M2I Corporation

Industrial PC-HMI
TOP-PCVIEW
Hardware Manual

Thank you for using TOP-PCVIEW series of M2I corporation.
Please read this manual carefully to know installing, wiring, operating, servicing and inspecting this equipment.

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Chapter 1 Safety Precautions

■ Before using the product

To use the product safely and effectively, please read the contents of this manual thoroughly before use. Please keep to the safety precaution, for it is to prevent accidents and potential danger from occurring. Safety precaution is classified into 'Warning' and 'Caution' and their meanings are as follows. Also the indicated illustrations on the product and in the manual have the following meanings.

⚠ Warning	Violating the instruction may result in serious personal injury or death.
⚠ Caution	Violating the instruction may result in slight personal injury or product damage.
⊘	Be cautious, for danger may be present.
❗	Be cautious, for there is a possibility of an electric shock.

■ General Precautions ⚠ Caution

⊘ Do not press the screen with a hard or sharp object (awl, screwdriver, pen) with too strong a force. It may cause malfunction of touch due to damage of the front sheet.

⊘ Do not use or store in an environment with high vibration.

❗ Do not allow foreign objects such as water, liquids, or metal powders to enter the product. This may cause breakage or electric shock.

⊘ Use the radio or mobile phone at least 30cm away from the main unit.

⊘ Two or fewer bright spots may appear on the LCD screen, and certain areas may appear brighter, but this is not a defect in LCD characteristics.

⊘ Do not store or operate in direct sunlight. Direct sunlight can change the properties of the LCD.

■ Design Precautions ⚠ Warning

Do not install the location which exceeds allowed temperature. Product can be damaged or shorten the life. Especially Install environment as below should be avoided.

❗ As the malfunction & incorrect result of Products could damage the stability of the entire systems and human body, you must install damage preventing interlock circuit such as emergency stop, Protective circuits, positioning upper and lower limit switch and interlock for forward/reverse operation.

❗ When computer or other controllers communicate and exchange data with products or change operation mode of products, set up protective sequence program in PC or Controller for protecting system from communication error.

❗ The output signal or communication lines should be separated from the power line or high tensioned wire. They should be installed 100mm (3.94 inch) or more from each other.

■ Environmental conditions ⚠ Caution

⊘ Indoor use only.

⊘ Altitude up to 2000m.

⊘ The length of Power Cable should be 3m (10 ft) or less.

■ Wiring Precautions ⚠ Warning

❗ Be sure the wiring is done correctly by checking the product's rated voltage and the terminal layout. Incorrect wiring could result in fire, damage or malfunctions.

❗ Tighten the terminal screw with the specified torque. If the screws of terminal are loose, it could result in

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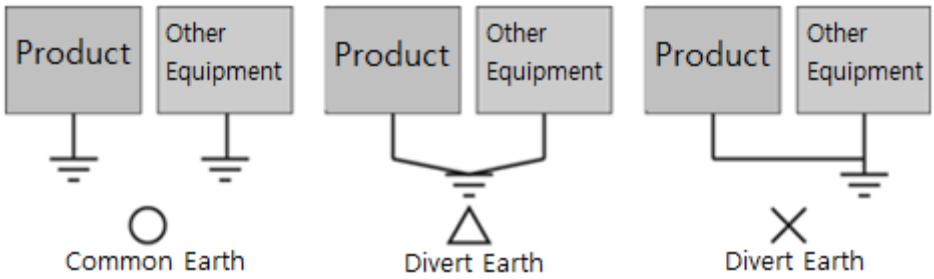
short circuit, fire, malfunctions. FG Terminal must be used a dedicated ground. Not doing so could result in malfunctions.

❗ a. Grounding should be the Class 3 grounding. The cable for grounding should be more than 4㎟.

❗ b. grounding point be closed to the products and make short the distance to the ground cable if possible. Please see below.



■ Installation Precaution

Do not install the location which exceeds allowed temperature. Product can be damaged or shorten the life. Especially Install environment as below should be avoided.

🚫 Do not Install product to the place which the ambient temperature is out of limits, from 0℃ to 60℃ or on the surface of control board which high pressure equipment is installed.

🚫 Do not install to the place where strong shock or vibration continuously have impacted on product.

❗ The space between back of product and back of control board must be more than 100mm for maintenance and ventilation.

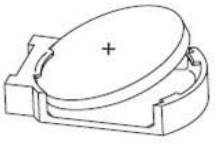
🚫 Do not storage and operate in the place in direct sunlight. By the strong ultraviolet rays can degrade the quality of LCD Displays.

■ Disposal Precaution

When you dispose of product, please treat it as industrial waste. It can create poisonous substances or explosion.

■ Cell Type Battery Specifications

If a "CMOS CHECKSUM ERROR" occurs during booting, the BIOS setup cannot be saved due to the exhaustion of the CMOS battery, so users should replace the button battery that is fixed in the product.

Item	Content
Battery Voltage	DC 3V
Battery Model	CR2032(lithium Battery)
Battery lifetime	About 3 years (In case of ambient temperature 25℃)
Image	

* Specifications are subject to change depending on the model.

■ All field-wiring connections to this unit shall be from Limited Voltage. Limited below 24Vdc isolated secondary source with an output fuse, or Class 2.

Chapter 2 Overview

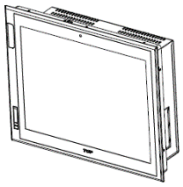
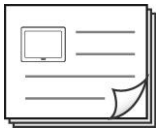
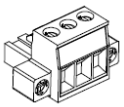
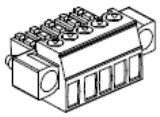
2.1 Product Introduction

The industrial PC-HMI touch panel with industrial PC is required in industry, Windows applications, and RS-232C/422/485, Ethernet-based Control of the other devices that are connected to this unit (PLC) is a device used to communicate with the primary objective.

2.2 Package Contents

please make sure that all of components are in the package.

Pictures shown may vary as a guide for understanding the real components.

Item	Figure	Quantity
Main Body		1
User Manual		1
Power Connector		1
Terminal block 5P connector		1
Mounting Clamp		6
Accessories (Sold separate)	 USB Memory	User Options

2.3 Explanation of Model Name

(1) Basic Model Name

TOP-PCVIEW	□□	□□	□	□
Series	**Display Size**	**Option**	**Resolution**	**Power Type**
	10 : 10.4"	00 : Celeron	X : XGA (1024 x 768)	*A: AC
	12 : 12.1"	10 : 4th Core-i3	S : SXGA (1280 x 1024)	D: DC
	15 : 15.0"	20 : 8th Core-i3	H : HD (1366 x 768)	
	17 : 17.0"	30 : 8th Core-i5		
	19 : 18.5"			

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(2) Option

□□	-	□□	□□	□□	□BAY
Built-in program		**RAM Capacity**	**O/S install location**	**DISK Capacity**	**HDD RACK**
*WF : Windows OS+TOPVIEW License		R4 : 4GB	H : mSATA(On borad)	64 : 64GB	*1 : 1 Slot
WN : Windows OS		*R8 : 8GB	*HE : 2.5" SSD(External)	128 : 128GB	2 : 2 Slot
NF : TOPVIEW License				*256 : 256GB	
NN : No Option					

- "*" is a default option.

Chapter 3 Product Specifications

3.1 Power Specifications

Input Voltage	AC Power	AC100~240V, 50/60Hz
	DC Power	DC 24V
Voltage Endurance	AC Power	AC85/170V, Less than 10ms
	DC Power	DC 24V, Less than 10ms
Power Consumption	60W or less	
Insulation resistance	500V DC, 10 ㏁	

3.2 System Specifications

Item	Model	Description
CPU	00	Intel® Celeron® Processor J1900
	10	Intel® Core-i3™ Processor 4010U
	20	Intel® Core-i3™ Processor 8145UE
	30	Intel® Core-i5™ Processor 8365UE
Base/Burst Frequency / TDP	00	2.0@2.42 GHz / 10W
	10	1.7GHz / 15W
	20	2.2@3.9 GHz / 15W
	30	1.6@4.1 GHz / 15W
System Memory	00, 10	DDR3L SO-DIMM 8GB. (Max. Capacity 8GB)
	20, 30	DDR4 SO-DIMM 8GB. (Max. Capacity 32GB)
Main Disk		2.5" SSD 256GB (*Default)

3.3 LCD Specifications

Item	Model	Description
Resolution and Luminance	TOP-PCVIEW10****	1024 X 768, 400cd/m2
	TOP-PCVIEW12****	1024 x 768, 700 cd/m2
	TOP-PCVIEW15****	1024 x 768, 500 cd/m2
	TOP-PCVIEW17****	1280 x 1024, 250 cd/m2
	TOP-PCVIEW19****	1366 x 768, 250 cd/m2
Number of Colors	16.7M	

3.4 Touch Specifications

Touch Type	Analog resistive touch

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3.5 Ethernet Specifications

Speed	10/100/1000Mbps
Connector	RJ-45 x 2

3.6 Audio Specifications

Audio Codec	Realtek ALC888S
I/O Connector	SPK, Line-in, MIC

3.7 External Display Output Specifications

Item	Model	Description
Graphic Controller	00	Intel Gen7 Graphic Engine
	10	Intel HD Graphics 4400
	20, 30	Intel UHD GFx 620
VGA	00	최대 2560 x 1600 at 60Hz
	10	최대 1920 x 1200 at 60 Hz
	20, 30	Not support
HDMI	00	HDMI 1.4a for HD video playback, 1080P at 60Hz
	10	HDMI 1.4 for HD video playback, 4096 x 2304 at 24Hz
	20, 30	HDMI 1.4 up to 4096 x 2160@30/24Hz
DP	00	Not support
	10	Not support
	20, 30	DP 1.2 up to 4096 x 2306@60Hz
Mulit-Display	00	VGA + HDMI, VGA + LVDS, HDMI + LVDS
	10	VGA + HDMI, VGA + LVDS, HDMI + LVDS, VGA + HDMI + LVDS
	20, 30	DP + HDMI, DP + LVDS, HDMI + LVDS, DP + HDMI + LVDS

3.8 USB Specifications

Item	Model	Description
Front	Common	USB 2.0 x 1
Side	00	USB 2.0 x 3, USB 3.0 x 1
	10	USB 2.0 x 2, USB 3.0 x 2
	20, 30	USB 3.1 x 4

3.9 Others

HDD RACK	1-Bay 2.5" HDD RACK	Default
	2-Bay 2.5" HDD RACK	(*Option)

* TOP-PCVIEW10 does not support HDD RACK. (*SSD on board)

* If you need 2-bay HDD RACK, please contact M2I Corporation.

3.10 Optional Specifications

Item	Windows O/S Option	Adoptable Model
Optional O/S	- Windows Embedded Standard 7 (WES7) 32/64bit KOR/ENG - Windows 7 Professional for Embedded System 64bit KOR	00, 10
	- Windows 10 IoT 1809 LTSC 64bit 한글/영문	Common
TOPVIEW License USB	USB Dongle Inserted	Common

* A basic O/S of Celeron and 4th Core-i3 product is WES7.

** Intel 8th product is only for Windows 10, WES7 or Win 7 Pro is not supported to install.

3.11 Environment Specifications

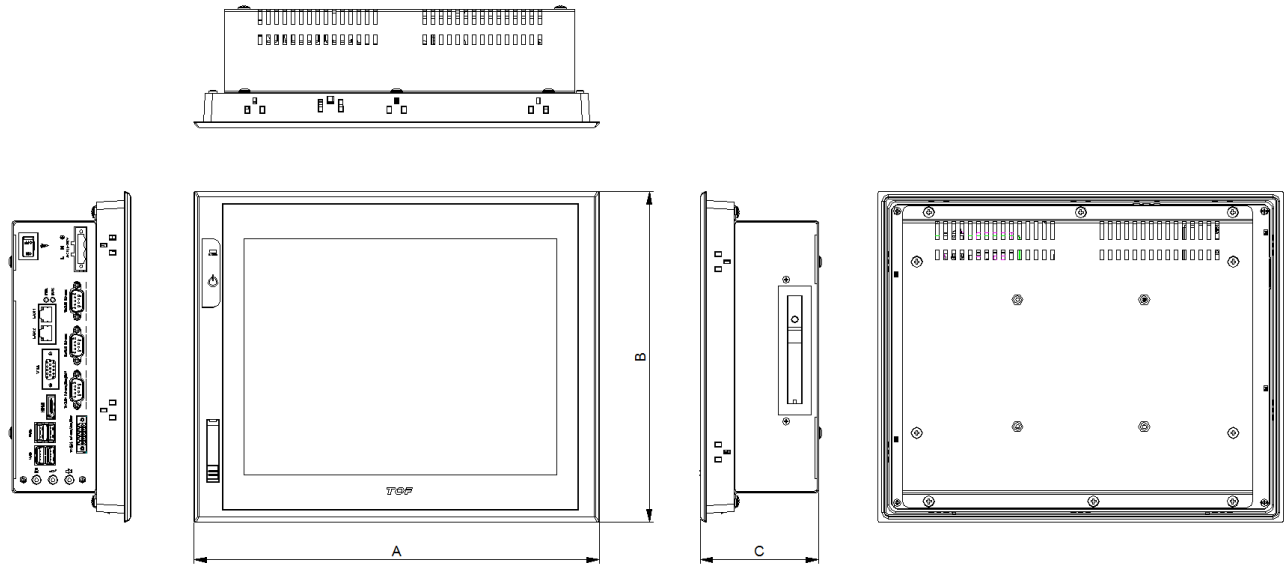
Operation Temperature(℃)	No humidity	0 ~+60°C
	humidity 95%	0~+40°C(Non-Condensing)
Storage Temperature(℃)	-20°C ~ +60°C	
Atmosphere	No corrosive gas	
Vibration Endurance	Amplitude: 10≤F < 25 Hz(2G) X,Y,Z each direction (for 30 minutes)	
Noise Immunity	1000Vp-p (Pulse width 1 μs)	
Electrostatic Discharge	Electrostatic Discharge from EN61000-4-2: ±4 kV	
Shock Endurance	10G X,Y,Z each direction(for 3 times)	
withstand voltage	500V (Line-Line)	
Ground connection	Class 3(Under 100Ω)	
Protection Classification	Front Side: IP65, Rear Side: IP2X	

3.12 Structure Specifications

Item	Model	Model Name	Dimension
Dimension(㎜)	00, 10	TOP-PCVIEW10	276 x 219.5 x 87.9
		TOP-PCVIEW12	320 x 261 x 93.5
		TOP-PCVIEW15	370 x 301 x 87
		TOP-PCVIEW17	414 x 348 x 86.6
		TOP-PCVIEW19	497 x 316 x 86.6
	20, 30	TOP-PCVIEW19	497 x 316 x 94.8
Cooling System	Natural air circulation		
Case Material	AL(Aluminium)		

Chapter 4 Parts Names and Functions

4.1 TOP-PCVIEW10****



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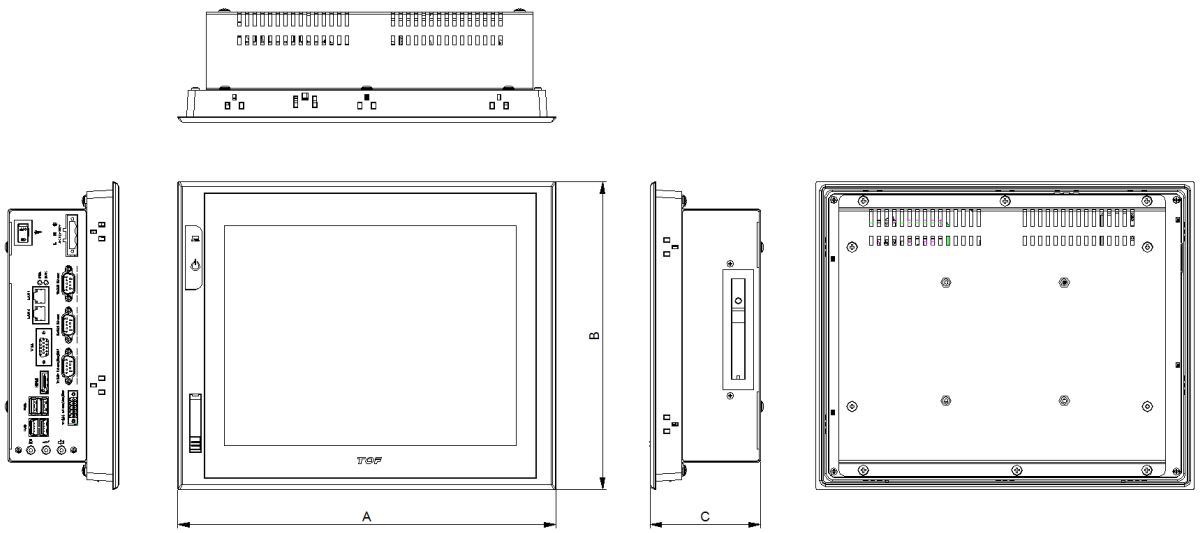
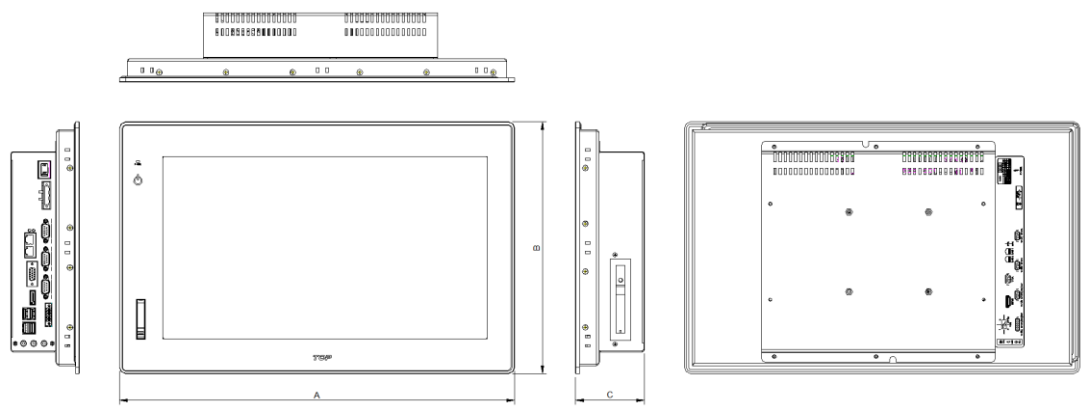
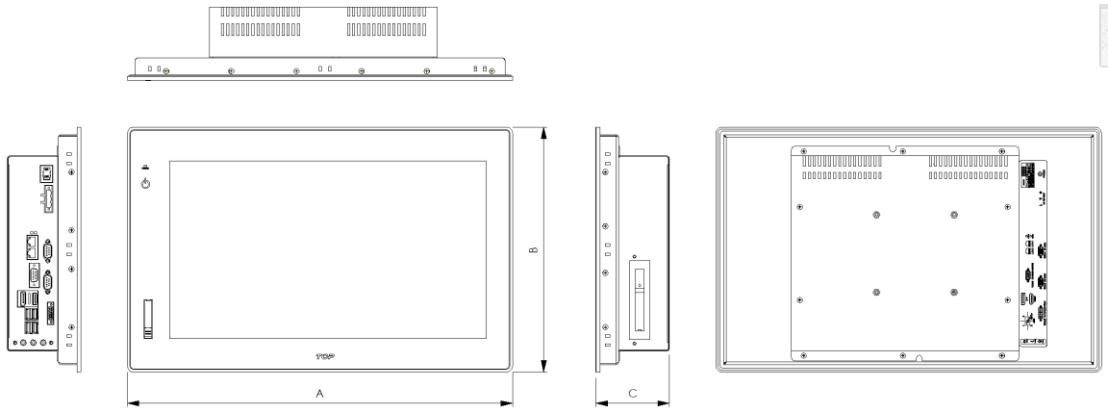
4.2 TOP-PCVIEW 12 / 15 / 17 ****



4.3 TOP-PCVIEW19****

TOP-PCVIEW **1900**** **1910****	
TOP-PCVIEW **1920**** **1930****	

Model Name	A (mm)	B (mm)	C (mm)
TOP-PCVIEW10****	276	219.5	87.9
TOP-PCVIEW12****	320	261	93.5
TOP-PCVIEW15****	370	301	87
TOP-PCVIEW17****	414	348	86.6
TOP-PCVIEW19 [00], [10] **	497	316	86.6
TOP-PCVIEW19 [20], [30] **	497	316	94.8

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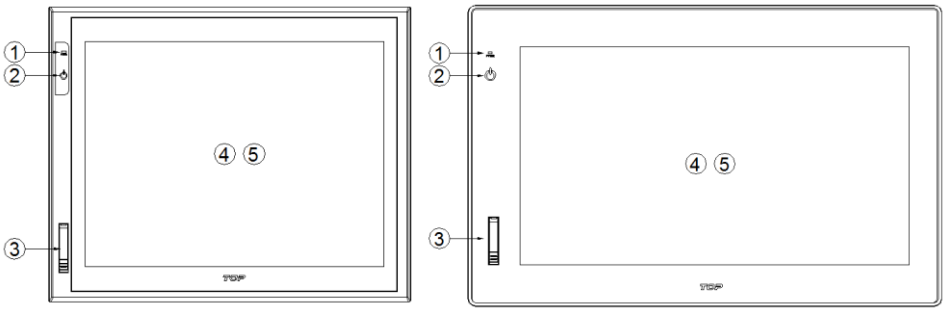
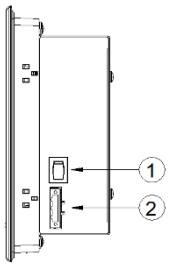
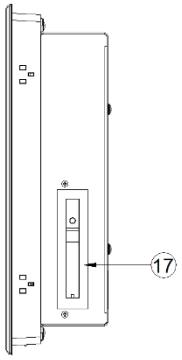
4.4 Front Parts Names and Specifications



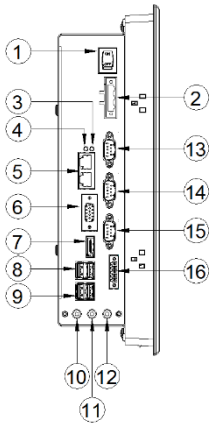
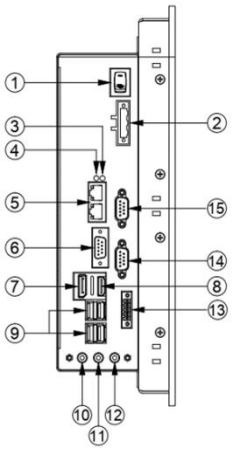
No	Name	Description
①	Power LED	Display the System Power State
②	Front power switch	System power on / off touch switch (* On/off contact for more than 3 seconds)
③	USB Port	Front USB HOST Port
④	TFT LCD	TFT 16M Color LCD
⑤	Touch Panel	Analog resistive touch type

4.5 Side Parts Names and Specifications

4.5.1 Right

TOP-PCVIEW 10****	TOP-PCVIEW 12 / 15 / 17 / 19****
	

4.5.2 Left

TOP-PCVIEW 10 / 12 / 15 / 17 / 19 [00], [10] **	TOP-PCVIEW 10 / 12 / 15 / 17 / 19 [20], [30] **
	

4.5.3 TOP-PCVIEW 10 / 12 / 15 / 17 / 19 [00], [10] **

No.	Item	Type	Description
1	Power Switch	Rocker Switch-2P	System power ON / OFF switch
2	Power Connector	Terminal Block-3P	Power input, Pitch 7.62mm
3	Disk LED	LED	Display Disk operation status
4	Power LED	LED	Display Disk operation status
5	LAN Port #1, #2	RJ-45 2Ch.	Ethernet communication ports, configurable independent IP
6	VGA	DSUB-15P	VGA external monitor connection
7	HDMI	HDMI Port	HDMI external monitor connection
8	USB #1	USB 2Ch.	USB Ports
9	USB #2	USB 2Ch.	USB Ports
10	SPK	Audio Jack(3.5Pi)	Audio output
11	LINE-IN	Audio Jack (3.5Pi)	External Audio input
12	MIC	Audio Jack (3.5Pi)	External Mic input
13	COM1	DSUB-9(Male)	RS-232C Port
14	COM2	DSUB-9(Male)	RS-232C Port
15	COM3	DSUB-9(Male)	RS-232C/422/485 Port
16	COM4	Terminal Block-5P	RS-232C/422/485 Port, Pitch 3.50mm
17	HDD Rack	2.5" bay Slot	2.5" External Hard drive Rack

4.5.4 TOP-PCVIEW 10 / 12 / 15 / 17 / 19 [20], [30] **

No.	Item	Type	Description
1	Power Switch	Rocker Switch-2P	System power ON / OFF switch
2	Power Connector	Terminal Block-3P	Power input, Pitch 7.62mm
3	Disk LED	LED	Display Disk operation status
4	Power LED	LED	Display Disk operation status
5	LAN Port #1, #2	RJ-45 2Ch.	Ethernet communication ports, configurable independent IP
6	COM1	DSUB-9(Male)	RS-232C/422/485 Port
7	DP	DP Port	DP external monitor connection
8	HDMI	HDMI Port	HDMI external monitor connection
9	USB	USB 4Ch.	USB Ports
10	SPK	Audio Jack(3.5Pi)	External Audio onput
11	LINE-IN	Audio Jack (3.5Pi)	External Audio input
12	MIC	Audio Jack (3.5Pi)	External Mic input
13	COM2	Terminal Block-5P	RS-232C/422/485 Port, Pitch 3.50mm
14	COM3	DSUB-9(Male)	RS-232C Port
15	COM4	DSUB-9(Male)	RS-232C Port
17	HDD Rack	2.5" bay Slot	2.5" External Hard drive Rack

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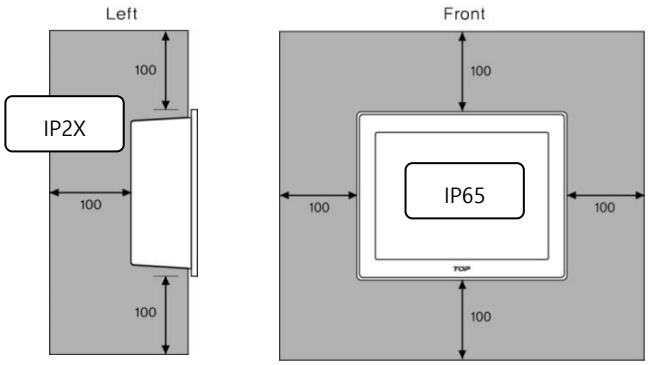
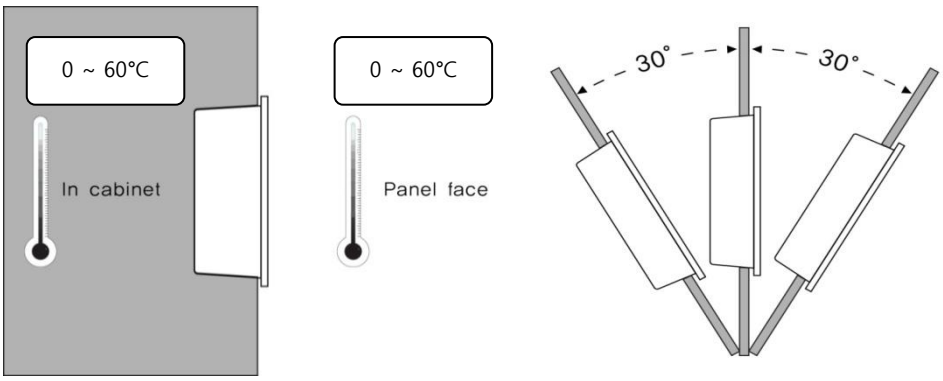
Chapter 5 Installation ⚠Warning

5.1 Installation Requirements

(1) To safe use of the product, keep the 100mm space between the wall and the product. And install the cooling fan in an enclosed space to ensure performance and ventilation.



(2) TOP PC should be installed within 0 ~ 60°C(relative-humidity 0%) or 0~40°C(relative-humidity less than 95%, (Non-Condensing)), otherwise the screen may be changed or cause malfunction and damage.
(3) Be sure that heat from surrounding equipment does not cause TOP PC to exceed its standard operating temperature.
(4) When you don't see within 30°, you may not see clearly.
(5) Please remove all of mechanical dangers around the product for preventing mechanical risks.



5.2 Installation Procedure ⚠Warning

For mounting product to the control panel, it should be recommended following below items.

5.2.1 Panel Cut-out

Make a panel cut which product is mounted and insert the TOP PC to the panel form the front side.

(1) The Size of Panel Cut (Mounting Place)

Making the Panel Cut (Mounting Size) per each TOP PC Series as below Table, Before Installation.

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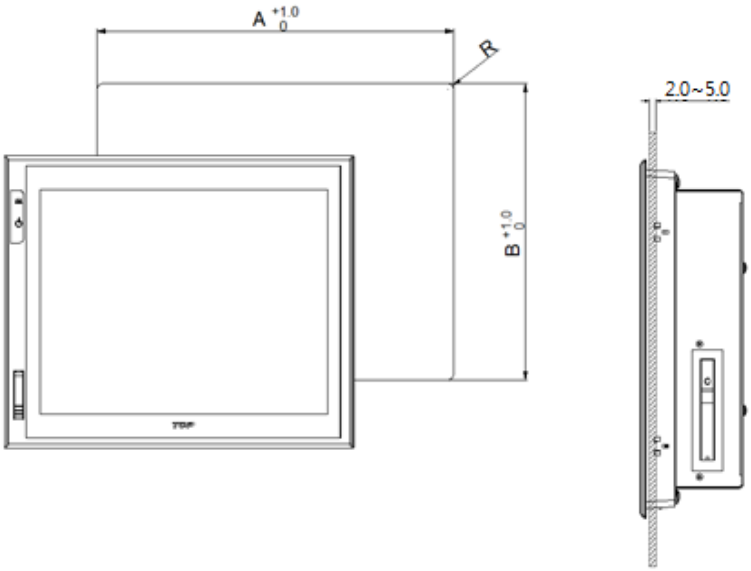
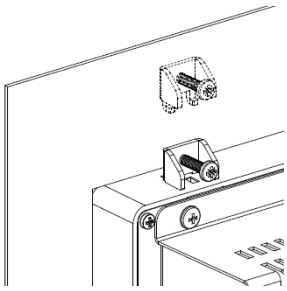


Model Name	A(mm)	B(mm)	R(mm)
TOP-PCVIEW10****	260.0(+1.0/0)	202.0(+1.0/0)	Max. 5.0(+1.0/0)
TOP-PCVIEW12****	306.0(+1.0/0)	247.0(+1.0/0)	
TOP-PCVIEW15****	355.0(+1.0/0)	286.0(+1.0/0)	
TOP-PCVIEW17****	400.0(+1.0/0)	334.0(+1.0/0)	Max. 2.0(+1.0/0)
TOP-PCVIEW19****	479.0(+1.0/0)	298.0(+1.0/0)	

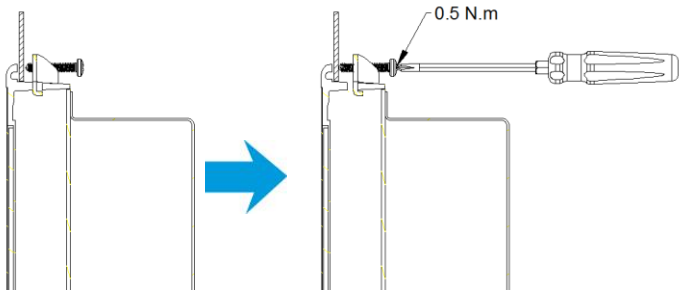
(2) Fixation

Installation methods should be following by using the supplied installation Clamps.

a. Insert the clamp into the slot of Product.



b. Secure the Product in the mounting cut-out from behind with the clamp.



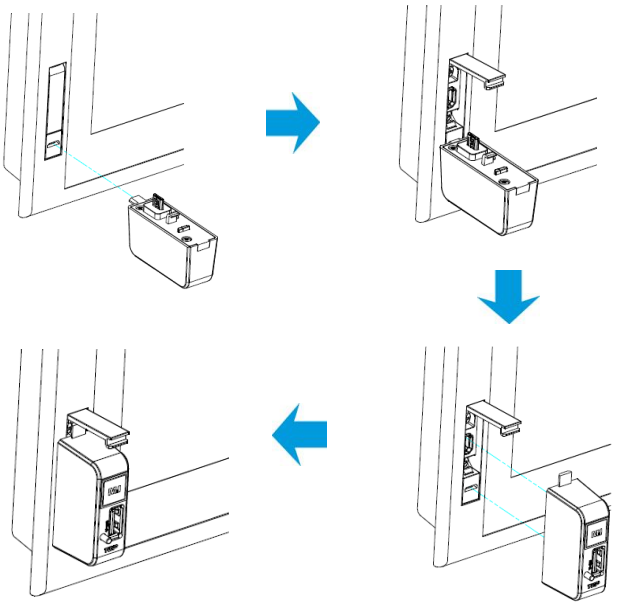
c. If the screw is over tightened, it may cause the front deformation, thus resulting the touch sensor can't work properly. Tighten the screw to 0.5Nm.

Caution: Front protection (IP) will not able to work when clamp is not tightened in 0.5N.m power.

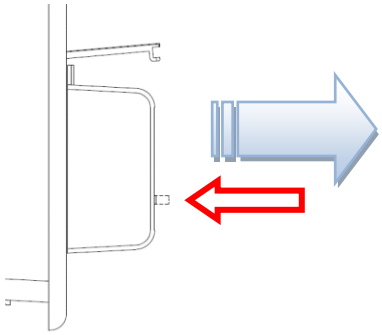
5.3 Front USB (*Locker type, Option)

5.3.1 Open / Close

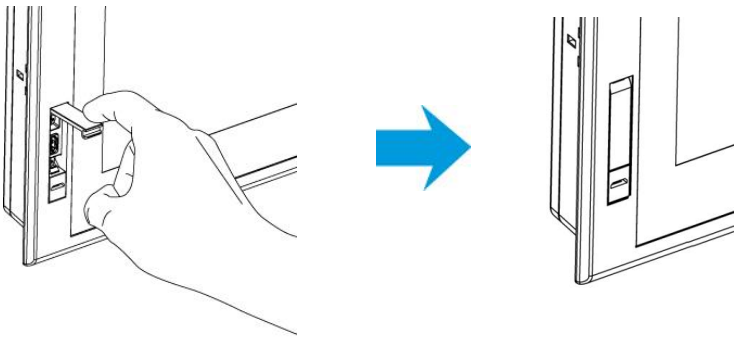
(1) Open the cover: The cover opens when you insert the USB connector into the front USB Home.



(2) Gender Remove: Hold down the button below and pull back the USB gender.



(3) Close the cover: Close and slide the cover of the connector.



* Locker type USB cover is required for front USB gender use. Please contact M2I Corporation.

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Chapter 6 Interface with Other Device

Please refer to below explanations to communicate with other devices.

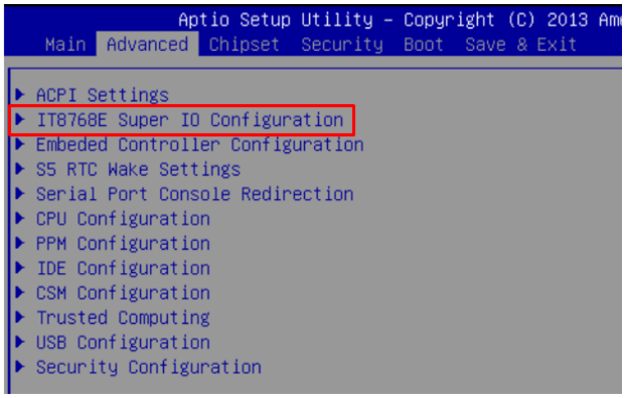
6.1 Serial Communication Mode setting and specifications

6.1.1 Set serial communication mode

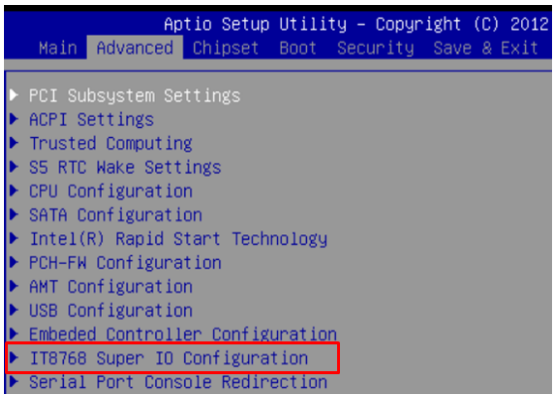
Boot <DEL> or <ESC> Press the key to set the communication mode can be changed in CMOS.

(1) TOP-PCVIEW ** [00], [10] **

Advanced -> IT8768(E) Super IO Configuration -> Select Serial Port -> Select one in [Serial Port] Mode from [RS-232 Mode], [RS-422 Mode], and [RS-485 Mode].



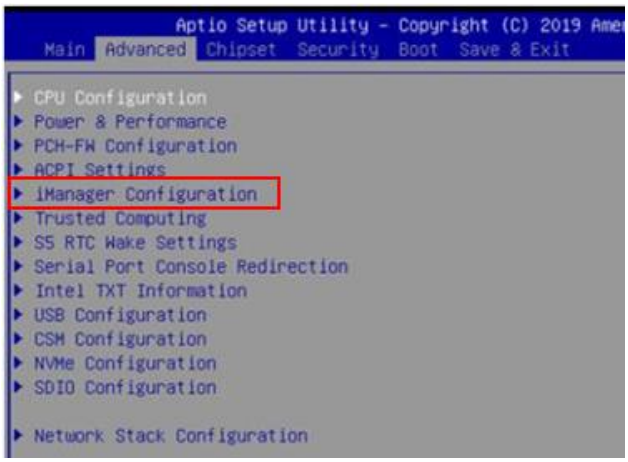
TOP-PCVIEW ** [00]**



TOP-PCVIEW ** [10]**

(2) TOP-PCVIEW ** [20], [30] **

Advanced -> iManager Configuration -> Select Serial Port -> Select one in [Serial Port] Mode from [RS-232 Mode], [RS-422 Mode], and [RS-485 Mode].



6.1.2 Available Communication Mode by Port

Serial mode can be chosen in COM1 ~ COM4. You can set below communication mode.

(1) TOP-PCVIEW ** [00], [10] **

Serial Port	COM1	COM2	COM3	COM4
Manufacturer status	RS-232C	RS-232C	RS-485	RS-485
Available settings	Not available	Not available	RS-232C	RS-232C
			RS-422	RS-422

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(2) TOP-PCVIEW ** [20], [30] **

Serial Port	COM1	COM2	COM3	COM4
Manufacturer status	RS-232C	RS-232C	RS-232C	RS-232C
Available settings	RS-422	RS-422	Not available	Not available
	RS-485	RS-485		

6.1.3 Serial Communication Specification

(1) RS-232C

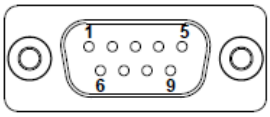
Item		Description
Protocol		Full Duplex
Synch.		Asynchronous
Communication Distance		About 15m
Type of connection		1:1
Control Code		ASCII Code or HEXA Code
Baud Rate		Max. 115,200 bps
Data Type	Data Bit	7, 8 bit
	Parity Bit	NONE, ODD, EVEN Parity
	Stop Bit	1, 2 bit
Connector Type		DSUB 9pin(Male), Terminal Block 5P(3.50mm)

(2) RS-422/485

Item		Description
Protocol		Full Duplex, Half Duplex
Synch.		Asynchronous
Communication Distance		About 500m
Type of connection		1:N (N ≤ 31)
Control Code		ASCII Code or HEXA Code
Baud Rate		Max. 115,200 bps
Data Type	Data Bit	7, 8 bit
	Parity Bit	NONE, ODD, EVEN Parity
	Stop Bit	1, 2 bit
Connector Type		DSUB 9pin(Male), Terminal Block 5P(3.50mm)

(3) Pin Number and Signals for DSUB-9 (RS-232C Only)

Relevant Ports: [00], [10] - COM1, COM2 / [20], [30] - COM3, COM4

Type	Pin No.	Signal	Direction	Meaning
9Pin male 	1	DCD	Input	Data Carrier Detect
	2	RXD	Input	RS-232C Receive Data
	3	TXD	Output	RS-232C Transmit Data
	4	DTR	Output	Data Terminal Ready
	5	SG	GND	Signal Ground
	6	DSR	Output	Data Set Ready
	7	RTS	Output	Request to Send
	8	CTS	Input	Clear to Send
	9	RI	Input	Ringing Indicator

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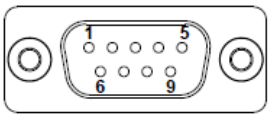
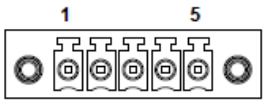
(4) Pin Number and Signals for DSUB-9 (RS-232C/422/485)

Relevant Ports: [00], [10] - COM3 / [20], [30] - COM1

Type	Pin No.	Signal	Direction	Meaning
9Pin male 	1	TXD(-) TRX(-)	Input/Output	422: TXD(-) 485: TRX(-)
	2	TXD(+) TRX(+) RXD	Input/Output	422: TXD(+) 485: TRX(+) 232C: RX
	3	RXD(+) TXD	Input/Output	422: RXD(+) 232C: TX
	4	RXD(-)	Input	422: RXD(-)
	5	SG	GND	Signal Ground
	6	DSR	Output	Data Set Ready
	7	RTS	Output	Request to Send
	8	CTS	Input	Clear to Send
	9	RI	Input	Ringing Indicator

(5) Pin Number and Signals for Terminal Block-5P (RS-232C/422/485)

Relevant Ports: [00], [10] - COM4 / [20], [30] - COM2

Type	Pin No.	Signal	Direction	Meaning
	1	TXD(+) TRX(+) RXD	Input/Output	422: TXD(+) 485: TRX(+), 232C: RX
	2	TXD(-) TRX(-)	Output	422: TXD(-) 485: TRX(-)
	3	SG	GND	Signal Ground
	4	RXD(+) TXD	Input/Output	422: RXD(+) 232C: TX
	5	RXD(-)	Input	422: RXD(-)

* For Serial Communication with RS-232C, Twisted Pair Cable must be used to communication cable corresponding to each Signal Pins such as RXD & TXD and SG. The RD & SD should be wired by cross connection. SG must be wired direct connection.

* For Serial Interface with RS-422/485, Twisted Pair Cable must be used to communication cable corresponding to each Signal Pins such as [TXD+, TXD-], [RXD+, RXD-] and [TRX+, TRX-].

* The shield cable of communication should not be used to signal ground. It may cause failure of communication.

* Serial port is not isolated.

* SG (Signal Ground) and FG (Frame Ground) are connected internally.

* If you are connecting external devices SG careful not to have a short circuit.

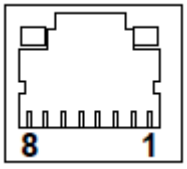
6.2 Ethernet setting and specifications

(1) Ethernet Specification

Item		Description
IEEE Compliant	TOP-PCVIEW ** [00], [10] **	IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, 10BaseT/100BaseT/1000BaseT
	TOP-PCVIEW ** [20], [30] **	IEEE 802.3, IEEE 802.3u, IEEE 802.3z, IEEE 802.ab,

		10BaseT/100BaseT/1000BaseT
Speed		10M / 100M / 1000M bps
Communication Method		Base Band
Communication Cable		UTP (Unshielded Twisted Pair)
Modular Jack		RJ-45 x 2

(2) RJ45 Pin Map

Type	Pin No.	color	Signal
	1	Orange/White	TX+(10/100M), BI_DA+(GHz)
	2	Orange	TX-(10/100M), BI_DA-(GHz)
	3	Green/White	RX+(10/100M), BI_DB+(GHz)
	4	Blue	BI_DC+(GHz)
	5	Blue/White	BI_DC-(GHz)
	6	Green	RX-(10/100M), BI_DB-(GHz)
	7	Brown/White	BI_DD+(GHz)
	8	Brown	BI_DD-(GHz)

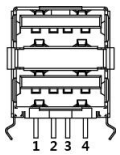
* IP configuration when connecting separated by internal / external network, you must enter each separate IP.

* Use a 1Gbps UTP cable is required standard Cat 5e or CAT 6 confirmation.

*** UTP Cable Contents**	**Cat 5e**	**Cat 6**
Speed	MAX. 1Gbps	1Gbps or more
Band width	100Mhz	250Mhz
Data Loss	100m Increase data loss	No data loss over 100m intervals

6.3 USB Specification

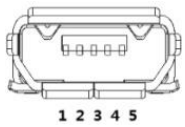
6.3.1 USB Port

Type	Item	Description
	USB Interface	USB 3.1/3.0/2.0/1.1
	Speed	Max.480Mb/s, Max.5Gb/s
	Current Consumption	USB 2.0: 5.0V@500mA, USB3.0: 5.0V@900mA
	Connector type	Type A(2ch)

* To use USB 3.0, your device must also support USB 3.0 specification.

* Ports with blue color inserts support USB 3.0.

6.3.2 Front USB

Type	Item	Description
	USB Interface	USB2.0/1.1
	Speed	Max.480Mb/s
	Current Consumption	5.0V@500mA
	Cable Length	1.5m (Cable from M2I is recommended. Meet the length limit for other cables.)
	Connector type	Micro USB B, Female

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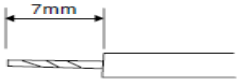
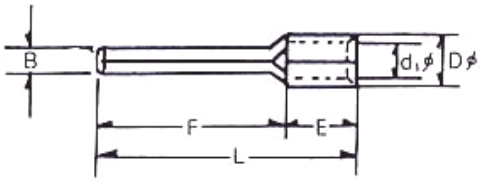
Chapter 7 Wiring ⚠Warning

7.1 Power wiring

(1) The Power cable should have the following specification.

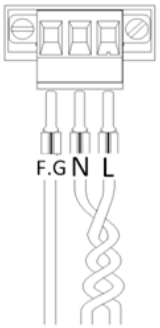
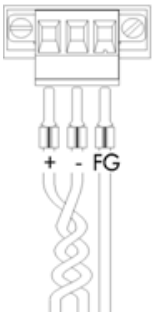
Power Cable Specification	0.75~2.5mm^2 (18~12AWG)
FG Cable Specification	2mm^2(14AWG) or more
Conductor type	Simple or Stranded wire(Use Copper Conductors only)
Bolt tightening force	≥ 0.5N.m ⚠Warning
Conductor length	
Temperature rating of the field installed conductors	65℃ Only

(2) The Power terminal should have the following specification.
Use Pin type terminal for preventing from wearing out and improving the electrical transmission.



B	L	F	E	D	d
1.8~2.0	22~18	12~14	5	3.3~3.8	2~2.5

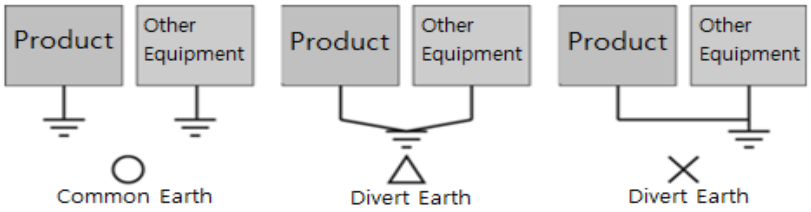
(3) Wiring of power is as follows. ⚠Warning

AC Power	DC Power
	

7.2 Ground wiring ⚠Warning

(1) The Product has enough anti-noise measure, so except that there are many noises specially, the ground is not needed. When doing ground, please refer to the followings.
(2) The ground should be the exclusive ground. The ground should be type 3 ground (ground resistor is less than 100Ω)

(3) When not doing the exclusive ground, do common ground like figure B).



(4) Use the cable more than 2mm^2. Put the point of the ground near TOP PC and shorten ground line.

Chapter 8 System Utilities ⚠Warning

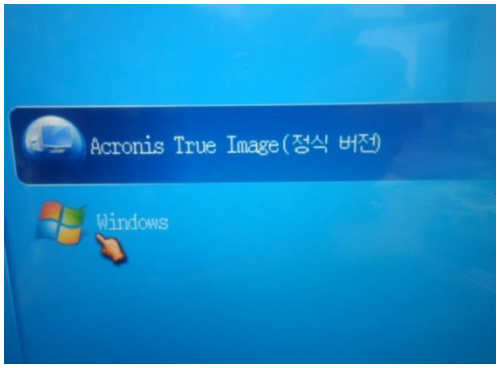
8.1 System Recovery Solution

User error or virus, warm a system file is corrupted, you can recover to the factory default state.
Although the recovery program is built into the body, it is recommended to produce a recovery USB memory stick.

8.1.1 TOP-PCVIEW ** [00], [10] **

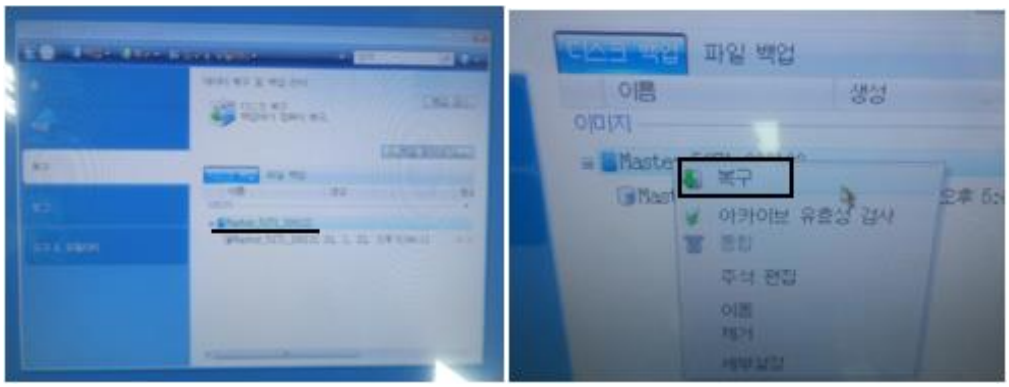
After the Post process (self-test) is finished, press F11 to run the recovery program. Available to the recovery of the factory default state following a recovery procedure. Factory reset recovery time is within 30 minutes. Please be careful when restoring all previously saved data will be deleted.

(1) Select the Acronis True Image.
At this time, do value using a mouse or touch screen, you should always select only the keyboard.



(2) When the following screen appears, execute in the order specified.

1) Select backup archive: Press the right button on the image file list to select "Recover".
If there is no recovery file on the right, select [Browse Backup]-> [Acronis Secure Zone]-> Restore File on the right side of the screen.



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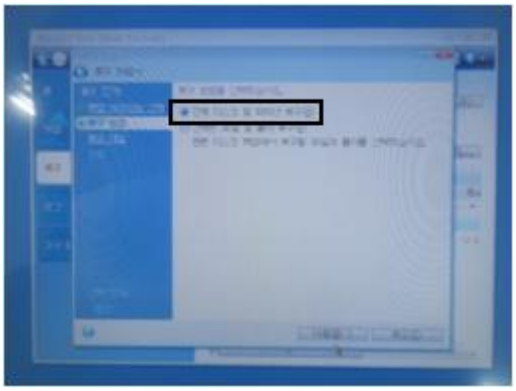
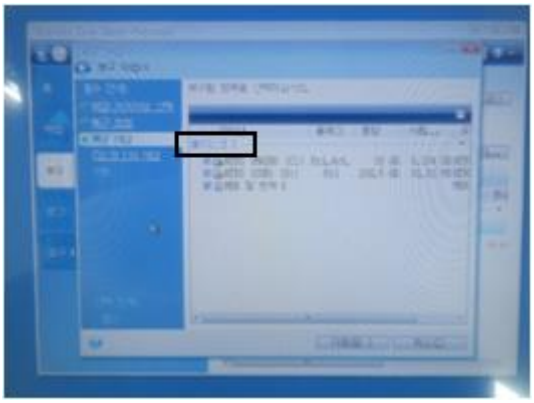
2) [Recovery method]: Select "Recover whole disks and partitions.



3) [Recovery target]: Check all drive selections of "Disk 1".



4) [Destination of Disk 1]: After checking the partition information of the selected disk, click "OK" in the [Confirm] warning when "Next" is selected to proceed with recovery.

* If recovery fails and you cannot proceed to the next step, please uncheck "MBR and track 0" in [Recover to].

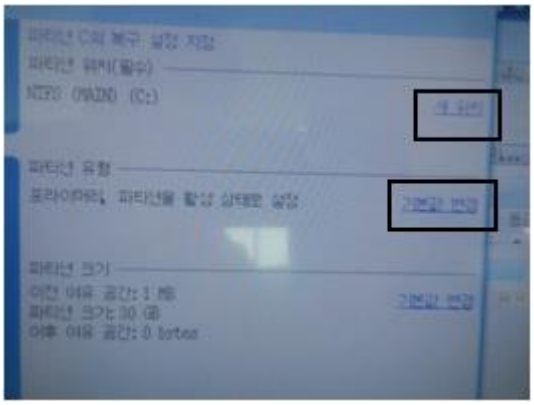
** If it stops for a long time during recovery, turn off the power and try the recovery procedure again.

5) If "MBR and Track 0" is deselected, the [Partition C Settings] and [Partition D Settings] menus will be created additionally.

[Partition C Settings]

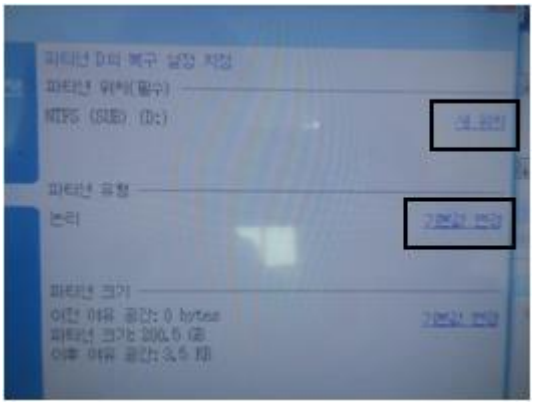
* Partition Location (Required): Specify as (C:).

* Partition type: set "primary, partition active".



[Partition D Settings]

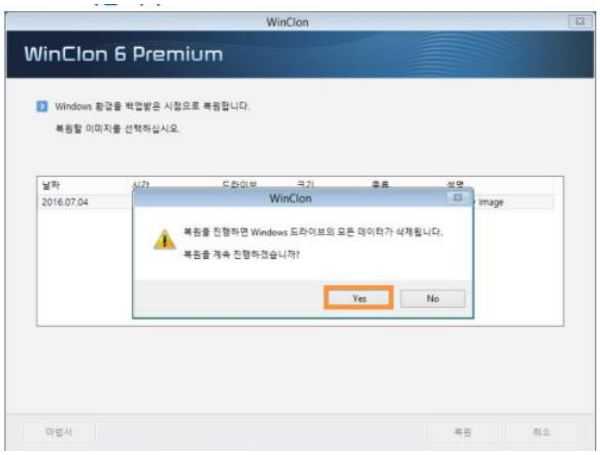
* Partition Location (Required): Specify as (D:)
* Partition Type: "Logic" setting

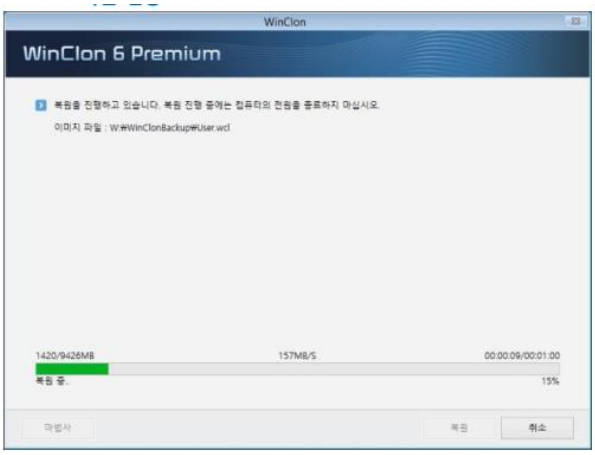


8.1.2 TOP-PCVIEW ** [20], [30] **

After the Post process (self-test) is finished, press F11 to run the recovery program. Available to the recovery of the factory default state following a recovery procedure. Factory reset recovery time is within 10 minutes. Please be careful when restoring all previously saved data will be deleted.

If you touch 'Factory Reset' button, it will start the recovery.





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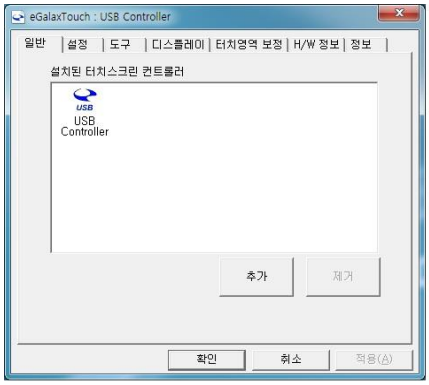
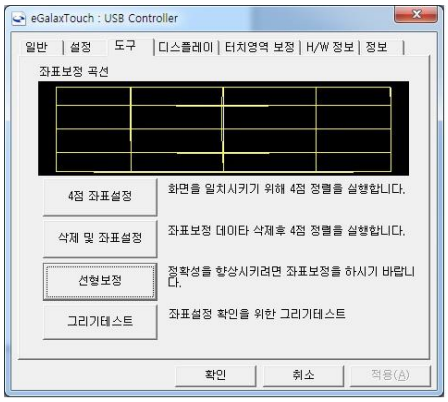
8.2 Touch panel compensation

Calibration settings are used when the user wants a touch panel coordinates and the coordinates do not match. Calibration settings are as follows.

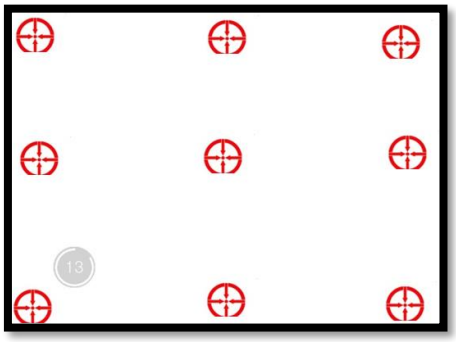
(1) Run eGalaxTouch - Configure Utility Program.



(2) Run "tool" - "Linearization Calibration".



(3) Click and hold the pointer is displayed correctly.



Do not correction from a sharp object. improve accuracy when you hold down the exact location, such as a stylus pen.

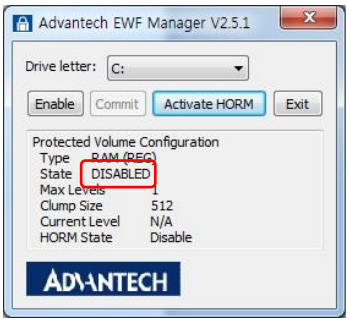
8.3 EWF (Enhanced Write Filter) Settings

* Only support in WES7 O/S.
** Model: TOP-PCVIEW ** [00], [10] **

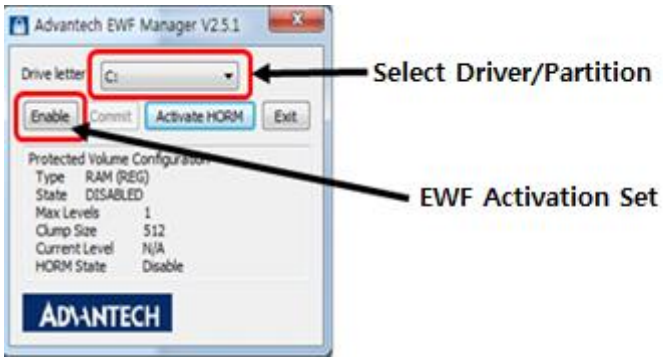
EWF is to prevent a direct write to the disk, a technology that allows you to give the OS partition and the protection of unit. When using the EWF, all write operations are being written in physical memory, when the reboot is initialized, and it will save to disk when needed. The physical memory is called an overlay the information related to the write operation on the overlay will be accumulated. The Product can be set easily by built-in applications.

* "Enable": EWF is active by using the write protection on the disc.
* "commit": information is stored in a temporary space on the active state of EWF (write operation) to the storage on the disk.
* "Disable": deactivate the EWF creates the disk as normal.
* "Activate HORM": all disks are available from the state and the EWF is enabled, the system shut down like hibernation.
* Decorate it to the boot prompt

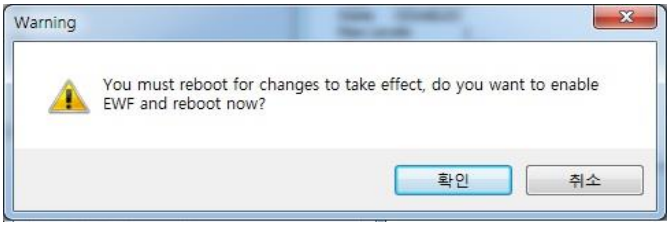
(1) When you run the EWFManager of the Start menu as shown below will run the program.
(2) The default status of EWFManager is set to DISABLED.



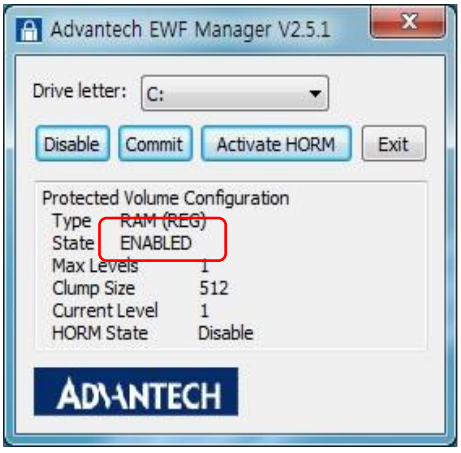
(3) Set to ENABLED.



(4) It turns to ENABLED after re-boot.



(5) Check the 'ENABLE' is adopted.



(6) Press the button DISABLED during commit, press the Disable button. If you do not press all of the contents in the temporary space had to switch to DISABLED state as initialized commit.

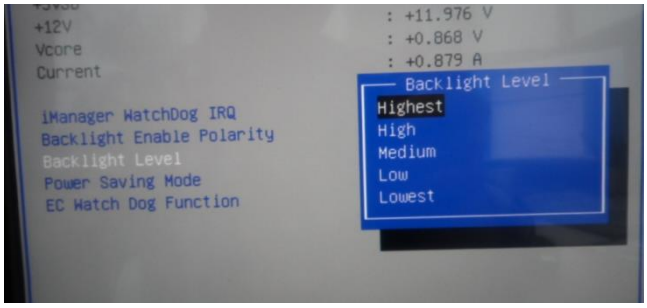
* The EWF function may not work normally when restoring to the factory default state. If you need the function, please contact M2I CORPORATION.

8.4 Backlight brightness settings

* Supporting Models: TOP-PCVIEW ** [00], [10] **

You can adjust the display brightness to suit your needs. Adjustable in five steps, and the default settings are to Highest.
To use other settings must be selected in CMOS.

(1) boot -> <DEL> or <ESC> Press the key to enter the CMOS screen.
(2) "Select the Advanced -> Embedded Controller Configuration -> Backlight Level.
(3) Adjust the desired brightness at the bottom of the screen.



(4) Select "Save & Exit" ->"Save changes and Exit".

* TOP-PCVIEW ** [20], [30] **: You can set in [Windows -> "Display Setting".]

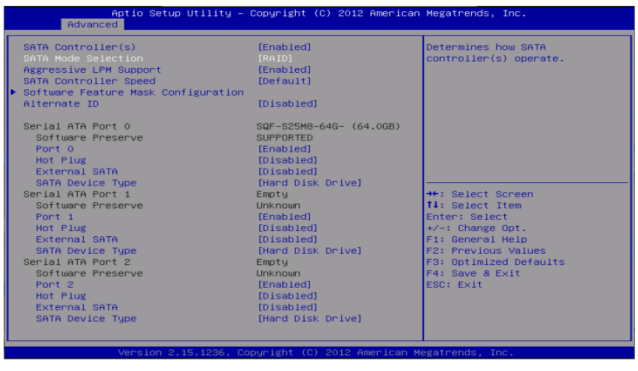
8.5 RAID Settings (*Premium Option)

For Premium models, RAID can be configured using the optional 2-bay hard drive.

If you are creating an array of RAID 1 (Redundant Array of Inexpensive Disks), you can use two new drives, or you can use the old and new drives. Instead of striping data, RAID 1 replicates data stored on one drive to another array drive. It provides some level of data redundancy and allows you to reconfigure arrays without losing data in the event of a drive failure. The new disk must have the same or larger capacity than the existing disk. If the two capacities are different, the small capacity disc is the reference storage capacity. For example, if one disk storage capacity is 256 GB and the other disk is 64 GB, the maximum storage capacity of RAID 1 is set to 64GB.

(1) BIOS Setting

To use RAID, you need to change the SATA mode to RAID in BIOS as below.



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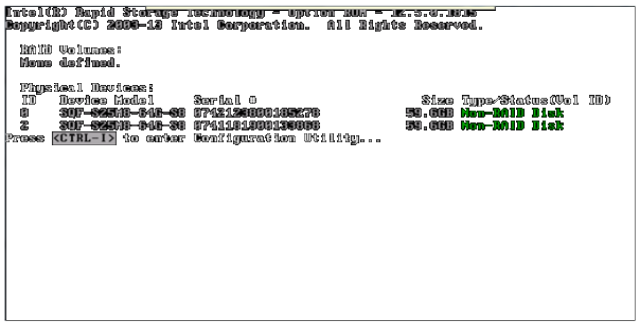
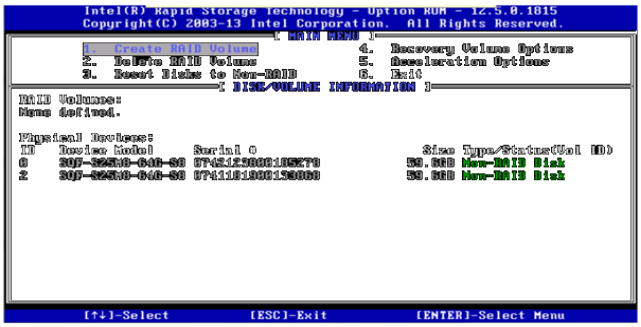
(2) RAID Setting

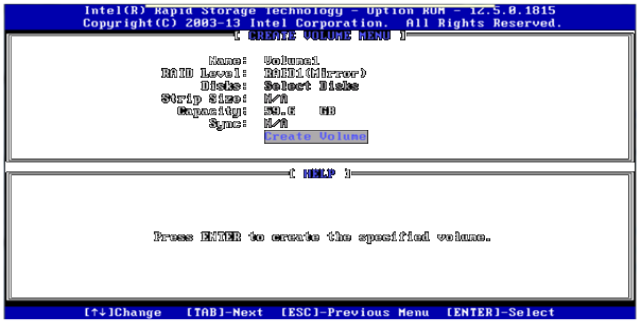
If you see the message below when booting up, press "CTRL + I" key to enter RAID configuration screen.



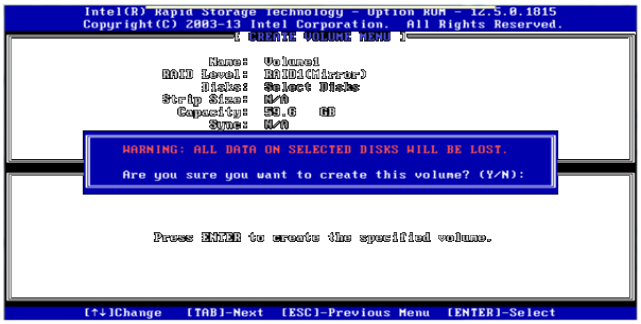
If RAID is already existing, only 1 and 6 can be selected as below, and Disk information is displayed as Non-RAID.



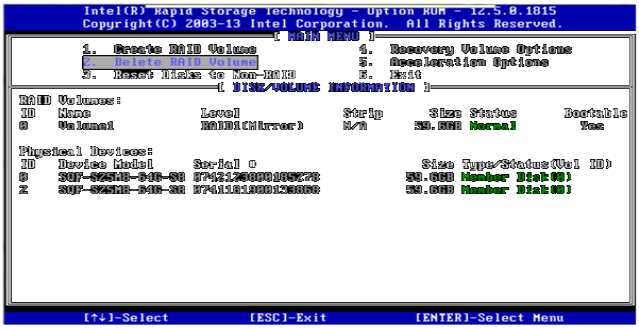
If you select 1 menu, RAID configuration screen will appear as below. You can move with the Tab key. Select the desired RAID level in the RAID level by using the up and down arrow keys, then select Create Volume to configure the RAID level.



Confirmation window before RAID configuration. Press the "Y" key.

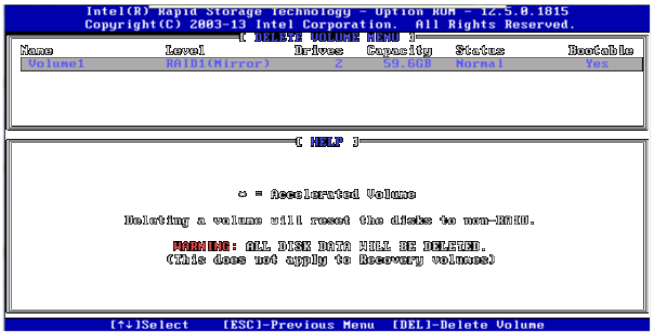


The RAID configuration is completed. When the configuration is completed, exit with EXIT and install Windows.

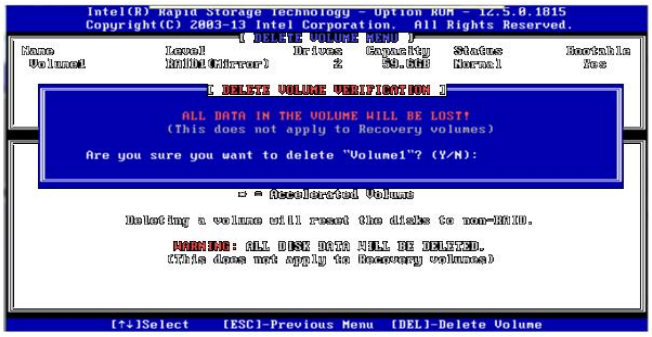


(3) Delete RAID

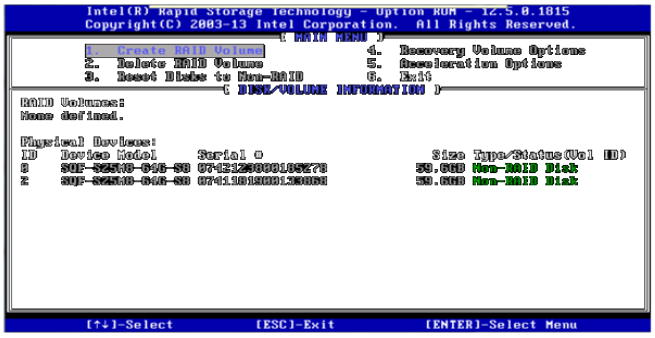
If you do not need RAID, you can delete it by using menu 2 (delete RAID Volume). When executing the menu No. 2, the delete menu appears as shown below. Enter "Del" key when deleting.



After entering the Del key, a confirmation window appears once more. Press "Y" at this time.



After deletion, it will come out like the screen before the first configuration. The status changes from Member Disk to Non-RAID Disk.

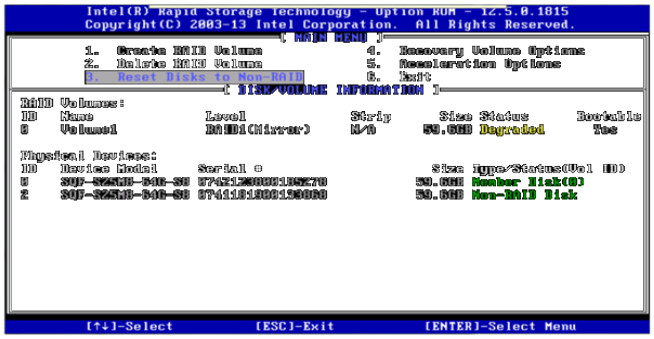


(4) Initialize the RAID DISK to normal DISK

To delete the information on the RAID configuration disk, use menu 3 (Reset Disks to Non-RAID). This process should be used again when using AHCI mode again. Select the disk you want to reset and press "Enter".

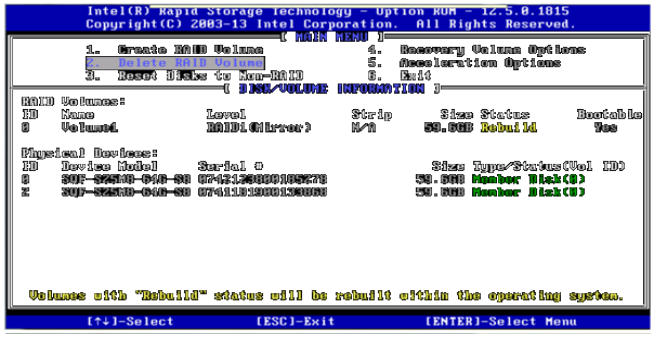
It is a window to check again whether user request is correct. Press "Y".

Once the initialization is completed, it will be recognized as a general disk, so you will be asked if you want to configure raid, but if you press "Esc", you will return to the window as below.



(5) When removing the RAID Disk

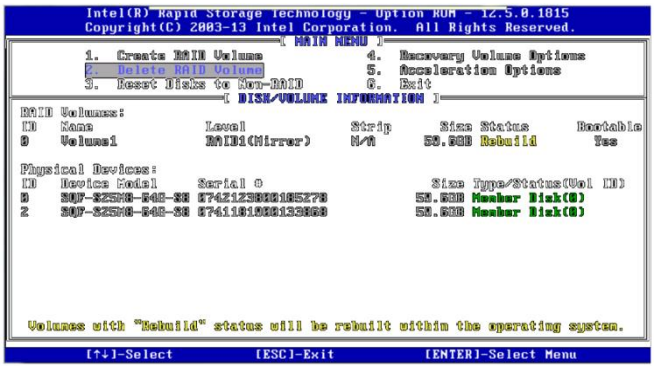
If you unplug a disk while using RAID, you will be prompted to rebuild it as shown below. Enter the OS and rebuild using the Intel RST tool.



(6) When connecting a new disk with a RAID Disk failure

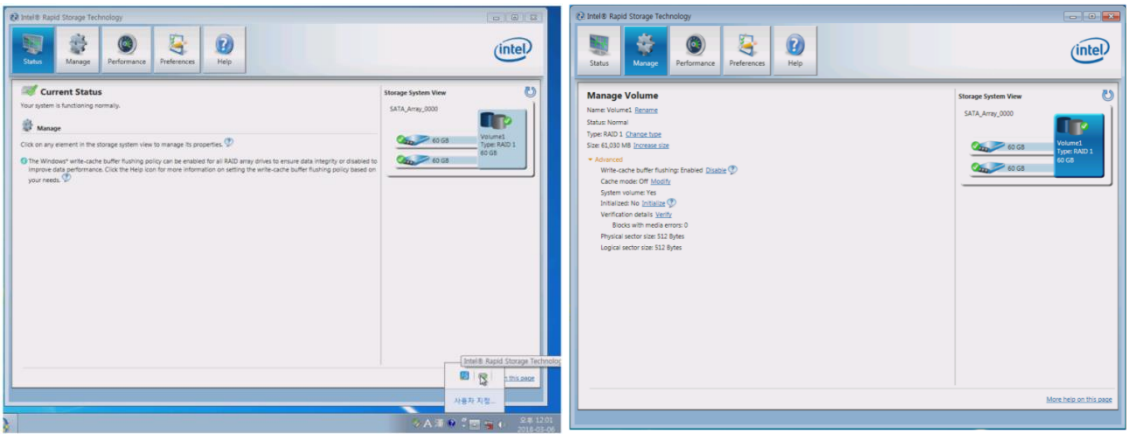
After connecting the new hard disk, enter RAID menu (Ctrl + I). If you press Enter at this time, a new hard disk is added with the RAID configuration (RAID1) that you created previously. (It is also possible with the intel RST utility of the OS) After the addition, you need to rebuild from Intel RST utility in OS.

Select "Exit" for Rebuild and exit.

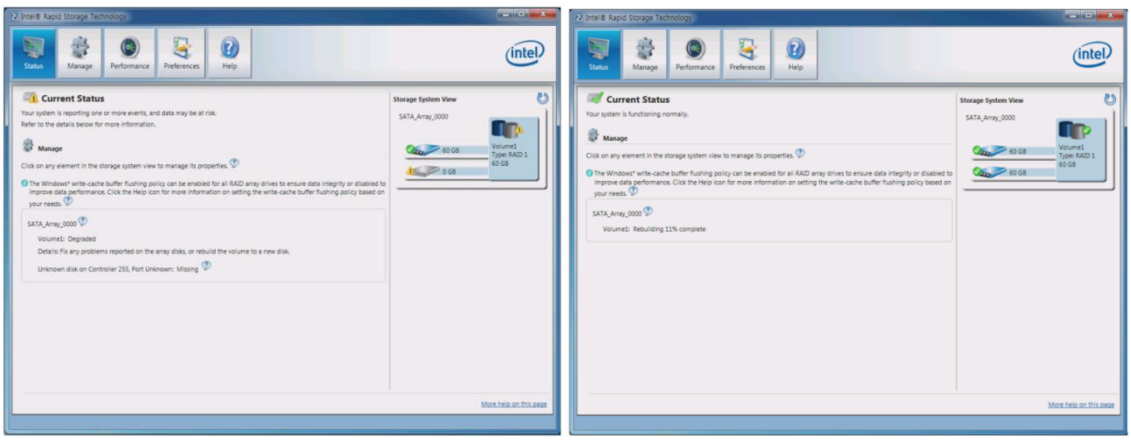


(7) Windows setting

Intel RST can be launched from the icon in the lower right corner or from the launcher. If there is no problem, it will be displayed as below.



If the disk is broken or there is a problem with the connection, the disk with the problem as shown below is displayed.



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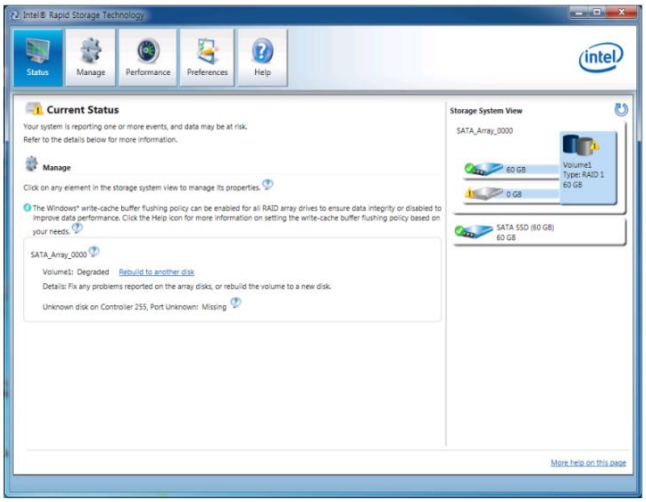
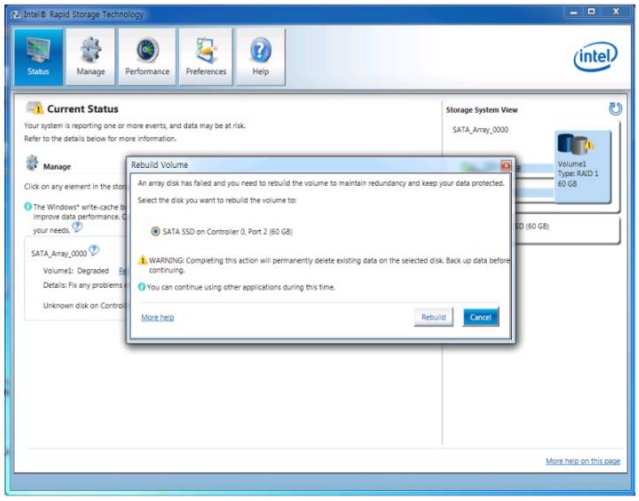
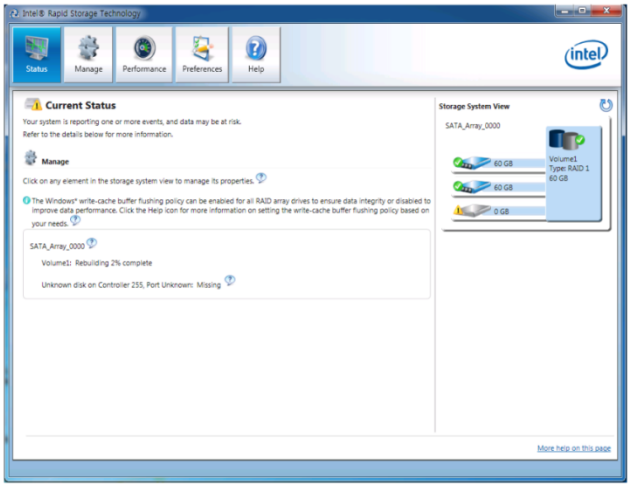
If there is a problem with the connection and it is reconnected, the rebuild starts as below when rebooting.
If a new hard disk is connected due to a failure of one disk, a window asking whether you want to rebuild the new disk will appear as shown below. At this time, click "rebuild to another disk" to rebuild.

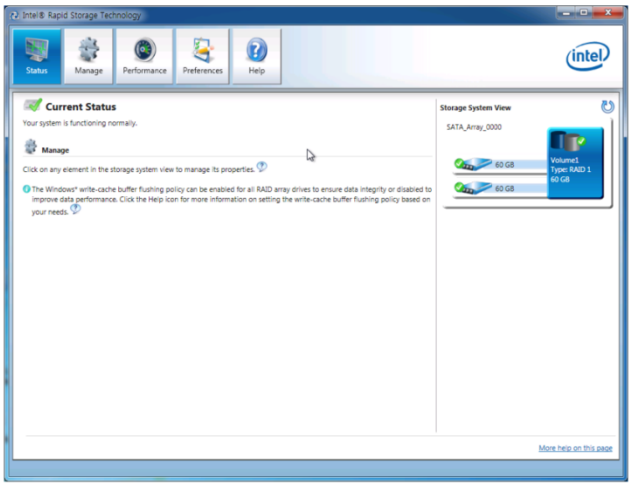


Rebuild in progress screen



Rebuild completed screen





(8) Precautions when using RAID1 function

1) Disk synchronization (rebuilding) has two discs that use the recovery solution. Use a disk labeled "RAID".
2) When using the recovery solution, click on the recovery image "Invisible Backup" Browse, "Acronis Secure Zone" and click "OK".
3) I do not see the retail license of Windows 7 after recovery. Please use the input to serial number 25.
- Activate Windows - After you change your product key, click Enter your product key and connect to an external network.
- If activation fails, set the computer time to the current time.

4) After the recovery, the recovery solution will be disabled. Be sure to click "Tools & Utilities" - "Activate "Acronis Startup Recovery Manager" - "Activate".

Chapter 9 Maintenance ⚠Warning

9.1 Cleaning the Display

When the surface or frame of the display become dirty, spray the cleaning solution onto a soft cloth and wipe the device. Do not spray the cleaning solution directly onto the device.

9.2 Periodic Check Points

Check the followings periodically for best condition of the device.

(1) Environment
  a. Is the operating temperature within the allowable range?
  b. Is the operating humidity within the allowable range?
  c. Is the Surrounding pollution no corrosive gas?
(2) Power
  a. Is the input voltage within the change range?
  b. Check the front power switch surface for damage, scratches, and contamination.
(3) Related Items
  a. Check the touch pad there is no damage, scratch or pollution by eye.
  b. Check the guarantee duration of LCD Backlight by eye.

9.3 Problems with the Device ⚠Warning

(1) If there is a problem during operation, stop using it and contact the A/S department of M2I Corporation, which is indicated on the product label.
(2) Only the authorized worker from M2I Corporation can check and repair problems related to malfunction of the machine.
(3) If the problem cannot be solved at the installation site, the equipment can be collected and moved to M2I Corporation.
(4) The manufacturer, M2I Corporation, is not responsible for damage or malfunction of the equipment caused by the use conditions of the user beyond the installation and use standards described in the manual.

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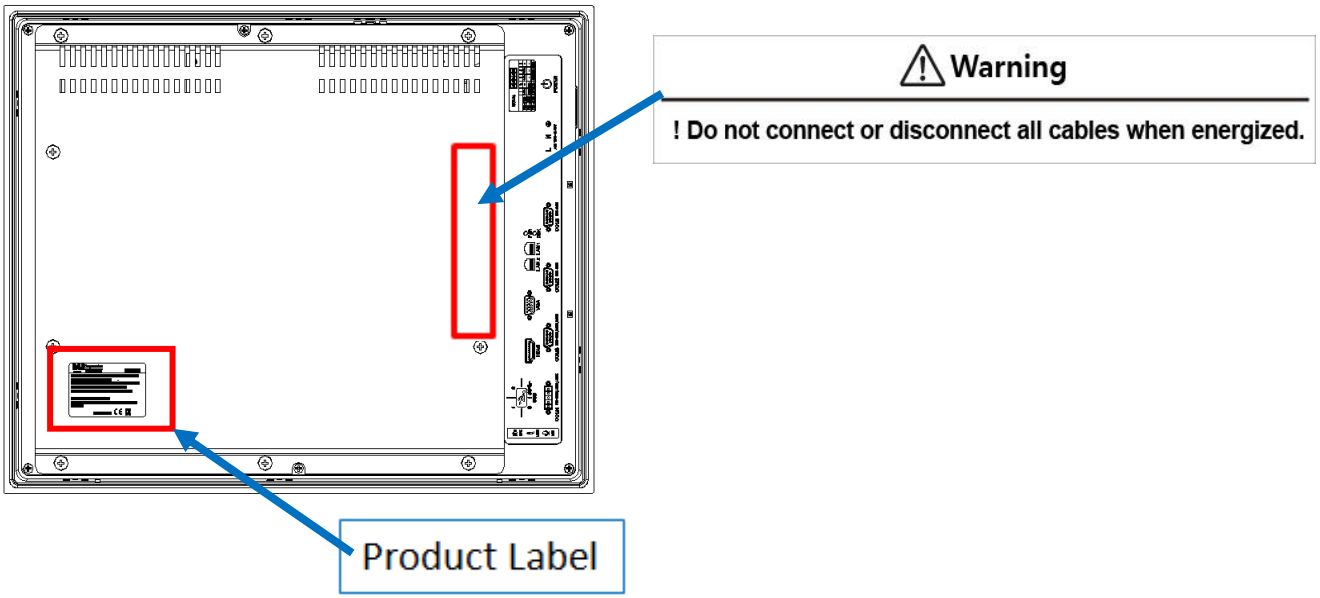
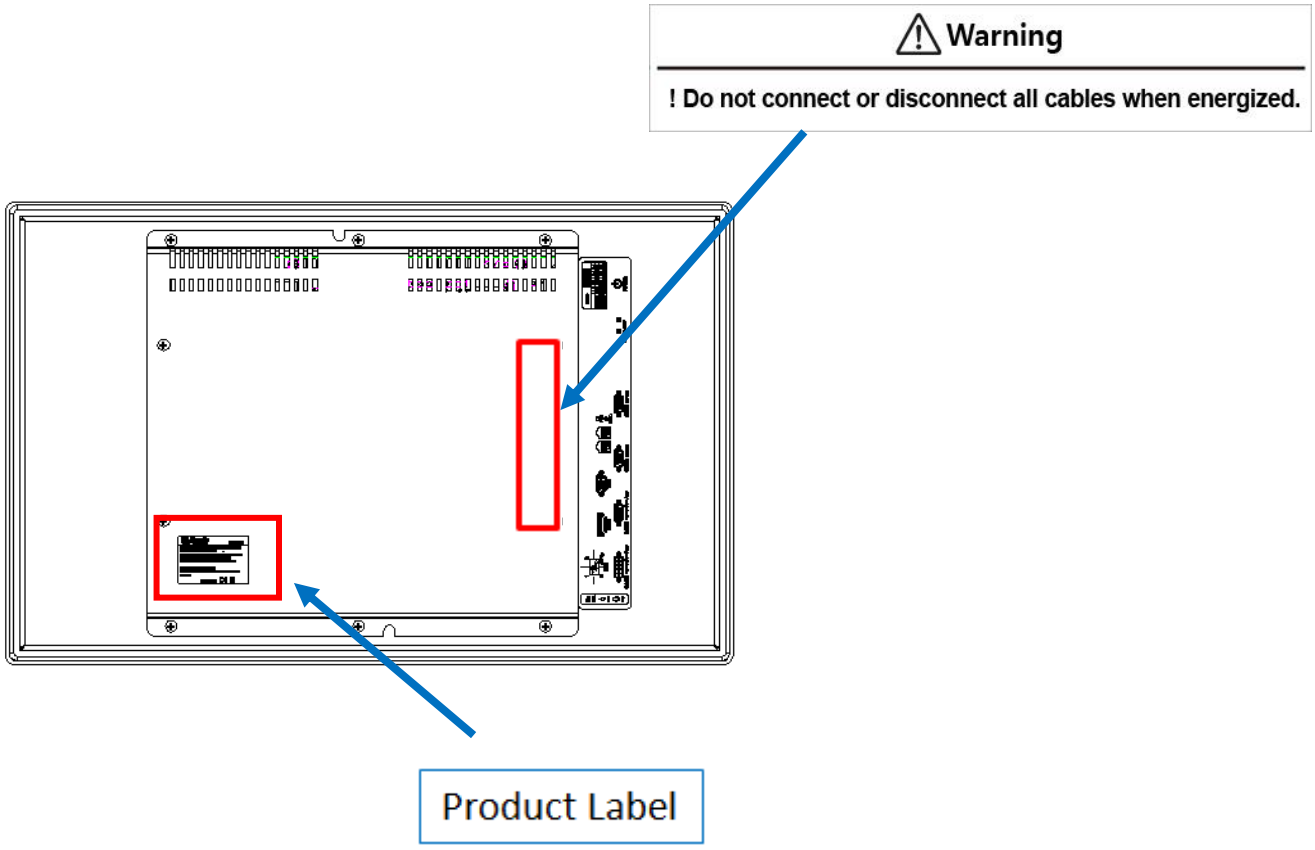
Chapter 10 Products and Warning Label

10.1 TOP-PCVIEW10/12/15/17****



10.2 TOP-PCVIEW19****



Chapter 11 Products Label

11.1 AC Power Models

Manufacture(AS): M2I Corporation
11-35, Simin-daero 327beon-gil, Dongan-gu, Anyang-si, Gyeonggi-do 14055, Korea
Tel: 82-31-465-3366

Product Name: Industrial PC-HMI Touch Panel
Model Name: **TOP-PCVIEW□□ □□ □A**
Operating Temp: 0 ℃ ≤ Ta ≤ +60 ℃ (No humidity) / +40 ℃ (RH 95%)
Power specification: TOP-PCVIEW Series...**A**, AC 100-240V, 50/60 Hz, 60W or less
KC Certificate NO.:
Internal Cell: Model Name CR2032 (lithium Battery)
Serial Number:

11.2 DC Power Models

Manufacture(AS): M2I Corporation
11-35, Simin-daero 327beon-gil, Dongan-gu, Anyang-si, Gyeonggi-do 14055, Korea
Tel: 82-31-465-3366

Product Name: Industrial PC-HMI Touch Panel
Model Name: **TOP-PCVIEW□□ □□ □D**
Operating Temp: 0 ℃ ≤ Ta ≤ +60 ℃ (No humidity) / +40 ℃ (RH 95%)
Power specification: TOP-PCVIEW Series...D, 24 Vdc, 60W or less
KC Certificate NO.:
Internal Cell: Model Name CR2032 (lithium Battery)
Serial Number:

 www.m2i.co.kr

- When using M2I equipment, thoroughly read this datasheet and associated manuals introduced in this datasheet, also pay careful attention to safety and handle the module properly.
- Store this datasheet in a safe place so that you can take it out read it whenever necessary.

User Guide
This product has Relevant Assessments for business environment. If this product is used in home environment, there can be an interference.