EMB-CPU04

User Manual

Version 1.0

DAQ SYSTEM
Measurement & Automation

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1. EMB-CPU04 Introduction

EMB-CPU04 is a Single Board Computer (SBC) that provides a solution suitable for the embedded market that wants low cost, low power and small size equipped with Intel Atom Z520PT Processor.

1-1   Features

- Intel Atom Processor Z520PT(Z510PT, Z530P)
- Intel system controller hub US15WPT chipset
- Intel GMA500 graphics driver (VGA, LVDS)
- Single Power(+9V   to +15V) operation
- Compact small size 160 x 100mm
- Supports industrial Temperature range (-40 - +85)
- Operating Systems :   Windows XP

1-2   Applications

- Factory Automation
- Data Acquisition
- Medical and Robotics
- Auto PC
- UMPC(Ultra Mobile PC)
- Instrument Control PC

1-3   Specifications
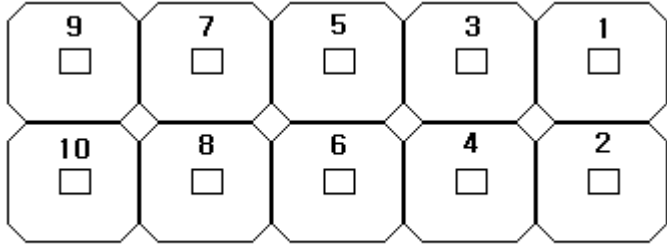
Form Factor	**160 x 100mm**
Processor	**Intel Atom Z520PT(512K cache, 1.33GHz, 533MHz FSB)**
System Chipset	**Intel System Controller Hub US15WPT**
Bios	**AMI bios**
Memory	**1 x 200 pin DDR2-400/533 SODIMM max up to 2GB**
Extension Slot	
Compact Flash slots	**44pin IDE to Compact Flash type-2 adaptor**

PC card slots	
NVRAMs	
Display	Support LVDS, VGA Dual Display
Ethernet	one 10/100/1000 Mbps Ethernet port
EIDE	2mm pitch 44pin EIDE connector
Audio	HD Codec audio with mono speaker AMP
Serial I/O	Two serial ports , one can be used as touch input
Parallel Port	
USB	Four USB A connector, Two with 10pin header
Watch dog timer	
Status LEDs	Indication for Ready and operation
Power Input	Single +9 to + 15V range power max current is 1.5A
Debug Connector	
Operating Temperature Rating	-40 to 50(without FAN and Heat-sink), -40 to +85 (with Heat-sink)
Power Consumption	Max 15W
Regulator Compliance	

2. EMB-CPU04 Appearance
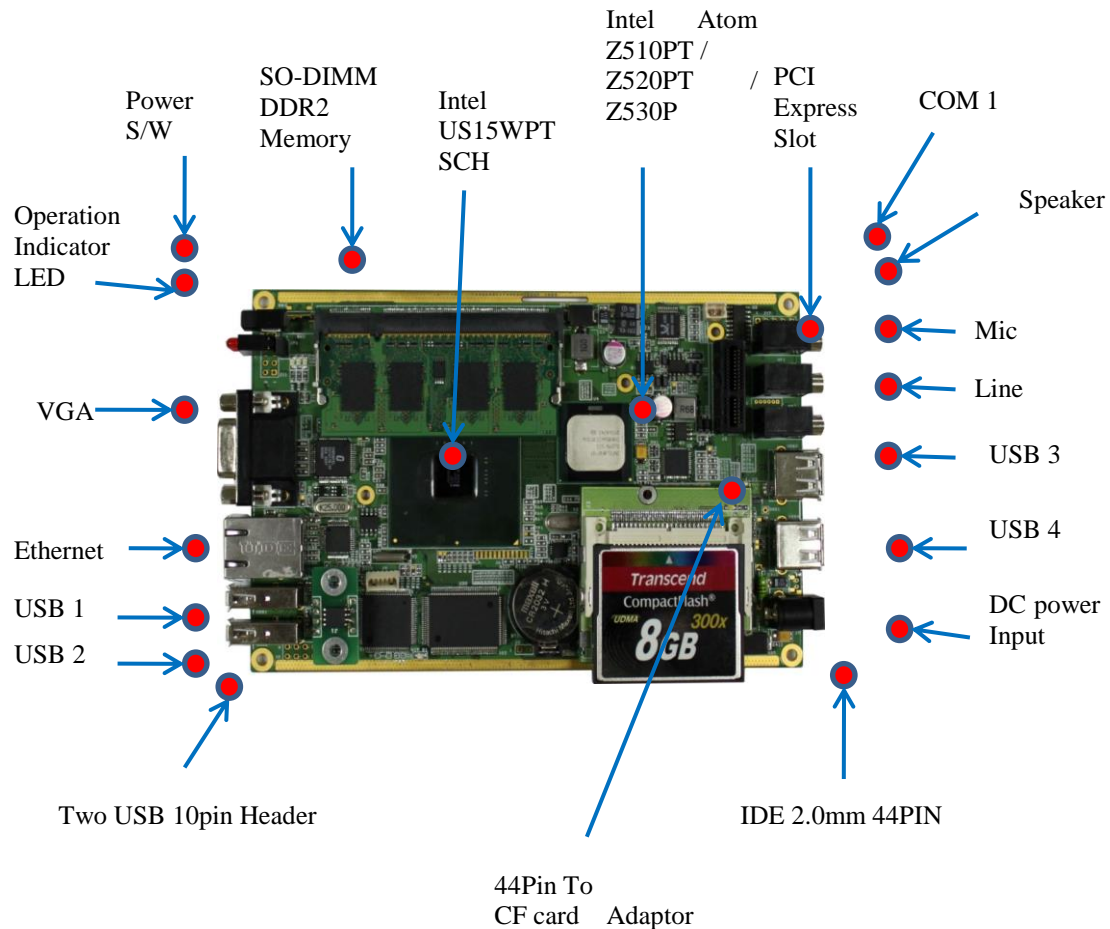
POWER S/W	Main power switch of EMB-CPU0
SO-DIMMDDAR2 MEMORY	256M ~ 2GB Memory
Intel US15WPTSCH	
Intel Atom	
PCI Express Slot	You can use it by installing a PCI Express slot connector.
COM1 (J17)	PIN Connector for Serial Communication 1. PIN : RX1 2. PIN : TX1 3. PIN : Touch screen

|	
	4. PIN : Touch screen 5. PIN : GND
Speaker	SPK connecter
MIC	MIC connector
Line	AUX connector
USB 1~4	USB connecter
DC Power Input	Single +9 to +15V range power max current is 1.5A
IDE 2.0mm 44 PIN	Flash memory connecter
Two USB 10pin Header (J10)	 1.PIN , 2.PIN : +5 V 3.PIN : 1D- 4.PIN : 2D- 5.PIN : 1D+ 6.PIN : 2D+ 7.PIN , 8.PIN : GND 9.PIN ,10.PIN : No Connect
Ethernet	one 10/100/1000 Mbps Ethernet port

3. Driver Installation

3-1 Sound Driver

- Install the sound driver by executing the CDROM:₩Driver₩audio₩audio_WDM_R241₩setup.exe file.
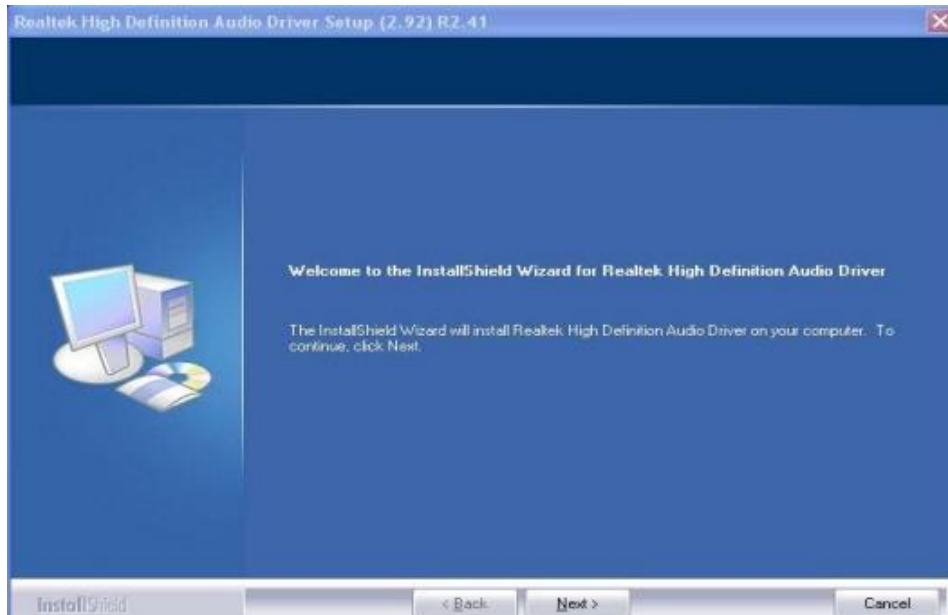
3-2 LAN Driver

- Install the LAN driver by executing the CDROM:₩Driver₩Lan₩AsusSetup.exe file.
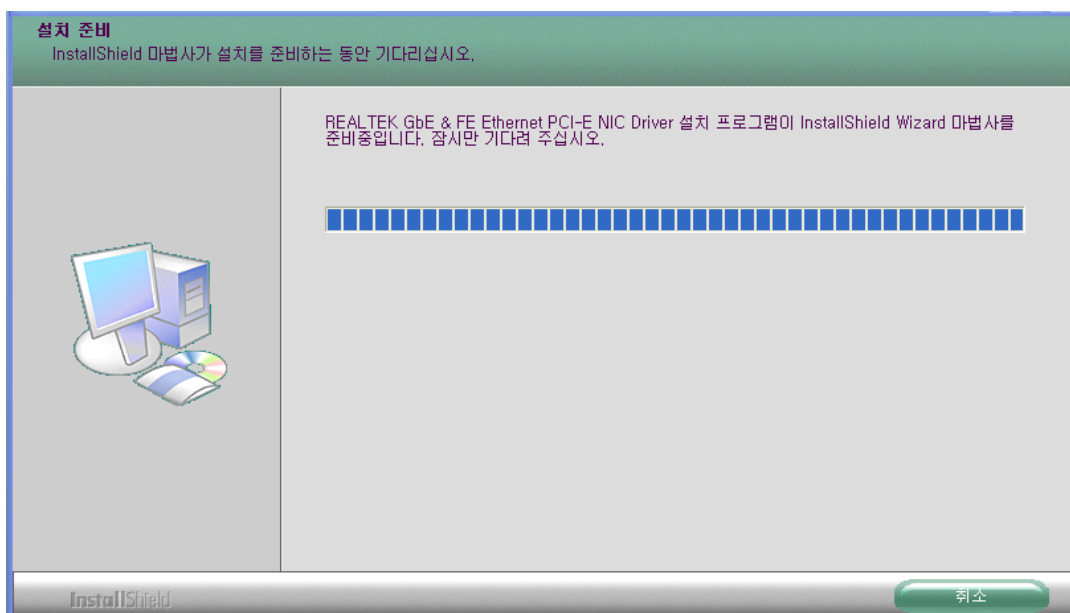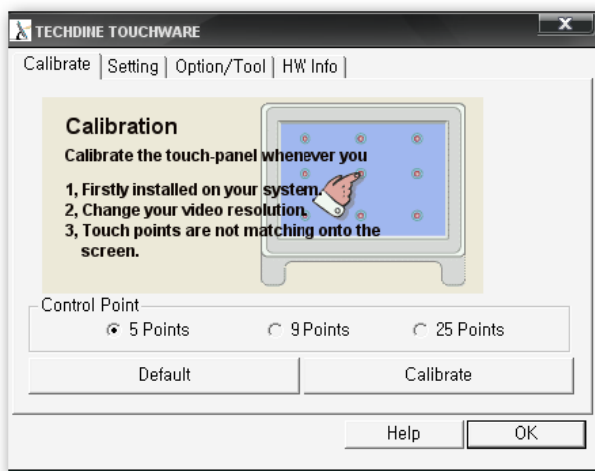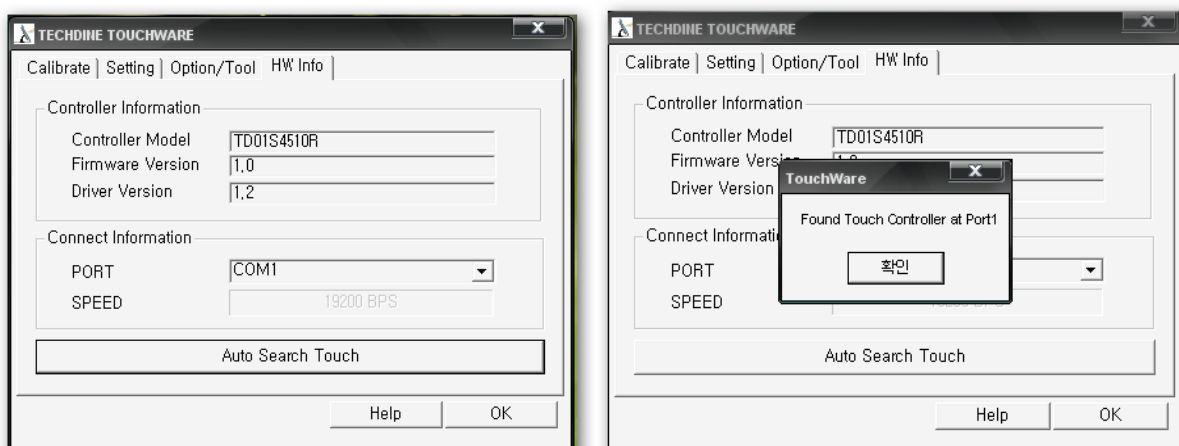
3-3 Touch Driver

- Install the Touch driver by executing the CDROM:₩Driver₩Touch₩SetupVista32-RS232.exe file.
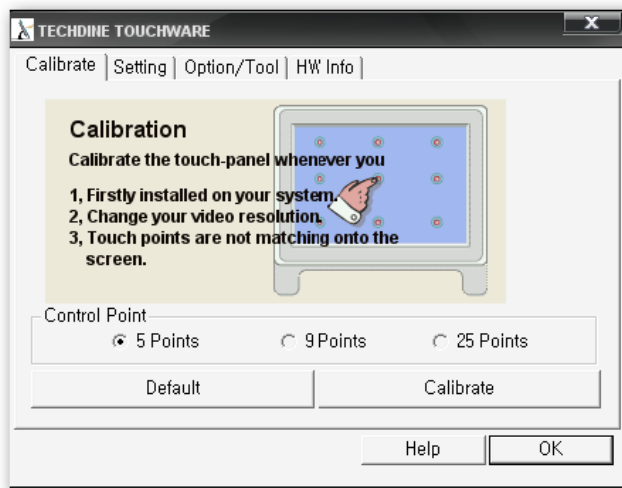

- If you double-click the execution screen, the following screen appears.
- Click "HW Info" in the picture below.

- Click the 'Auto Search Touch' button in "HW Info" to check the connection port.

- After finding the port to which the Touch Controller is connected, press the OK button.
- Select "Calibrate" and press the 'Calibrate' button on the screen below.

- When the screen below appears, press and hold the blinking point.

  (Make sure to keep holding until the progress bar at the bottom is done.)
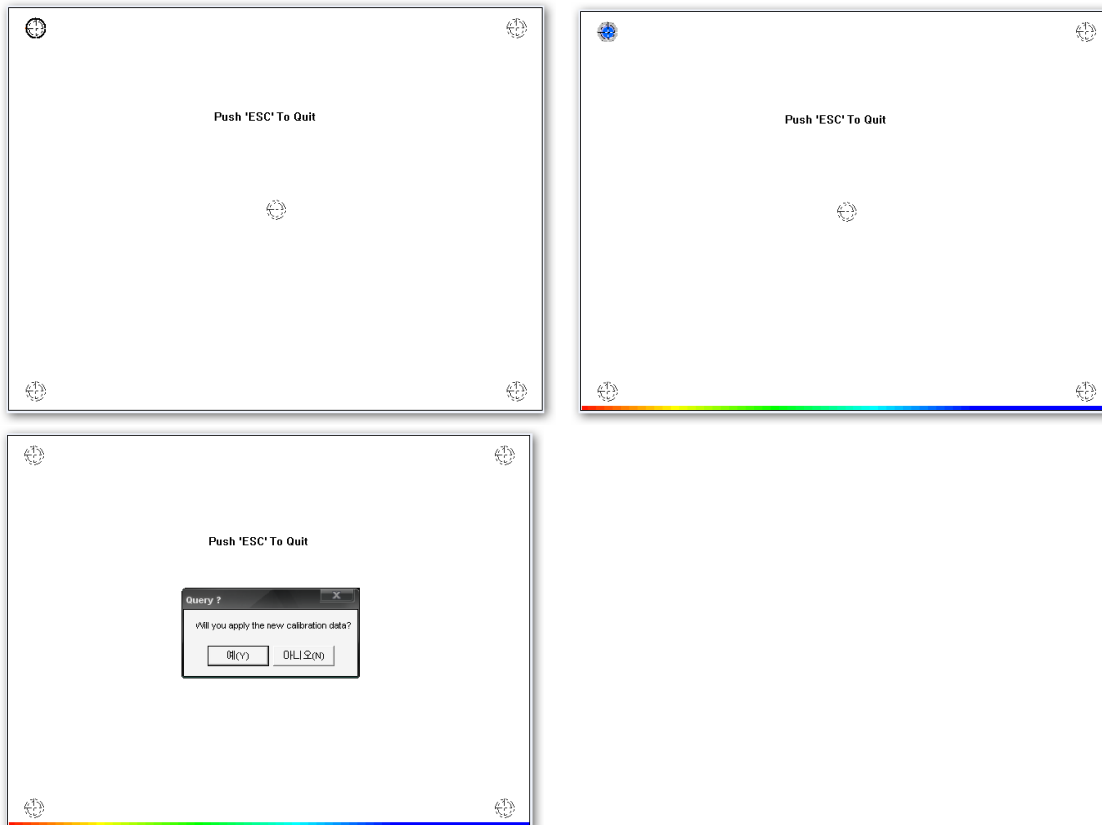
- If you press all the way down in the correct order, the above screen appears. Click "Yes" to exit and you are done.

3-4   Graphic Driver

Execute CDROM:₩Driver₩Driver₩Graphic₩XP₩setup.exe to install Graphic Driver and then reboot.

4. Display Setup

4-1 Installation with LCD
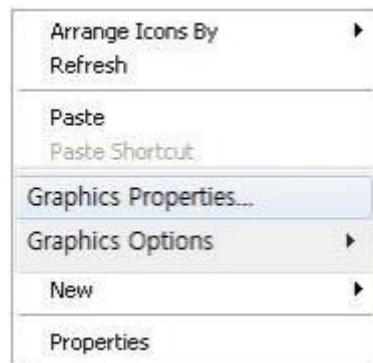
Right-click on the desktop and select "Graphics Properties... Select ".

1) MID Monitor Single Output
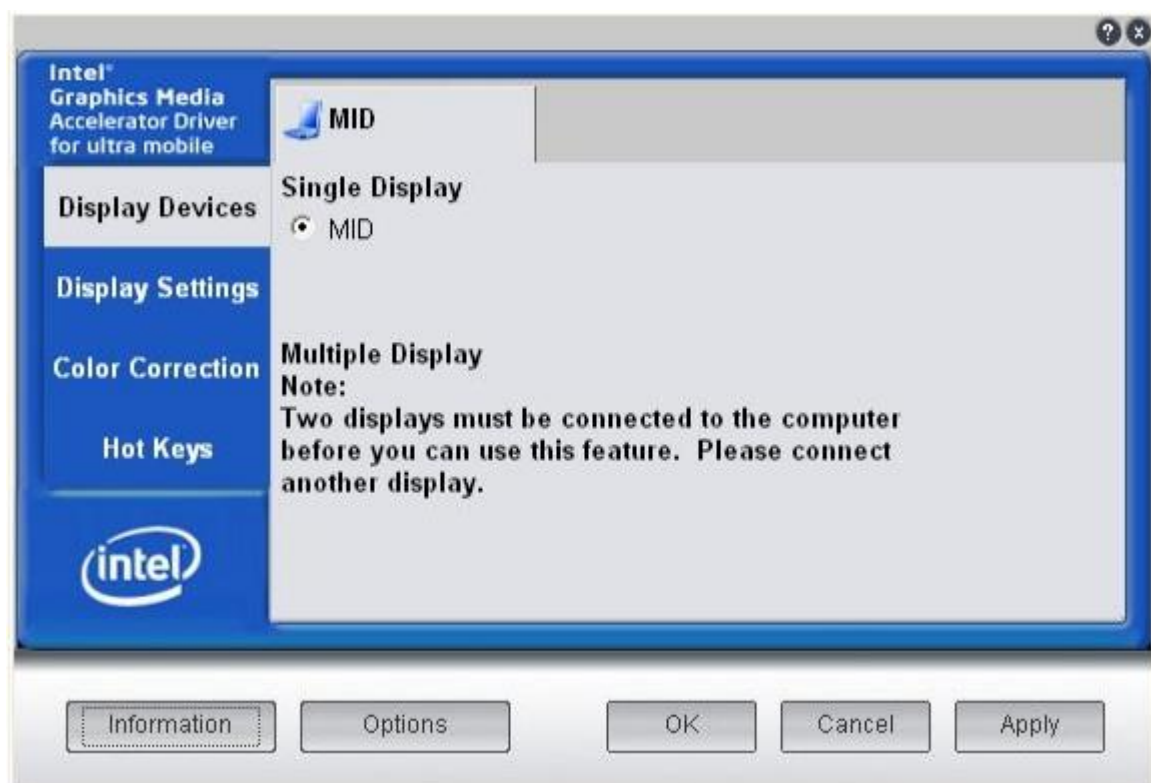
- When only MID Monitor is connected, only single display setting is possible.
   (Single screen output to MID Monitor)

2) MID Monitor AND Desk Top Monitor Single Output
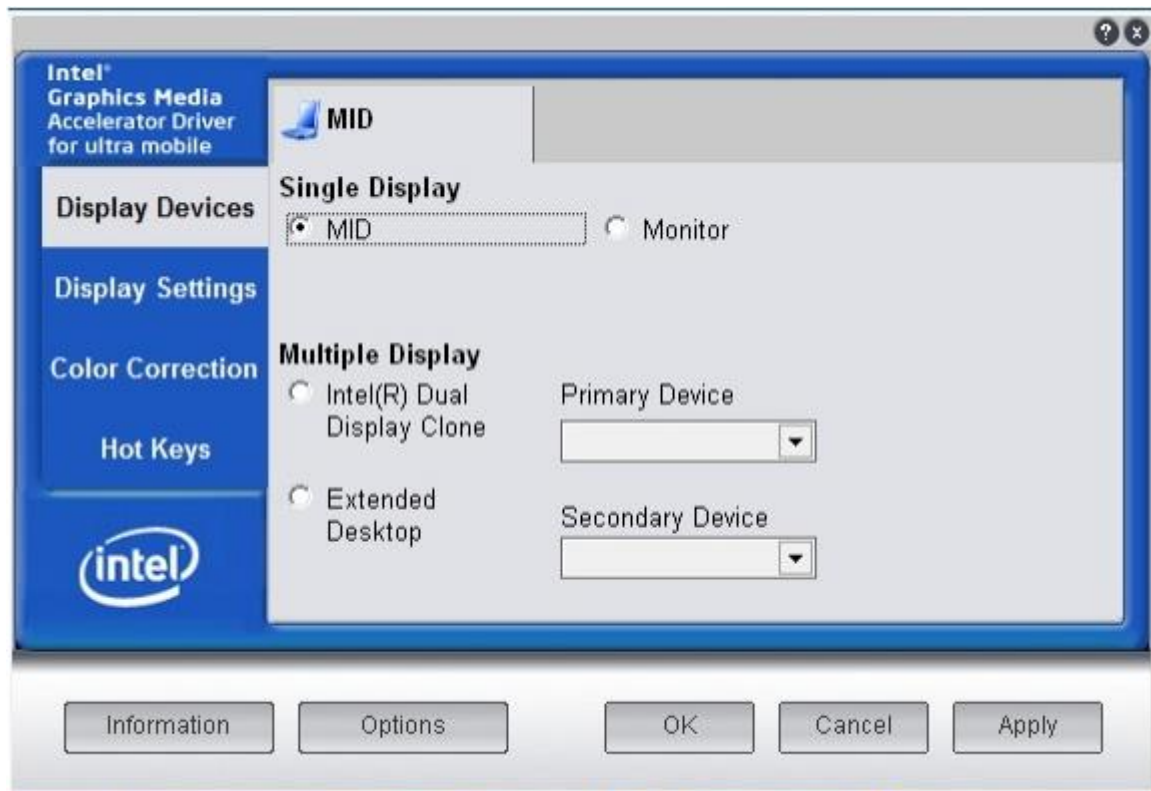
- When both MID Monitor and Desk Top Monitor (VGA Connecter) are connected, "Graphic Properties… " This is the setting screen.
- In the "Single Display" setting, you can choose between MID Monitor or Desk Top Monitor for output. (MID Monitor or Desk Top Monitor single output)

3) MID Monitor AND Desk Top Monitor Multiple Output

- When "Intel(R) Dual Display Clone" is set in "Multi-Display" setting, the same screen output is possible on MID Monitor and Desk Top Monitor. (same screen output)
- When setting "Expanded Desktop", one of MID Monitor and Desk Top Monitor can be used as an extended monitor. (extended monitor output)

4-2 Installation method when connecting only Desk Top Monitor without LCD

After installing the Graphic Driver and rebooting, the Windows logo screen is displayed on the Desk Top Monitor as follows.

When the logo screen is finished, the graphic driver outputs the screen to the initial setting LCD, so no image is displayed on the Desk Top Monitor.

 After a minute or so after the logon screen disappears, press [Ctrl] + [Art] + [F1] to display the screen on the monitor. The above settings require one setting when installing Windows.

Appendix

A-1   Repair Regulations

Thank you for purchasing DAQ SYSTEM's product. Please refer to the following regarding Customer Service stipulated by DAQ SYSTEM.

(1)   Please read the user's manual and follow the instructions before using the DAQ SYSTEM product.

(2)   When returning the product to be repaired, please send it to the head office with the symptoms of the malfunction as well.

(3)   All DAQSYSTEM products have a one-year warranty.
  -. The warranty period is counted from the date the product is shipped from DAQ SYSTEM.
  -. Peripherals and third-party products not manufactured by DAQ SYSTEM are covered by the manufacturer's warranty.
  -. If repair is required, please contact the contact points below.

(4)   Even during the free repair warranty period, paid repairs are made in the following cases.
  ① Failure or damage caused by not following the user's manual
  ② Failure or damage caused by customer negligence during product transportation after purchase
  ③ Natural phenomena such as fire, earthquake, flood, lightning, pollution, etc. or power supply exceeding the recommended range malfunction or damage
  ④ Failures caused by inappropriate storage environment (eg, high temperature, high humidity, volatile chemicals, etc.) damaged
  ⑤ Failure or damage due to unreasonable repair or modification
  ⑥ Products whose serial number has been changed or intentionally removed
  ⑦ In the event that DAQ SYSTEM determines that it is the customer's negligence for other reasons

(5)   The customer must bear the shipping cost of returning the repaired product to DAQ SYSTEM.

(6)   The manufacturer is not responsible for any problems caused by incorrect use regardless of our warranty provisions.

MEMO

Contact Point

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DAQ SYSTEM
Measurement & Automation