO : MISS04GS2SMHS RAON : DM252G14V010	1

- If the message, "DISK BOOT FAILURE, INSERT SYSTEM DISK AND PRESS ENTER", is shown, please follow the below direction for reassembly, if the problem still remains, SATA DOM should be replaced
- SATA-DOM between ARTIGO(MISS04GS2SMHS_2GB) and RAON-7300B(DM252G14V010_4GB) differs
- Replacement of SATA-DOM
 1. Refer to "How to disassemble the upper cover" for the inner bracket disassembly, then replace the SATA DOM as below image



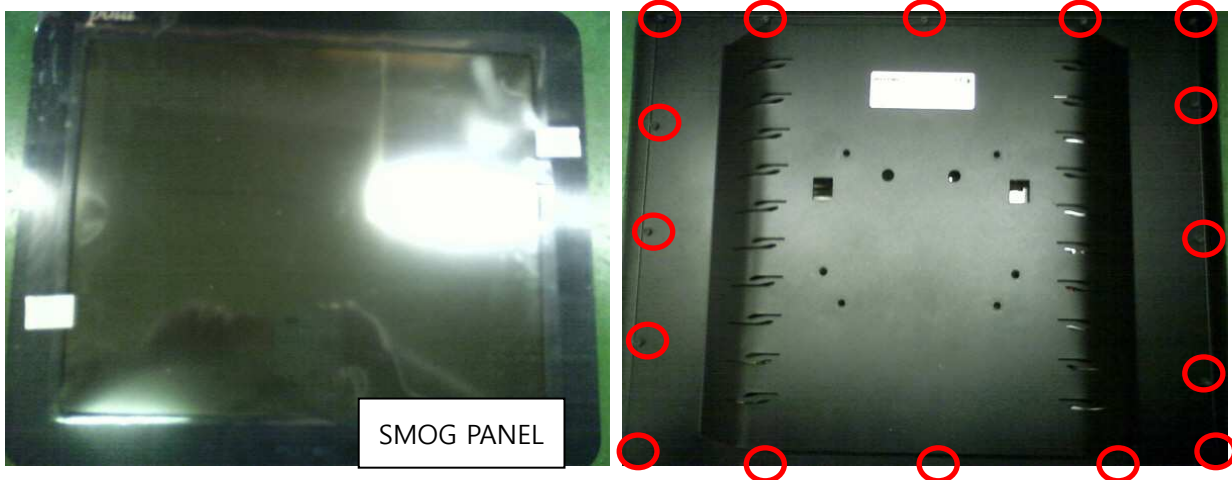
LC-TS7009_Replacement of IR-RECEIVER

Ref No.	Name of Part	Code of Part	Description	Q'ty
	IR-RECEIVER	E-EY00-A02		1

- Please be sure that disassembly and assembly are different based on the materials of the external case
 - S/N of Metal case : D70B03AN ~ D7AC30BN
 - S/N of Plastic case : D7AC30CN ~

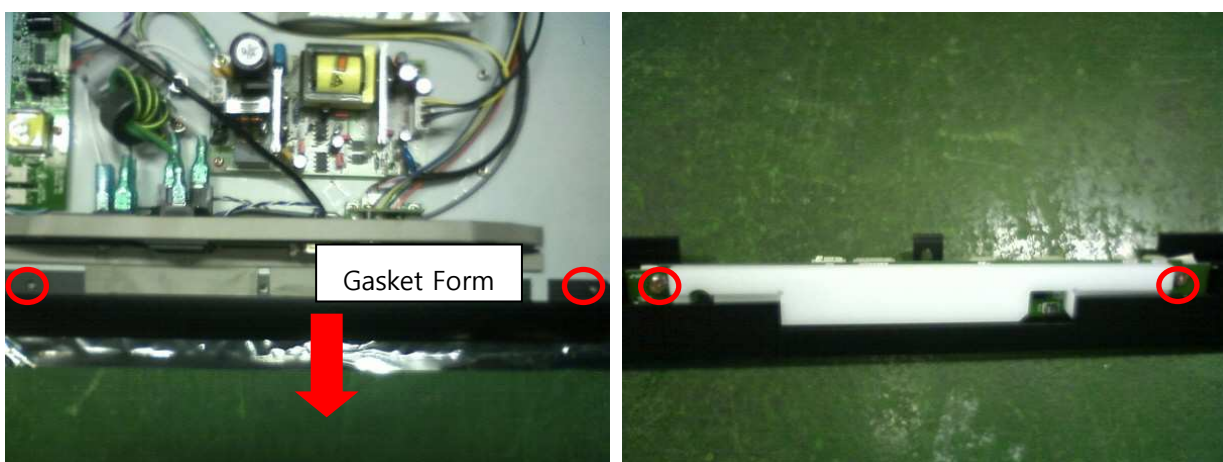
- IR-RECEIVER replacement for metal cases

1. Remove the SMOG PANEL from the front of PLC-7000, then remove the screws in red



2. Remove the Gasket Form(Tape) and disconnect the cable as below image, then remove the screws in red and take 19" _LCD FRAME LED apart as the below arrow

Remove the IR-RECEIVER from 19" _LCD FRAME LED after unscrewing

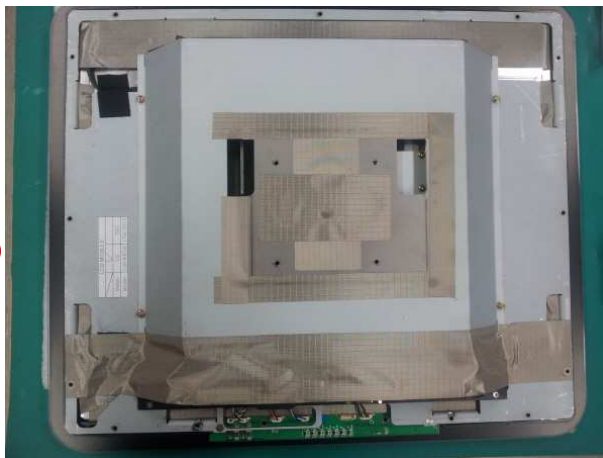
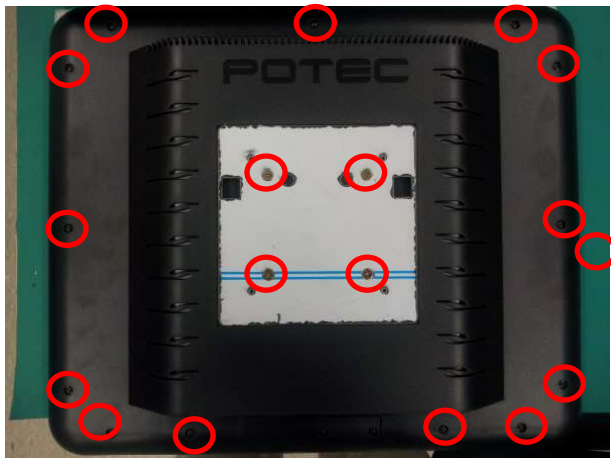


3. Assembly can be followed in reverse to disassembly

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- IR-RECEIVER replacement for plastic cases

1. Remove the screws in the back of PLC-7000, then take upper case apart



2. Remove the SMOG PANEL after downside up, then replace IR-RECEIVER after removing the screws in red as below image



3. Assembly can be followed in reverse to disassembly

LC-TS7010_How to set up the channel of the remote controller

Ref No.	Name of Part	Code of Part	Description	Q'ty
	REMOTE CONTROLLER ASSY	E-ASL0-A14		1

1. How to set up the channel of remote controller for PLC-7000



- 1) Press button ① and ② at the same time
- 2) Press button ②, then POTEC logo will be blinked
- 3) Press button ③ for finalizing channel set up, then POTEC logo will be blinked for two times for the set up confirmation

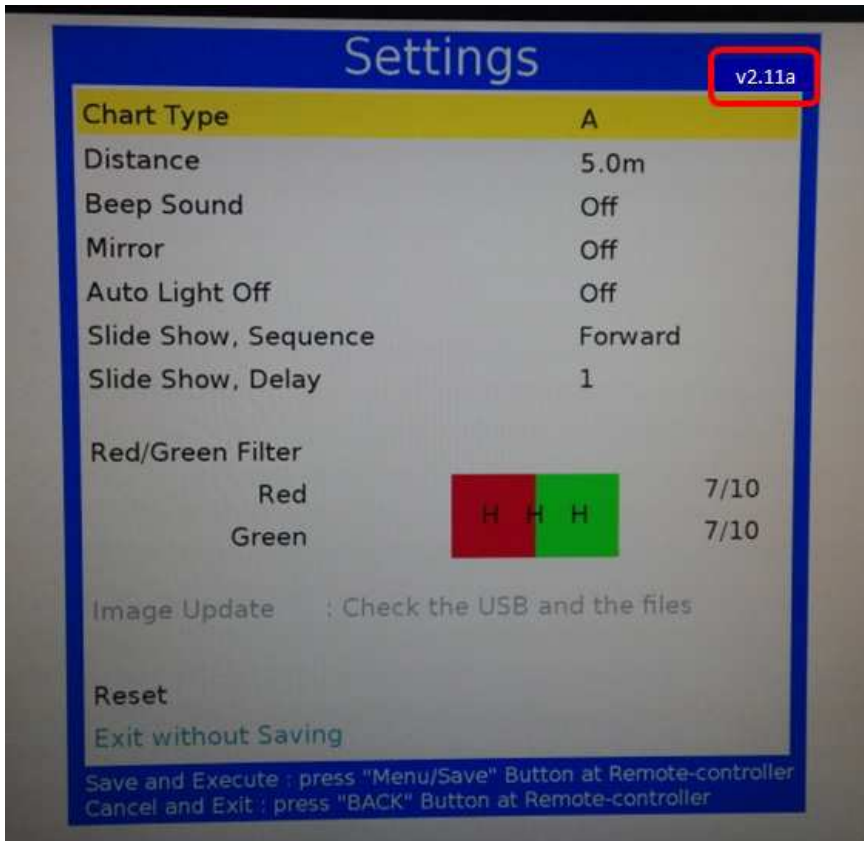
2. How to check the remote defectiveness – [Click on this link to watch the video](#)

- 1) Check the battery of the remote controller
- 2) Keep the receiver of the remote controller toward any mobile or digital camera's lens
- 3) Press any button of the remote controller if light on the LCD is checked
- 4) If light can be checked, the remote controller and its battery work properly

LC-TS7011_PDR-7000 and PLC-7000 Bluetooth Connectivity

1. PLC-7000 Software Version Check

- 1) After booting PLC-7000, operate PLC-7000 by pressing Chart on/off button on the remote controller.
- 2) Press Manu button on the remote controller.
- 3) Check software version. Blue tooth communication is available from v2.11a.

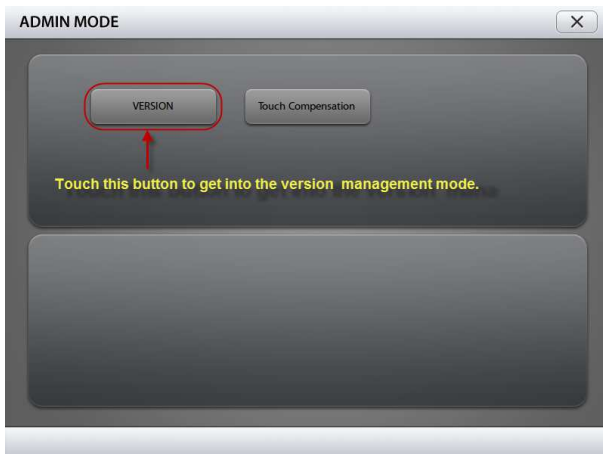


2. PDR-7000 Software Version Check

- 1) Move to "ADMIN MODE" after booting by pressing "SHIFT+MENU" button at the same time.



- 2) Move to version management mode from ADMIN MODE by touching red circled button in the picture below.



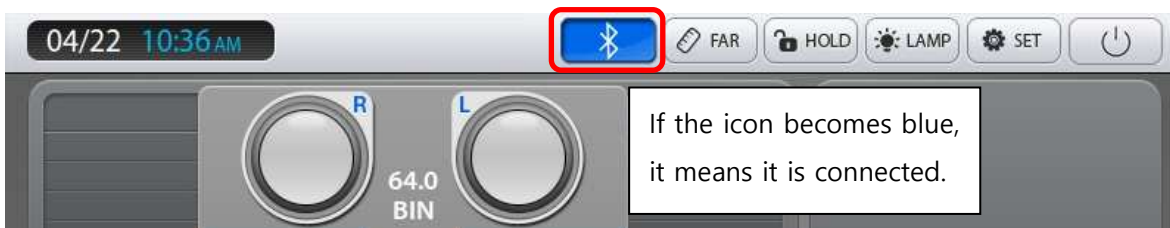
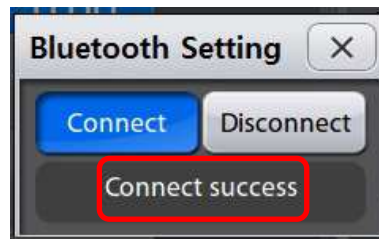
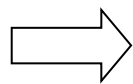
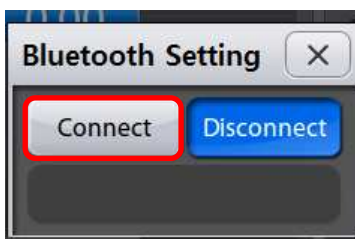
- 3) Check the version (Please refer to the part highlighted by red). Bluetooth communication with PLC-7000 is available from 0.93b/3.00a.



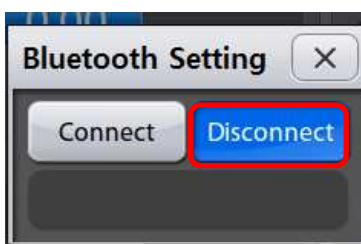
3. Press 'MENU' button on the panel and then touch 'Select Chart'. Subsequently, Select 'PLC-7000/PLC-7000Pola' and get out of 'Setting' menu by touching 'x'.



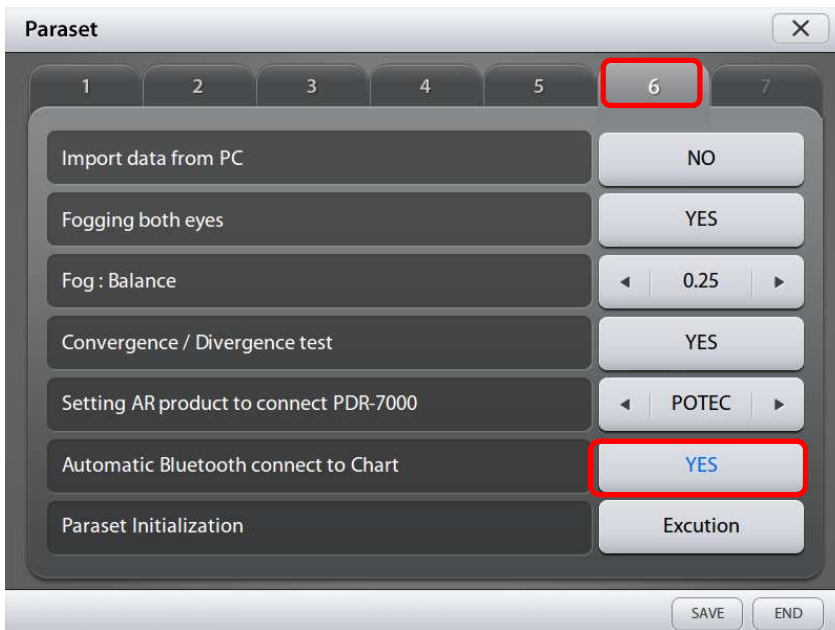
4. Insert the bluetooth dongle into USB port of PLC-7000 and turn PLC-7000 on. Subsequently, also insert the bluetooth dongle into USB port of Control Box of PDR-7000(backside of it). After the booting of PLC-7000 is completed, touch the bluetooth icon in the main image of PDR-7000.



5. If you want to stop the bluetooth communication, touch 'Disconnect' icon as in the picture below.



6. Access to 'Menu' and select the sixth tab of 'Paraset'. If you set 'Yes' on 'Automatic Bluetooth connect to Chart' menu, PDR-7000 would automatically try to get the Bluetooth communication with PLC-7000(Pola) on everytime it is on.(PLC-7000(Pola) should be on to be connected by bluetooth communication.



7. Caution

- Bluetooth dongle : CSR 4.0
- Bluetooth communication between PDR-7000 and PLC-7000 would work only when the message 'Press the Chart On/Off Button' is on the PLC-7000 screen after booting process.

8. Video Clip

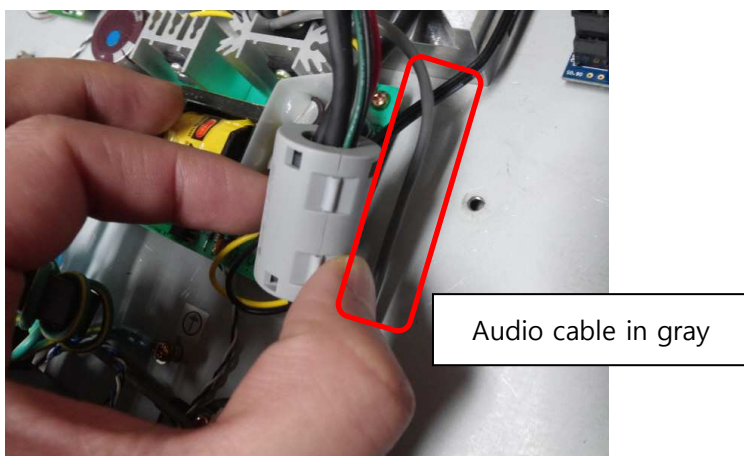
<https://www.dropbox.com/s/ryvq9m96xugszwt/PDR-7000%20and%20PLC-7000%20Bluetooth%20Connectivity.avi?dl=0>

LC-TS7012_Corrective action when noise occurs

1. Refer to "How to disassemble the upper cover" for the inner bracket disassembly
2. Divide the core in gray by a knife or a flat-tip screwdriver



3. Take the audio cable only out of the core and keep the rest in the core, then assemble



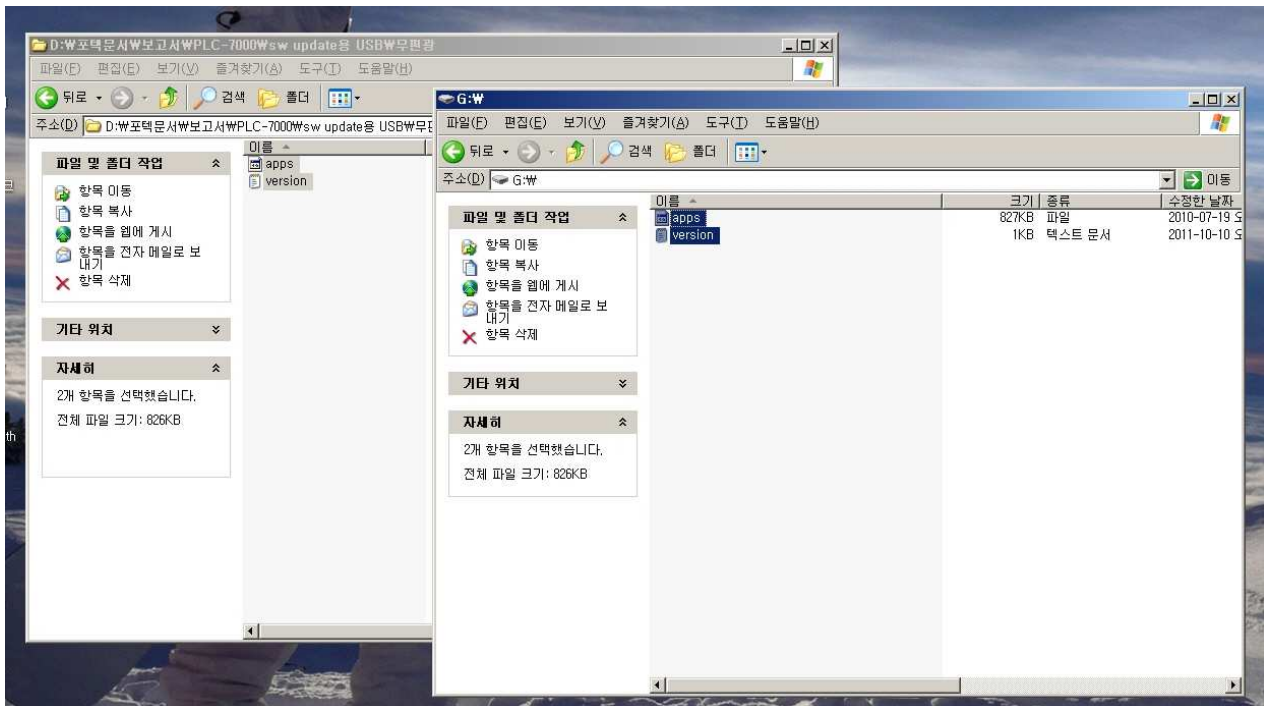
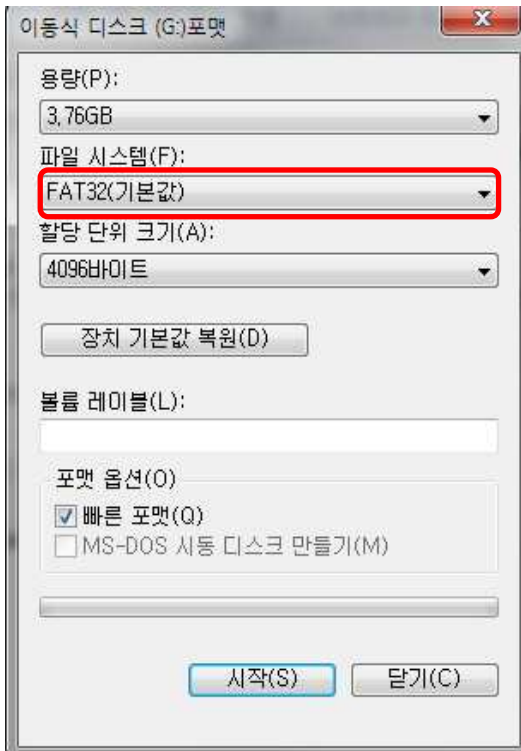
4. Assembly can be followed in reverse to disassembly

LC-TS7013_PLC-7000 Linux Software Update

1. Prepare an USB DISK to be connected with PC, then save the files(apps, version) into a USB DISK

- Caution : USB DISK should be in FAT32 format as below image

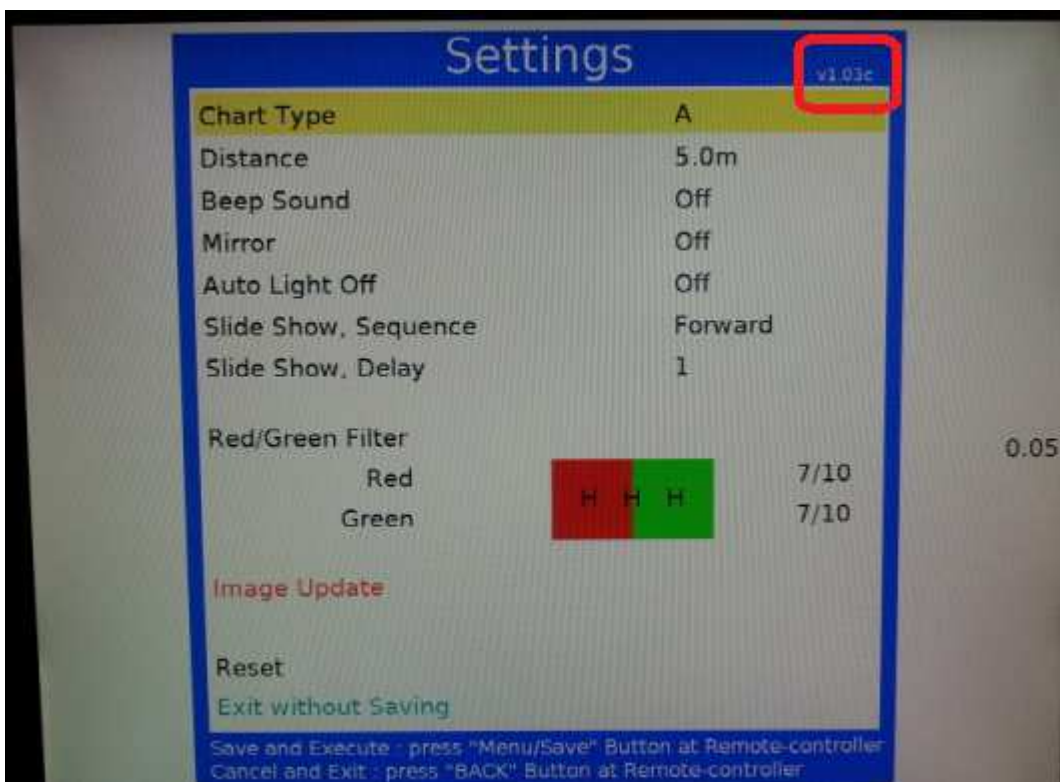
Apps files have no extension, be sure that please delete any extension if Apps files have e.g.) apps.dat → apps



2. Once the files are saved, connect the USB DISK with the port of PLC-7000, then turn on the PLC-7000 power



3. Software is automatically upgraded during booting process
4. Check the software version once booting process is finalized



- New versions – There are three versions as below and be sure that each version should be matched with each other for its compatibility before upgrading
1.03e / 1.03e p (1.00x)
2.00b / 2.00b p (2.00x)
2.20 / 2.20 p (2.1x ~)

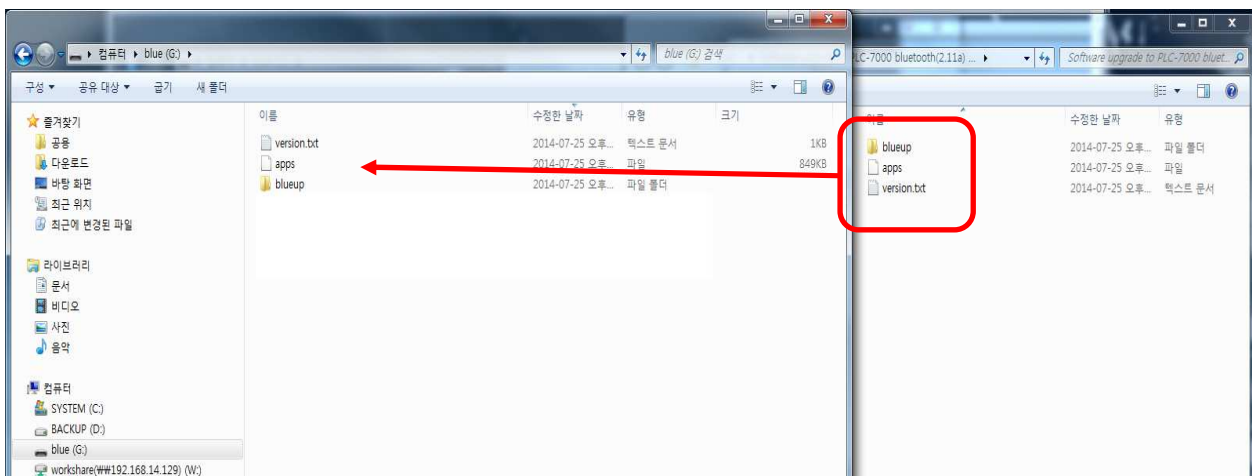
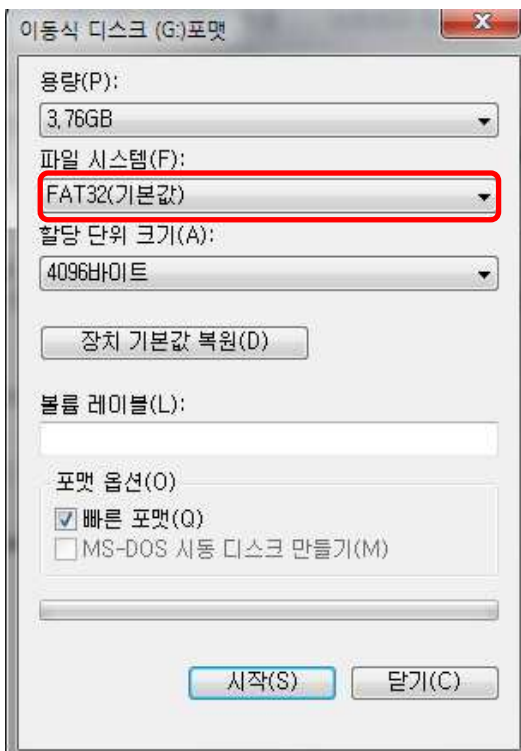
LC-TS7014_PLC-7000 Bluetooth Software Update

- Bluetooth communication is available from the S/N, D7CJ29AN

1. Prepare an USB DISK to be connected with PC, then save the files(blueip folder, apps, version) into a USB DISK

- Caution : USB DISK should be in FAT32 format as below image

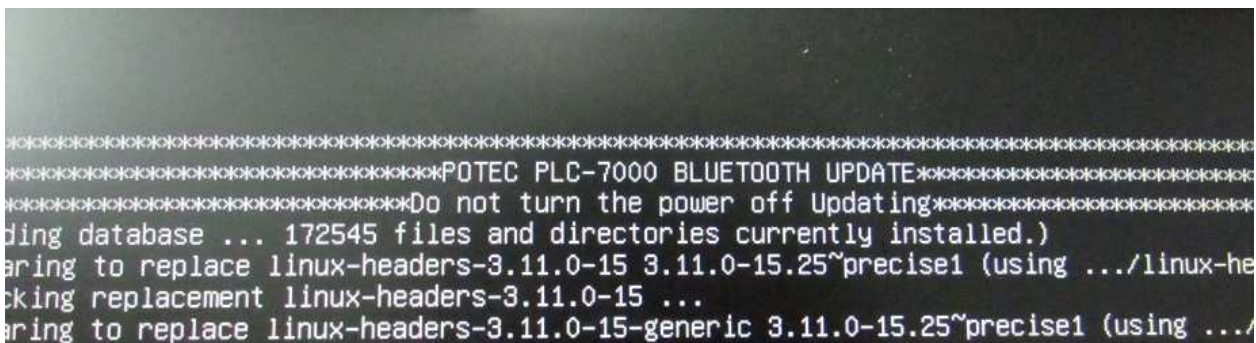
Apps files have no extension, be sure that please delete any extension if Apps files have e.g.) apps.dat → apps



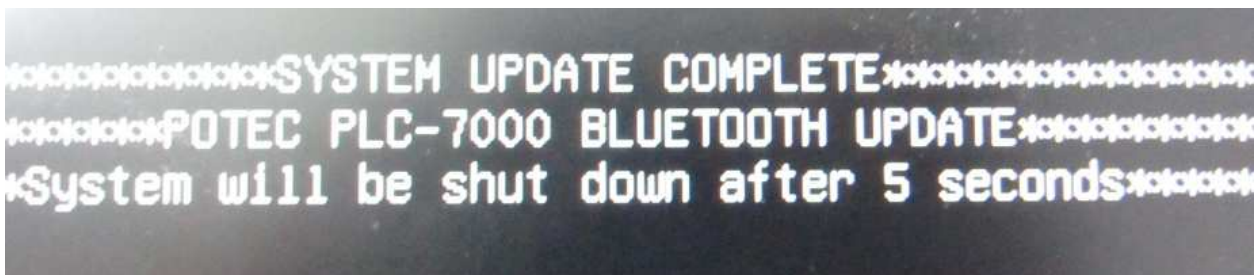
2. Once the files are saved, connect the USB DISK with the port of PLC-7000, then turn on the PLC-7000 power



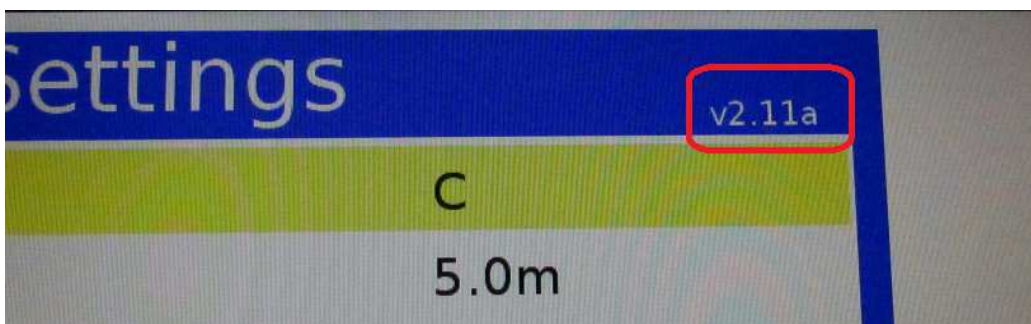
3. 5 to 10 minutes are expected for the upgrade



4. The below message will be shown once the upgrade finalized, then turn the PLC-7000 off and on



5. Press "Menu" button on the remote control to check the software version. Bluetooth communication is available over 2.11a version

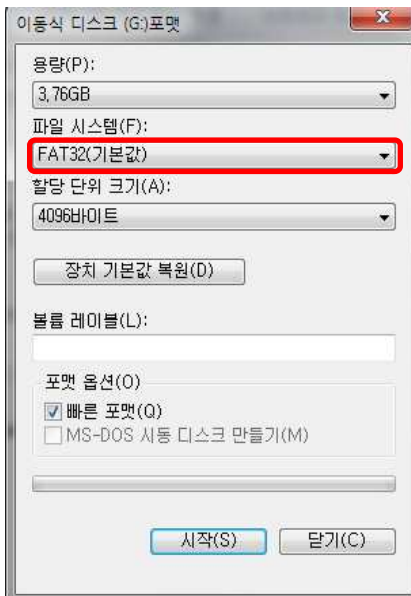


LC-TS7015_PLC-7000 Image Update

- Follow the instructions for image changes as below if you have any favorite other image other than what Potec provides

38 images can be stored and 1280 x 1024 pixels in jpg format is recommended

1. Prepare an USB DISK in FAT32 format to be connected with PC



2. Create one folder named as "Image" in an USB disk, and change the file names shown as below to save into the disk

- ◆ Logo – This file name is indicated for the initial image once booting process is done
- ◆ Slide01 ~ Slide38

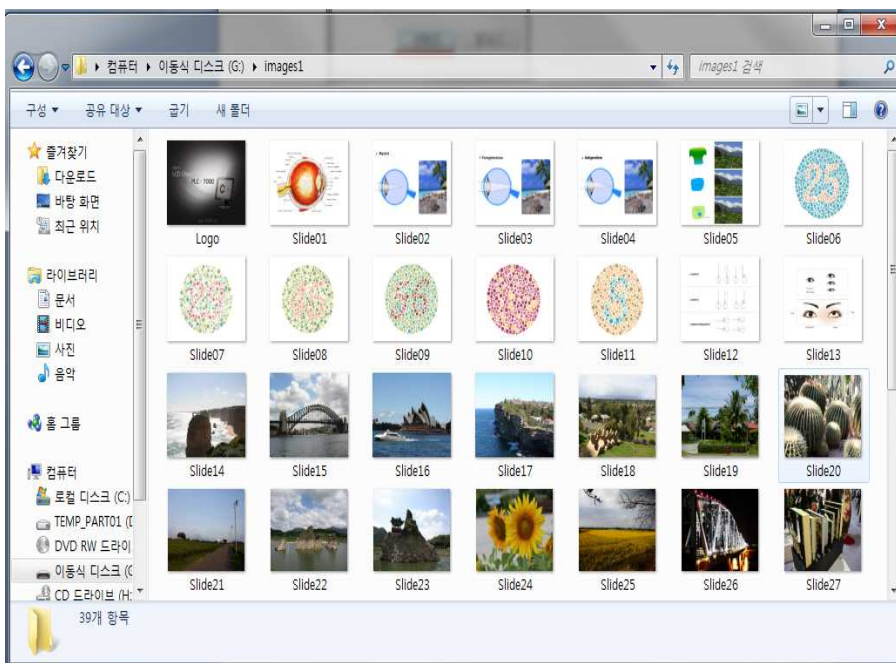
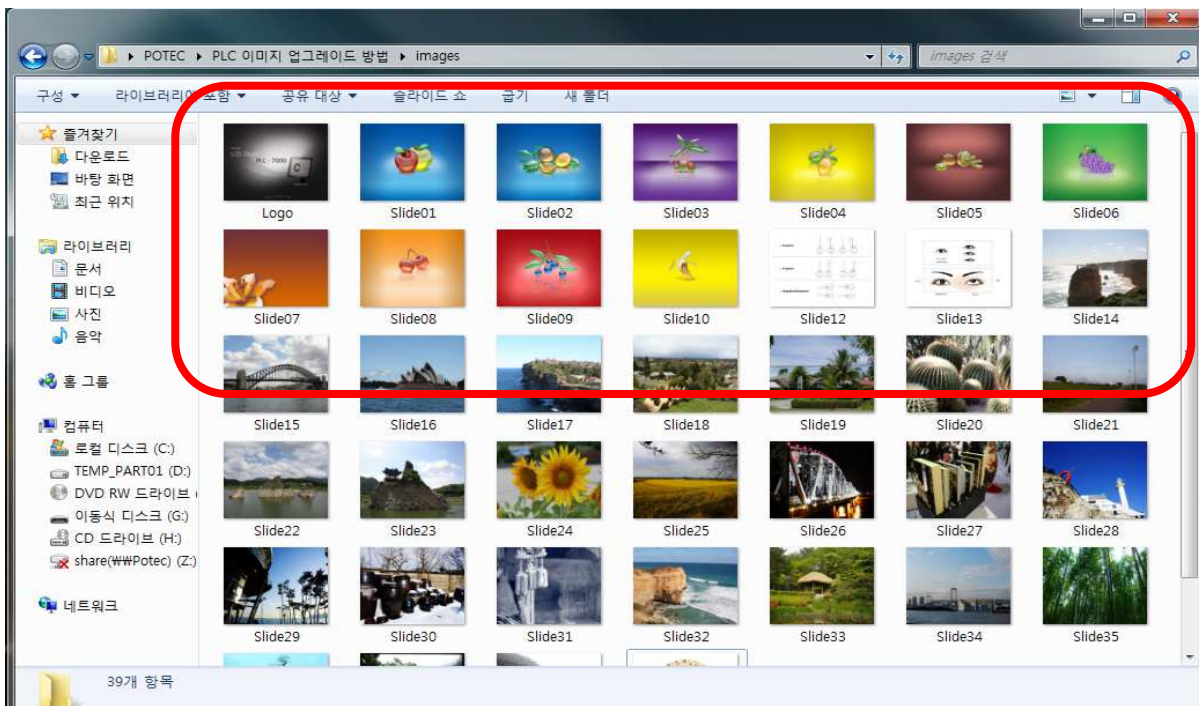


Image files provided
by Potec

3. Change the files named like "Slide01", then copy to save the files into the "Image" folder.

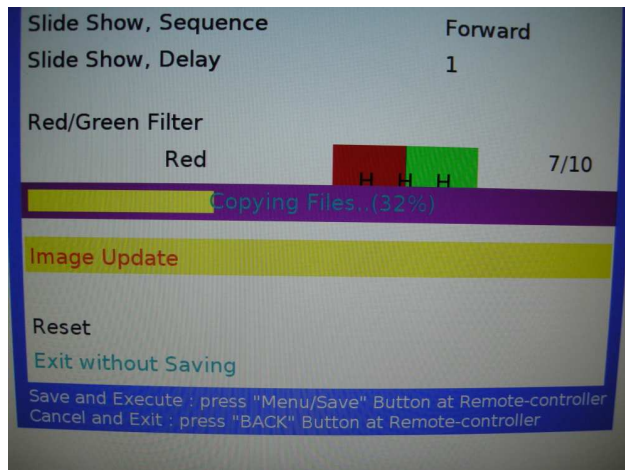
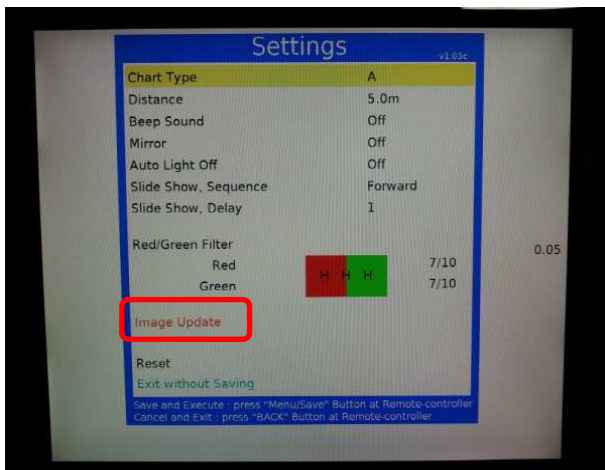


4. Once the files are saved, connect the USB DISK with the port of PLC-7000, then turn on the PLC-7000



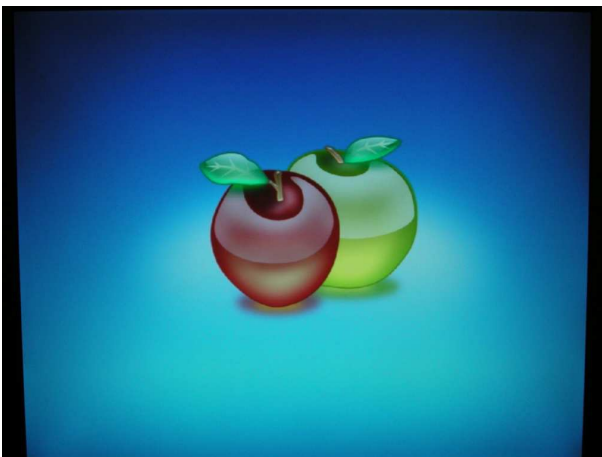
5. Choose "Image Update" through "Menu" button on the remote control once booting is done.

Image files will be automatically changed as below image



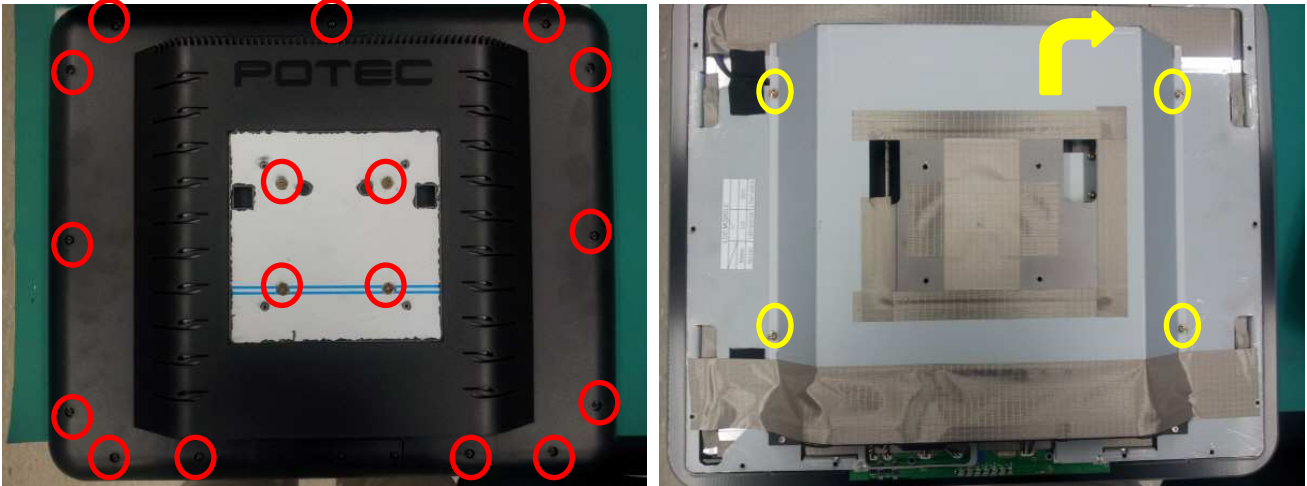
Note : Retry the steps from # 1 to # 4 or use another USB disk if the message, "Image Update : Check the USB and the files" is shown on the screen

6. Press "Chart/Slide" on the remote controller to check the image changes

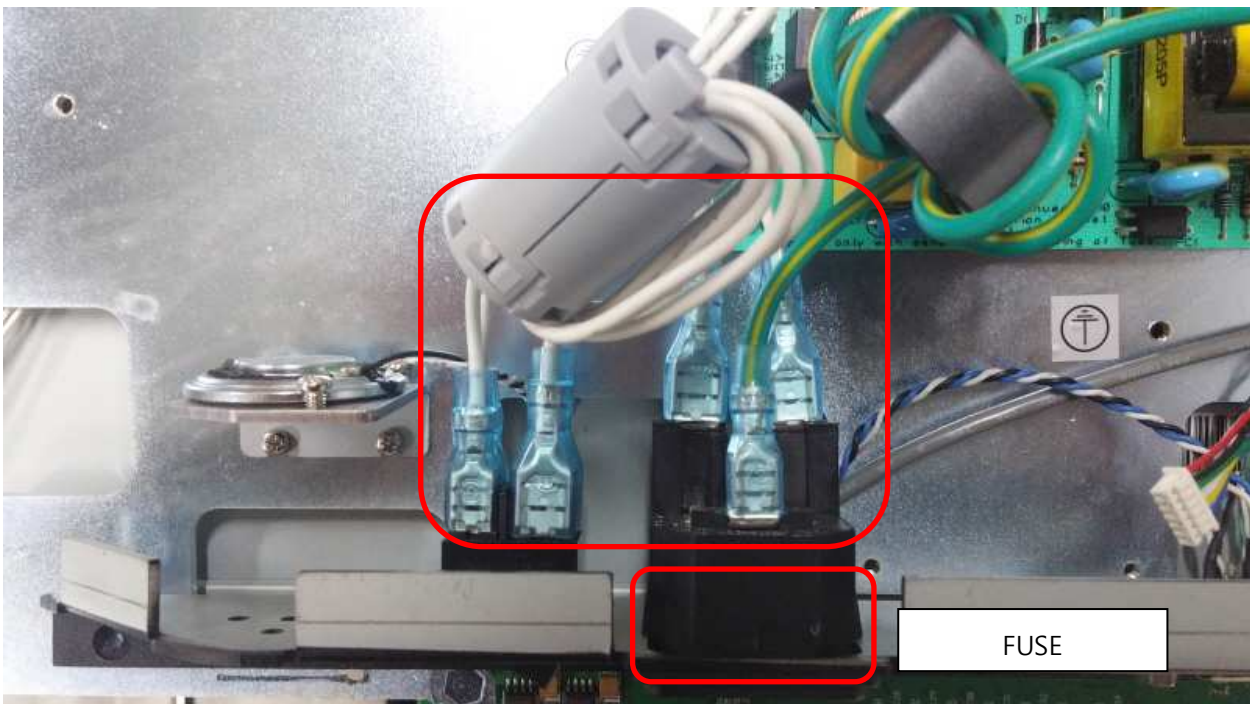


LC-TS7016_How to check CONNECTION MOUNT COVER ASS'Y Cable & Fuse

2. Turn PLC-7000 over and remove all bolts to detach UPPER COVER as below image.
After that, remove bolts of below yellow part and tear tape apart to disassemble bracket.



3. Check whether the cable & Fuse below red part were fell out(cut) or not.



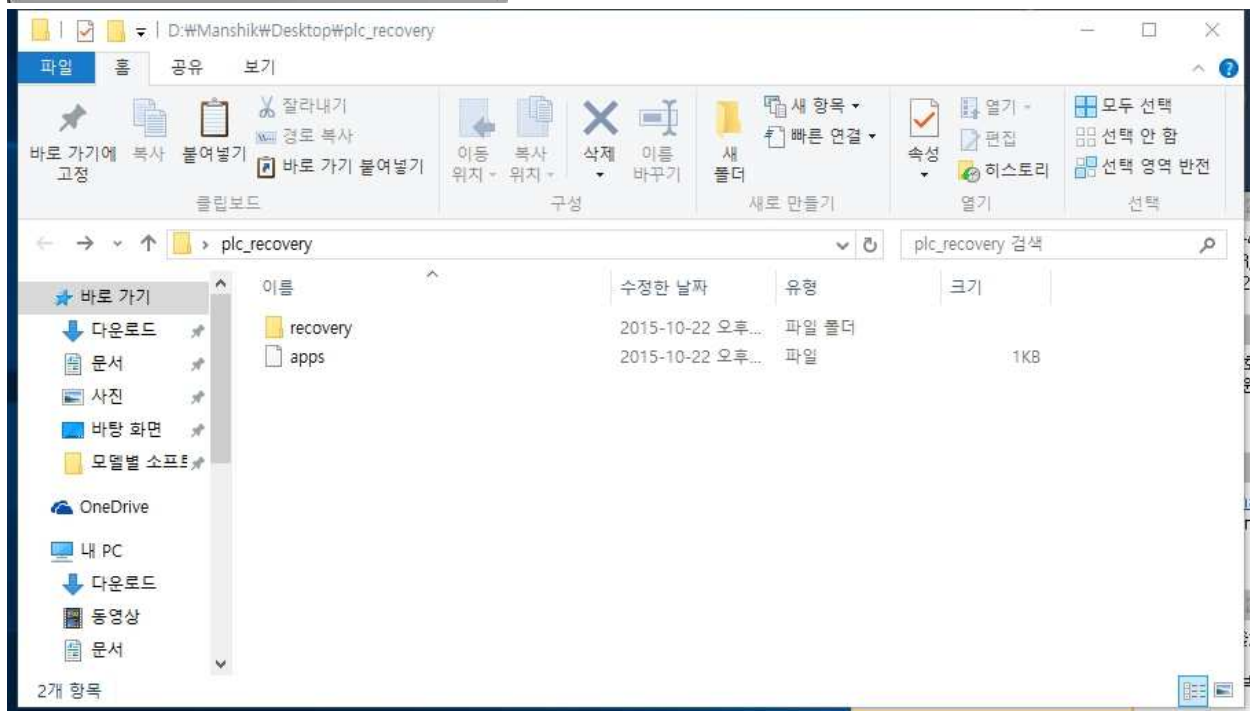
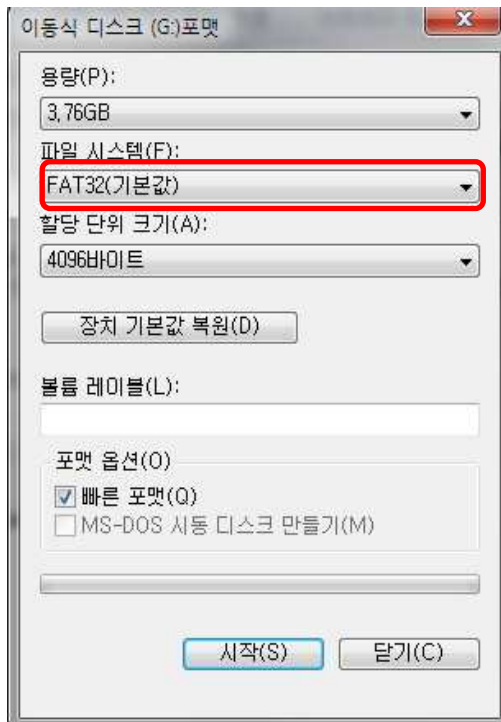
LC-TS7017_PLC-7000 Recovery

- Recovery by this way when the device doesn't boot up with "Slide Show" chart type.
1. Connect to PC with USB DISK. Copy the file(apps, recovery folder) which provided from Potec to the USB DISK.

- Caution : Format the USB DISK on **FAT32** as below.

'apps' file has no extension name, remove if it has.

ex) apps.dat → apps



2. Insert USB DISK to PLC-7000 USB port. After that turn on the PLC-7000.

POTEC QUALITY CONTROL TEAM



3. Screen will be turned off after showing below message. (approx. take 10secs)

```

*****
***                               PLC recovery                               ***
*****
Finished

Broadcast message from root@potec-VX855
(/dev/tty1) at 22:31 ...

The system is going down for power off NOW!
/usr/local/Trolltech/QtEmbedded-4.4.0/TucoWork/potecvision/potecvision
: ")" unexpected
Checking for running unattended-upgrades:
root@potec-VX855:~# acpid: exiting
Rather than invoking init scripts through /etc/init.d, use the service
utility, e.g. service K20bluetooth stop
-

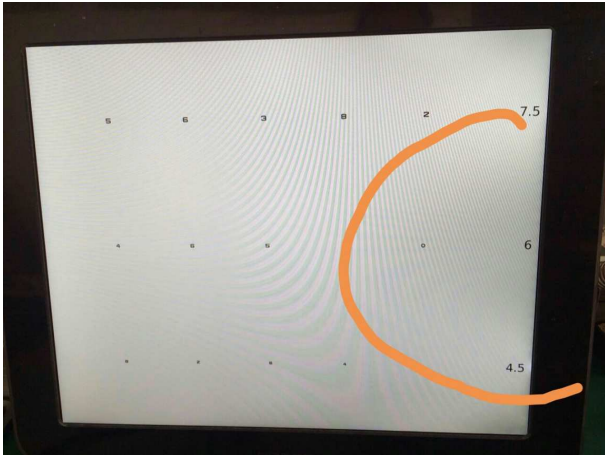
```

4. When the screen off, turn off and on PLC-7000 once again. Check if it boots up properly..
5. MENU will be initialized if boots up properly. (Type of chart, distance etc.) Set up the configuration again and use it.

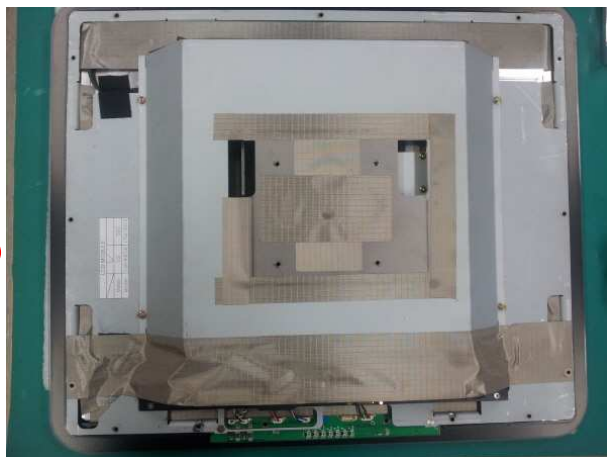
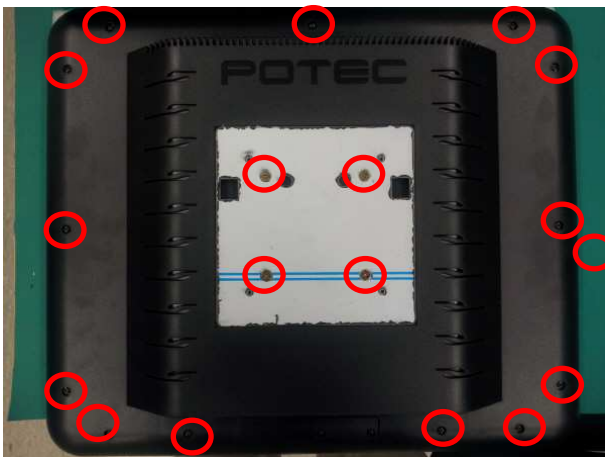
LLC-TS7018_LCD light leakage repairing process.

Ref No.	Name of Part	Code of Part	Description	Q'ty
	IR-RECEIVER	E-EY00-A02		1

- If LCD light leakage problem occurs from LED type chart, it's caused from interference of bolts to bezel. Due to light leakage problem surrounding are appear relatively dark.



1. Remove all the screws from back and separate the upper case.



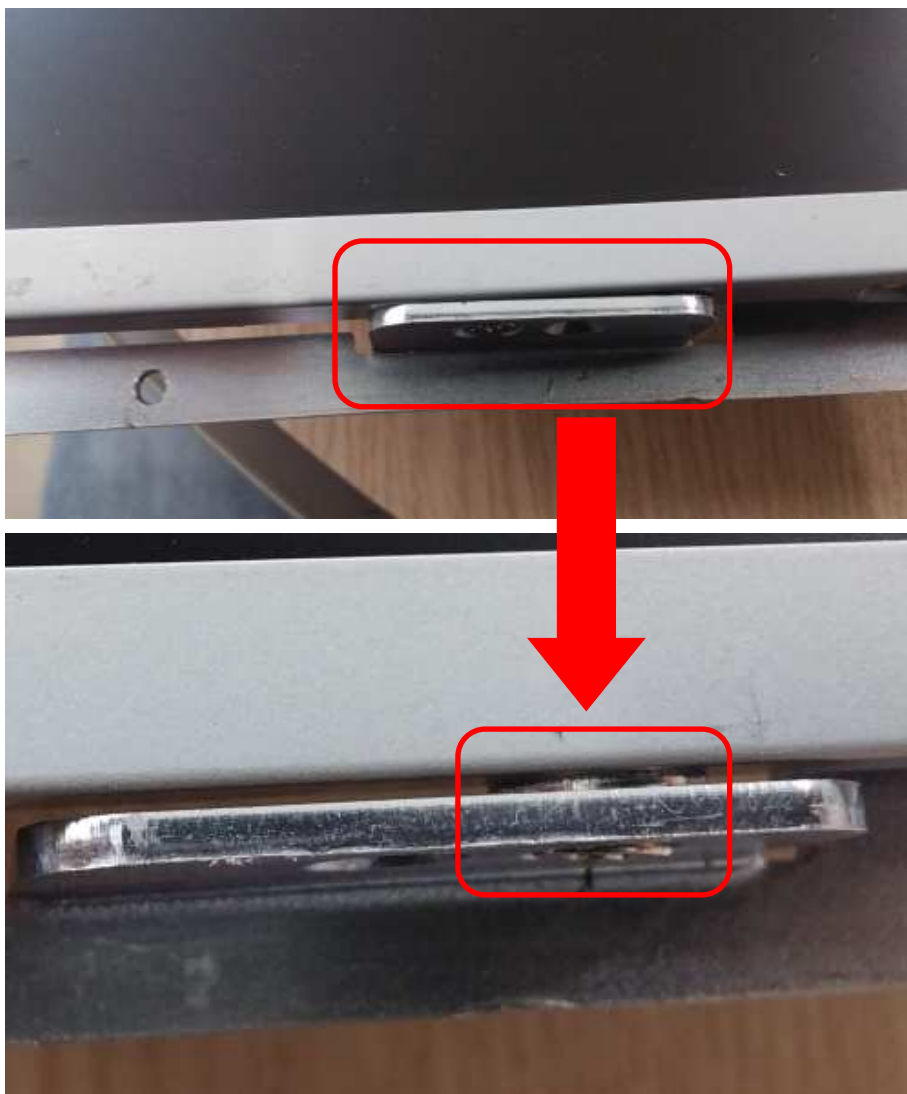
2. Open the front SMOG PANEL by lifting.



3. Remove two indicated screws in the photo



4. 나사를 풀어낸 자리에 아래 그림처럼 와셔를 대고 다시 조인다. Attach washer to the position and tighten the screw again.



5. Assemble again with reverse process of disassemble.

LC-TS7019_PLC-7000 RAON-7300B Replacement method

Video Clip

<https://www.dropbox.com/s/opxcjllw3o200yu/PLC-7000%20RAON-7300B%20Replacement%20method.avi?dl=0>