Service
Service
Service
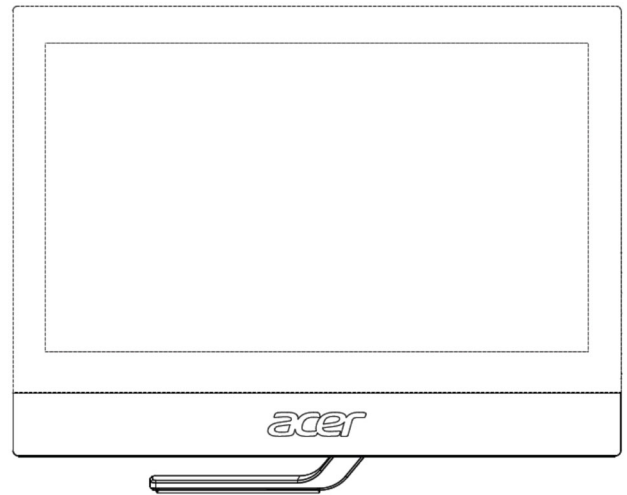
Acer Monitor T232HL

LIFECYCLE EXTENSION GUIDE

Contents

Important Safety Notice

Proper service and repair is important to the safe, reliable operation of all ACER Company Equipment. The service procedures recommended by ACER and described in this service manual are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It is also important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. ACER could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, ACER has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by ACER must first satisfy himself thoroughly that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.
Hereafter throughout this manual, ACER Company will be referred to as ACER.

WARNING
Use of substitute replacement parts, which do not have the same, specified safety characteristics may create shock, fire, or other hazards.

Under no circumstances should the original design be modified or altered without written permission from ACER. ACER assumes no liability, express or implied, arising out of any unauthorized modification of design.

Servicer assumes all liability.

FOR PRODUCTS CONTAINING LASER:
DANGER-Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.
CAUTION-Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
CAUTION -The use of optical instruments with this product will increase eye hazard.

TO ENSURE THE CONTINUED RELIABILITY OF THIS PRODUCT, USE ONLY ORIGINAL MANUFACTURER'S REPLACEMENT PARTS, WHICH ARE LISTED WITH THEIR PART NUMBERS IN THE PARTS LIST SECTION OF THIS SERVICE MANUAL.

Take care during handling the LCD module with backlight unit
-Must mount the module using mounting holes arranged in four corners.
-Do not press on the panel, edge of the frame strongly or electric shock as this will result in damage to the screen.
-Do not scratch or press on the panel with any sharp objects, such as pencil or pen as this may result in damage to the panel.
-Protect the module from the ESD as it may damage the electronic circuit (C-MOS).
-Make certain that treatment person's body is grounded through wristband.
-Do not leave the module in high temperature and in areas of high humidity for a long time.
-Avoid contact with water as it may a short circuit within the module.
-If the surface of panel becomes dirty, please wipe it off with a soft material. (Cleaning with a dirty or rough cloth may damage the panel.)1.

1. Exploded view diagram with list of items
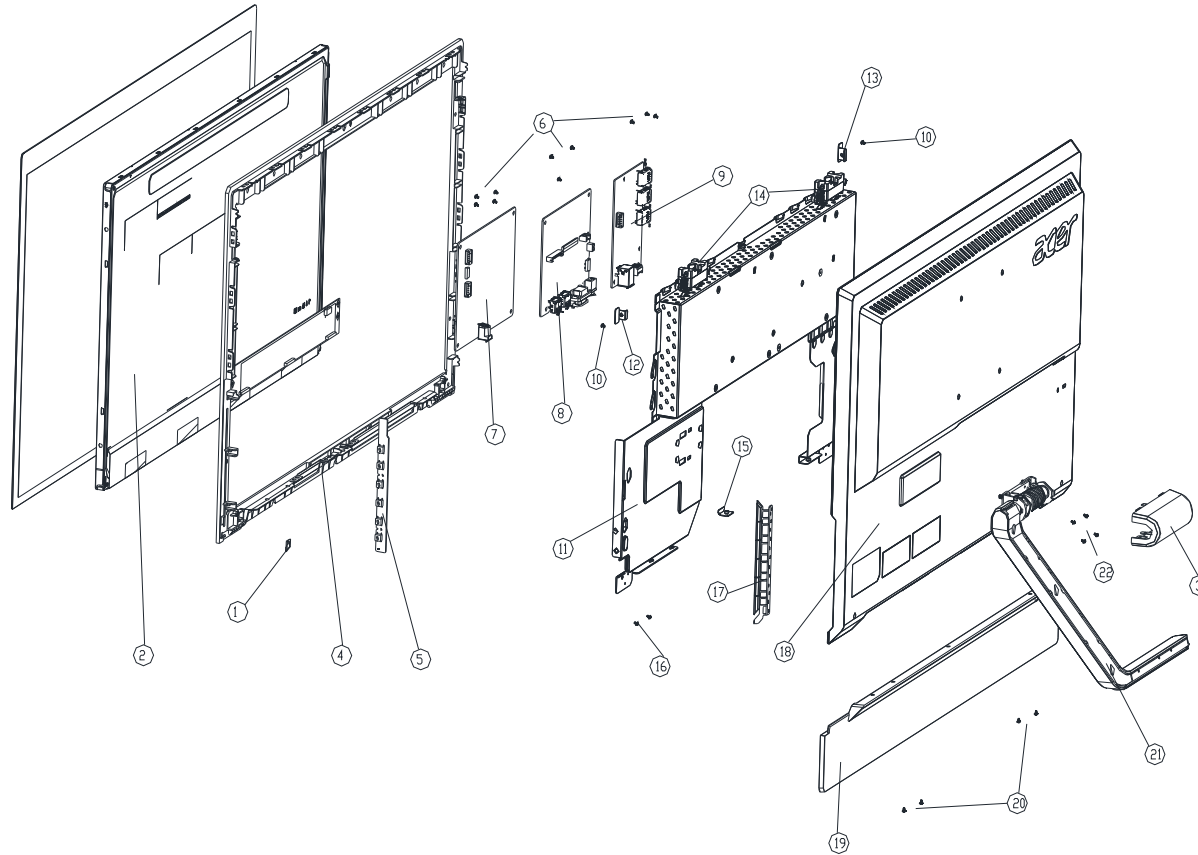
Item	Description	TPV Part No.	ACER Part No.
2	PANEL	750GDB230F3P13N0AC	6M.T27M2.002
5	KEY BOARD	KEPCEQB2	55.T27M2.002
7	CONVERTER BOARD	LNPCEB232GNBP	55.T27M2.004
8	MAIN BOARD	756GQECB0BA070000Q	55.T27M2.001
9	USB BOARD	USBEQB3Q	55.T27M2.003
	LVDS-CABLE-30P-30P(A2004)-260(MB TO PANEL)	395G801830DL41	50.T27M2.006

2. Mechanical Instruction

Tools Required

List the type and size of the tools that would typically can be used to disassemble the product to a point where components and materials requiring selective treatment can be removed.
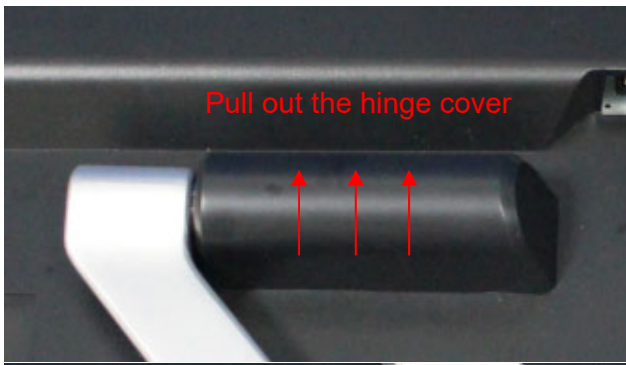
Tool Description:

- Screwdriver (Phillip-head, Hexagonal head)

- Penknife

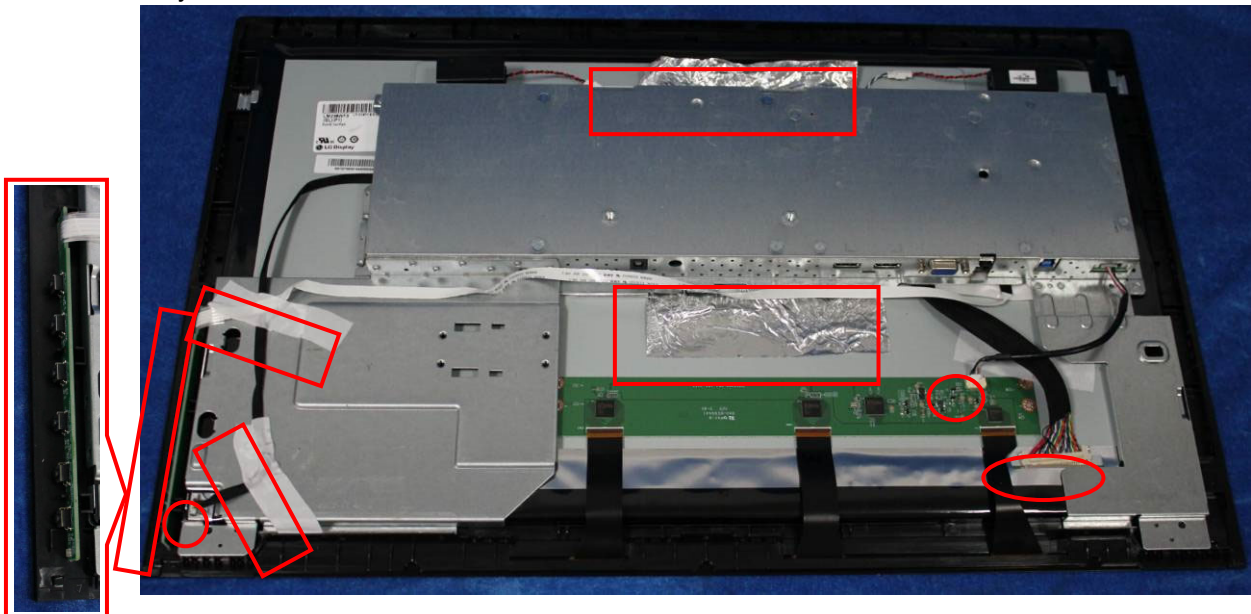## 2.1 Disassembly Procedures:

S1. Remove the stand ASS'Y.

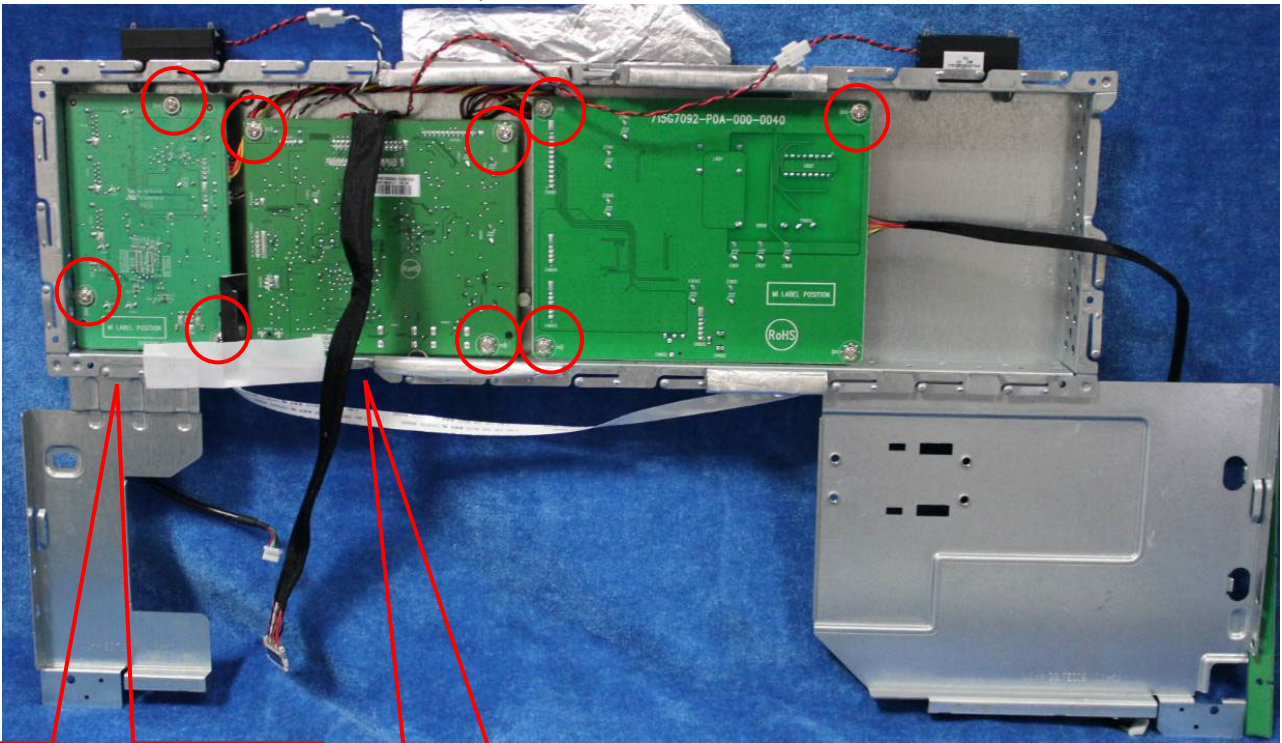S2. Remove the stand ASS'Y.

Pull out the hinge cover
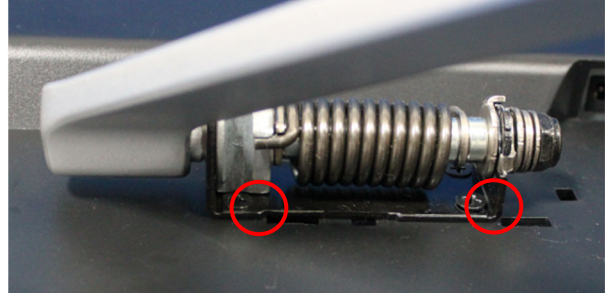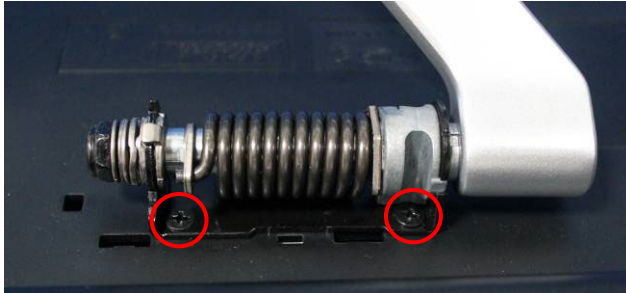
S3. Remove the rear cover. Use a tool (like picture using) to open all latches. (Be careful the position of the key board.)
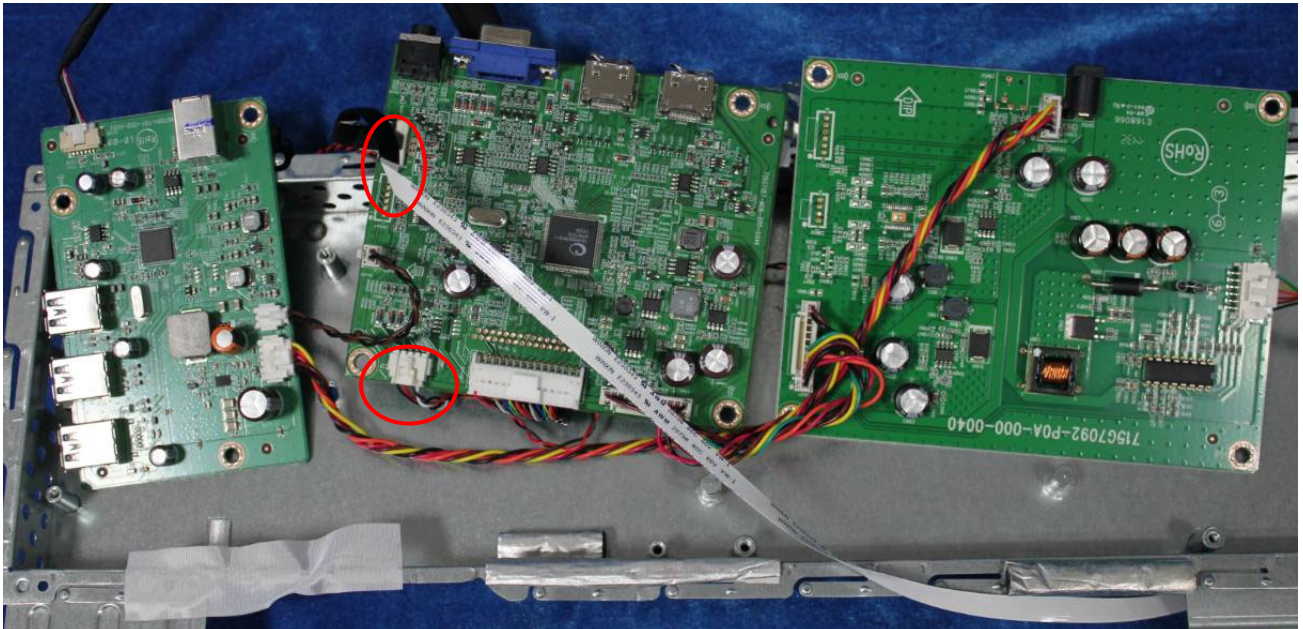

S4. Disconnect the LVDS cable (main board to panel), lamp power cable (power board to panel), and tear up all tapes. Pull out the key board from the slot.

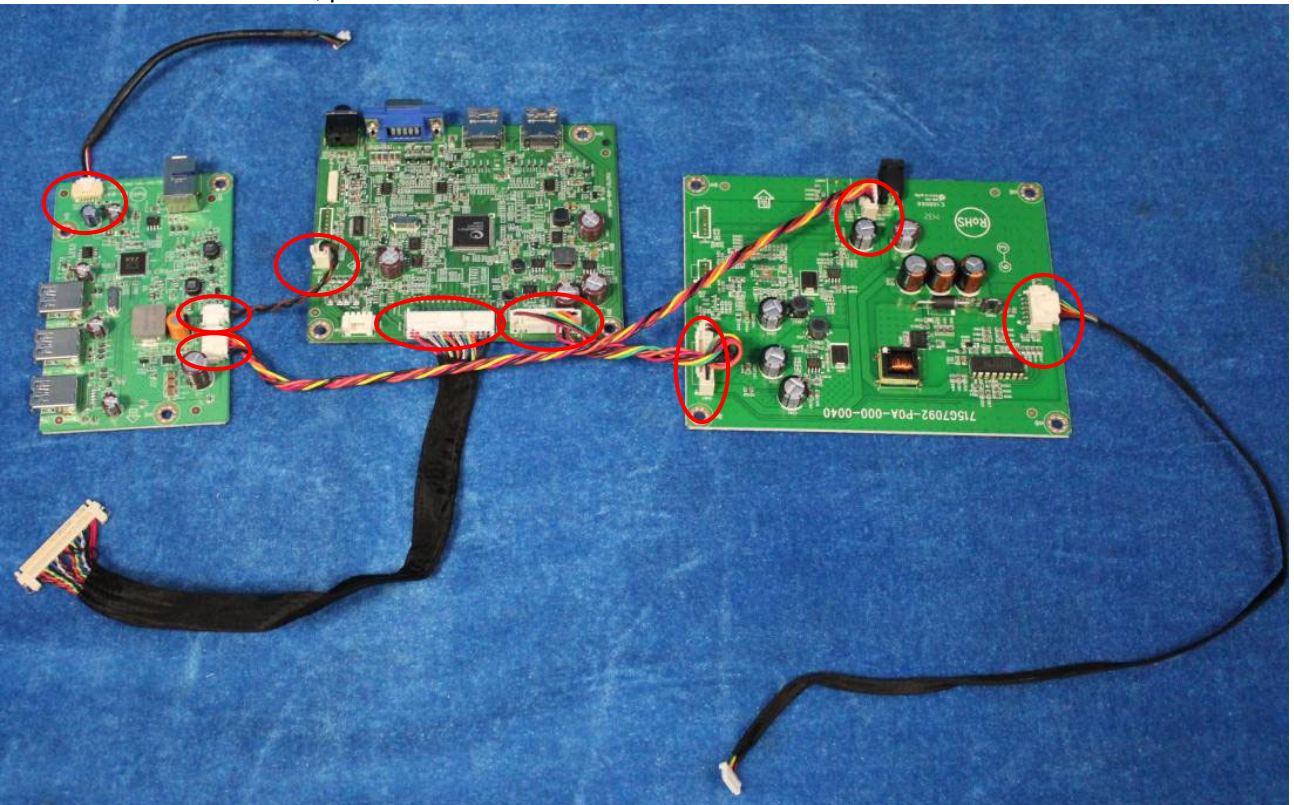S5. Unscrew the screws on main board and power board.
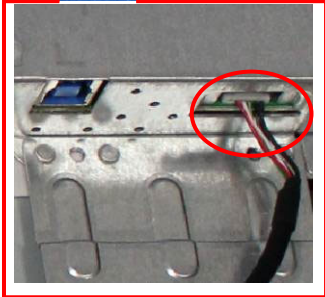
S6. Turn over the boards. Disconnect the key and speaker cables.

S7. Disconnect the main board, power board and USB board.

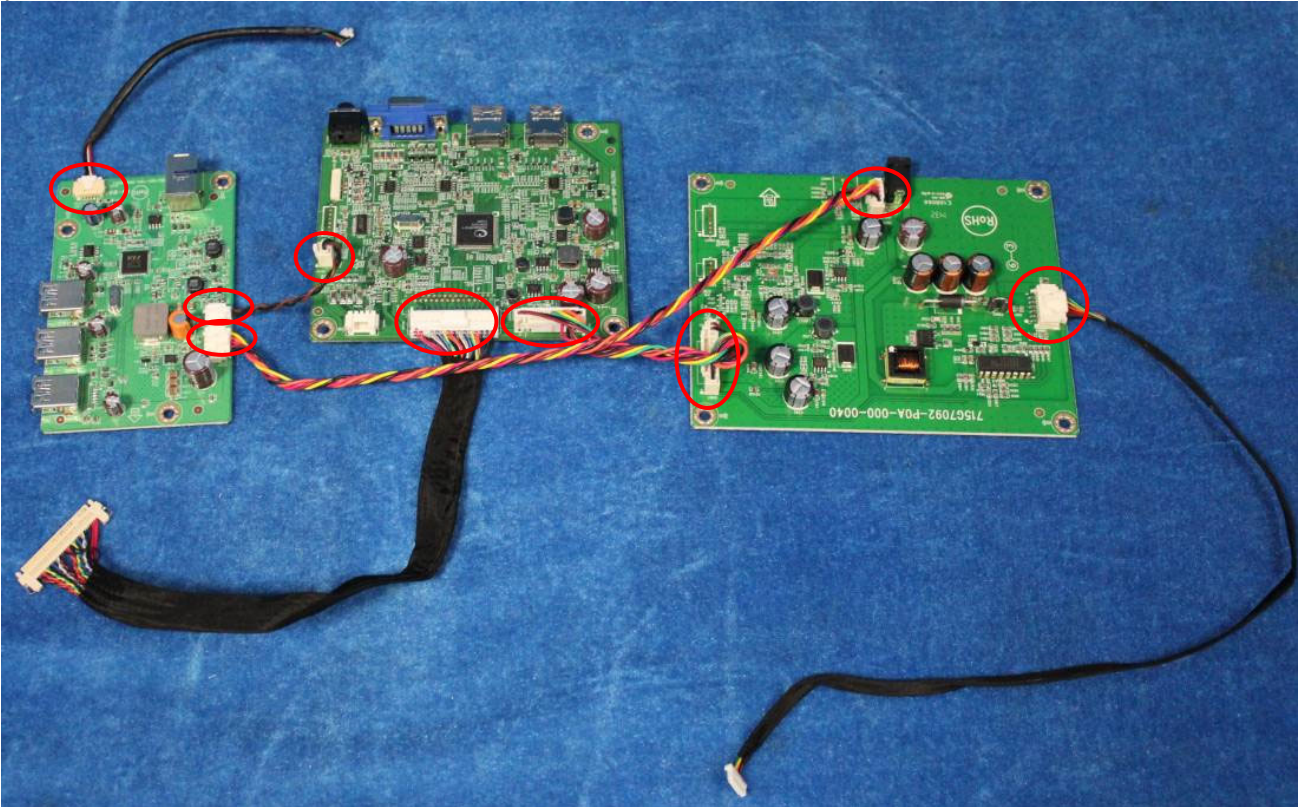S8. Disconnect the speaker from the mainframe as below picture.

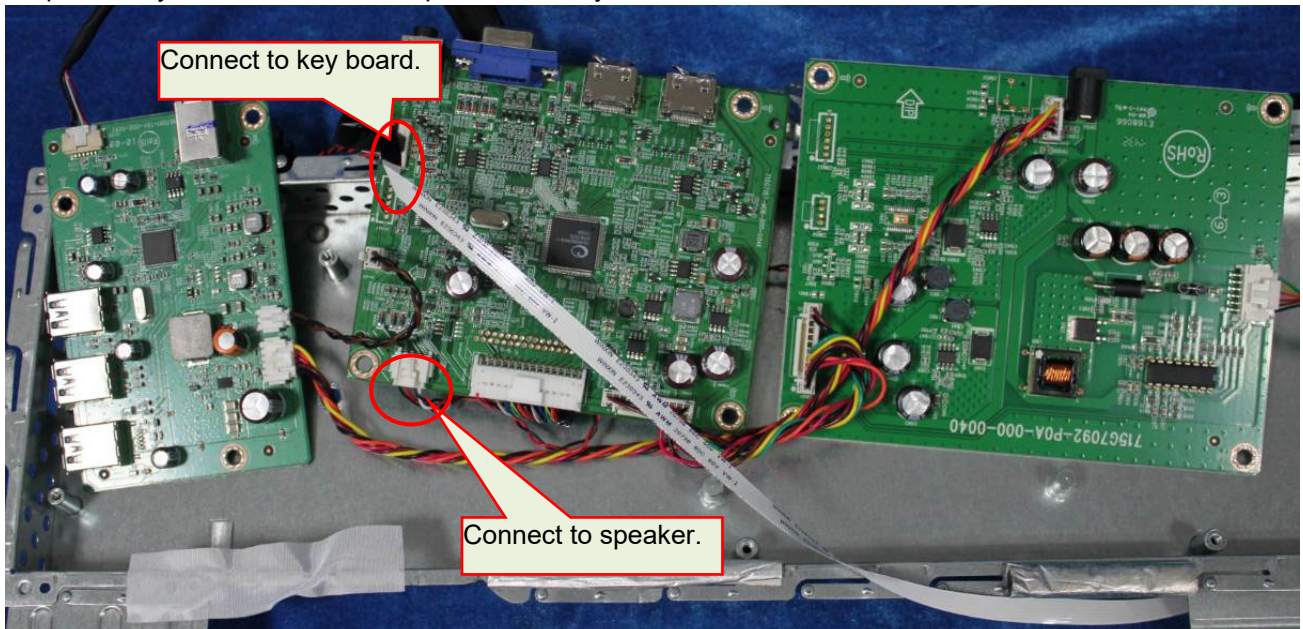S9. The panel and bezel ASS'Y.

2.2 Assembly Procedures:

S1. Prepare a main board, a power board, a USB board and some cables. Connect the cables as the below picture.

S2. Prepare a speaker, a mainframe. Assemble the speaker to mainframe.

S3. Prepare a key board. Connect the speaker and key cables to main board.

Connect to key board.

Connect to speaker.

S4. Turn over the boards. Through the cable from USB board to the hole of mainframe, and then use a Philips-head screwdriver to tighten the screws till the power board, main board and USB board with shield are firmly attached. Tighten the screws for locking the VGA connector.
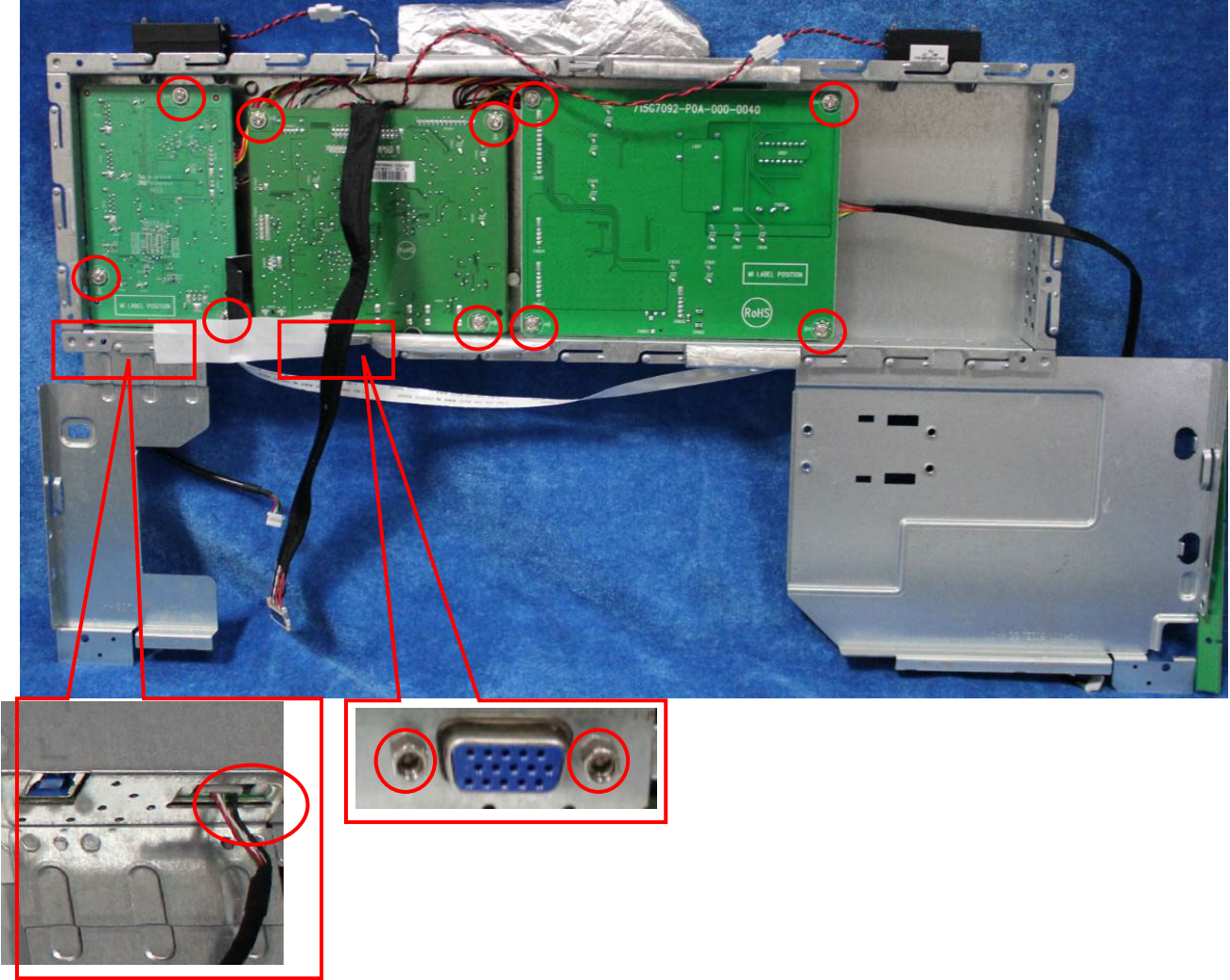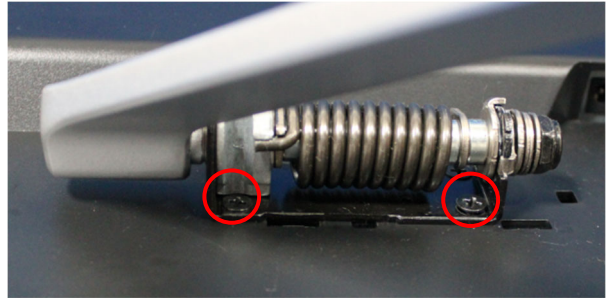
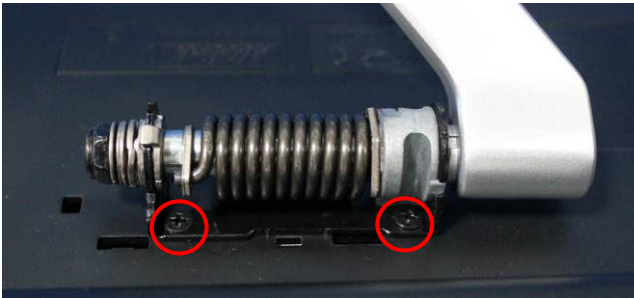S5. Prepare a panel and bezel ASS'Y.

S6. Assemble bezel unit and shield unit. Assemble the key board to the position. Connect the cables and pasting the tapes
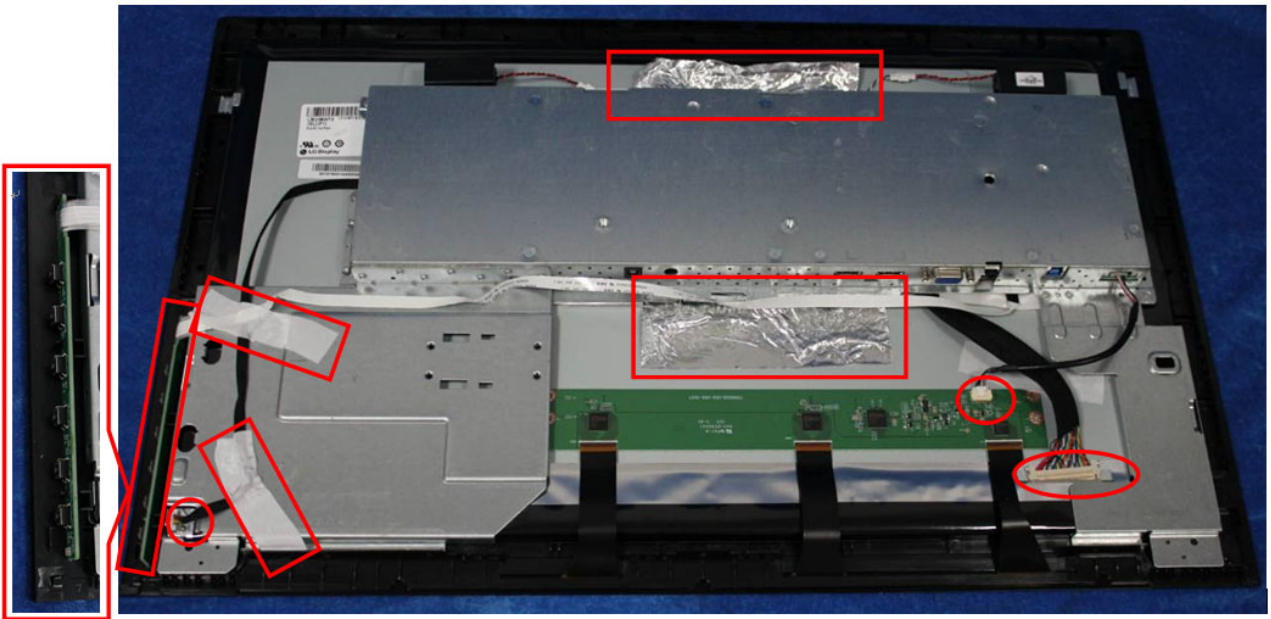
S7. Prepare a rear cover and assemble it.

S8. Assemble the stand ASS'Y to rear cover and lock the screws as below pictures. And then, put the cover onto the stand ASS'Y.

S9. Assemble the BEZEL BTM to the unit. Locking the screws in red circles.

3. Firmware Upgrade Process
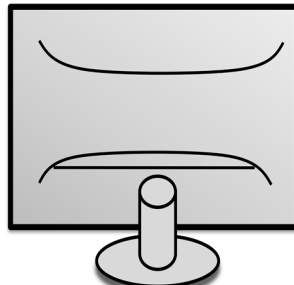
1.Materials list

ISP JIG: 715GT089-B/C

VGA cable
TPV P/N: 089G728 GAA DB

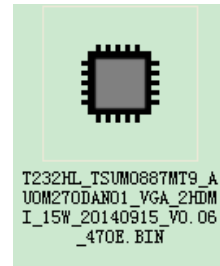
PC

Monitor

USB cable
TPV P/N: 089G1758 X

FTC100103(MSTAR) usb
drive.rar

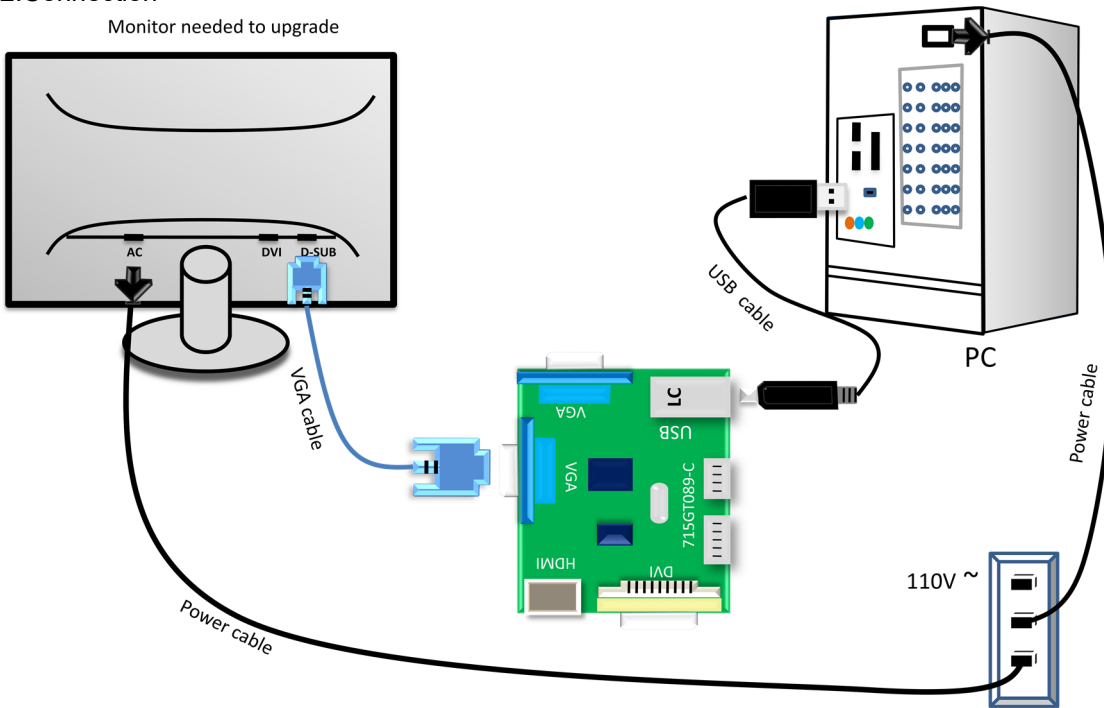USB port driver

MSTAR-USB-驱动
-DB07-6 driver

MSTAR driver

ISP_Tool.exe

ISP tool:

T232HL_TSUM0887MT9_A
UOM270DAN01_VGA_2HDM
I_15W_20140915_V0.06
_470E.BIN

New F/W
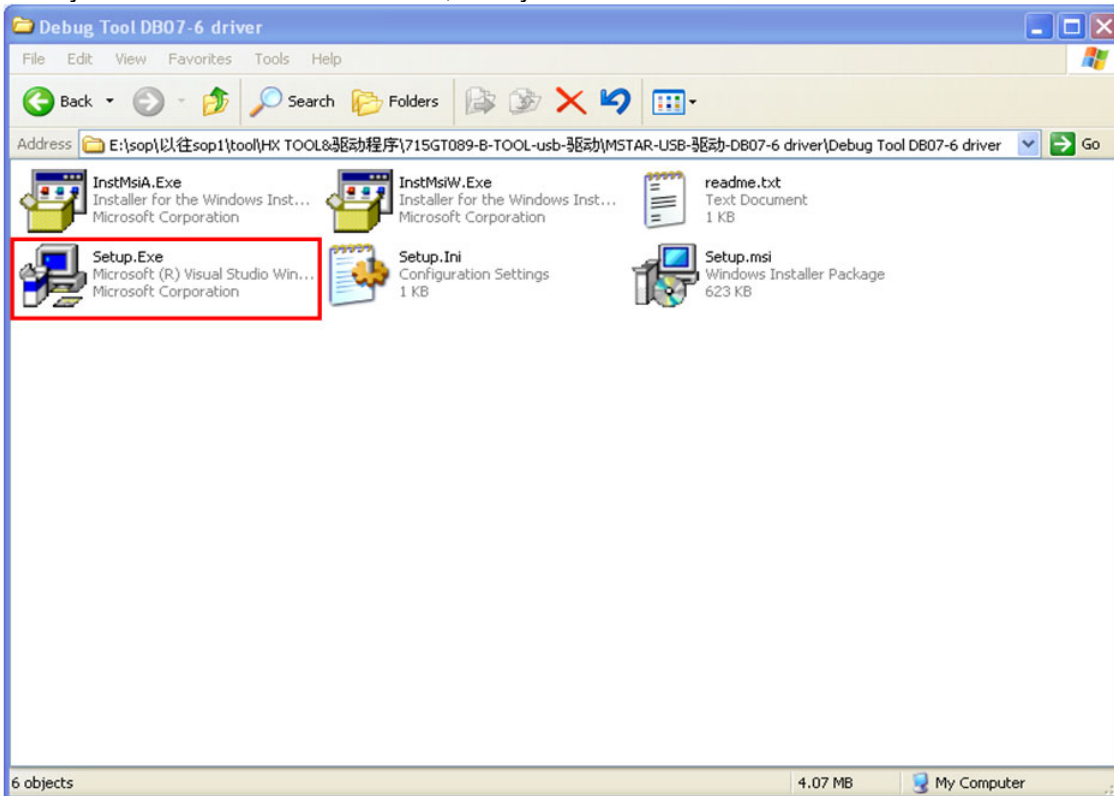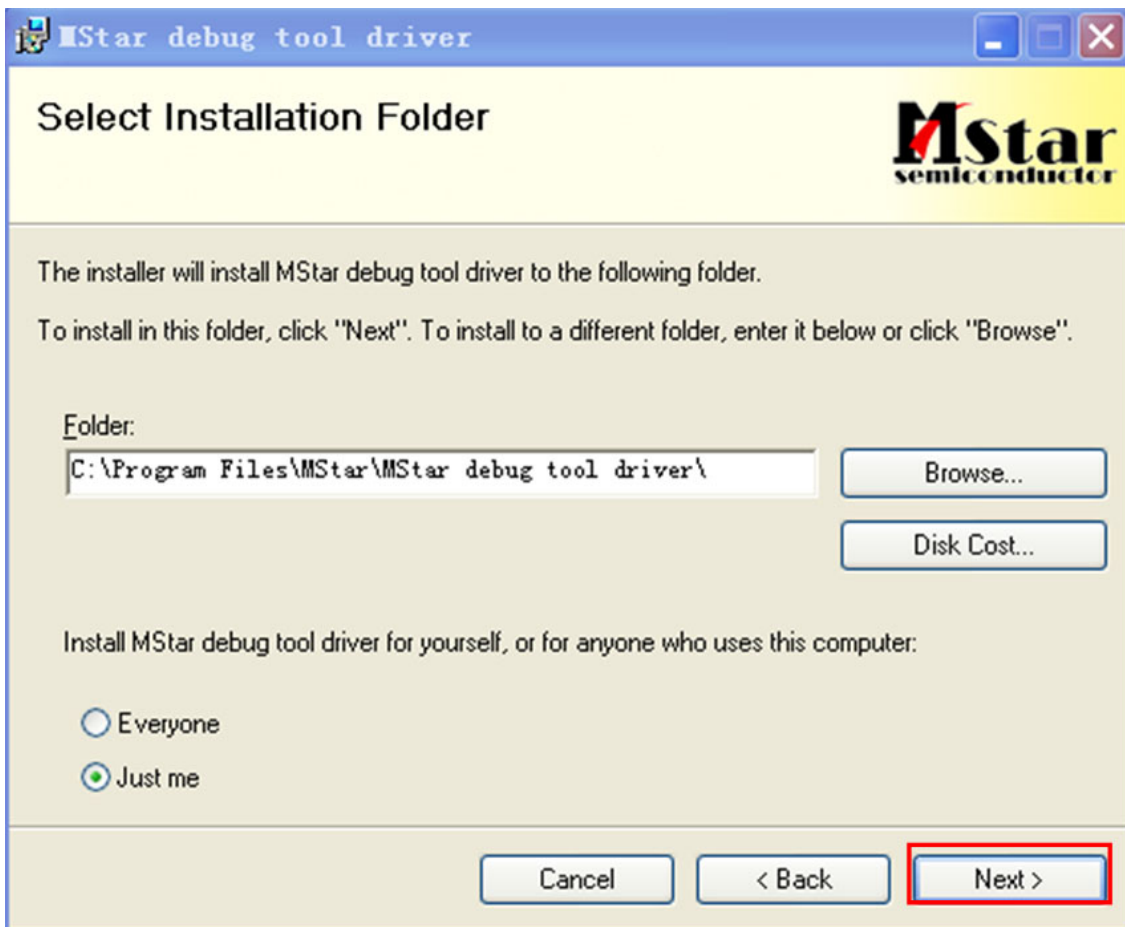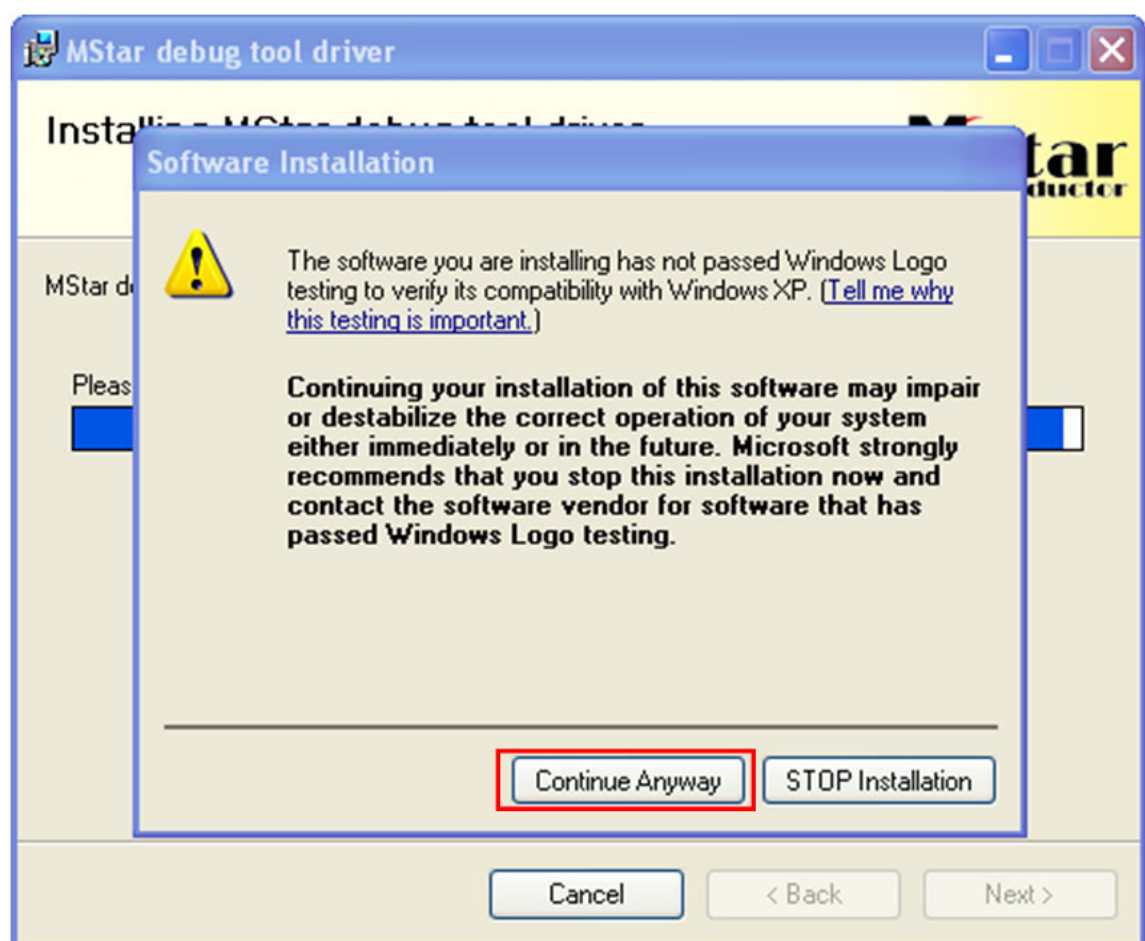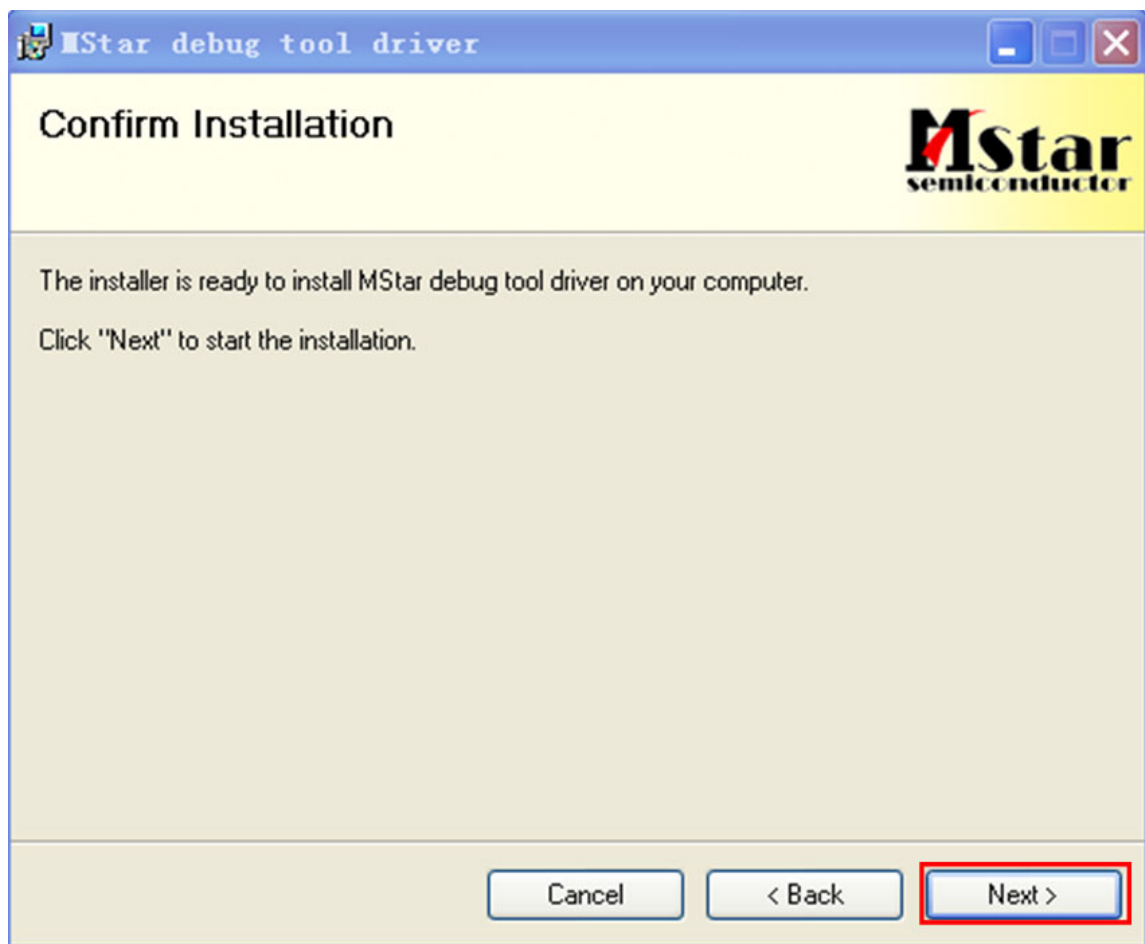
2.Connection

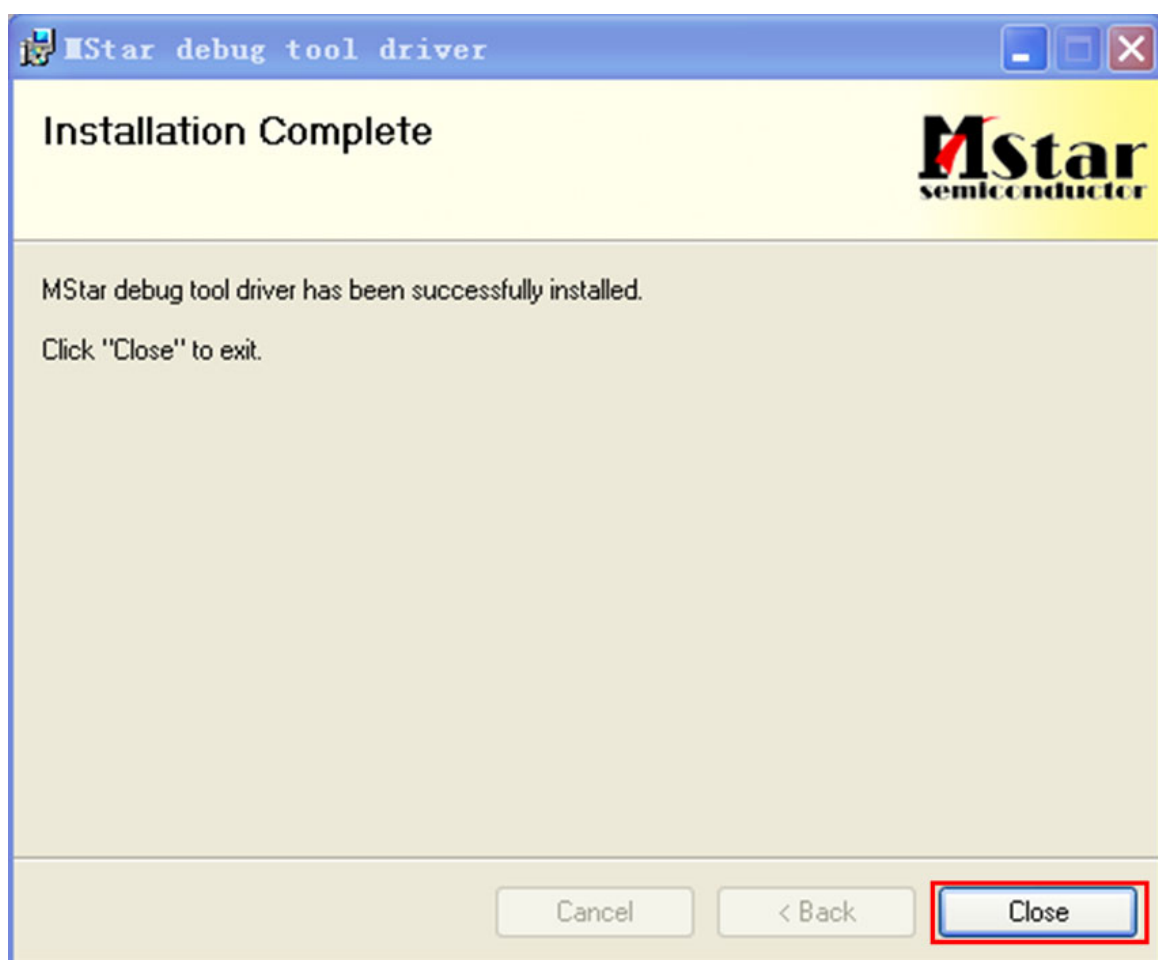Monitor needed to upgrade

3.Install driver

S1. If you use this ISP board first time, First you need to install mstar driver .

MStar debug tool driver

Welcome to the MStar debug tool driver Setup Wizard

Please plug in the USB debug tool before continue...

WARNING: This computer program is protected by copyright law and international treaties. Unauthorized duplication or distribution of this program, or any portion of it, may result in severe civil or criminal penalties, and will be prosecuted to the maximum extent possible under the law.

| Cancel | < Back | Next > |

MStar debug tool driver

Select Installation Folder

The installer will install MStar debug tool driver to the following folder.

To install in this folder, click "Next". To install to a different folder, enter it below or click "Browse".

Folder:

C:\Program Files\MStar\MStar debug tool driver\

Browse...

Disk Cost...

Install MStar debug tool driver for yourself, or for anyone who uses this computer:

○ Everyone

◉ Just me

| Cancel | < Back | Next > |

MStar debug tool driver

Confirm Installation

The installer is ready to install MStar debug tool driver on your computer.

Click "Next" to start the installation.

[Cancel] [< Back] [**Next >**]

MStar debug tool driver

Software Installation

⚠ The software you are installing has not passed Windows Logo testing to verify its compatibility with Windows XP. ([Tell me why this testing is important.](#))

Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the software vendor for software that has passed Windows Logo testing.

[**Continue Anyway**] [STOP Installation]

[Cancel] [< Back] [Next >]

MStar debug tool driver

Installing MStar debug tool driver

MStar debug tool driver is being installed.

Please wait...

MSTAR USB Drivers Setup for Win2K/XP

MSTAR Drivers Installation failed.

确定

Cancel   < Back   Next >

MStar debug tool driver

Installation Complete

MStar debug tool driver has been successfully installed.
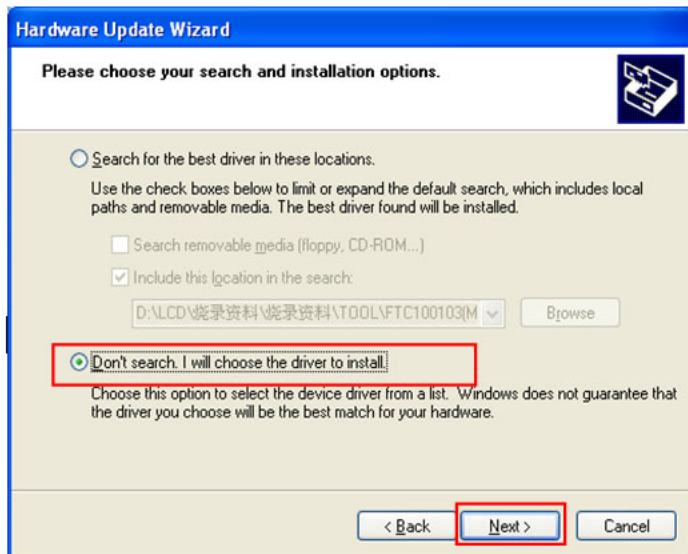
Click "Close" to exit.

Cancel   < Back   Close

S2 When insert the USB cable to PC USB port, will pop up a Hardware Wizard to help you install the USB driver if you use this ISP board first time. You can install it successfully as the below instruction step by step.
Remark: The USB driver files path: D:\FTC100103(Mstar)\FTCUSB.INF

Hardware Installation

The software you are installing for this hardware:

Mstar USB Serial Port

has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)

Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.

[Continue Anyway] [STOP Installation]

Hardware Update Wizard

Please wait while the wizard installs the software...

Mstar USB Serial Port

Setting a system restore point and backing up old files in case your system needs to be restored in the future.

[< Back] [Next >] [Cancel]

Found New Hardware Wizard

Completing the Found New Hardware Wizard

The wizard has finished installing the software for:

Mstar USB Debug Tool A

Click Finish to close the wizard.

[< Back] [Finish] [Cancel]

Click "Finish" to complete the USB serial port driver installation.

After installation the USB serial port driver, please to check the port. Look the properties of "my Computer".
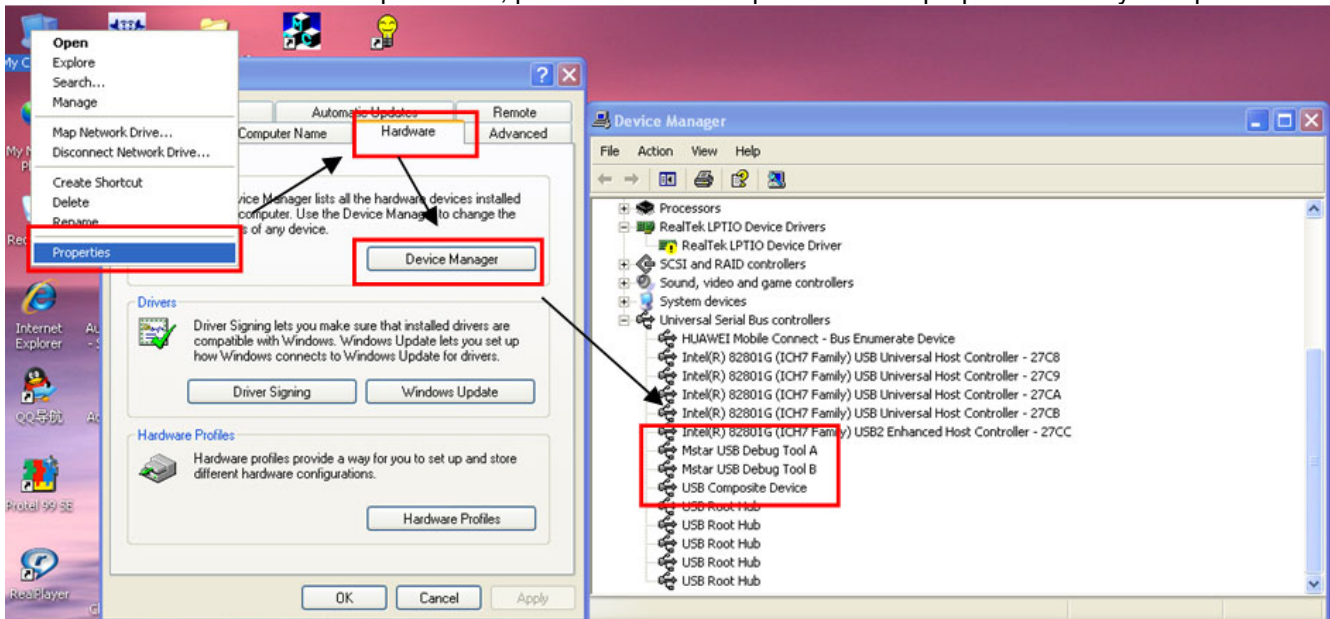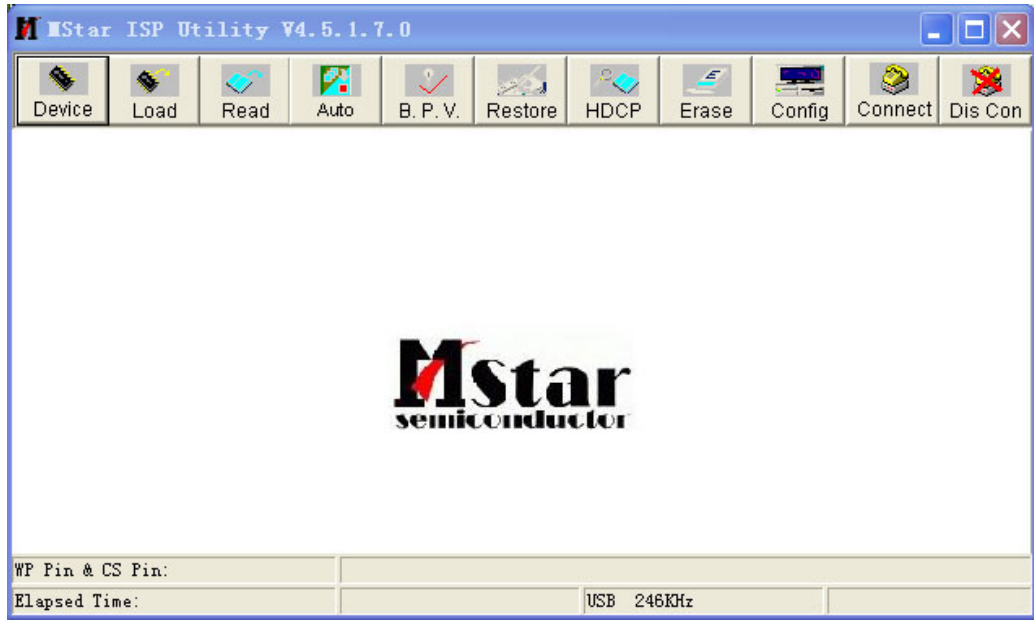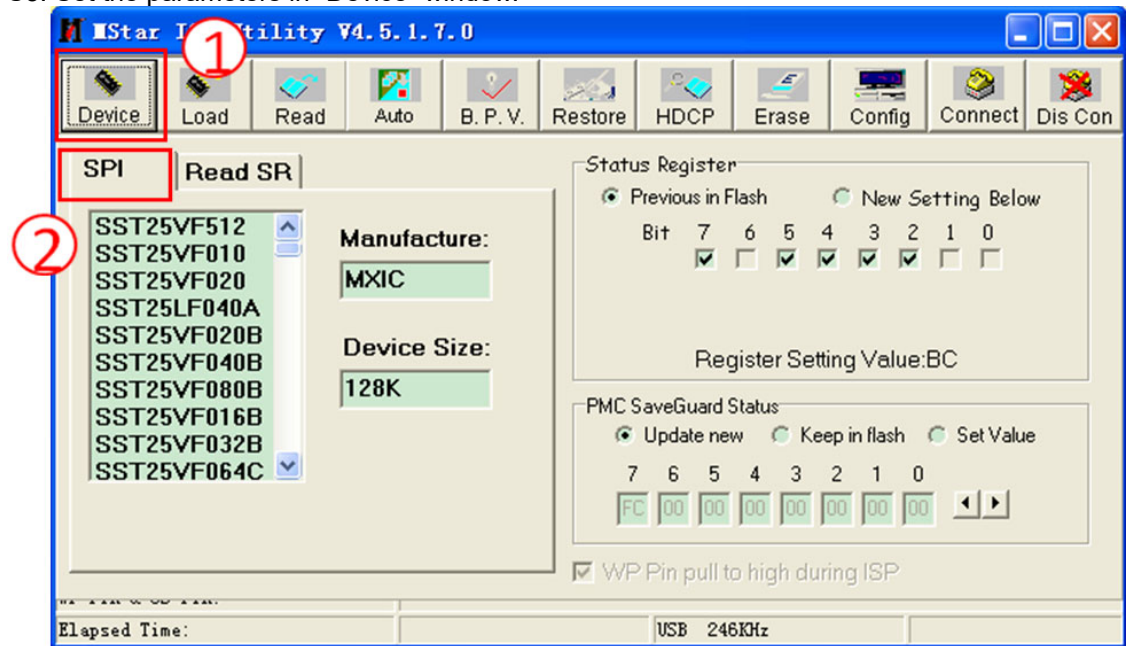
4. Install the ISP tool.
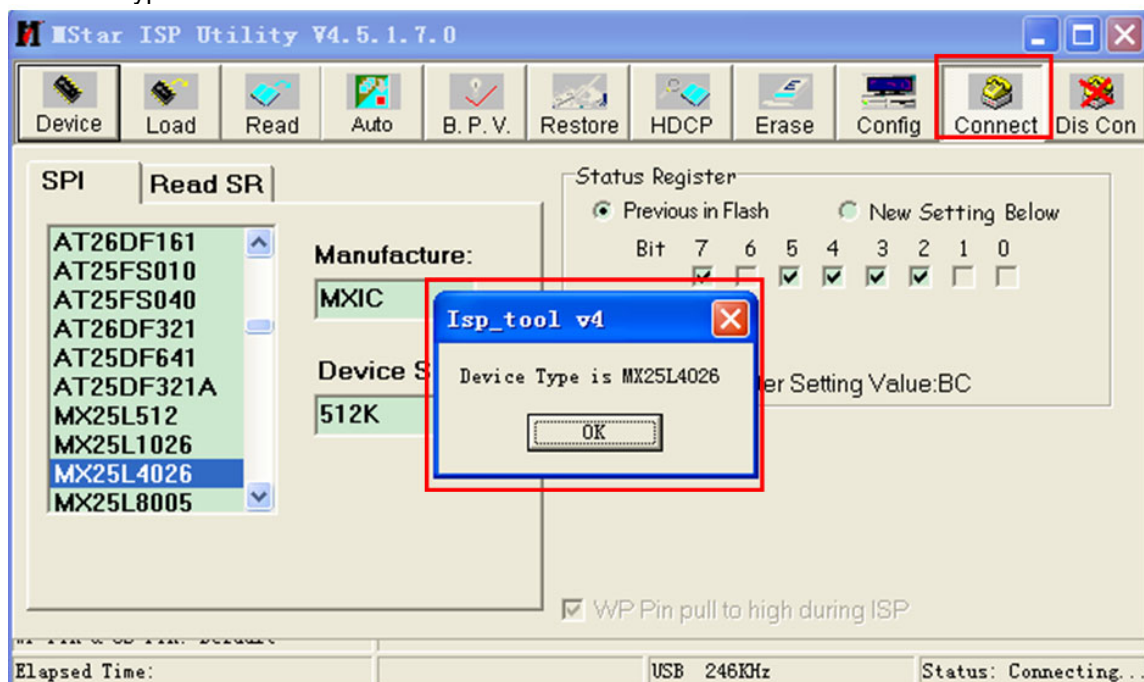S1.Copy the three files in one folder.
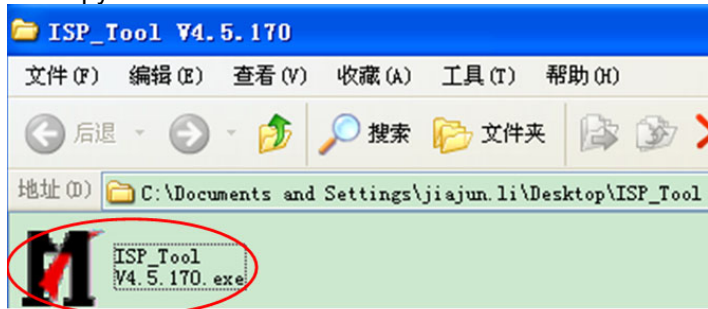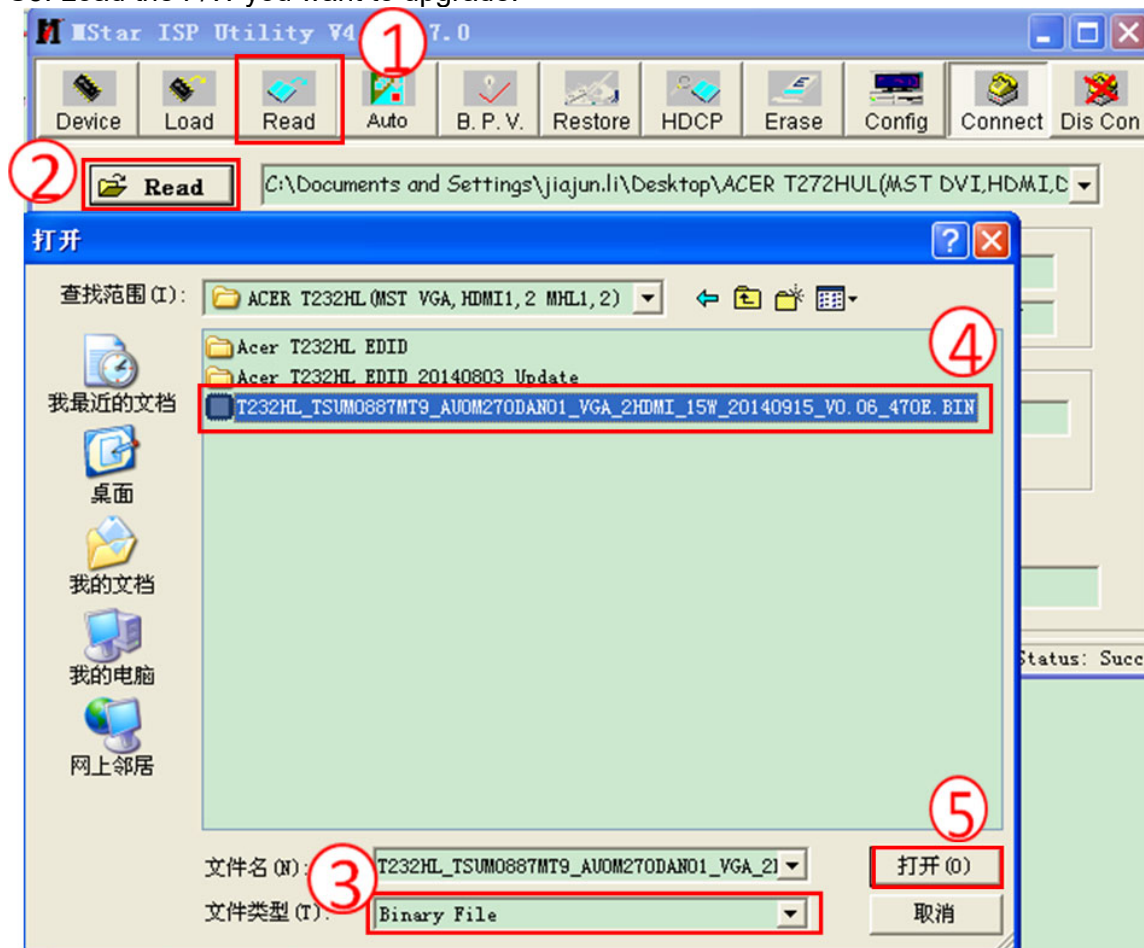

S2. Double-click to run the ISP tool.

S3. Set the parameters in "Device" window.

S4. Connect to the monitor. Click "Connect". If the tool communicate with monitor successfully, the tool will detect the flash type of monitor.
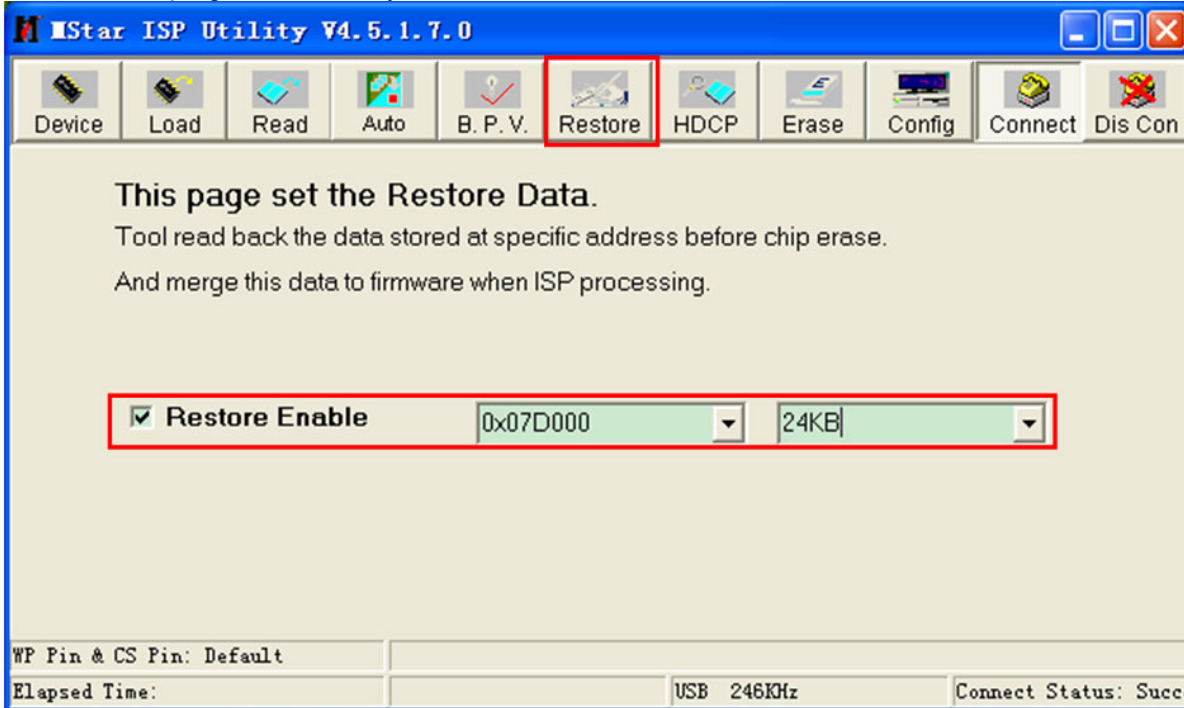
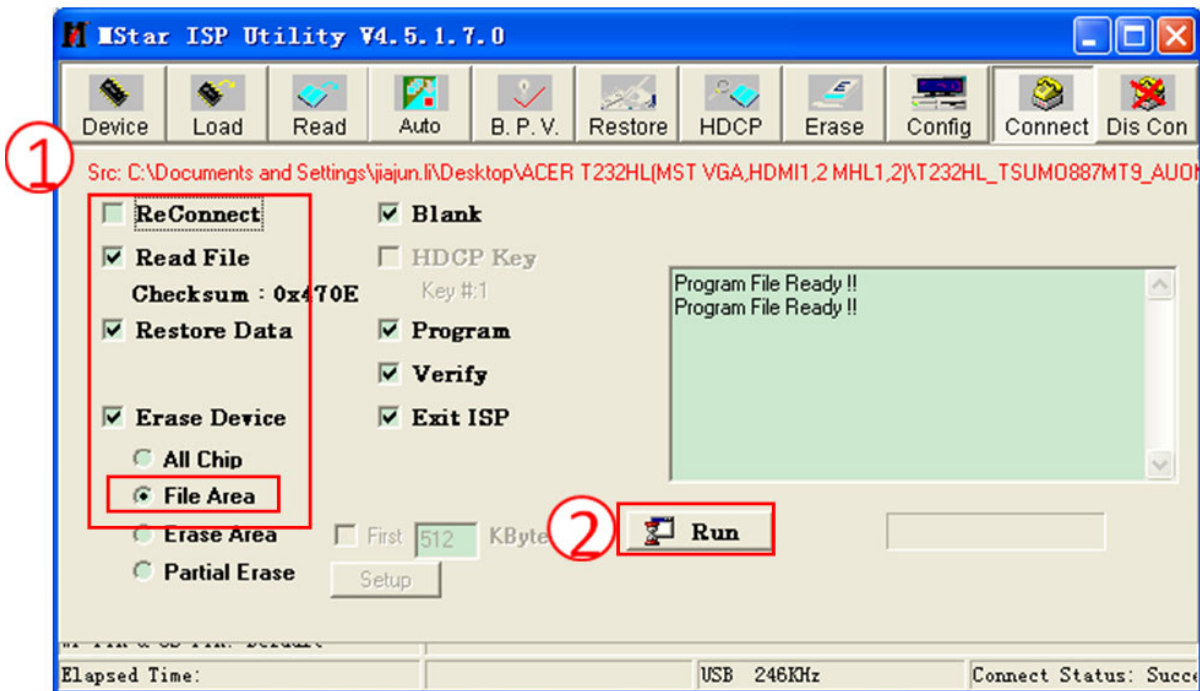

S5. Load the F/W you want to upgrade.

S6. Set the restore address.
   If the monitor has DVI or HDMI port, you need to set restore address for HDCP key
   to avoid re-program HDCP key. "0x07D000", 24KB for ACER T232HL.

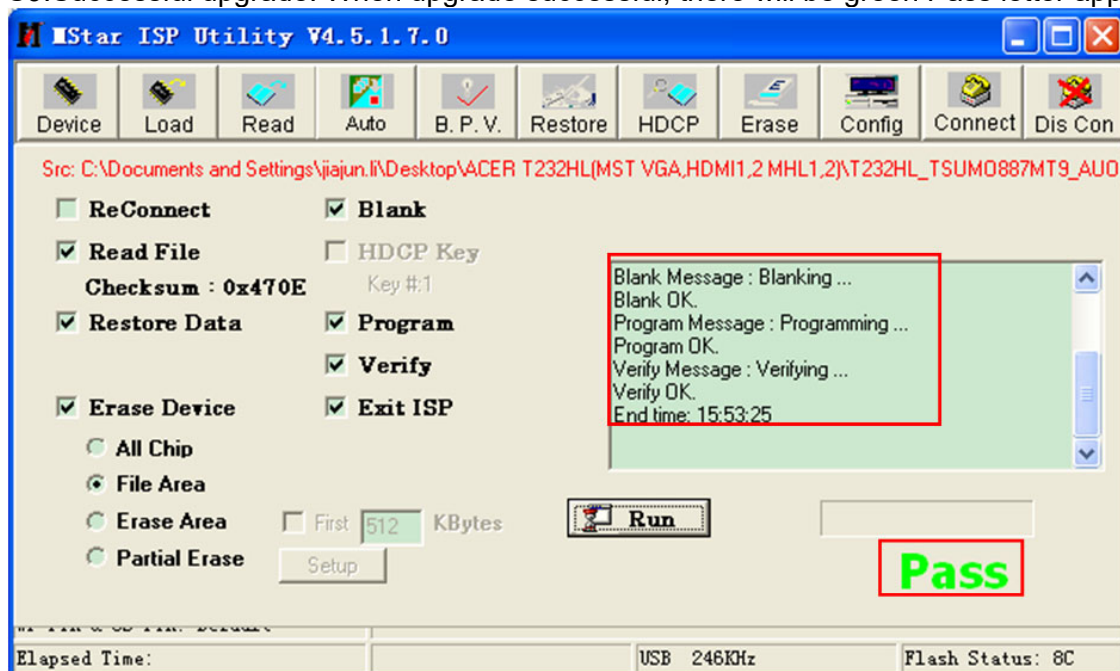S7. Set parameter in "Auto" window. If you have set "Restore address", please tick "Restore Data".

S8.Processing of upgrade. After clicking "Run", the tool start to program. It is forbided to power off monitor or switch off connection during programming.
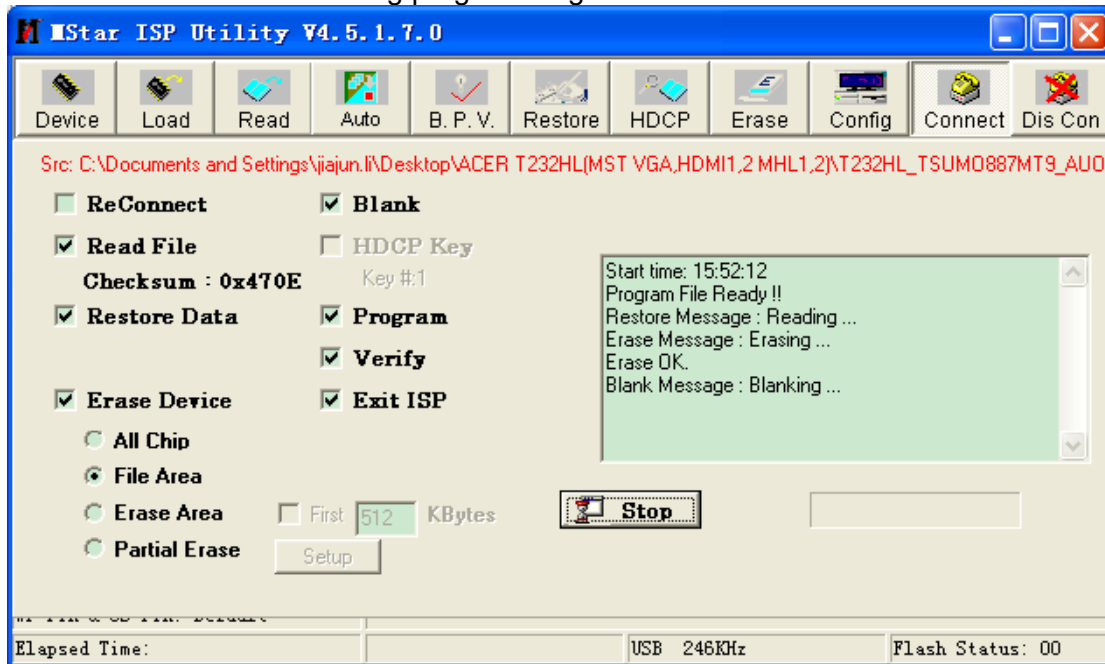
S9.Successful upgrade. When upgrade successful, there will be green Pass letter appearing.
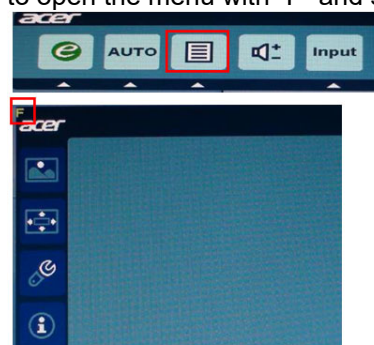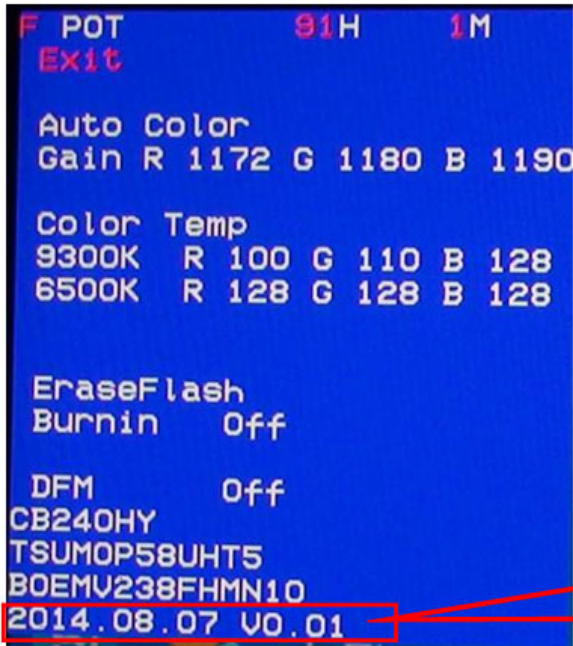

5. Check the FW version after upgrade.
S1. The way to open factory menu.
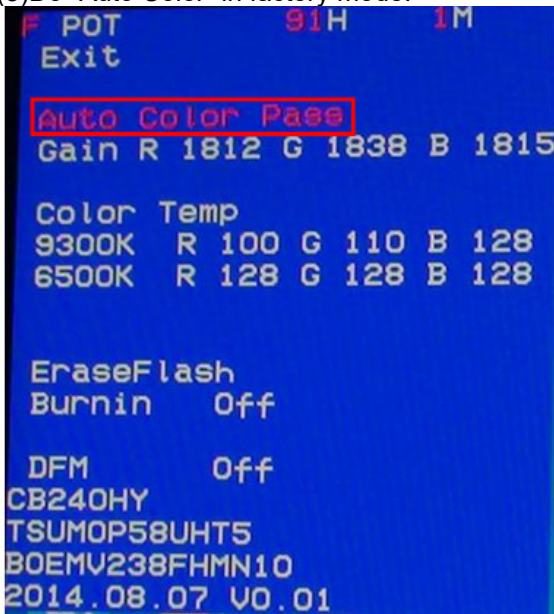(1) Connect VGA source to monitor and turn it on.
(2)The way to factory menu: Pressing "e" and DC on, when the screen lights, release the key and press "MENU" again to open the menu with "F" and select "F" to open factory menu.
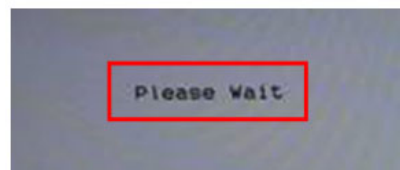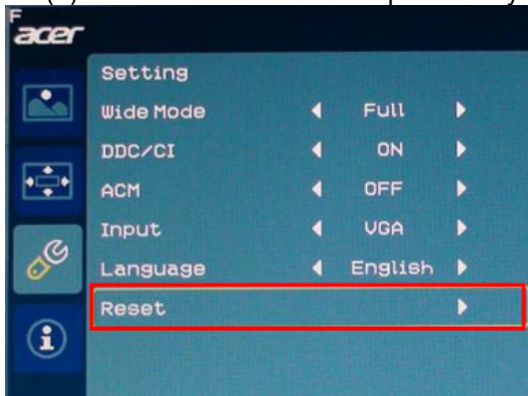
F POT   91H   1M
Exit

Auto Color
Gain R 1172 G 1180 B 1190

Color Temp
9300K   R 100 G 110 B 128
6500K   R 128 G 128 B 128

EraseFlash
Burnin   Off

DFM   Off
CB240HY
TSUMOP58UHT5
BOEMV238FHMN10
2014.08.07 V0.01

Check   this F/W version.

(3)Do "Auto Color" in factory mode.

F POT   91H   1M
Exit

Auto Color Pass
Gain R 1812 G 1838 B 1815

Color Temp
9300K   R 100 G 110 B 128
6500K   R 128 G 128 B 128

EraseFlash
Burnin   Off

DFM   Off
CB240HY
TSUMOP58UHT5
BOEMV238FHMN10
2014.08.07 V0.01

S2. Do factory reset in user menu.
   (1)Restart the monitor after open factory menu. And then open the user menu.

acer

Setting

Wide Mode   ◀   Full   ▶

DDC/CI   ◀   ON   ▶

ACM   ◀   OFF   ▶

Input   ◀   VGA   ▶

Language   ◀   English   ▶

Reset   ▶

⟹

Please Wait

   (2)Factory reset will turn off "Burn in" mode which screen color switches among red, green, blue and black.

6. Troubleshooting.
S1. Can't Entry ISP Mode!!
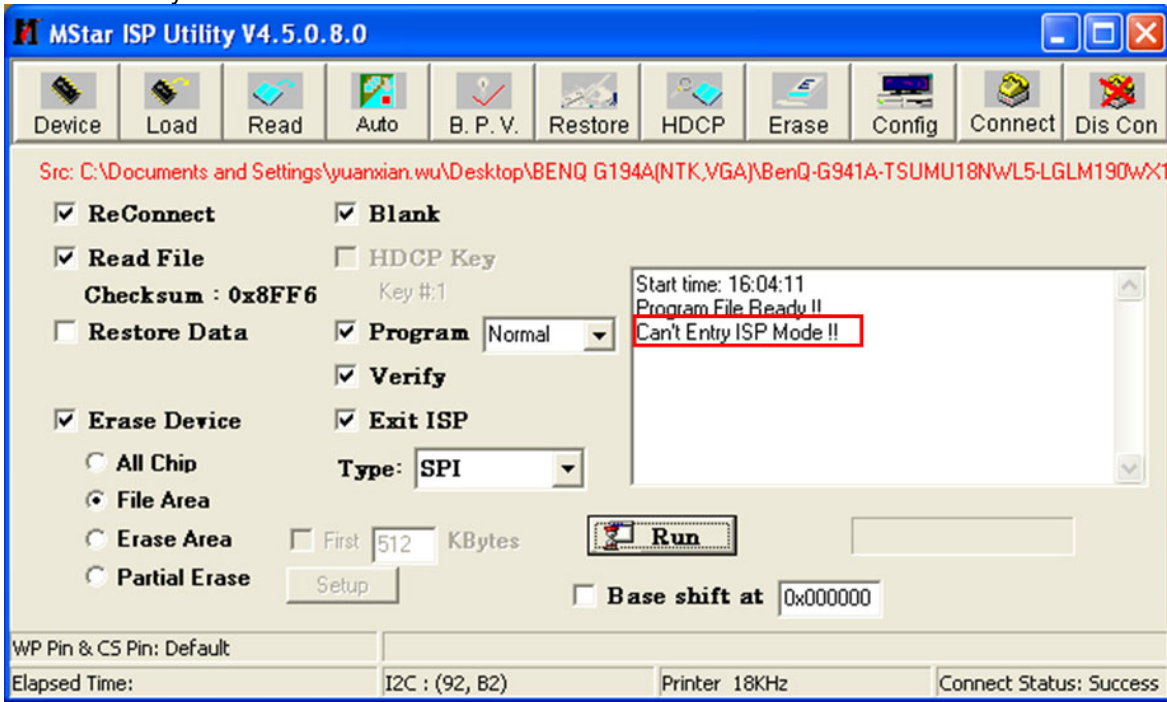
(1) Check the cables and ISP JIG are connected fluently.
(2) Click the "Dis Con" and click "Connect" again.
(3) AC off the monitor for a while and retry it.
(4) Change other vervion ISP program.
(4)Change ISP JIG or cable.
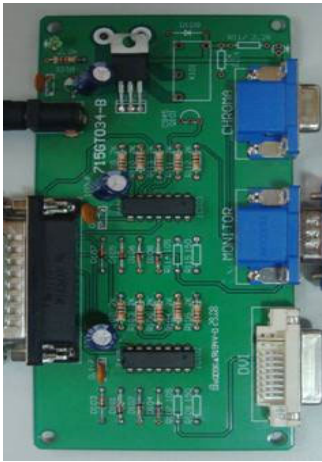(5)Change PC.

4. Writing EDID Process
1.Materials list

LPT cable (male to male)
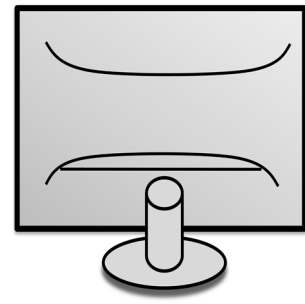TPV P/N: N/A

VGA cable
TPV P/N: 089G728 GAA DB

12V DC adapter
TPV P/N: ADPC12416BEP

ISP JIG: 715GT034-B

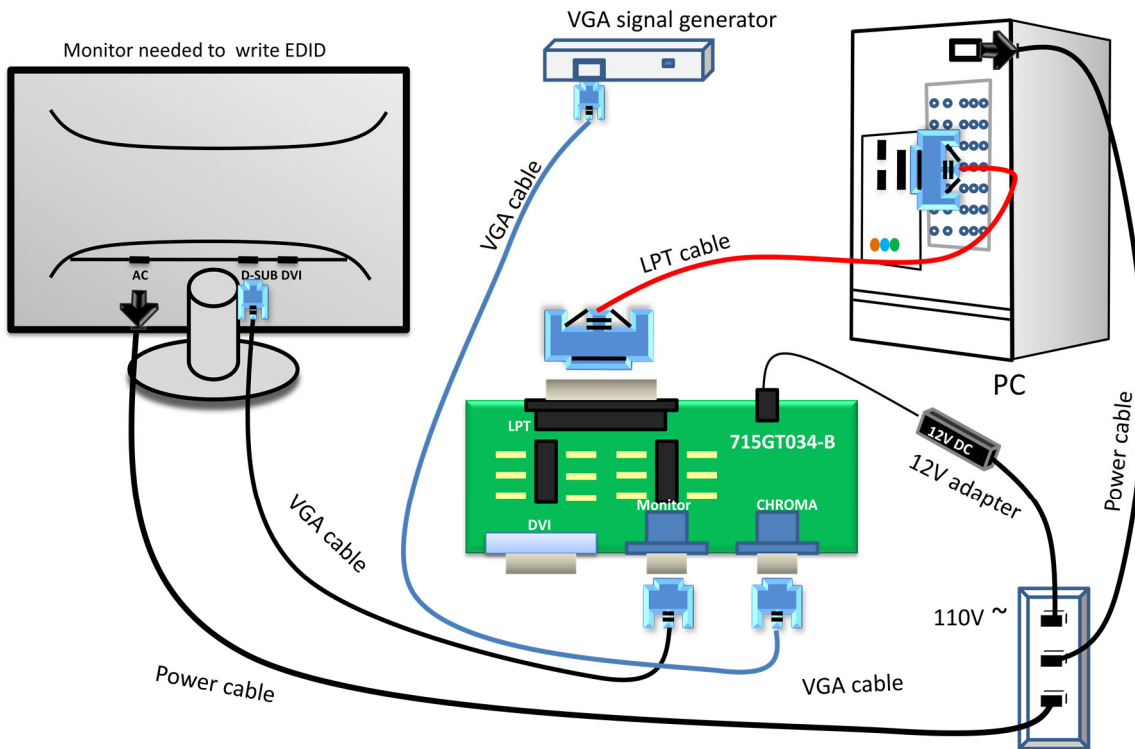PC

Monitor

PORT95NT.EXE
LPT port driver

DDCV066.exe
ISP tool

Acer T232HL EDID
EDID

2. Connection(DC on the monitor)

3. Install LPT driver.

S1. Double click the icon ![PORT95NT.EXE PackageForTheWeb Stub InstallShield Software Corpora...] to install the driver. Restart PC after installation.
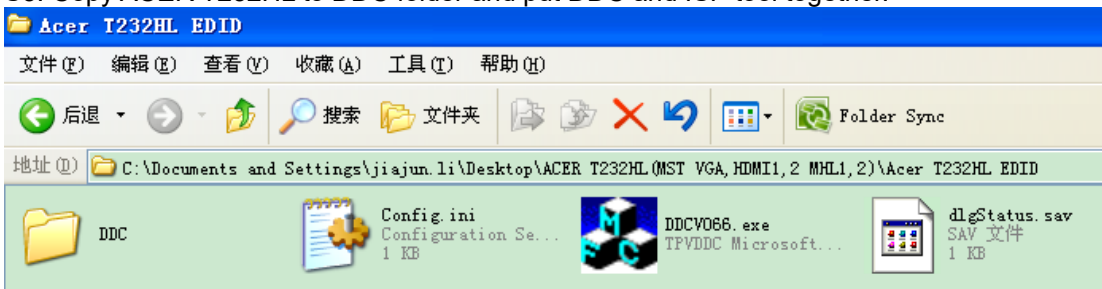
4. Prepare the EDID written.

S1. Change the EDID files name as below rule.

VGA EDID ⟶ WA.dat	HDMI1 EDID ⟶ WH.dat	
HDMI2 EDID ⟶ WH2.dat	MHL1 EDID ⟶ WHM.dat	
MHL2 EDID ⟶ WHM2.dat		

S2. Copy these six files to one folder named as ACER T232HL which must contains "config.ini" file.
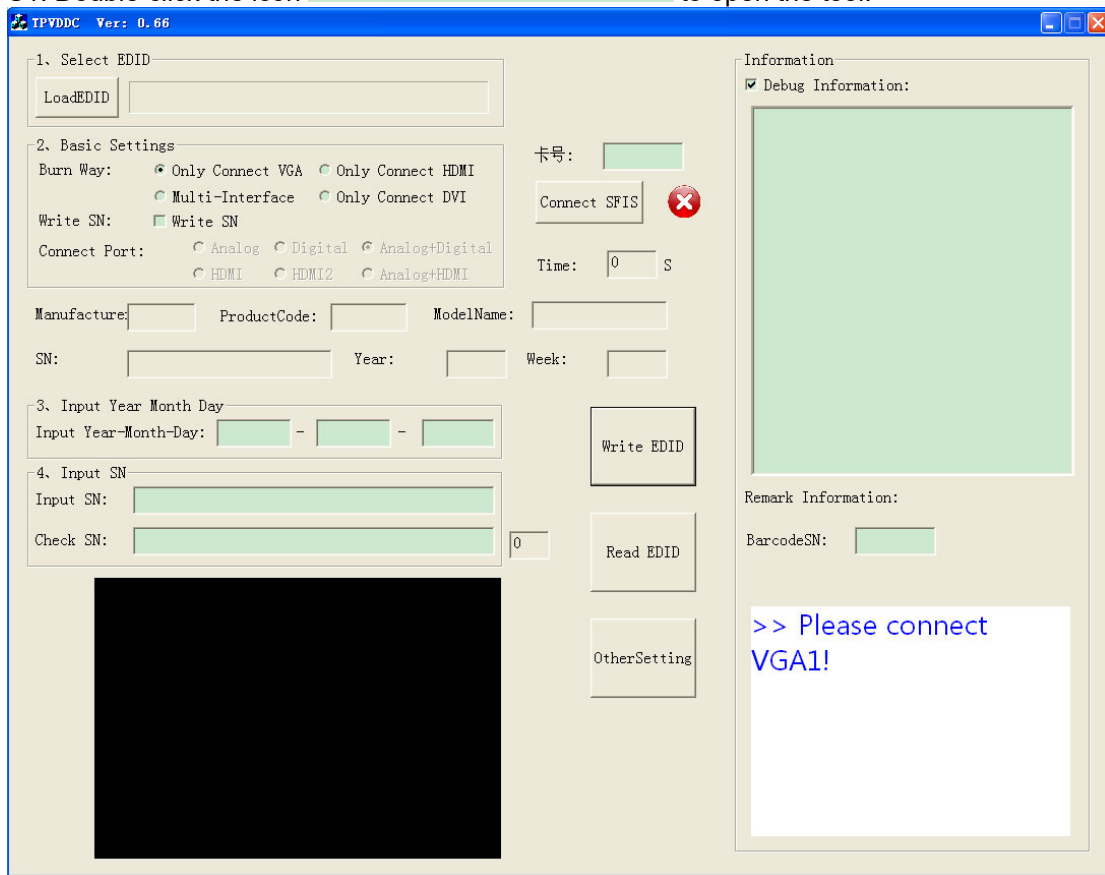

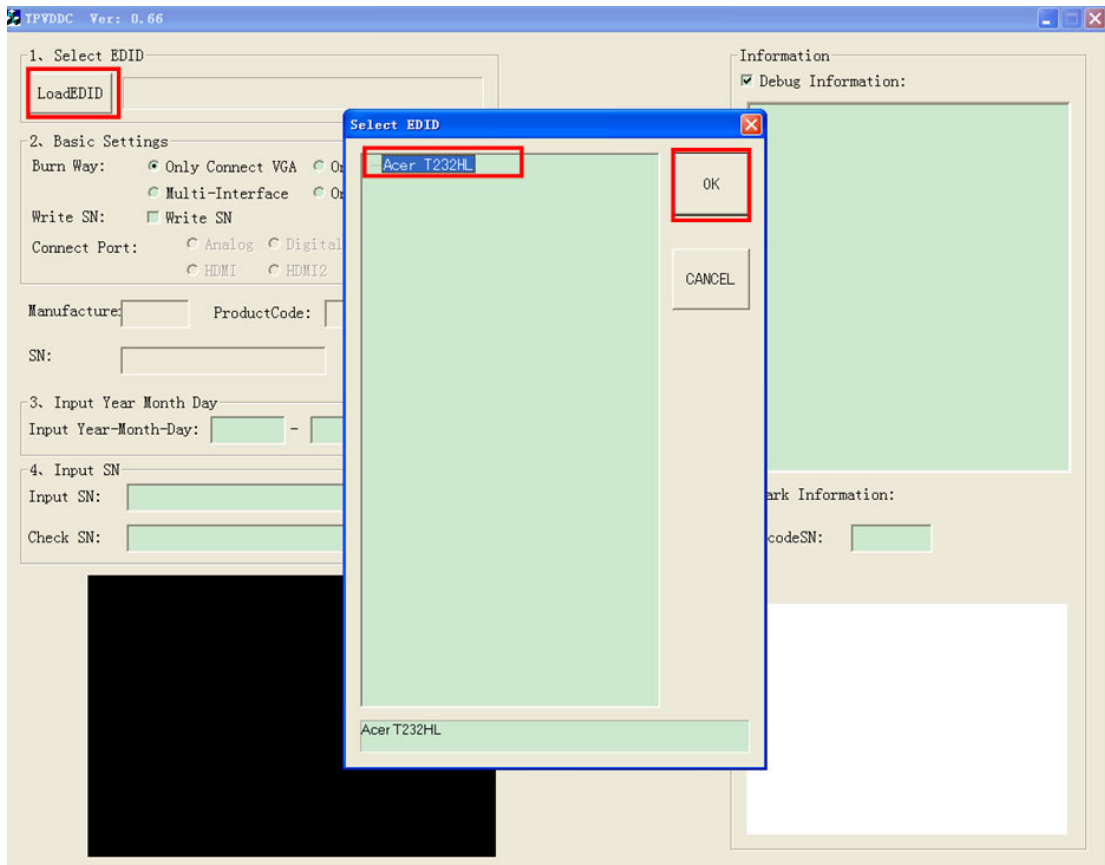S3. Copy ACER T232HL to DDC folder and put DDC and ISP tool together.
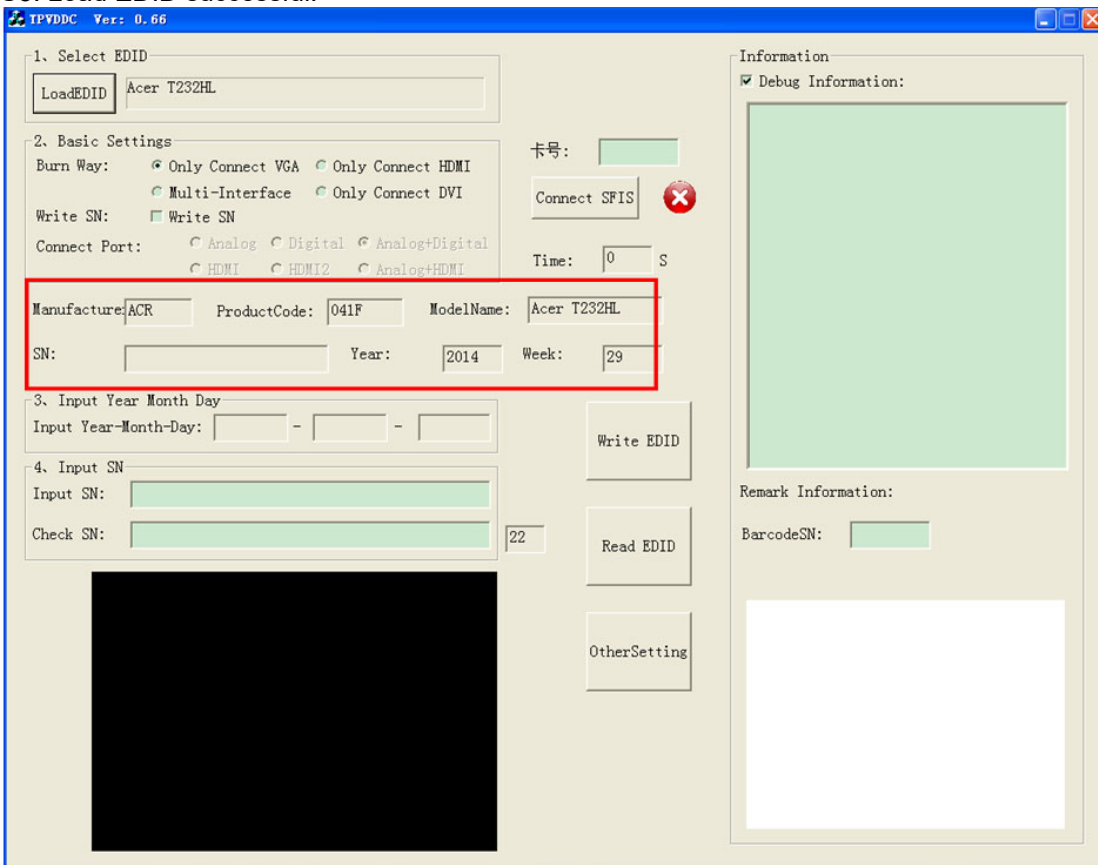
5. Run the ISP tool

DDCV066.exe
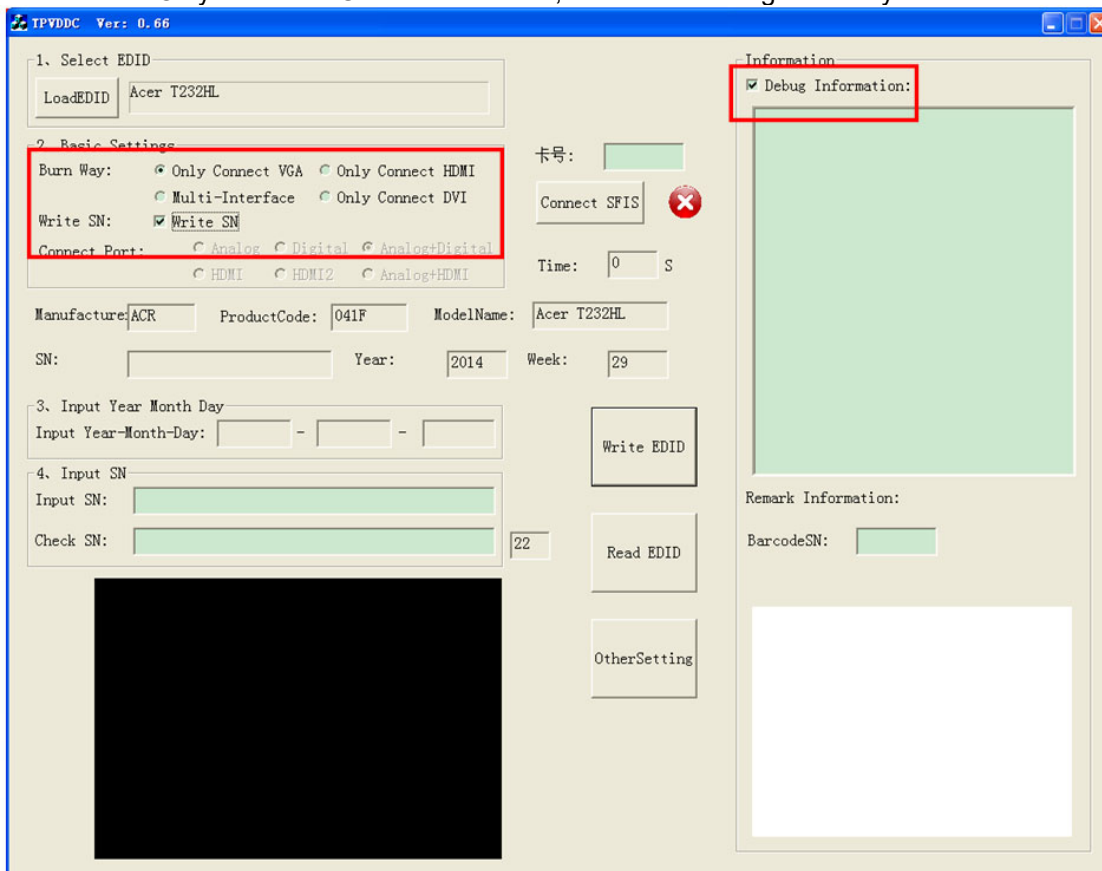TPVDDC Microsoft...

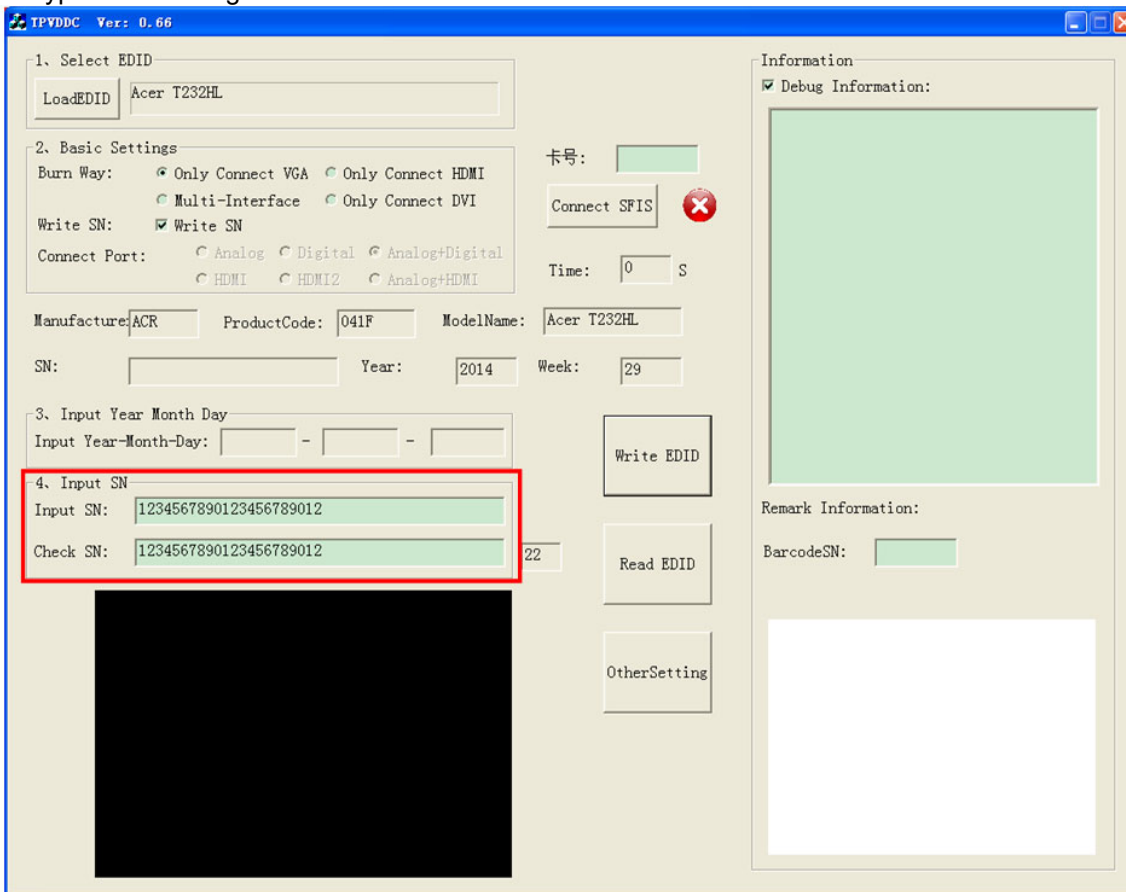S1. Double-click the icon to open the tool.

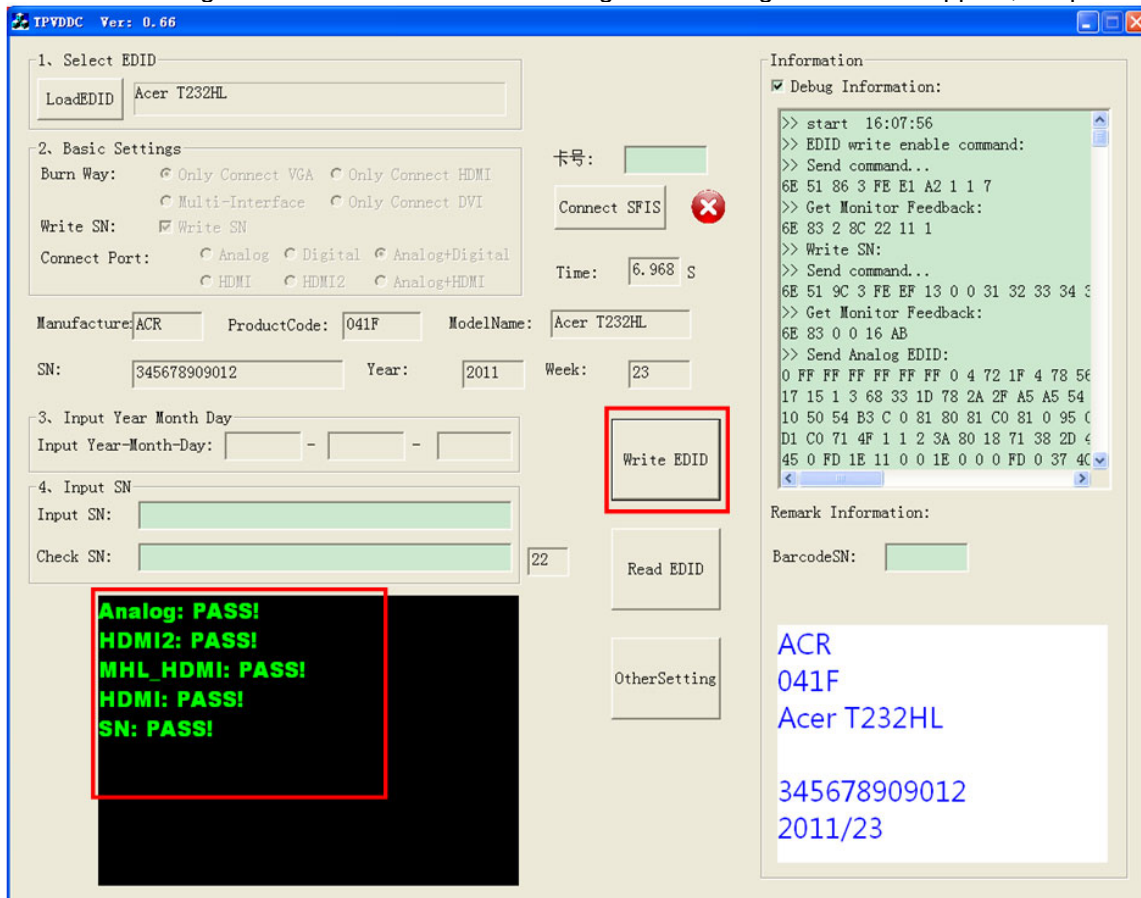
S2. Select the EDID folder.

S3. Load EDID successful.

S4 Tick the "Only connect VGA"and "write SN", then click "Debug Imformayion".
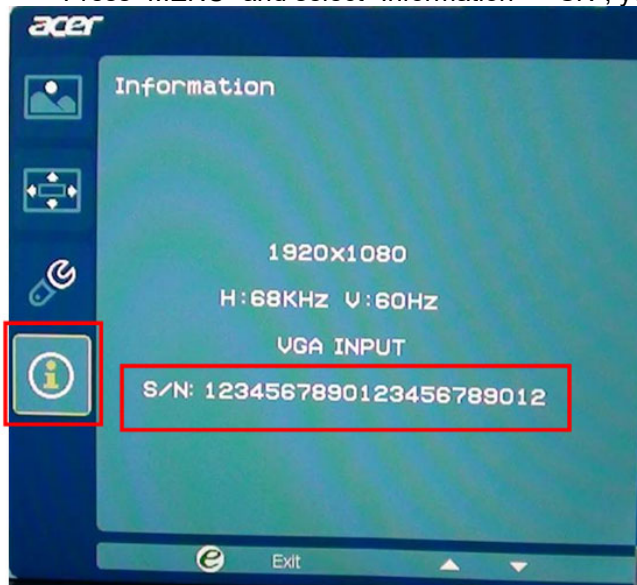
S5 type in the 22 digit S/N.

S6. Start to writing. Click "write EDID" to start writing. When The green "PASS" appear, the process is finished.

S7 Check the S/N in monitor user menu.
    Press "MENU" and select "Information"—"SN", you can check the SN.

    6. Troubleshooting.
S1. Can't write!
    (1) AC on the monitor and turn on it.(Restart the monitor)
    (2)Take apart the monitor and connect the 7pin of EEPROM to GND to diable write protection then write EDID one
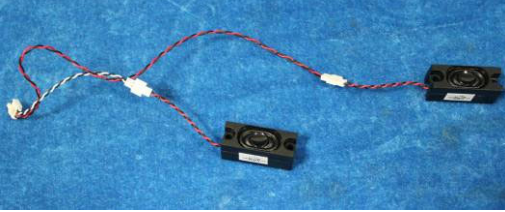   by one.
    (3) Set the Burn in on last to try again.

5. FRU (Field Replaceable Unit) List

This chapter gives you the FRU (Field Replaceable Unit) listing in global configurations of ACER T232HL Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization).

Please note that WHEN ORDERING FRU PARTS, you should check the most up-to-date information available on your regional web or channel. For whatever reasons a part number change is made, it will not be noted on the printed Service Guide. For ACER AUTHORIZED SERVICE PROVIDERS, your ACER office may have a DIFFERENT part number code from those given in the FRU list of this printed Service Guide. You MUST use the local FRU list provided by your regional ACER office to order FRU parts for repair and service of customer machines.

NOTE: To scrap or to return the defective parts, you should follow the local government ordinance or regulations on how to dispose it properly, or follow the rules set by your regional ACER office on how to return it.

Picture	Description	TPV Part No.	ACER Part No.
	Main board	756GQECB0BA070000Q	55.T27M2.001
	Key board	KEPCEQB2	55.T27M2.002
	USB board	USBEQB2Q	55.T27M2.003
	Power board	LNPCEB232GNBP	55.T27M2.004

	ADAPTER 19V 65W (THREE HOLES)	380GLA19525DE1	25.LZPM2.002
	Speaker	378G0020646YAA	23.T2DM2.001
	LCD LM230WF3-SLP1 FQ TVEFQ	750GDB230F3P13N0AC	6M.T27M2.002
	HARNESS-6P(2008)-6P(SHJP)-360mm(PB TO PANEL)	395G801406DK04	50.T27M2.007
	LVDS-CABLE-30P-30P(A2004)-260(MB TO PANEL)	395G801830DL41	50.T27M2.006
	HARNESS 2PIN-2PIN 80MM(MB TO USB)	395G801402XF09	50.T27M2.002

	HARNESS 5PIN-5PIN 280MM(PB TO USB)	395G801405XH58	50.T27M2.004
	BEZEL_BTM	A34G370700201C0100	60.T27M2.001
	REAR COVER	A34G3706AEMA1L0130	60.T27M2.002
	STAND BASE ASSY	Q37G043100200000FH	60.T27M2.006
	COVER HINGE	A34G3701AEM01L0100	60.T27M2.003

	MAIN FRAME	Q15G204420101A00FJ	60.T27M2.005

6. Trouble shooting instructions

Before sending your LCD monitor for servicing, please check the troubleshooting list below to see if you can self-diagnose the problem.

VGA mode

Problem	LED status	Remedy
No picture visible	Blue	Using the OSD, adjust brightness and contrast to maximum or reset to their default settings.
	Off	Check the power switch. Check if the power cord is properly connected to the monitor.
	Amber	Check if the video signal cable is properly connected at the back of monitor. Check if the computer system is switched on and in power saving/ standby mode.
Unstable picture		Check if the specification of graphics adapter and monitor is in compliance which may be causing the input signal frequency mismatch.
Abnormal picture	Image is missing, off-center, too large or too small on the screen.	Using the OSD, adjust focus, clock, H-position and V-position with non-standard signals. Check the display setting on your system. In case of a missing image, please select another resolution or vertical refresh rate. Wait for a few seconds after adjusting the size of the image before changing or disconnecting the signal cable or switching off the monitor.

DVI/HDMI mode

Problem	LED status	Remedy
No picture visible	Blue	Using the OSD, adjust brightness and contrast to maximum or reset to their default settings.
	Off	Check the power switch. Check if the AC power cord is properly connected to the monitor.
	Amber	Check if the video signal cable is properly connected at the back of monitor. Check that the computer system is switched on and in power saving/standby mode.