

# CO-W121C/P2002 Series

21.5" 6th Gen. Intel® Core™ Processor U Series Fanless  
Touch Panel PC with CFM & CDS Technology



## ALL-NEW OPEN FRAME PANEL PC

| CO-100/P2002 Series Fits Any Machine Perfectly |

### Overview

[CONTACT](#)

Cincoze's high-performance open-frame modular panel PCs (CO-W121C/P2002 Series) use Intel® Core U series processors that provide high-performance data processing and graphics computing capabilities with only 15W low power consumption. The CO-100/P2002 series supports CFM technology that extends system functions according to requirements, with options such as Power Ignition Sensing (IGN) and Power over Ethernet (PoE). The series has multiple sizes, display ratios (4:3 and 16:9), and touchscreen options. Its integrated structure, exclusive adjustable mounting bracket, and support for multiple mounting methods to perfectly fit cabinets of different materials and thicknesses. The robust design also meets the application needs of harsh industrial environments.

### Key Features

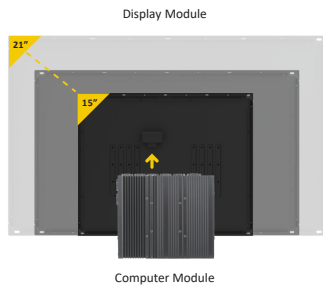
- 21.5" TFT-LCD with Projected Capacitive Touch
- Onboard Intel® 6th Generation Core™ Processor U Series (15W)
- 2x DDR4 SO-DIMM Socket, Support Up to 32 GB
- Designed with Adjustable Mounting Bracket
- Support Flat / Standard / VESA / Rack Mount
- Front Panel IP65 Compliant
- Wide Operating Temperature
- Cincoze Patent CDS Technology Support

### Certifications



## High Performance and Power Saving

Intel® Core U series processors provide high-performance data processing and graphics computing capabilities with a 15W low power consumption, support for up to 64GB of memory and two 2.5" HDD/SSD.



## Patented CDS Technology

The patented CDS (Convertible Display System) technology makes maintenance easy and offers flexibility for future upgrades. To upgrade the panel size, replace the display module, or to upgrade the system performance, replace the computer module.

Patent No. M482908

## Flexibility for Various Applications

Mini-PCIe and PCI/PCIe expansion slots support data acquisition cards, motion control cards, I/O expansion, and other applications.

[ PCI/PCIe expansion slot available Model : CO- W121C/P2002E ]



## Flexible Design and Easy Installation

Exclusive adjustable mounting bracket with thickness adjustment setting and two panel-locking methods (panel or boss type) make modular panel PC easier and more convenient to integrate into industrial machinery.

Patent No.: D224544, D224545, I802427

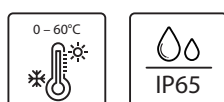
## Integrated Structure

As standard, the open frame modular panel pc can be deployed in equipment machines, but remove the mounting bracket and it becomes a standalone panel pc for use with a VESA mount or in a 19" rack.



## Strong, Reliable and Durable

Meets the requirements for HMI applications in harsh industrial environments: IP65 waterproof and dustproof front panel, fanless, wide temperature (0-60°C), and wide voltage (9-48 VDC).



**CO-W121C Specifications**

Model Name	CO-W121C
<b>Display</b>	
LCD Size	• 21.5" (16:9)
Resolution	• 1920 x 1080
Brightness	• 300 cd/m2
Contract Ratio	• 5000 : 1
LCD Color	• 16.7M
Pixel Pitch	• 0.24825 (H) x 0.24825 (V) mm
Viewing Angle	• 178 (H) / 178 (V)
Backlight MTBF	• 50,000 hrs
<b>Touch Screen</b>	
Touchscreen Type	• Projected Capacitive Touch
<b>Physical</b>	
Dimension (W x D x H)	• 550 x 343.7 x 63.3
Weight	• 7.16 kg
Construction	• One-piece and Slim Bezel Design
Mounting Type	• Flat / Standard / VESA / Rack Mount
Mounting Bracket	• Pre-installed Mounting Bracket with Adjustable Design ( Support 11 different stages of adjustment )
<b>Protection</b>	
Ingress Protection	• Front Panel IP65 Compliant * According to IEC60529
<b>Environment</b>	
Operating Temperature	• Ambient with Air flow: 0°C to 60°C (with Industrial Grade Peripherals)
Storage Temperature	• -20°C to 60°C
Humidity	• 80% RH @ 50°C (Non-condensing)
EMC	• CE, UKCA, FCC, ICES-003 Class A
EMI	<ul style="list-style-type: none"> <li>• CISPR 32 Conducted &amp; Radiated: Class A</li> <li>• EN/BS EN 55032 Conducted &amp; Radiated: Class A</li> <li>• EN/BS EN IEC 61000-3-2 Harmonic current emissions: Class A</li> <li>• EN/BS EN61000-3-3 Voltage fluctuations &amp; flicker</li> <li>• FCC 47 CFR Part 15B, ICES-003 Conducted &amp; Radiated: Class A</li> </ul>
EMS	<ul style="list-style-type: none"> <li>• EN/IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV</li> <li>• EN/IEC 61000-4-3 RS: 80 MHz to 1000 MHz: 3 V/m</li> <li>• EN/IEC 61000-4-4 EFT: AC Power: 1 kV; DC Power: 0.5 kV; Signal: 0.5 kV</li> <li>• EN/IEC 61000-4-5 Surges: AC Power: 2 kV; Signal: 1 kV</li> <li>• EN/IEC 61000-4-6 CS: 3V</li> <li>• EN/IEC 61000-4-8 PFMF: 50 Hz, 1A/m</li> <li>• EN/IEC 61000-4-11 Voltage Dips &amp; Voltage Interruptions: 0.5 cycles at 50 Hz</li> </ul>
Safety	• UL, cUL, CB, IEC, EN 62368-1

## P2002 Series Specifications

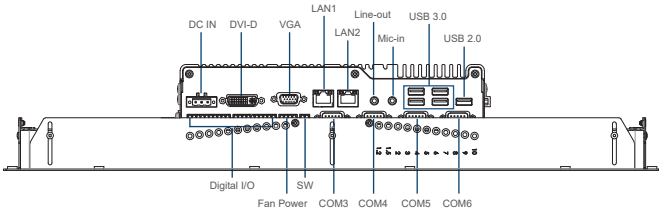
Model Name	P2002	P2002E
<b>System</b>		
Processor	<ul style="list-style-type: none"> <li>Onboard 6th Intel® Core™ U processors (Skylake)                             <ul style="list-style-type: none"> <li>Intel® Core™ i5-6300U processor (3M Cache, up to 3.00 GHz)</li> <li>Intel® Core™ i3-6100U processor (3M Cache, 2.30 GHz)</li> <li>TDP: 15 W</li> </ul> </li> </ul>	
Memory	<ul style="list-style-type: none"> <li>2x DDR4 2133 MHz 260-Pin SO-DIMM Socket</li> <li>Support Un-buffered and Non-ECC Type up to 32 GB</li> </ul>	
BIOS	<ul style="list-style-type: none"> <li>AMI 64Mbit SPI BIOS</li> </ul>	
<b>Graphics</b>		
Graphics Engine	<ul style="list-style-type: none"> <li>Integrated Intel® UHD Graphics 520</li> </ul>	
Maximum Display Output	<ul style="list-style-type: none"> <li>Supports Triple Independent Display</li> </ul>	
CDS	<ul style="list-style-type: none"> <li>1x CDS Connector for Cincoze Display Module</li> </ul>	
VGA	<ul style="list-style-type: none"> <li>1x VGA Connector(1920 x 1080 @60Hz), DB-15</li> </ul>	
DVI-D	<ul style="list-style-type: none"> <li>1x DVI-D Connector (1920 x 1080 @ 60Hz)</li> </ul>	
<b>Audio</b>		
Audio Codec	<ul style="list-style-type: none"> <li>Realtek® ALC888, High-Definition Audio</li> </ul>	
Speaker-out	<ul style="list-style-type: none"> <li>1x Speaker-out, Phone Jack 3.5mm</li> </ul>	
Mic-in	<ul style="list-style-type: none"> <li>1x Mic-in, Phone Jack 3.5mm</li> </ul>	
<b>I/O</b>		
LAN	<ul style="list-style-type: none"> <li>2x GbE LAN (Supports WoL, Teaming, Jumbo Frame &amp; PXE), RJ45                             <ul style="list-style-type: none"> <li>GbE1: Intel® I219LM</li> <li>GbE2: Intel® I210</li> </ul> </li> </ul>	
USB	<ul style="list-style-type: none"> <li>4x USB 3.2 Gen1 (Type A), 1x USB 2.0 (Type A)</li> </ul>	
Serial Port	<ul style="list-style-type: none"> <li>6x RS-232/422/485 with Auto Flow Control Support 5V/12V, DB9</li> </ul>	
DIO	<ul style="list-style-type: none"> <li>16x Isolated Digital I/O (8in/8out), 10-Pin Terminal Block</li> </ul>	
<b>Storage</b>		
SSD/HDD	<ul style="list-style-type: none"> <li>2x 2.5" HDD/SSD Bay, Support RAID 0/1 (Gen3)</li> </ul>	
mSATA	<ul style="list-style-type: none"> <li>2x mSATA (One Shared by Mini-PCIe Socket) (Gen2)</li> </ul>	
CFast	<ul style="list-style-type: none"> <li>1x CFast Socket (Gen 3)</li> </ul>	
<b>Expansion</b>		
Mini PCI Express	<ul style="list-style-type: none"> <li>2x Full-size Mini-PCIe Sockets</li> </ul>	
PCI Express	<ul style="list-style-type: none"> <li>1x PCI or 1x PCIe x4 Expansion slot (with Optional Riser Card)</li> <li>maximum dimension of add-on card:100mm x 200mm (H x L)</li> </ul>	
SIM Socket	<ul style="list-style-type: none"> <li>1 x Front Accessible SIM Socket</li> </ul>	
Universal Bracket	<ul style="list-style-type: none"> <li>1x Universal I/O Bracket</li> </ul>	
CFM (Control Function Module) Interface	<ul style="list-style-type: none"> <li>2x CFM Interface for optional CFM-IGN or CFM-PoE (max 25.5W) Module Expansion</li> </ul>	
CDS (Convertible Display System) Technology	<ul style="list-style-type: none"> <li>1x Convertible Display System (CDS) Interface, Compact PCI Connector</li> </ul>	

<b>Other Function</b>		
Instant Reboot	• Support 0.2sec Instant Reboot technology	
Watchdog Timer	• Software Programmable Supports 256 Levels System Reset	
Internal Speaker	• AMP 2W + 2W	
OSD Function	• LCD On/Off, Brightness Up, Brightness Down	
Reset Button	• 1x Reset Button	
External Fan Connector	• 1x External Fan Connector, 4-pin Terminal Block	
<b>Power</b>		
Power Button	• 1x ATX Power On/Off Switch	
Power Mode Switch	• 1x AT/ATX Mode Switch	
Power Input	• 1x 3-pin Terminal Block Connector with Power Input 9~48VDC	
Power Adapter (Optional)	• 1x Optional AC/DC 12V/5A 60W or 24V/5A 120W • 1x Optional AC/DC 24V/9.2A 220W (For P2002E only)	
Remote Power On/Off	• 1x Remote Power On/Off Connector, 2-pin Terminal Block	
<b>Physical</b>		
Dimension( W x D x H )	• 254.5 x 220 x 54mm	• 254.5 x 220 x 72 mm
Weight Information	• 2.92 kg	• 3.18 kg
Mechanical Construction	• Extruded Aluminum with Heavy Duty Metal	
Mounting	• Wall / VESA / CDS	
Physical Design	• Fanless Design • Jumper-less Design	
<b>Reliability &amp; Protection</b>		
Reverse Power Input	• Yes	
Over Voltage Protection	• Protection Range: 51~58V • Protection Type: shut down operating voltage, re-power on at the present level to recover	
Over Current Protection	• 15A	
CMOS Battery Backup	• SuperCap Integrated for CMOS Battery Maintenance-free Operation	
<b>Operating System</b>		
Microsoft® Windows®	• Windows® 10, Windows® 8.1, Windows® 7	
Linux	• Linux® Kernel 4.4	
<b>Environment</b>		
Operating Temperature	• Ambient with Air Flow: -25°C to 70°C (with Extended Temperature Peripherals)	
Storage Temperature	• -40°C to 85C	
Relative humidity	• 95% RH @ 40°C (Non-condensing)	
Shock	• Operating, 50 Grms, Half-sine 11ms Duration (w/ SSD, according to IEC60068-2-27)	
Vibration	• Operating, 5 Grms, 5-500 Hz, 3 Axes (w/ SSD, according to IEC60068-2-64)	
EMC	• CE, UKCA, FCC, ICES-003 Class A	

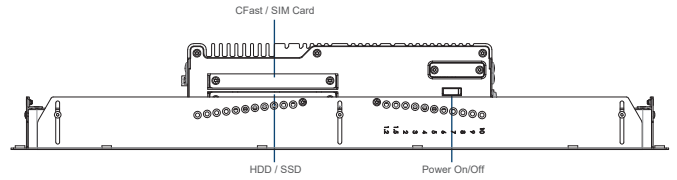
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**CO-W121C/P2002 External Layout**

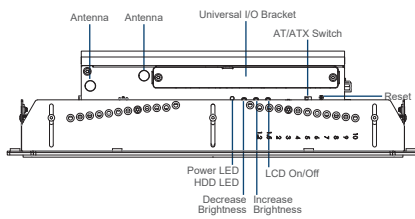
Front I/O



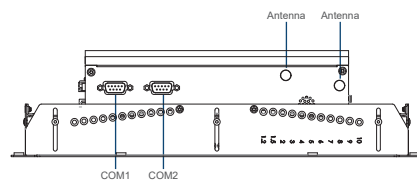
Rear I/O



Left I/O

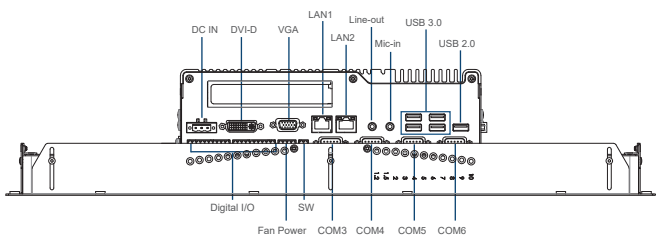


Right I/O

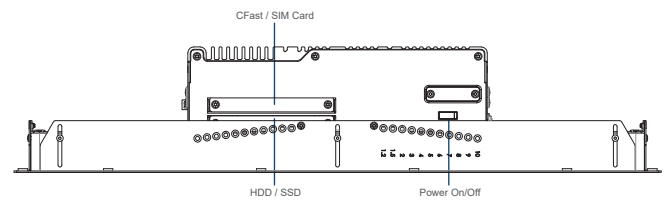


**CO-W121C/P2002E External Layout**

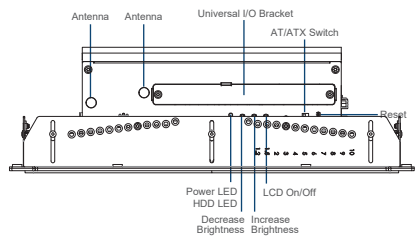
Front I/O



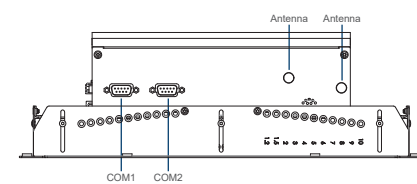
Rear I/O



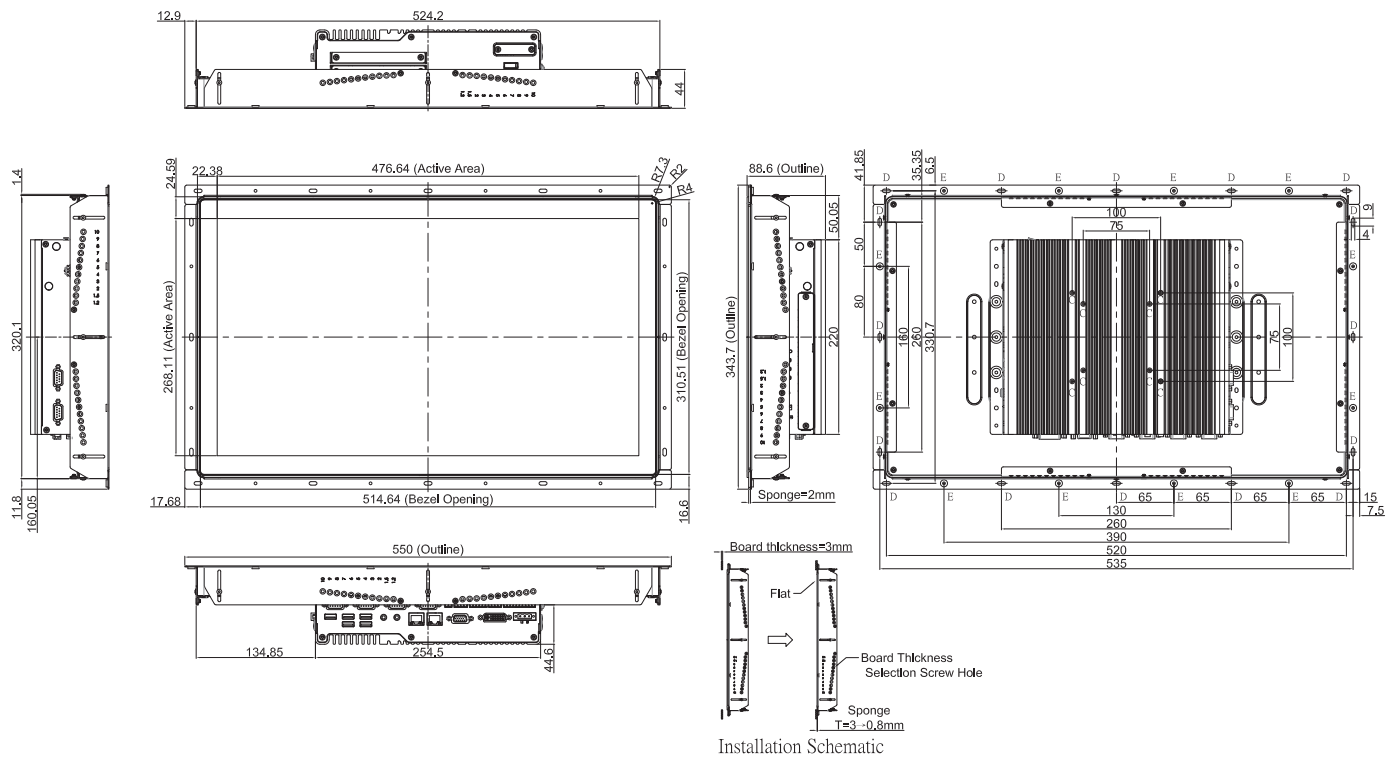
Left I/O



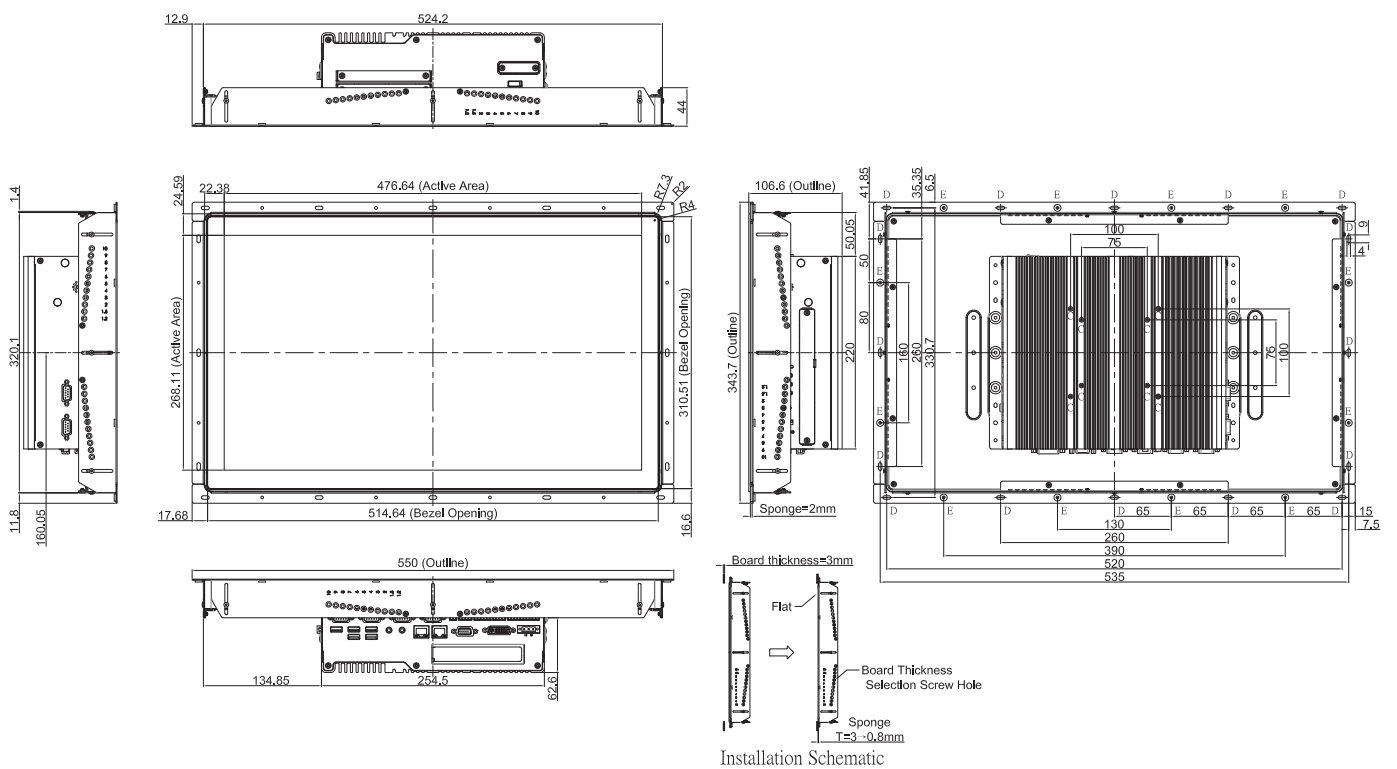
Right I/O



**CO-W121C/P2002 Dimensions**



**CO-W121C/P2002E Dimensions**





## Ordering Information

### Available Models

Model No.	Description
CO-W121C-R10/P2002-i5-R10	21.5" TFT-LCD Full HD 16:9 Open Frame Display Module with Projected Capacitive Touch and Intel 6th Gen. Core i5-6300U Fanless Computer, CFM Interface, CDS Interface
CO-W121C-R10/P2002E-i5-R10	21.5" TFT-LCD Full HD 16:9 Open Frame Display Module with Projected Capacitive Touch and Intel 6th Gen. Core i5-6300U Expandable Fanless Computer, CFM Interface, CDS Interface
CO-W121C-R10/P2002E-i5-E4-R10	21.5" TFT-LCD Full HD 16:9 Open Frame Display Module with Projected Capacitive Touch and Intel 6th Gen. Core i5-6300U Fanless Computer, CFM Interface, CDS Interface, 1x PCIe4 Expansion
CO-W121C-R10/P2002E-i5-PI-R10	21.5" TFT-LCD Full HD 16:9 Open Frame Display Module with Projected Capacitive Touch and Intel 6th Gen. Core i5-6300U Expandable Fanless Computer, CFM Interface, CDS Interface, 1x PCI Expansion
CO-W121C-R10/P2002-i3-R10	21.5" TFT-LCD Full HD 16:9 Open Frame Display Module with Projected Capacitive Touch and Intel 6th Gen. Core i3-6100U Fanless Computer
CO-W121C-R10/P2002E-i3-R10	21.5" TFT-LCD Full HD 16:9 Open Frame Display Module with Projected Capacitive Touch and Intel 6th Gen. Core i3-6100U Expandable Fanless Computer, CFM Interface, CDS Interface
CO-W121C-R10/P2002E-i3-E4-R10	21.5" TFT-LCD Full HD 16:9 Open Frame Display Module with Projected Capacitive Touch and Intel 6th Gen. Core i3-6100U Fanless Computer, CFM Interface, CDS Interface, 1x PCIe4 Expansion
CO-W121C-R10/P2002E-i3-PI-R10	21.5" TFT-LCD Full HD 16:9 Open Frame Display Module with Projected Capacitive Touch and Intel 6th Gen. Core i3-6100U Expandable Fanless Computer, CFM Interface, CDS Interface, 1x PCI Expansion

### Model Configuration

	CO-W121C	P2002 (i3/i5)	P2002E (i3/i5/E4/PI)
CO-W121C/P2002	V	V	--
CO-W121C/P2002E	V	--	V

V : Compatible

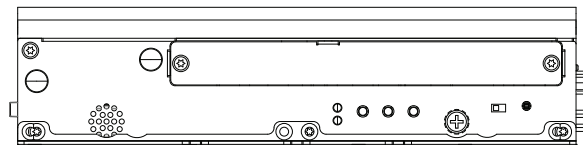
### Package Checklist

• CO-W121C/P2002 Series Panel PC x 1	• DIO Terminal Block Connector x 2
• Wall / CDS Mounting Kit x 1	• Remote Power On/Off Terminal Block Connector x 1
• Power Terminal Block Connector x 1	• Screw Pack x 1
• Fan Terminal Block Connector x 1	

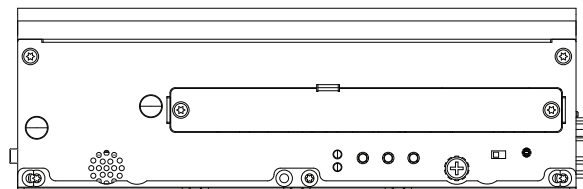
Model No.	Description
RC-PI-01	Riser Card with 1x PCI Slot(For P2002E only)
UB0503	Universal Bracket with 2x DB9 Cutout
UB0504	Universal Bracket with 4x DB9 Cutout
UB0511	Universal Bracket with 2x RJ45 Cutout
UB0514	Universal Bracket with 2x USB Cutout
URM01	Universal 19" Rack Mount Kit for Industrial Panel PC & Industrial Monitor
GST220A24-CIN	Adapter AC/DC 24V 9.2A 220W with 3pin Terminal Block Plug 5.0mm Pitch, with TUBES, GST220A24-CIN
GST120A24-CIN	Adapter AC/DC 24V 5A 120W, GST120A24-CIN, wide temp(-30°C ~ +70°C), level VI
GST60A12-CIN1	Adapter AC/DC 12V 5A 60W, GST60A12-CIN1, wide temp(-30°C ~ +70°C)
SL2-SL3	US 2 heads power cord, US B type to IEC C13,SVT 18AWG/3C Black 1.8M
SL6-SL3	EU 2 heads power cord, EU G type to IEC C13,H05VV-F 0.75mm2/3G Black 1.8M
QP026-SL3	UK 2 heads power cord, UK I type to IEC C13,H05VV-F 0.75mm2/3G Black 1.8M





**Optional Module Configuration**

**P2002**



**P2002E**



Model No.	Description	P2002	P2002E
 <p>MEC-COM-M212/UB0503</p>	Mini-PCIe Module with 2x COM Ports, 1x Universal Bracket with 2x DB9 Cutout (154 x 17 mm)	V	V
 <p>MEC-COM-M334/UB0504</p>	Mini-PCIe Module with 4x RS-232/422/485 Serial Ports, 1x Universal Bracket with 4x DB9 Cutout (154 x 17 mm)	V	V
 <p>MEC-LAN-M102-30/UB0511</p>	Mini-PCIe Module with 2x LAN Ports, 2x 30cm cable, 1x Universal Bracket with 2x RJ45 Cutout (154 x 17 mm)	V	V
 <p>MEC-USB-M102-30/UB0514</p>	Mini-PCIe Module with 2x USB 3.0 Ports, 1x Universal Bracket with 2x USB Cutout (154 x 17 mm)	V	V

V : Compatible