

# CV-W121/P1001 Series

21.5" TFT Full HD 16:9 Panel PC w/ Intel® Atom™ E3845  
Quad Core, 4x USB, 2x COM, 1x VGA and 1x DisplayPort



## POWER EFFICIENT INDUSTRIAL PANEL PC

| CV-100/P1000 Series |

### Overview

 CONTACT

The 21.5" widescreen (16:9) all-in-one panel PC offers LED backlight LCD with resolution up to 1920 x 1080 (Full HD) and 300 nits brightness. CV-W121/P1000 Series features flat surface and IP65 dust/waterproof front panel. In addition, designed with aluminum die-cast front frame with rugged body structure that can be able to apply in industrial applications. CV-W121/P1000 Series supports Convertible Display System (CDS) technology which makes it more flexible in system maintaining and upgrading. CV-W121/P1000 Series carries single touch function with resistive 5-wire touch screen, multi touch function with projected capacitive touch screen or glass screen. By incorporating with Intel® Atom™ E3845 processor and DDR3L memory, CV-W121/P1000 Series offers extensive I/O including 4x USB, 2x RS-232/422/485, 1x VGA, 1x DisplayPort, 4x DI / 4x DO. Besides, the panel PC also includes 2x Universal I/O Bracket. (For P1001E only) CV-W121/P1001 Series supports 3G and WLAN via 2x GbE and 1x Mini-PCIe slot. Furthermore, there are 3 types of storage devices including 2.5" SATA HDD, CFast and SIM card. The accessible design of these storage devices allow quick data access and easy maintenance. Supporting wide range power DC input from 9 ~ 48VDC, CV-W121/P1000 Series can be deployed and powered for various industrial applications.

### Key Features

- 21.5" Full HD TFT-LCD with Resistive 5-wire Touch, P-Cap. Touch, or Glass Only
- Onboard Intel® Atom™ E3845 Processor Quad Core, 1.91GHz
- 1x DDR3L SO-DIMM Socket, Support Up to 8 GB
- Integrated Intel® HD Graphics Support Dual Display
- 1x 2.5" SATA HDD Bay, 1x CFast Socket and 1x SIM Card Socket
- IP65 Compliant Aluminum Die-Cast Front Frame
- 1x Full-size Mini-PCIe Socket for Wireless and I/O Expansion
- Convertible Display System (CDS) Supported
- Rich I/O (2x GbE LAN, 2x COM, 4x USB, 8x Isolated DIO)
- Universal I/O Bracket Expandable Version Available (For P1001E only)

### Certifications



CV-W121 Series Specifications

| Model Name              | CV-W121R                                                                                                                                                                                                                                                                                                                                                                                          |                        | CV-W121C       | CV-W121G |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------------|----------|
| Display                 |                                                                                                                                                                                                                                                                                                                                                                                                   |                        |                |          |
| LCD Size                | ▪ 21.5” (16:9)                                                                                                                                                                                                                                                                                                                                                                                    |                        |                |          |
| Max. Resolution         | ▪ 1920 x 1080                                                                                                                                                                                                                                                                                                                                                                                     |                        |                |          |
| Brightness (cd/m2)      | ▪ 300                                                                                                                                                                                                                                                                                                                                                                                             |                        |                |          |
| Contrast Ratio          | ▪ 5000 : 1                                                                                                                                                                                                                                                                                                                                                                                        |                        |                |          |
| LCD Color               | ▪ 16.7M                                                                                                                                                                                                                                                                                                                                                                                           |                        |                |          |
| Pixel Pitch (mm)        | ▪ 0.24825 (H) x 0.24825 (V)                                                                                                                                                                                                                                                                                                                                                                       |                        |                |          |
| Viewing Angle (H-V)     | ▪ 178 / 178                                                                                                                                                                                                                                                                                                                                                                                       |                        |                |          |
| Backlight MTBF          | ▪ 50,000 hrs (LED Backlight)                                                                                                                                                                                                                                                                                                                                                                      |                        |                |          |
| Touch Screen            |                                                                                                                                                                                                                                                                                                                                                                                                   |                        |                |          |
| Touch Type              | ▪ Resistive 5-wire                                                                                                                                                                                                                                                                                                                                                                                | ▪ Projected Capacitive | ▪ Glass Screen |          |
| Physical                |                                                                                                                                                                                                                                                                                                                                                                                                   |                        |                |          |
| Dimension ( W x D x H ) | ▪ 550 x 330.5 x 63.2mm                                                                                                                                                                                                                                                                                                                                                                            |                        |                |          |
| Weight Information      | ▪ 5.56 kg                                                                                                                                                                                                                                                                                                                                                                                         |                        |                |          |
| Mechanical Construction | ▪ Die-Casting Flat Surface                                                                                                                                                                                                                                                                                                                                                                        |                        |                |          |
| Environment             |                                                                                                                                                                                                                                                                                                                                                                                                   |                        |                |          |
| Front Panel Protection  | ▪ IP 65 Compliant                                                                                                                                                                                                                                                                                                                                                                                 |                        |                |          |
| Operating Temperature   | ▪ 0°C to 60°C (with Industrial Grade peripherals; Ambient with air flow)                                                                                                                                                                                                                                                                                                                          |                        |                |          |
| Storage Temperature     | ▪ -20°C to 60°C                                                                                                                                                                                                                                                                                                                                                                                   |                        |                |          |
| Relative Humidity       | ▪ 80% RH @ 50°C (Non-condensing)                                                                                                                                                                                                                                                                                                                                                                  |                        |                |          |
| EMC                     | ▪ CE, UKCA, FCC, ICES-003 Class A                                                                                                                                                                                                                                                                                                                                                                 |                        |                |          |
| EMI                     | ▪ CISPR 32 Conducted & Radiated: Class A<br>▪ EN/BS EN 55032 Conducted & Radiated: Class A<br>▪ EN/BS EN IEC 61000-3-2 Harmonic current emissions: Class A<br>▪ EN/BS EN61000-3-3 Voltage fluctuations & flicker<br>▪ FCC 47 CFR Part 15B, ICES-003 Conducted & Radiated: Class A                                                                                                                 |                        |                |          |
| EMS                     | ▪ EN/IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV<br>▪ EN/IEC 61000-4-3 RS: 80 MHz to 1000 MHz: 3 V/m<br>▪ EN/IEC 61000-4-4 EFT: AC Power: 1 kV; DC Power: 0.5 kV; Signal: 0.5 kV<br>▪ EN/IEC 61000-4-5 Surges: AC Power: 2 kV; Signal: 1 kV<br>▪ EN/IEC 61000-4-6 CS: 3V<br>▪ EN/IEC 61000-4-8 PFMF: 50 Hz, 1A/m<br>▪ EN/IEC 61000-4-11 Voltage Dips & Voltage Interruptions: 0.5 cycles at 50 Hz |                        |                |          |
| Safety                  | ▪ UL, cUL, CB, IEC, EN 62368-1                                                                                                                                                                                                                                                                                                                                                                    |                        |                |          |

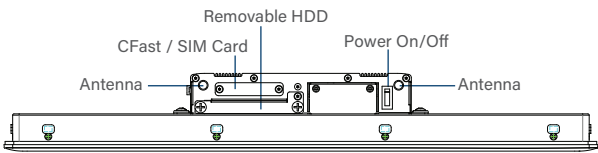
P1001 Series Specifications

| Model Name                                  | P1001                                                                                                       | P1001E                     |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------|----------------------------|
| System                                      |                                                                                                             |                            |
| Processor                                   | ▪ Onboard Intel® Atom™ Processor E3845 Quad Core, 1.91 GHz                                                  |                            |
| Memory                                      | ▪ 1x DDR3L 1066/1333 MHz SO-DIMM Socket (un-buffered and non-ECC)<br>▪ Support up to 8 GB                   |                            |
| BIOS                                        | ▪ AMI 64Mbit SPI BIOS                                                                                       |                            |
| Graphics                                    |                                                                                                             |                            |
| CDS (Convertible Display System) Technology | ▪ 1x Convertible Display System (CDS) Interface                                                             |                            |
| VGA                                         | ▪ 1x VGA Connector (1920x1080@60Hz)                                                                         |                            |
| DP                                          | ▪ 1x DisplayPort Connector (1920x1080@60Hz)                                                                 |                            |
| Audio                                       |                                                                                                             |                            |
| Line-out                                    | ▪ 1x Line-out, Phone Jack 3.5mm                                                                             |                            |
| Mic-in                                      | ▪ 1x Mic-in, Phone Jack 3.5mm                                                                               |                            |
| I/O                                         |                                                                                                             |                            |
| LAN                                         | ▪ 2x GbE LAN (Supports WoL, Teaming, Jumbo Frame & PXE), RJ45<br>- GbE1: Intel® I210<br>- GbE2: Intel® I210 |                            |
| USB                                         | ▪ 1x USB 3.2 Gen1 (Type A), 3x USB 2.0 (Type A)                                                             |                            |
| Serial Port                                 | ▪ 2x RS-232/422/485 with Auto Flow Control Support, DB9                                                     |                            |
| DIO                                         | ▪ 8x Isolated Digital I/O (4in/4out)                                                                        |                            |
| Storage                                     |                                                                                                             |                            |
| SSD/HDD                                     | ▪ 1x 2.5” HDD/SSD Drive                                                                                     |                            |
| SIM Card                                    | ▪ 1x Front Accessible SIM Socket                                                                            |                            |
| CFast                                       | ▪ 1x Front Accessible CFast Socket                                                                          |                            |
| Expansion                                   |                                                                                                             |                            |
| Mini PCI Express                            | ▪ 1x Full-size Mini-PCIe Socket for Wi-Fi/GSM/Expansion Module                                              |                            |
| Universal Bracket                           |                                                                                                             | ▪ 2x Universal I/O Bracket |
| Other Function                              |                                                                                                             |                            |
| 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                                                                                           |                            |
| Power                                       |                                                                                                             |                            |
| 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                                                                             |                            |

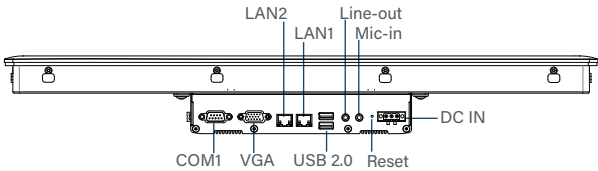
| Physical                 |                                                                                                                                                                                                                                                                                                                                                                                                   |                       |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Dimension ( W x D x H )  | ▪ 204.5 x 149 x 37.5 mm                                                                                                                                                                                                                                                                                                                                                                           | ▪ 204.5 x 150 x 60 mm |
| Weight Information       | ▪ 1.34kg                                                                                                                                                                                                                                                                                                                                                                                          | ▪ 1.54kg              |
| Mechanical Construction  | ▪ Extruded Aluminum with Heavy Duty Metal                                                                                                                                                                                                                                                                                                                                                         |                       |
| Mounting                 | ▪ Wall / VESA / CDS Mounting                                                                                                                                                                                                                                                                                                                                                                      |                       |
| Physical Design          | ▪ Fanless Design<br>▪ Jumper-less Design                                                                                                                                                                                                                                                                                                                                                          |                       |
| Reliability & Protection |                                                                                                                                                                                                                                                                                                                                                                                                   |                       |
| Reverse Power Input      | ▪ Yes                                                                                                                                                                                                                                                                                                                                                                                             |                       |
| Over Voltage Protection  | ▪ Protection Range: 51~58V<br>▪ Protection Type: shut down operating voltage, re-power on at the present level to recover                                                                                                                                                                                                                                                                         |                       |
| Over Current Protection  | ▪ 20A                                                                                                                                                                                                                                                                                                                                                                                             |                       |
| Operating System         |                                                                                                                                                                                                                                                                                                                                                                                                   |                       |
| Microsoft® Windows®      | ▪ Windows® 10, Windows® 8, Windows® 7<br>▪ Windows® Embedded 8 Standard, Windows® Embedded Standard 7                                                                                                                                                                                                                                                                                             |                       |
| Linux                    | ▪ Supports by project                                                                                                                                                                                                                                                                                                                                                                             |                       |
| Environment              |                                                                                                                                                                                                                                                                                                                                                                                                   |                       |
| Operating Temperature    | ▪ Ambient with Air Flow: -20°C to 70°C (with Industrial Grade Peripherals)                                                                                                                                                                                                                                                                                                                        |                       |
| Storage Temperature      | ▪ -30°C to 85°C                                                                                                                                                                                                                                                                                                                                                                                   |                       |
| Relative humidity        | ▪ 10%~95% RH (Non-condensing)                                                                                                                                                                                                                                                                                                                                                                     |                       |
| Shock                    | ▪ Operating, 15 Grms, Half-sine 11 ms Duration (w/ SSD, according to IEC60068-2-27)                                                                                                                                                                                                                                                                                                               |                       |
| Vibration                | ▪ Operating, 1 Grms, 5-500 Hz, 3 Axes (w/ SSD, according to IEC60068-2-64)                                                                                                                                                                                                                                                                                                                        |                       |
| EMC                      | ▪ CE, UKCA, FCC, ICES-003 Class A                                                                                                                                                                                                                                                                                                                                                                 |                       |
| EMI                      | ▪ CISPR 32 Conducted & Radiated: Class A<br>▪ EN/BS EN 55032 Conducted & Radiated: Class A<br>▪ EN/BS EN IEC 61000-3-2 Harmonic current emissions: Class A<br>▪ EN/BS EN61000-3-3 Voltage fluctuations & flicker<br>▪ FCC 47 CFR Part 15B, ICES-003 Conducted & Radiated: Class A                                                                                                                 |                       |
| EMS                      | ▪ EN/IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV<br>▪ EN/IEC 61000-4-3 RS: 80 MHz to 1000 MHz: 3 V/m<br>▪ EN/IEC 61000-4-4 EFT: AC Power: 1 kV; DC Power: 0.5 kV; Signal: 0.5 kV<br>▪ EN/IEC 61000-4-5 Surges: AC Power: 2 kV; Signal: 1 kV<br>▪ EN/IEC 61000-4-6 CS: 3V<br>▪ EN/IEC 61000-4-8 PFMF: 50 Hz, 1A/m<br>▪ EN/IEC 61000-4-11 Voltage Dips & Voltage Interruptions: 0.5 cycles at 50 Hz |                       |

CV-W121/P1001 External Layout

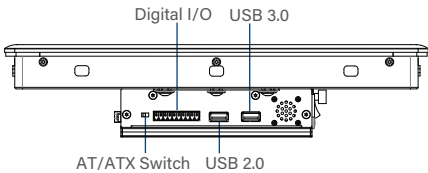
Front I/O



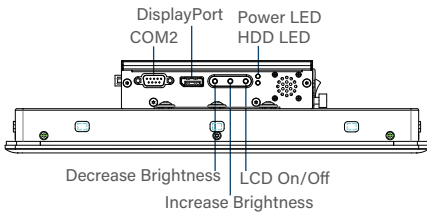
Rear I/O



Left I/O

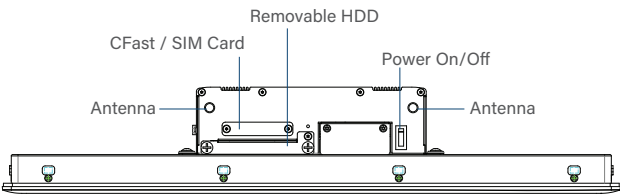


Right I/O

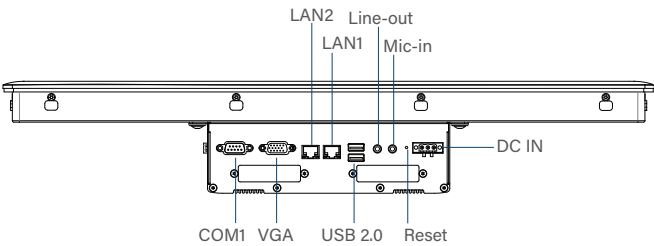


CV-W121/P1001E External Layout

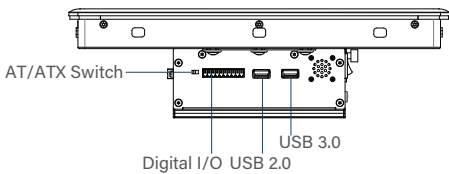
Front I/O



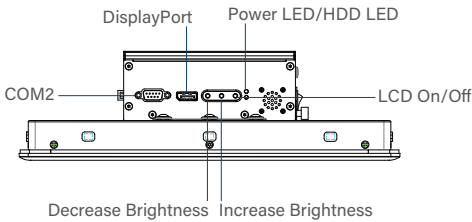
Rear I/O



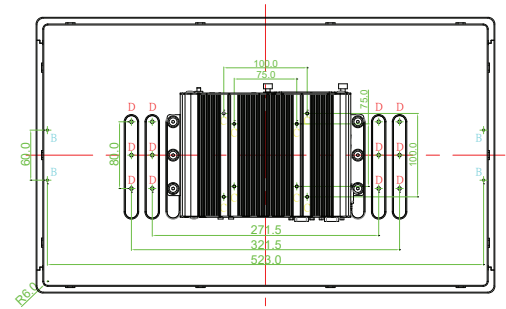
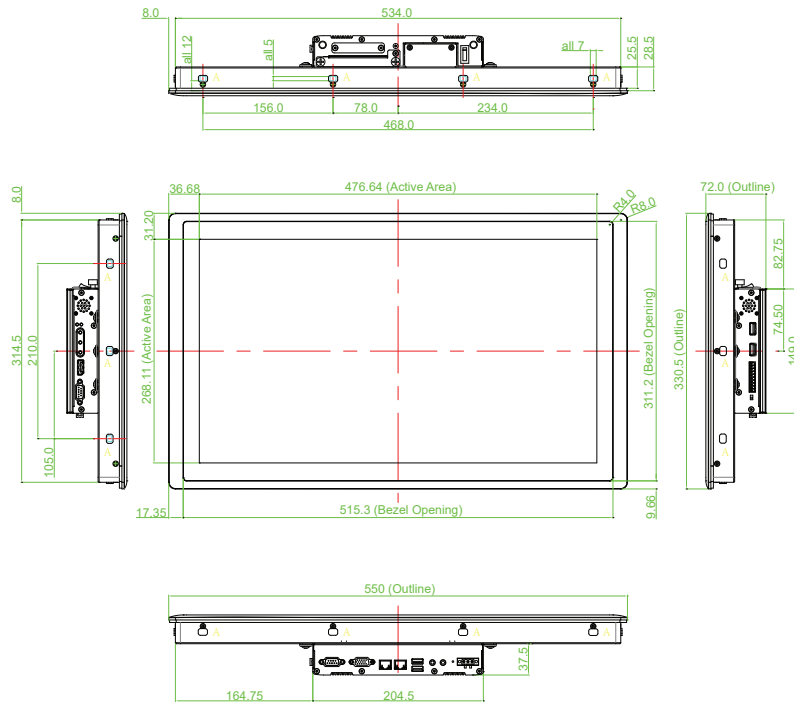
Left I/O



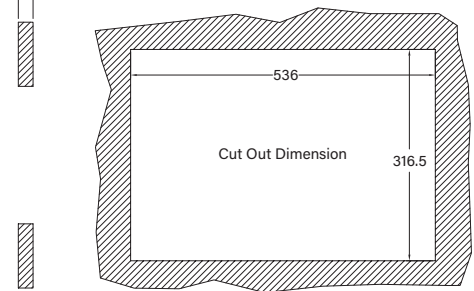
Right I/O



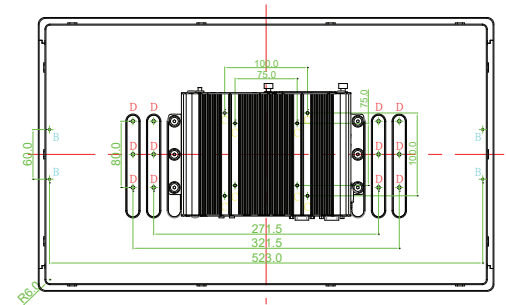
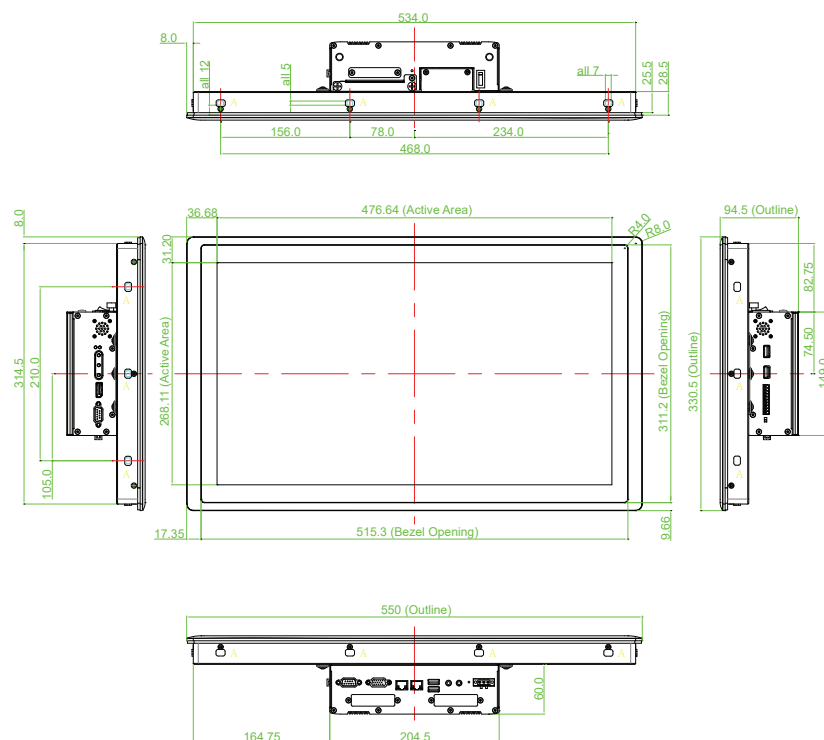
## CV-W121/P1001 Dimensions



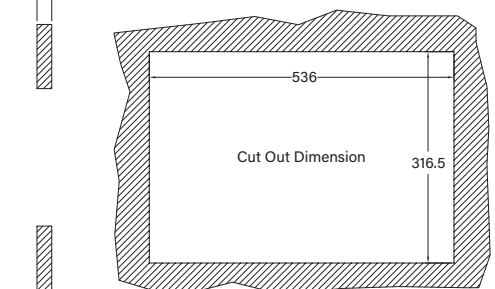
5.5 (Max. Wall Thickness)



## CV-W121/P1001E Dimensions



5.5 (Max. Wall Thickness)



Unit: mm

## Ordering Information

### Available Models

| Model No.               | Description                                                                                                                                                               |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CV-W121R-R10/P1001-R10  | 21.5" TFT Full HD 16:9 Panel PC with Resistive 5-wire Touch and Intel® Atom™ E3845 Quad Core PC Module, 4x USB, 2x COM, 1x VGA, 1x DisplayPort                            |
| CV-W121C-R11/P1001-R10  | 21.5" TFT Full HD 16:9 Panel PC with Projected Capacitive Touch and Intel® Atom™ E3845 Quad Core PC Module, 4x USB, 2x COM, 1x VGA, 1x DisplayPort                        |
| CV-W121G-R10/P1001-R10  | 21.5" TFT Full HD 16:9 Panel PC without Touch and Intel® Atom™ E3845 Quad Core PC Module, 4x USB, 2x COM, 1x VGA, 1x DisplayPort                                          |
| CV-W121R-R10/P1001E-R10 | 21.5" TFT Full HD 16:9 Panel PC with Resistive 5-wire Touch and Intel® Atom™ E3845 Quad Core PC Module, 4x USB, 2x COM, 1x VGA, 1x DisplayPort, 2x Universal Brackets     |
| CV-W121C-R11/P1001E-R10 | 21.5" TFT Full HD 16:9 Panel PC with Projected Capacitive Touch and Intel® Atom™ E3845 Quad Core PC Module, 4x USB, 2x COM, 1x VGA, 1x DisplayPort, 2x Universal Brackets |
| CV-W121G-R10/P1001E-R10 | 21.5" TFT Full HD 16:9 Panel PC without Touch and Intel® Atom™ E3845 Quad Core PC Module, 4x USB, 2x COM, 1x VGA, 1x DisplayPort, 2x Universal Brackets                   |

### Model Configuration

|                 | CV-W121R | CV-W121C | CV-W121G | P1001 | P1001E |
|-----------------|----------|----------|----------|-------|--------|
| CV-W121R/P1001  | V        | --       | --       | V     | --     |
| CV-W121C/P1001  | --       | V        | --       | V     | --     |
| CV-W121G/P1001  | --       | --       | V        | V     | --     |
| CV-W121R/P1001E | V        | --       | --       | --    | V      |
| CV-W121C/P1001E | --       | V        | --       | --    | V      |
| CV-W121G/P1001E | --       | --       | V        | --    | V      |

V : Compatible

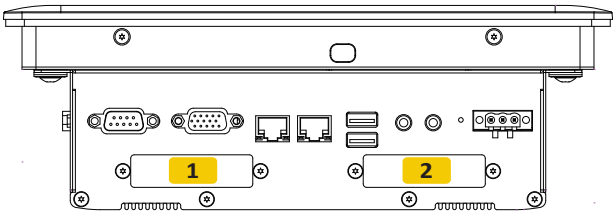
### Package Checklist

|                                             |                                               |
|---------------------------------------------|-----------------------------------------------|
| • CV-W121/P1001 Series Panel PC x 1         | • Power Terminal Block Connector (Female) x 1 |
| • Panel Mounting Kit x 1                    | • Screw Pack x 1                              |
| • DIO Terminal Block Connector (Female) x 1 |                                               |

Optional Modules and Accessories

| Model No.        | Description                                                                           |
|------------------|---------------------------------------------------------------------------------------|
| MEC-COM-M212-DB9 | Mini-PCle Module with 2x COM Ports, 1x Standard DB9 Cable (For P1001E only)           |
| MEC-LAN-M102-30  | Mini-PCle Module with 2x LAN Ports, 2x 30cm cable (For P1001E only)                   |
| MEC-USB-M102-30  | Mini-PCle Module with 2x USB 3.2 Gen1 Ports, 1x 30cm cable (For P1001E only)          |
| UB0303           | 2x Universal Bracket each with 1x DB9 Cutout (For P1001E only)                        |
| UB0311           | 1x Universal Bracket with 2x RJ45 Cutout (For P1001E only)                            |
| UB0314           | 1x Universal Bracket with 2x USB Cutout (For P1001E only)                             |
| URM01            | Universal 19" Rack Mount Kit for Industrial Panel PC & Industrial Monitor             |
| 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 SL-2+SL-3        |
| SL6-SL3          | EU 2 heads power cord, EU G type to IEC C13, H05VV-F 0.75mm2/3G Black 1.8M SL-6+SL-3  |
| QP026-SL3        | UK 2 heads power cord, UK I type to IEC C13, H05VV-F 0.75mm2/3G Black 1.8M QP026+SL-3 |

Optional Module Configuration (For P1001E only)



| Model No.                                                                                                              | Description                                                                                             | 1 | 2 |
|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|---|---|
| <div>MEC-COM-M212-DB9/UB0303</div>  | Mini-PCle Module with 2x COM Ports, 1x Standard DB9 Cable, 2x Universal Bracket each with 1x DB9 Cutout | V | V |
| <div>MEC-LAN-M102-30/UB0311</div>   | Mini-PCle Module with 2x LAN Ports, 2x 30cm cable, w/ 1x Universal Bracket with 2x RJ45 Cutout          | V | V |
| <div>MEC-USB-M102-30/UB0314</div>   | Mini-PCle Module with 2x USB 3.2 Gen1 Ports, 1x 30cm cable, 1x Universal Bracket with 2x USB Cutout     | V | V |

V : Compatible