CV-W115FH/P2302 Series

15.6" TFT FHD 16:9 Display Modular Panel PC with Intel Meteor Lake-PS Core Series (LGA Socket) Slim / Expandable Embedded Computer

HIGH PERFORMANCE INDUSTRIAL PANEL PC
| CV-100/P2000 Series |

Overview

📧 CONTACT

The CV-100/P2302 series is a high-performance modular industrial panel PC with an Intel® Core™ Ultra U-series (Meteor Lake-PS) Processors, a comprehensive selection of screen sizes, and flexible expansion. It includes a rich set of native I/O interfaces (2.5 GbE LAN, USB 3.2 Gen 2x1, COM, and DIO), has M.2 Key B Type 3042/3052 Socket , M.2 Key E Type 2230 expansion slots, and supports the exclusive CFM expansion module to add PoE and IGN functions. Cincoze's exclusive CDS patented technology provides flexibility for future computer performance upgrades or display replacements. The rugged CV-100/P2302 series can meet the diverse applications of equipment machine HMI and production process visualization.
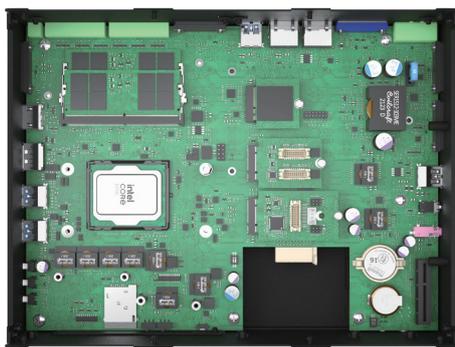
Key Features

- 15.6" TFT FHD 16:9 LCD with Resistive 5-wire / Projected Capacitive Touch
- Intel® Meteor Lake-PS Core™ Ultra 7/5/3 Processor
- 2 x DDR5 SO-DIMM Socket, Supports up to 5600MHz 64GB Memory
- Quad Independent Display (CDS / HDMI / DP / VGA)
- 1x M.2 Key E Type 2230 Socket for Wireless / Bluetooth Module Expansion
- 1 x M.2 Key B Type 3052/3042 Socket for 5G/Storage/Add-on Card Expansion
- 1x M.2 Key B Type 3042 Socket for Storage/Add-on Card Expansion
- Designed with Aluminum Die-cast Front Bezel
- Front Panel IP65 Compliant

Improved Performance x Power-Saving x AI Boost

The CV-100/P2302 series supports Intel® 4 Core Ultra i7/i5/i3 U Series (Meteor Lake-PS) processors with up to 12 cores and 15W low power consumption, providing 1.8 times the performance of the previous model. The new built-in Intel NPU delivers faster and more efficient AI acceleration capabilities for high-volume image processing and AI recognition.

intel CORE ULTRA 3 **intel CORE** ULTRA 7 **intel CORE** ULTRA 5

1.8x Faster Processing Power

Meteor Lake PS

Alder Lake-P

High Flexibility, Unlimited Applications

The CV-100/P2302 series offers outstanding flexibility, supporting Core Ultra U-series LGA CPUs for customizable performance. It features M.2 Key B/E slots for 5G, Wi-Fi, Bluetooth, NVMe SSDs, and I/O expansion. The CV-100/P2302E further supports PCI/PCIe slots for expansion cards (up to 75W, 111 × 169 mm), enabling diverse applications.

CDS Technology

Our exclusive CDS (Convertible Display System) technology enables easy maintenance in the field and simplifies future upgrades. Replacing the display or improving system performance only requires replacing a single component, significantly saving upgrade costs.

CDS Convertible Display System

Complete Range of Sizes

The CV-100/P2302 series has a diverse product portfolio, ranging from screen size (12" – 24"), display ratio (4:3 / 5:4 / 16:9) to touch methods (projected capacitive and single-point resistive), selectable according to application needs.
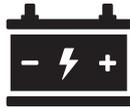
9 - 48VDC

IP65

Rugged, Safe, and More Reliable

The CV-100/P2302 series has multiple industrial-grade protections for applications in harsh industrial environments such as field-side HMI or production process visualization. Industrial-grade protections include wide temperature design, wide voltage design, and waterproof and dustproof IP65 front panel.

CV-W115FH Series Specifications

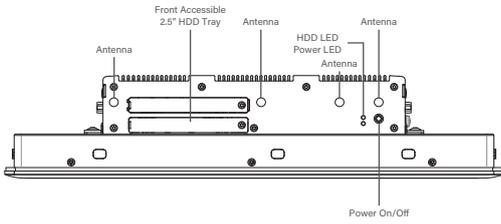| Model Name	CV-W115FHR	CV-W115FHC
Display		
LCD Size	▪ 15.6" (16:9)	
Max. Resolution	▪ 1920 x 1080 (Full HD)	
Brightness (cd/m2)	▪ 350	
Contrast Ratio	▪ 800 : 1	
LCD Color	▪ 16.7M	
Pixel Pitch (mm)	▪ 0.17925(H) x 0.17925 (W)	
Viewing Angle (H-V)	▪ 178 / 178	
Backlight LED Life Time	▪ 50,000 hrs (LED Backlight)	
Touch Screen		
Touch Type	▪ Resistive 5-wire	▪ Projected Capacitive
Physical		
Dimension (W x D x H)	▪ 420 x 254 x 66.2 mm	
Weight Information	▪ TBC	
Mechanical Construction	▪ Die-Casting Flat Surface	
Power		
Power Consumption	▪ 11.5W (Max.)	▪ 11.45W (Max.)
Environment		
Front Panel Protection	▪ IP 65 Compliant	
Operating Temperature	▪ -20°C to 70°C (with Industrial Grade peripherals; Ambient with air flow)	
Storage Temperature	▪ -40°C to 80°C	
Relative Humidity	▪ 90% RH @ 39°C (Non-condensing)	
EMC	▪ CE, UKCA, FCC, ICES-003 Class A	
EMI	▪ CISPR 32 Conducted & Radiated: Class A ▪ EN/BS EN 55032 Conducted & Radiated: Class A ▪ EN/BS EN IEC 61000-3-2 Harmonic current emissions: Class A ▪ EN/BS EN61000-3-3 Voltage fluctuations & flicker ▪ FCC 47 CFR Part 15B, ICES-003 Conducted & Radiated: Class A	
EMS	▪ EN/IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV ▪ EN/IEC 61000-4-3 RS: 80 MHz to 1000 MHz: 3 V/m ▪ EN/IEC 61000-4-4 EFT: AC Power: 1 kV; DC Power: 0.5 kV; Signal: 0.5 kV ▪ EN/IEC 61000-4-5 Surges: AC Power: 2 kV; Signal: 1 kV ▪ EN/IEC 61000-4-6 CS: 3V ▪ EN/IEC 61000-4-8 PFMF: 50 Hz, 1A/m ▪ EN/IEC 61000-4-11 Voltage Dips & Voltage Interruptions: 0.5 cycles at 50 Hz	
Safety	▪ UL, cUL, CB, IEC, EN 62368-1	

P2302 Specifications

Model Name	P2302	P2302E
System		

Processor	▪ Intel® Meteor Lake-PS Core™ Ultra 7/5/3 Processor
	  - Intel® Core™ Ultra 7 Processor 165UL 12 Cores Up to 4.9 GHz, TDP 15W
	  - Intel® Core™ Ultra 7 Processor 155UL 12 Cores Up to 4.8 GHz, TDP 15W
	  - Intel® Core™ Ultra 5 Processor 135UL 12 Cores Up to 4.4 GHz, TDP 15W
	  - Intel® Core™ Ultra 5 Processor 125UL 12 Cores Up to 4.3 GHz, TDP 15W
	  - Intel® Core™ Ultra 3 Processor 105UL 8 Cores Up to 4.2 GHz, TDP 15W	

Memory	▪ 2x DDR5 5600 MHz SO-DIMM Socket, Supports Un-buffered and ECC Type, Up to 64 GB	
BIOS	▪ AMI BIOS	
Graphics		
Graphics Engine	▪ Intel® Graphics	
Maximum Display Output	▪ Supports Quad Independent Display	
CDS	▪ 1x CDS Connector (1920 x 1080 @60Hz)	
DP	▪ 1x DisplayPort Connector (4096 x 2304 @60Hz) * Verified maximum resolution: 3840 x 2160 @ 60Hz	
HDMI	▪ 1x HDMI Connector (3840 x 2160 @30Hz)	
VGA	▪ 1x VGA Connector (1920 x 1080 @60Hz)	
Audio		
Audio Codec	Realtek® ALC888, High Definition Audio	
Line-out	▪ 1x Line-out, Phone Jack 3.5mm	
Mic-in	▪ 1x Mic-in, Phone Jack 3.5mm	
I/O		

LAN	▪ 2x 2.5GbE LAN, RJ45
	  - GbE1: Intel® I225
	  - GbE2: Intel® I225	

COM	▪ 4x RS-232/422/485 with Auto Flow Control (Supports 5V/12V), DB9	
USB	▪ 2 x USB 3.2 Gen2x1 (10Gbps), Type A ▪ 1 x USB 3.2 Gen1x1 (5Gbps), Type A ▪ 1 x USB 2.0 (480Mbps), Type A	
DIO	▪ 16x Isolated Digital I/O (8in/8out), 20-Pin Terminal Block	
Storage		
SSD/HDD	▪ 2x 2.5" SATA HDD/SSD Bay (SATA 3.0)	
M.2 SSD	▪ 1x M.2 SSD Shared by M.2 Key B Type 3042/3052 Socket, Support PCIe Gen 4x2 NVMe SSD ▪ 1x M.2 SSD Shared by M.2 Key B Type 3042 Socket, Support PCIe Gen 3x2 NVMe SSD	
RAID	▪ RAID 0/1	
Expansion		
M.2 Key E Socket	▪ 1x M.2 Key E Type 2230 Socket (PCIe Gen 3x1 / USB2.0), Support Wireless/Bluetooth Module Expansion	
M.2 Key B Socket	▪ 1x M.2 Key B Type 3042/3052 Socket (PCIe Gen 4x2 / USB3.2 Gen2 x1 / USB2.0), Support 5G/Storage/Add-on Card Expansion ▪ 1x M.2 Key B Type 3042 (PCIe Gen 3x2), Support Storage/Add-on Card Expansion	

PCI Express		▪ 1x PCI or 1x PCIe Gen3 x4 Expansion slot
		  (with Optional Riser Card)
		▪ Supports maximum dimensions of add-on card (H x L) :
		  111 x 169mm

SIM Socket	▪ 1 x Front Accessible SIM Socket
CFM (Control Function Module) Interface	▪ 1x CFM Interface for optional IGN Module Expansion ▪ 1x CFM Interface for optional PoE Module Expansion
CDS (Convertible Display System) Interface	▪ 1x CDS Interface for Convertible Display Module

Other Function

Clear CMOS Switch	▪ 1x Clear CMOS Switch
Reset Button	▪ 1x Reset Button
Instant Reboot	▪ Support 0.2sec Instant Reboot Technology
Watchdog Timer	▪ Software Programmable Supports 256 Levels System Reset
OSD Button	▪ LCD On/Off, Brightness Up, Brightness Down
Internal Speaker	▪ AMP 2W + 2W
Status LED Indicator	▪ Power LED, Storage LED
Antenna Holes	▪ 6x Antenna Holes

Power

Power Button	▪ 1x ATX Power On/Off Button
Power Mode Switch	▪ 1x AT/ATX Mode Switch
Power Input	▪ 9 - 48VDC, 3-pin Terminal Block
Remote Power On/Off	▪ 1x Remote Power On/Off, 2-pin Terminal Block

Max. Power Consumption	▪ Intel Core™ Ultra 7 Processor 165UL: 79.7W
	  - Test conducted with CPU, 1x RAM, and 1x storage
	  - 100% load during burn-in testing

Inrush Current (Peak)	▪ Intel Core™ Ultra 7 Processor 165UL: 5.010 A@24V

Operating System

Windows	▪ Windows®11, Windows®10
Linux	▪ Ubuntu Desktop 24.04 LTS

Physical

Dimension(W x D x H)	▪ 254.5 x 190 x 49.5 mm	▪ 254.5 x 190 x 69 mm
Weight Information	▪ 2.16 kg	▪ 2.26 kg
Mechanical Construction	▪ Extruded Aluminum with Heavy Duty Metal	
Mounting	▪ Wall / VESA / CDS / DIN Rail	
Physical Design	▪ Fanless Design ▪ Jumper-less Design	

Reliability & Protection

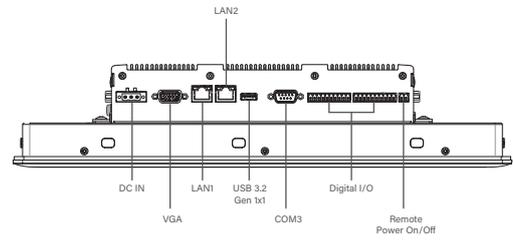| Reverse Power Input Protection	▪ Yes
Over Voltage Protection	▪ Protection Range: 51~58V ▪ Protection Type: shut down operating voltage, re-power on at the preset level to recover
Over Current Protection	▪ 15A
CMOS Battery Backup	▪ SuperCap Integrated for CMOS Battery Maintenance-free Operation
MTBF	▪ TBC Hours - Database: Telcordia SR-332 Issue3, Method 1, Case 3

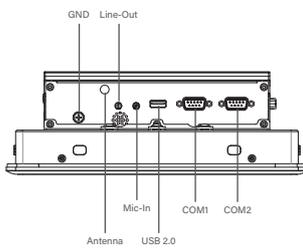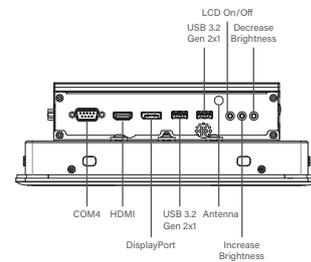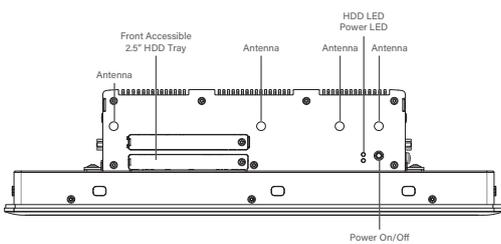| Environment	

Operating Temperature	▪ -40°C to 65°C
	  * PassMark BurnIn Test: 100% CPU, 2D/3D Graphics (without thermal throttling)
	  * With extended temperature peripherals; Ambient with air flow
	  * According to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14

Storage Temperature	▪ -40°C to 65°C
Relative Humidity	▪ 95%RH @ 65°C (non-Condensing)
Shock	▪ Operating, 50 Grms (w/ SSD, according to IEC60068-2-27)
Vibration	▪ Operating, 1 Grms, 10-500 Hz, 3 Axes (w/ SSD, according to IEC60068-2-6) ▪ Operating, 5 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 ▪ EN/BS EN 55032 Conducted & Radiated: Class A ▪ EN/BS EN IEC 61000-3-2 Harmonic current emissions: Class A ▪ EN/BS EN61000-3-3 Voltage fluctuations & flicker ▪ FCC 47 CFR Part 15B, ICES-003 Conducted & Radiated: Class A
EMS	▪ EN/IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV ▪ EN/IEC 61000-4-3 RS: 80 MHz to 1000 MHz: 10 V/m ▪ EN/IEC 61000-4-4 EFT: AC Power: 2 kV; DC Power: 1 kV; Signal: 1 kV ▪ EN/IEC 61000-4-5 Surges: AC Power: 2 kV; Signal: 1 kV ▪ EN/IEC 61000-4-6 CS: 10V ▪ EN/IEC 61000-4-8 PFMF: 50 Hz, 30A/m ▪ EN/IEC 61000-4-11 Voltage Dips & Voltage Interruptions: 1 cycles at 60 Hz

Industrial Environment	▪ EMC
	  - EN/BS/IEC 61000-6-4: 2019 Class A
	  - EN/BS/IEC 61000-6-2: 2019

CV-W115FH/P2302 External Layout

Front I/O

Antenna
Front Accessible 2.5" HDD Tray
Antenna
Antenna
HDD LED
Power LED
Antenna

Power On/Off

Rear I/O

LAN2

DC IN
LAN1
USB 3.2 Gen 1x1
Digital I/O
VGA
COM3
Remote Power On/Off

Left I/O

GND
Line-Out

Mic-In
COM1
COM2
Antenna
USB 2.0

Right I/O

LCD On/Off
USB 3.2 Gen 2x1
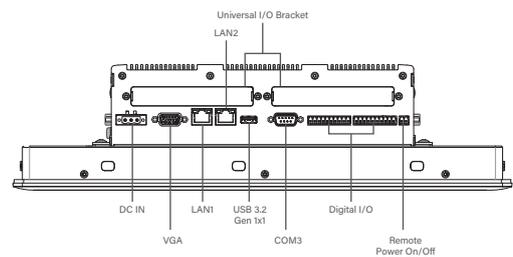Decrease Brightness

COM4
HDMI
USB 3.2 Gen 2x1
Antenna
DisplayPort
Increase Brightness

CV-W115FH/P2302E External Layout

Front I/O

Antenna
Front Accessible 2.5" HDD Tray
Antenna
HDD LED
Power LED
Antenna
Antenna

Power On/Off

Rear I/O

Universal I/O Bracket
LAN2

DC IN
LAN1
USB 3.2 Gen 1x1
Digital I/O
VGA
COM3
Remote Power On/Off

Left I/O

GND
Line-Out

Antenna
Mic-In
COM1
COM2
USB 2.0

Right I/O

LCD On/Off
USB 3.2 Gen 2x1
Decrease Brightness

COM4
HDMI
USB 3.2 Gen 2x1
Antenna
DisplayPort
Increase Brightness
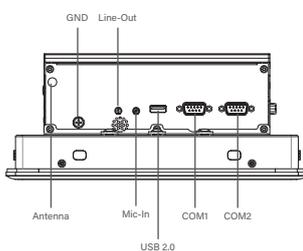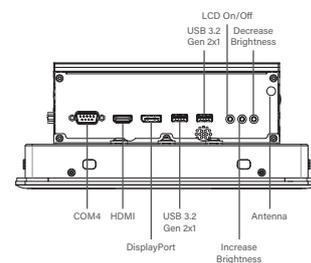
CV-W115FH/P2302 Dimensions

C4305(t=3.0mm)

5.5 (Max. Wall Thickness)

Cut Out Dimension
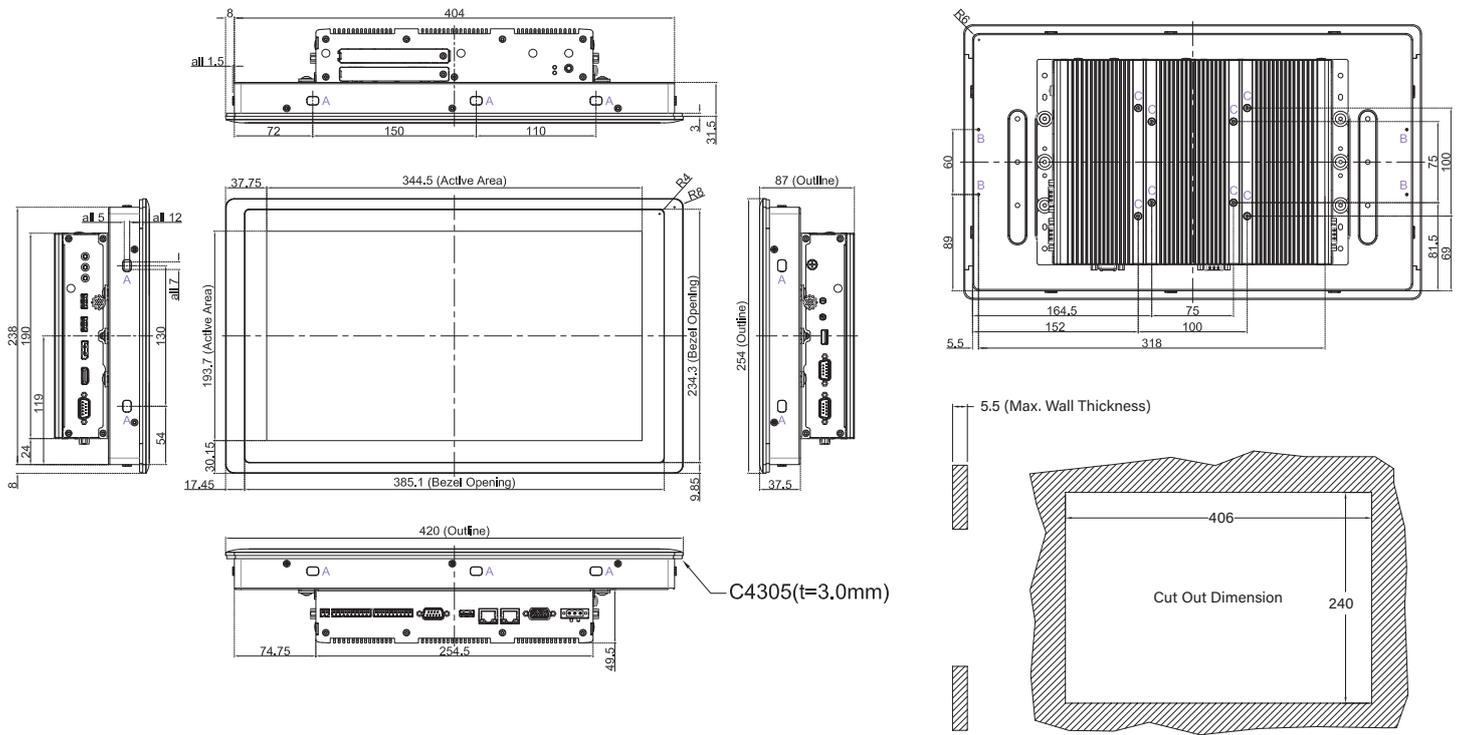
CV-W115FH/P2302E Dimensions

C4305(t=3.0mm)

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Cut Out Dimension

Unit: mm
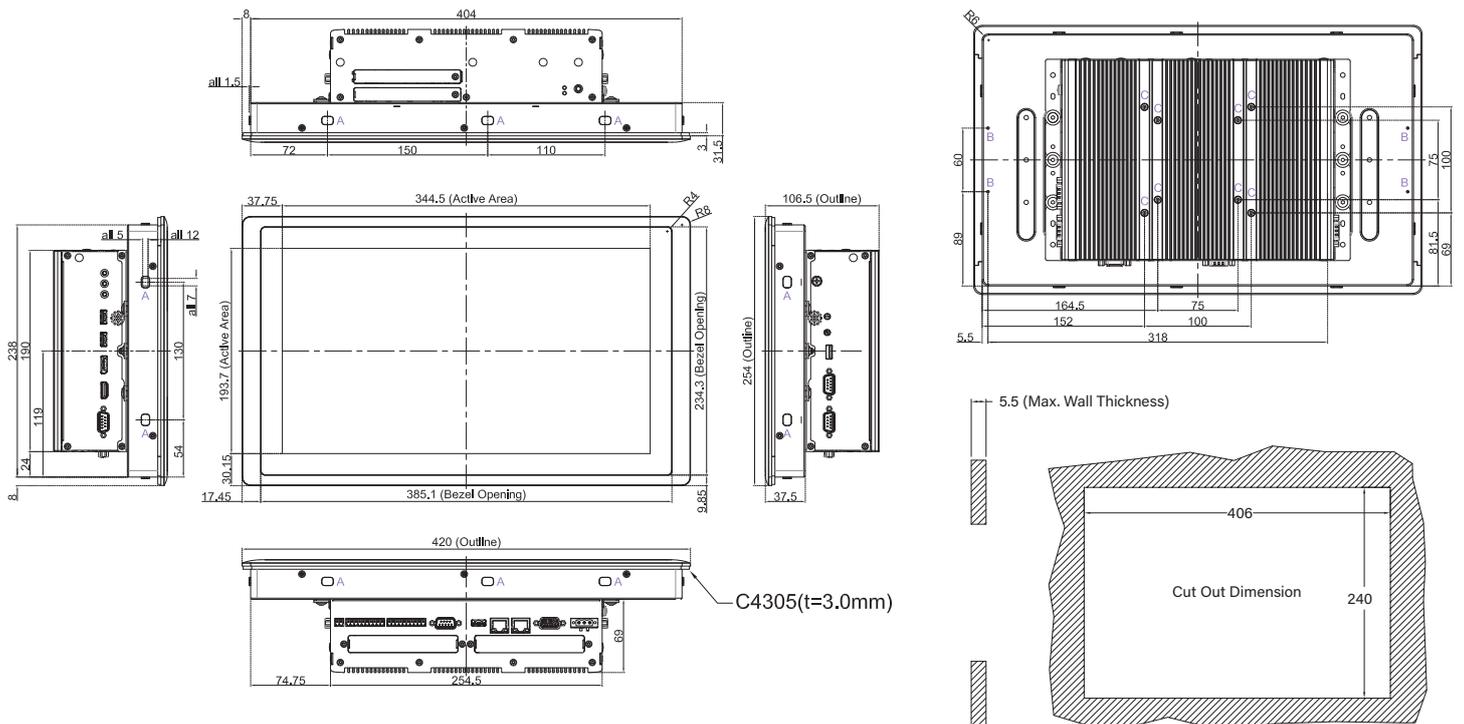
Ordering Information

Available Models

Model No.	Description
CV-W115FHR-R10/P2302-R10	15.6" TFT-LCD Full HD 16:9 Display Modular Panel PC with Intel Meteor Lake-PS Core Series (LGA Socket) Slim Embedded Computer and Resistive 5-wire Touch
CV-W115FHR-R10/P2302E-R10	15.6" TFT-LCD Full HD 16:9 Display Modular Panel PC with Intel Meteor Lake-PS Core Series (LGA Socket) Expandable Embedded Computer, Supporting 1x PCI/PCIe Expansion Card and Resistive 5-wire Touch
CV-W115FHC-R10/P2302-R10	15.6" TFT-LCD Full HD 16:9 Display Modular Panel PC with Intel Meteor Lake-PS Core Series (LGA Socket) Slim Embedded Computer and Projected Capacitive Touch
CV-W115FHC-R10/P2302E-R10	15.6" TFT-LCD Full HD 16:9 Display Modular Panel PC with Intel Meteor Lake-PS Core Series (LGA Socket) Expandable Embedded Computer, Supporting 1x PCI/PCIe Expansion Card and Projected Capacitive Touch

Model Configuration

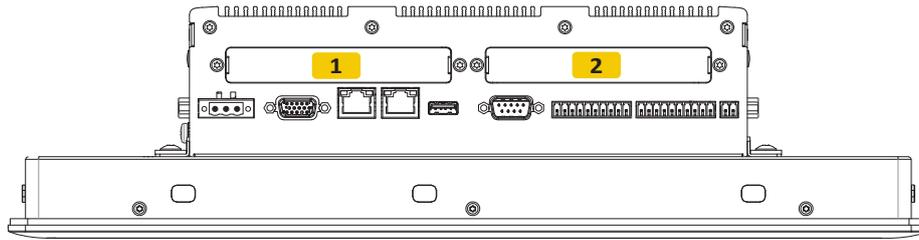|	CV-W115FHR	CV-W115FHC	P2302	P2302E
CV-W115FHR/P2302	V	--	V	--
CV-W115FHC/P2302	--	V	V	--
CV-W115FHR/P2302E	V	--	--	V
CV-W115FHC/P2302E	--	V	--	V

V : Compatible

Package Checklist

- CV-W115FH/P2302 Series Panel PC x1
- PCI / PCIe Card Installation Kit x1 (For P2302E Only)
- Power Terminal Block x1
- Screw Pack x4
- Remote Power On/Off Terminal Block Connector x1
- Heatsink Kit x1
- DIO Terminal Block Connector x2
- M.2 Key B Type 3052 to 3042 Adapter Bracket x1
- Panel Mounting Kit x10

Optional Modules and Accessories

Model No.	Description
CFM-IGN101	CFM Module with Power Ignition Sensing Control Function, 12V/24V Voltage Detection Selectable
CFM-PoE04	CFM Module with PoE Control Function, Individual Port 25.5W (For P2302 Only)
CFM-PoE05	CFM Module with PoE Control Function, Individual Port 25.5W (For P2302E Only)
MEC-LAN-2002i	M.2 2242/2260/2280 2-port 10/100/1000 Isolated Ethernet Board(-40℃~+85℃), 2x RJ45 Connector
MEC-LAN-2002i-S	M.2 2242/2260/2280 2-port 10/100/1000 Isolated Ethernet Board(-0℃~+70℃), 2x RJ45 Connector
MEC-USB-2002-SP	M.2 2242/2260/2280 2 port USB 3.2 board(-0℃~+70℃), w/ IDE 20P 90° Cable, 2x USB Type A Connector *Only one MEC-USB-2002-SP can be installed on the P2302E
MEC-USB-2002C	M.2 2242/2260/2280 2-port USB 3.2 Board(-0℃~+70℃), 2x USB Type C Connector
MEC-CAN-2812i	M.2 2242/2260/2280 (B+M Key) 2x Isolated CAN Bus 2.0B Board (-40℃~+85℃), 2x DB9 Connector
MEC-CAN-2814i	M.2 2242/2260/2280 (B+M Key) 4x Isolated CAN Bus 2.0B Board (-40℃~+85℃), 4x DB9 Connector
MEC-COM-2012	M.2 2242/2260/2280 (B+M Key) 2-port RS-232 Serial Board (-40℃~+85℃), 2x DB9 Connector
MEC-COM-2032i	M.2 2242/2260/2280 (B+M key) 2-port RS-232/422/485 isolated serial board (-40℃~+85℃), 2x DB9 Connector
RC-E4-02	Riser Card with 1x PCIe x4 Slot (For P2302E Only)
RC-PI-02	Riser Card with 1x PCI Slot (For P2302E Only)
UB1203	Universal Bracket with 2x DB9 Cutout for MEC-COM & MEC-CAN Expansion
UB1211	Universal Bracket with 2x RJ45 Cutout for MEC-LAN Expansion
UB1233-R10	Universal Bracket with 2x USB Type C Cutout for MEC-USB Expansion
UB1234-R10	Universal Bracket with 2x USB Type A Cutout for MEC-USB (M.2 interface) Expansion
DIN01	DIN-RAIL Mount Kit, KMRH-K175
GST120A24-CIN	Adapter AC/DC 24V 5A 120W with 3pin Terminal Block Plug and Tubes, Level VI
GST220A24-CIN	Adapter AC/DC 24V 9.2A 220W with 3pin Terminal Block Plug 5.0mm Pitch, with TUBES, level VI
GST360A24-CIN	Adapter AC/DC 24V 15A 360W with 3pin Terminal Block Plug 5.0mm Pitch, with TUBES,GST360A24-CIN

Optional Module Configuration (For P2302E only)

Model No.	Description	1	2
MEC-LAN-2002i/UB1211	M.2 2242/2260/2280 2-port 10/100/1000 Isolated Ethernet Board (-40°C~+85°C), 2x RJ45 Connector / Universal Bracket with 2x RJ45 Cutout for MEC-LAN Expansion	V	V
MEC-LAN-2002i-S/UB1211	M.2 2242/2260/2280 2-port 10/100/1000 Isolated Ethernet Board (-0°C~+70°C), 2x RJ45 Connector / Universal Bracket with 2x RJ45 Cutout for MEC-LAN Expansion	V	V
MEC-USB-2002-SP/UB1234-R10	M.2 2242/2260/2280 2 port USB 3.2 board(-0°C~+70°C), w/ IDE 20P 90° Cable, 2x USB Type A Connector / Universal Bracket with 2x USB Type A Cutout for MEC-USB (M.2 interface) Expansion *Only one MEC-USB-2002-SP can be installed on the P2302E	V	V
MEC-USB-2002C/UB1233-R10	M.2 2242/2260/2280 2-port USB 3.2 Board(-0°C~+70°C), 2x USB Type C Connector / Universal Bracket with 2x USB Type C Cutout for MEC-USB Expansion	V	V
MEC-CAN-2812i/UB1203	M.2 2242/2260/2280 (B+M Key) 2x Isolated CAN Bus 2.0B Board (-40°C~+85°C), 2x DB9 Connector / Universal Bracket with 2x DB9 Cutout for MEC-COM & MEC-CAN Expansion	V	V
MEC-CAN-2814i/2x UB1203	M.2 2242/2260/2280 (B+M Key) 4x Isolated CAN Bus 2.0B Board (-40°C~+85°C), 4x DB9 Connector / 2x Universal Bracket with 2x DB9 Cutout for MEC-COM & MEC-CAN Expansion	V	
MEC-COM-2012/UB1203	M.2 2242/2260/2280 (B+M Key) 2-port RS-232 Serial Board (-40°C~+85°C), 2x DB9 Connector / Universal Bracket with 2x DB9 Cutout for MEC-COM & MEC-CAN Expansion	V	V
MEC-COM-2032i/UB1203	M.2 2242/2260/2280 (B+M key) 2-port RS-232/422/485 isolated serial board (-40°C~+85°C), 2x DB9 Connector / Universal Bracket with 2x DB9 Cutout for MEC-COM & MEC-CAN Expansion	V	V
RC-E4-02	Riser Card with 1x PCIe x4 Slot	V	-
RC-PI-02	Riser Card with 1x PCI Slot	V	-

V : Compatible