Industrial Panel PC Operations Manual

PC1000 Series

Your Industrial Control Solutions Source

www.maplesystems.com

For use with the following:

- PC1200 Series Panel PC
- PC1300 Series Panel PC

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COPYRIGHT NOTICE

WARRANTY

Warranty Statements are included with each unit at the time of purchase and are available at www.maplesystems.com.

TECHNICAL SUPPORT

This manual is designed to provide the necessary information for trouble-free installation and operation of your Panel PC. However, if you need assistance, please contact Maple Systems:

- Phone: 425-745-3229
- Email: support@maplesystems.com
- Web: www.maplesystems.com

UNPACKING THE UNIT

Carefully unpack the Panel PC. Check all material in the container against the packing list. Maple Systems will not accept responsibility for shortages against the packing list unless notified within 30 days. The equipment and accessories were inspected and tested by Maple Systems before shipment.

Examine the equipment carefully; if any shipping damage is evident, notify the carrier immediately. Maple Systems is not responsible for claim negotiations with the carrier.

Save the shipping container and packing material in case the equipment needs to be stored, returned to Maple Systems, or transported for any reason.

Packing List
PC1000 Series Panel PC unit
Power Cable (for use with existing DC Power Supply)
M4x5mm VESA Mounting Screws (Set of 4)
Mounting Clips (Quantity Dependent on PC screen size)

SAFETY PRECAUTIONS

Please observe the following precautions when installing the PC1000 Series. Failure to comply with these restrictions could result in loss of life, serious personal injury, or equipment damage.

	**Warning:** Disconnect this equipment from any power before cleaning. Do not use liquid or spray detergents for cleaning. Use a damp cloth.
	**Warning:** Keep this equipment away from humidity.
	**Warning:** Before applying power the unit make sure the voltage of the power source is within the input voltage rating of the unit.
	**Warning:** Never open the equipment and do not operate equipment with its heatsink cover removed- there are dangerous high voltages present inside. For safety reasons, the equipment should be opened only by a qualified service technician.
	**Warning:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: • Reorient or relocate the receiving antenna • Increase the separation between the equipment and receiver • Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. • Consult the dealer or an experienced radio/TV technician for help
	**Warning:** Risk of explosion if the battery is replaced with an incorrect type. Batteries should be recycled where possible. Disposal of used batteries must be in accordance with local environmental regulations.
	**Warning:** Do not leave this equipment in an uncontrolled environment where the storage temperature is below -30°C (-22°F) or above 80°C (175°F). It may damage the equipment.

OVERVIEW OF PC1000 SERIES

PC1000 Series Panel PC units are industrial, heavy duty fanless PCs available in two main categories: PC1200 Series and PC1300 Series. Display sizes range from 10.4 ~ 27", with select displays offering a high-brightness (**1000 nits**) option. High brightness displays are ideal for use in environments where there is a larger than normal amount of ambient light, allowing for the user to maintain readability of the PC display.

All PC1000 Panel PCs feature Projected Capacitive Touch Screens, which allow for a more natural, intuitive user touch experience compared to traditional analog-resistive touch screen terminals. All PC1000 units feature dual Gigabit Ethernet Ports, allowing for simultaneous connection to multiple networks. Each PC1000 unit comes with Microsoft Windows® 10 IOT LTSC 64-bit pre-installed.

PC1000 Series Panel PCs are NEMA4 rated and carry a rugged IP65 certification (when panel mounted). PC1000 Series units can be factory equipped with Wi-Fi, enabling access to existing 802.11 b/g/n wireless networks.

For detailed specifications for PC1200 and PC1300 Series models, including CAD drawings, please see the datasheet posted on the unit's product page on maplesystems.com.

PC1200

The PC1200 Series is powered by the Intel® Pentium™ N4200 1.1GHz quad-core processor. Memory options include 4GB or 8GB of DDR3L RAM. Solid State Drive options include sizes from 64GB to 1TB (Other options may be available; contact Maple Systems for details).

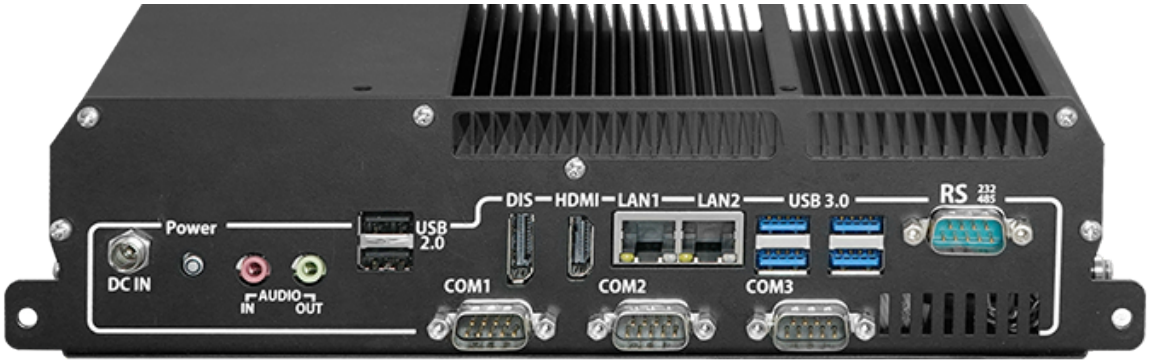
PC1200 Series units have 4 x USB 3.0 ports, 2 x USB 2.0 ports, 1 x HDMI, 1 x Line-out, 1 x Mic-in, and 3 x DE-9P serial ports.

PC1200 Series I/Os (View from Bottom of unit)

PC1300

The PC1300 Series units boast a 7th Generation Intel® Kaby Lake Core™ i-Series Processors (i3-7100U – 2.4GHz, i5-7300U – 2.6GHZ, i7-7600U – 2.8GHz) with up to 32GB of DDR4 RAM. Solid State Drive options include sizes from 64GB to 1TB (Other options may be available; contact Maple Systems for details).

PC1300 Series units have 4 x USB 3.0 ports, 2 x USB 2.0 ports, 1 x HDMI, 1 x DisplayPort, 1 x Line-Out, 1 x Mic-In, and 4 x DE-9P serial ports.



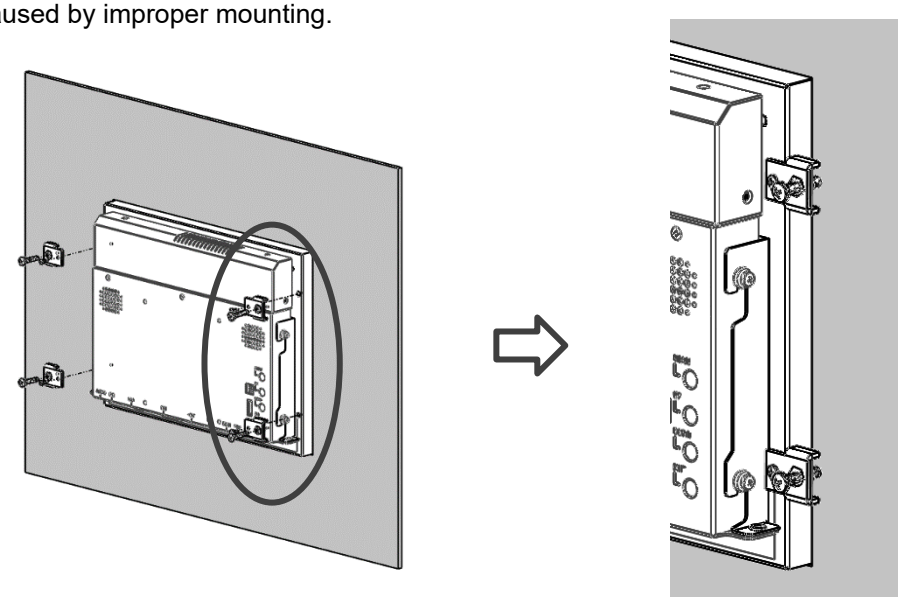
PC1300 Series I/Os (View from Bottom of unit)

PANEL PC MOUNTING OPTIONS

PANEL MOUNTING

PC1000 units can be panel mounted using the mounting holes located on the rear of the unit. Use the included clamps to fasten the unit to the panel, cut out to the proper dimensions on the datasheet corresponding to your display size. Tighten the bolts no more than **5.1 in./lbs.** to ensure an adequate seal. Over torquing the bolts may possibly negate NEMA or IP65 rating, or cause damage to the unit or panel.

Maple Systems is not responsible for damage to unit, mounting surface or any other components caused by improper mounting.

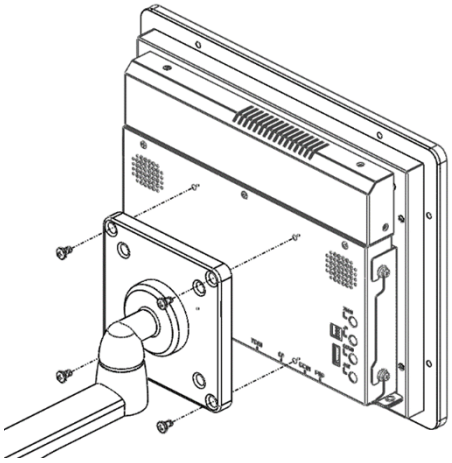


Note: 10.4" *Monitor Panel Mounting example shown. Actual Product differs from picture.*

VESA MOUNTING

In addition to panel mounting, the PC1000 Series Panel PCs offer VESA 100 mounting as an option. VESA 100 x 100 mm threaded inserts are located on the rear of the unit. Use M4 threaded mounting screws to attach your VESA mounting bracket (not provided by Maple Systems) to the Panel PC.

Your PC comes with M4x5mm mounting screws, but your VESA bracket may require screws of a different length. Use VESA mounting brackets sufficient for the application. Maple Systems is not responsible for damage to unit, mounting surface or any other components caused by improper mounting.

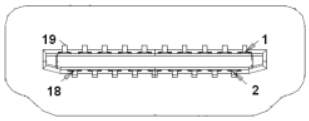


Note: *VESA Mounting example shown. Actual Product differs from picture. VESA Mount not provided by Maple Systems.*

I/O PORTS

HDMI®

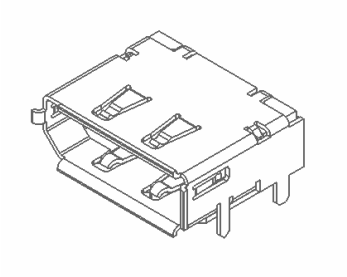
Connector Type: High Definition Multimedia Interface® Socket



DISPLAYPORT

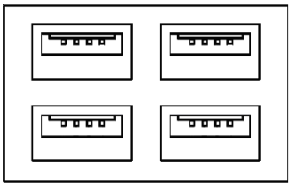
DisplayPort Connector available on PC1300 Series models

Connector Type: DisplayPort Interface Connector Socket



USB 3.0

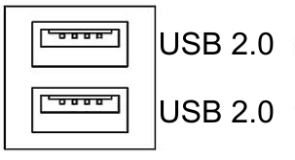
All PC1000 Series models have 4 x USB 3.0 Type A Host Ports



Note: *USB 3.0 allows data transfers up to 5Gb/s, full-speed, and low-speed signaling. The total current output limit is 1.8A per Stacked Hub (**0.9A per individual port**)*

USB 2.0

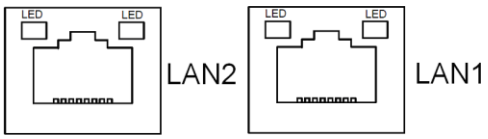
All PC1000 Series models have 2 x USB 2.0 Type A Host Ports



Note: *USB 2.0 allows data transfers up to 480Mb/s, full-speed, and low-speed signaling. The total current output limit is 1.0A per Stacked Hub (**0.5A per individual port**)*

LAN1 AND LAN2

Connector Type: Standard 10/100/1000M RJ-45 Ethernet ports



AUDIO-OUT

Connector Type: 3.5mm audio jack output

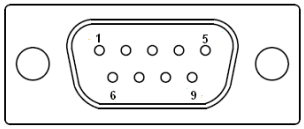
AUDIO-IN

Connector Type: 3.5mm audio jack input

COM1-COM4:

(COM4 only on PC1300 Series)

Connector Type: DE9P Male Serial Ports



Pin #	COM1*			COM2	COM3	COM4**
	(RS-232 Default)	(RS422)	(RS485)	(RS232)	(RS232)	(RS232)
1	DCD	422_TX-	485-	DCD	DCD	DCD
2	RXD	422_TX+	485+	RXD	RXD	RXD
3	TXD	422_RX+	NC	TXD	TXD	TXD
4	DTR	422_RX-	NC	DTR	DTR	DTR
5	GND	GND	GND	GND	GND	GND
6	DSR	NC	NC	DSR	DSR	DSR
7	RTS	NC	NC	RTS	RTS	RTS
8	CTS	NC	NC	CTS	CTS	CTS
9	RI	NC	NC	RI	RI	RI

*** Refer to "Setting COM1 Function" to set the communication mode.**			**** COM4 only on PC1300 Series**

BIOS CONFIGURATION OPTIONS

The BIOS (Basic Input/Output System) installed in the ROM of your Panel PC supports Intel® processors. The BIOS provides critical low-level support for standard devices such as disk drives and serial ports. The BIOS also provides a Setup utility program that allows the user to specify system configuration and setting options.

	**Warning:** ***Changing settings or configurations within the BIOS of your Panel PC can adversely impact the operation of your Panel PC if incorrectly performed.*** *Maple Systems provides the below instructions solely for the operations specified, and is not responsible for improper unit operation caused by changing settings or entries other than those explicitly listed below.*

To enter the BIOS of your Panel PC, ensure a USB keyboard is connected to your PC and apply power. Your PC1200 Series is automatically configured to boot up when power is applied. Turn the PC1300 Series on by pressing the power button located on the bottom of the CPU Module. If you wish for the PC1300 Series to automatically boot, see the instructions below.

Press the <Delete> key immediately during the POST (Power On Self-Test) portion of your PC's bootup sequence to enter the BIOS. The Main Menu containing the system summary information will appear.

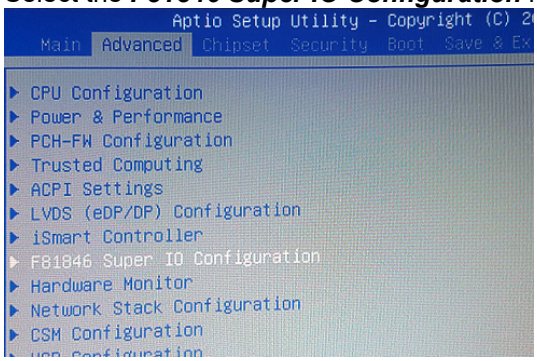
Example of initial POST screen. Your PC's POST screen may appear different.

SETTING COM1 FUNCTION

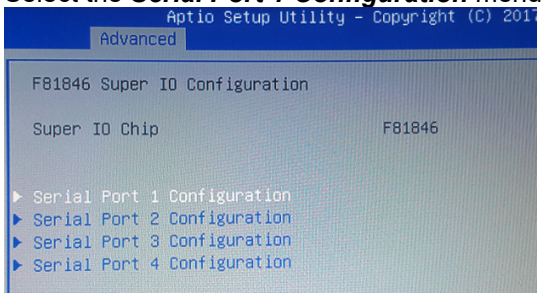
The PC1000 COM1 Serial Port is configured by default as RS232, but can be configured for RS422 (4-wire) or RS485 (2-wire) operation if so desired. COM1 port configuration is managed through the BIOS; see below for instructions on changing COM1 port mode.

> ***Note:*** *COM1 is the only port that can be configured for RS422 or RS485 operation; all other Serial Ports are exclusively configured for RS232 operation.*

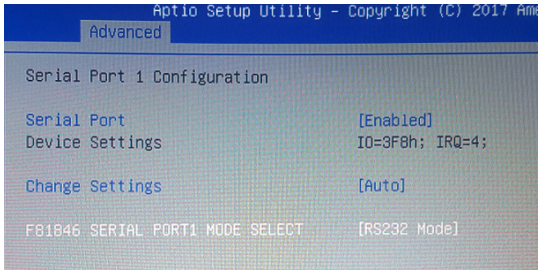
1. At the BIOS Main Menu, press the right arrow key for the ***Advanced*** submenu.
2. Select the ***F81846 Super IO Configuration*** menu and press the **Enter** key.



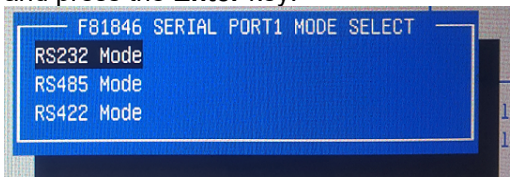
3. Select the ***Serial Port 1 Configuration*** menu option and press the **Enter** key.



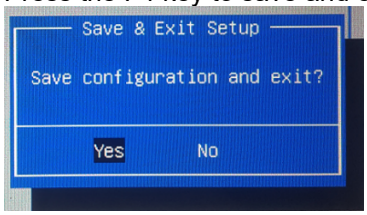
4. Select the ***F81846 Serial Port 1 Mode Select menu*** option and press the **Enter** key.



5. Select the ***[RS232], [RS485], or [RS422]*** option, depending on your desired port configuration and press the **Enter** key.



6. Press the F4 key to save and exit.

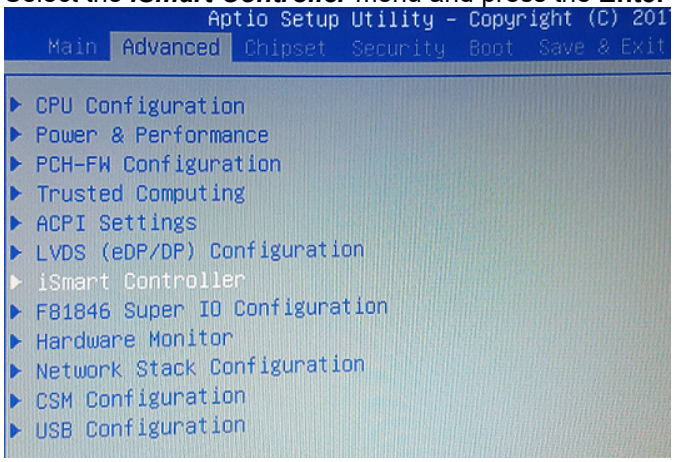


Note: *Make sure to SAVE changes before exiting the BIOS. The F4 key will bring up the save option.*

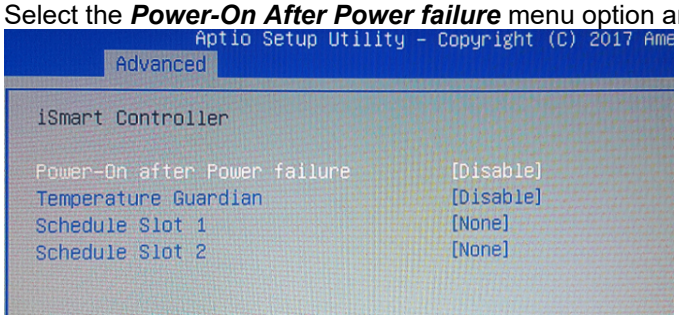
AUTOMATICALLY STARTUP WHEN POWER IS APPLIED (PC1300 SERIES)

When a Panel PC unit is panel-mounted, the power button becomes inaccessible. There is an option in the PC1300 Series BIOS that allows for the unit to be powered up when DC power is applied.

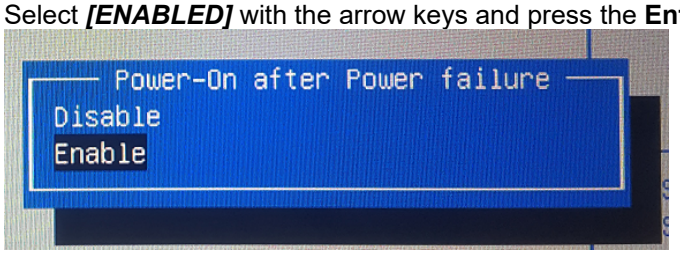
1. At the BIOS main menu, press the right arrow key for the ***Advanced*** submenu.
2. Select the ***iSmart Controller*** menu and press the **Enter** key.



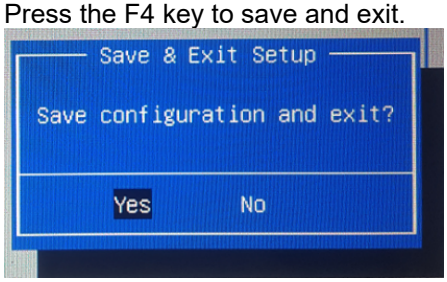
3. Select the ***Power-On After Power failure*** menu option and press the **Enter** key.



4. Select ***[ENABLED]*** with the arrow keys and press the **Enter** key.



5. Press the F4 key to save and exit.



Note: *Make sure to SAVE changes before exiting the BIOS. The F4 key will bring up the save option.*

OPERATING SYSTEM OPTIONS

The PC1000 Series Panel PCs can be purchased with the following operating systems pre-installed:

- Windows 10 IoT Enterprise LTSC
- Windows 10 IoT Enterprise Embedded LTSC
- Windows 11 IoT Enterprise GAC *(PC1300 Series)*
- Windows 11 IoT Enterprise Embedded GAC *(PC1300 Series)*
- Windows 11 Professional *(PC1300 Series)*
- Ubuntu Linux Desktop LTS

WINDOWS 10 IoT ENTERPRISE LTSC / WINDOWS 11 IoT ENTERPRISE GAC (PC1300 Series)

Windows IoT Enterprise is a full enterprise version of Windows 10 / Windows 11 available on all Industrial Box PC models. This powerful operating system delivers enterprise manageability and security to IoT solutions. Additionally, all of the features and functionality that customers expect to find on their desktop PC are available in this version. The Long Term Servicing Channel (LTSC – Windows 10) or General Availability Channel (GAC – Windows 11) version ensures long term stability that critical production systems require by updating only necessary operating system components, with significantly fewer update interruptions.

Included Apps with all Windows OS options:

- Microsoft Edge Web Browser
- LibreOffice Suite (Compatible with the following document types:)
  - MS Word
  - MS Excel
  - MS PowerPoint
  - Adobe PDF
- Media Player

WINDOWS 11 PROFESSIONAL (PC1300 Series)

Windows 11 Professional is a full professional version of Windows. All the features and functionality that customers expect to find on their desktop PC are available in this version. This powerful operating system lifetime security updates for the duration of Microsoft's support timeline of the OS. These versions are operationally identical to the Consumer operating System versions of Windows, and as such they provide regular feature and functionality updates on a more frequent schedule than Enterprise editions of the same OS.

UBUNTU LINUX DESKTOP LTS

This powerful Operating System delivers enterprise manageability and security across a wide range of industries. Additionally, most features and functionality that customers expect to find on their desktop PCs are available in this Open-Source Operating System. The Long-Term Support (LTS) version ensures long-term stability with five years of free security and maintenance updates.

AVEVA Edge

All of the PC1000 Series PCs are compatible with most Windows based SCADA Software, including our AVEVA Edge. Visit maplesystems.com/software/aveva-edge for more information.

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