CS-W115FH/P2102 Series

15.6" TFT-LCD Sunlight Readable and Modular Panel PC with 8th Gen. Intel® Core™ U Series Processor

HIGH-PERFORMANCE SUNLIGHT READABLE PANEL PC

| CS-100/P2000 Series |

Overview

CONTACT

The CS-100/P2102 Series is a 12.1" - 24" TFT-LCD sunlight readable panel PC that offers sufficient screen brightness for better image quality in outdoor usage. The panel PC is powered by Intel® 8th generation Core™ U series processor that brings outstanding computing performance boost up to 84% at a TDP of 15 watts, compared to 6th generation Intel® Core™ U series. To enable faster responsiveness and deal with multi tasks with ease, the CS-100/P2102 Series is equipped with two DDR4 2400 SODIMM sockets for up to 64 GB memory. With its slim design, the CS-100/P2102 Series offers extensive I/O to fulfill different connectivities and can easily fit into almost any space limited environment. For wireless connectivity, the CS-100/P2102 Series has 1x M.2 2230 E key and 2x full-size Mini-PCIe expansions which can be installed various add-on cards to enable Wi-Fi, 3G, and LTE communication. Besides, the CS-100/P2102 Series supports Control Function Module (CFM) Technology to install optional CFM modules for increasing power over ethernet and power ignition sensing functions according to user's specific applications. Featuring rigorous industrial protections, wide range operating temperature, IP65 dust/waterproof front panel, and wide range DC power input (9 to 48VDC), the CS-100/P2102 Series is appropriate for tough outdoor applications under direct sunlight. Furthermore, the CS-100/P2102 Series supports Cincoze patented Convertible Display System (CDS) technology, allowing users to replace display module or computer module on-site easily and thereby reducing maintenance costs and downtime.

Key Features

- 15.6" TFT-LCD with Ultra High Brightness up to 1,200 nits and 1920x1080 (Full HD) Resolution
- Onboard 8th Generation Intel® Core™ U Series Processor
- 2x DDR4 SO-DIMM Socket, Supports Up to 2400MHz, 64GB
- Supports Triple Independent Display
- Integrated USB 3.2 Gen 2 supports up to 10Gbps
- M.2 E Key Socket for Wireless Module or Intel CRF Module
- Supports Ignition Sensing Function (IGN) (with optional CFM module)
- Supports 2x PoE+ Function (with optional CFM module)
- Wide Range Operating Temperature
- Designed with Rugged Aluminum Die-casting Front Bezel
- True Flat IP65 Compliant Front Panel Protection
- Supports Panel / VESA / Rack Mounting
- 2x Universal Bracket (For P2102E only)

Certifications

IP65   FC   CE

High Performance Per Watt

Powered by 8th generation Intel® Core ™ U series processor (up to 4 cores, 4.10 GHz) at a TDP of only 15W, the CS-100/P2102 can fulfill a variety of applications that require high-performance computing and low power budget simultaneously.

Sunlight Readable

Featuring ultra-high brightness 1,000 nits - 1,800 nits, resolution up to 1024 x 768 - 1920 x 1080 (XGA), the CS-100/P2102 provides excellent viewing experience under all lighting conditions including direct sunlight.

Built For Extreme Temperature

Built with wide operating temperature ranges and a special selection of industrial-grade components, the CS-100/P2102 is suitable for deploying under extreme environments and severe climate.

CS-W115FH Specifications

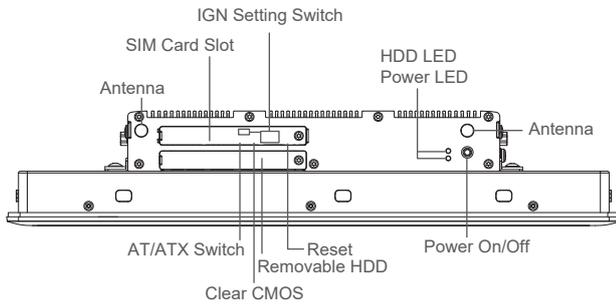| Model Name	CS-W115FH
Display	
LCD Size	▪ 15.6" (16:9)
Max. Resolution	▪ 1920 x 1080 (Full HD)
Brightness (cd/m2)	▪ 1200
Contrast Ratio	▪ 800 : 1
LCD Color	▪ 16.7M
Pixel Pitch (mm)	▪ 0.17925 (H) x 0.17925 (V)
Viewing Angle (H-V)	▪ 178 / 178
Backlight LED Life Time	▪ 50,000 hrs (LED Backlight)
Touch Screen	
Touch Type	▪ Projected Capacitive
Physical	
Dimension (W x D x H)	▪ 420 x 254 x 66.2 mm
Weight Information	▪ 3.58 kg
Mechanical Construction	▪ Flat Rugged Aluminum Die-casting Bezel
Power	
Power Consumption	▪ 25W (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

P2102 Series Specifications

Model Name	P2102	P2102E
System		

Processor	▪ Onboard 8th Intel® Core™ U Processors (Whiskey Lake)
	  - Intel® Core™ i5-8365UE Quad Core Processor (6M Cache, up to 4.10 GHz)
	  - Intel® Core™ i3-8145UE Dual Core Processor (4M Cache, up to 3.90 GHz)
	  - TDP: 15 W	

Memory	▪ 2x DDR4 2400 MHz 260-Pin SO-DIMM Socket ▪ Support Un-buffered and Non-ECC Type up to 64 GB	
Graphics		
Graphics Engine	▪ Integrated Intel® UHD Graphics 620	
Maximum Display Output	▪ Supports Triple Independent Display	
CDS	▪ 1x CDS Connector for Cincoze Display Module	
VGA	▪ 1x VGA Connector(1920 x 1200 @60Hz)	
DP	▪ 1x DisplayPort Connector (4096 x 2304 @ 60Hz, According to CPU Specifications) * Verified maximum resolution: 3840 x2160 @ 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 GbE LAN (Supports WoL, Teaming, Jumbo Frame & PXE), RJ45
	  - GbE1: Intel® I219LM
	  - GbE2: Intel® I210	

USB	▪ 3x USB 3.2 Gen2 (Type A), 2x USB 2.0 (Type A)	
Serial Port	▪ 4x RS-232/422/485 with Auto Flow Control Support 5V/12V, DB9	
DIO	▪ 16x Isolated Digital I/O (8in/8out), 20-Pin Terminal Block	
Storage		
SSD/HDD	▪ 2x 2.5" HDD/SSD Drive Bay (SATA 3.0), Supports RAID 0/1	
Expansion		
Mini PCI Express	▪ 2x Full-size Mini-PCIe Sockets	

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

M.2 E Key Socket	▪ 1x M.2 2230 E Key Socket for Wireless Module, Supports Intel CRF Module	
SIM Socket	▪ 1x Front Accessible SIM Socket	
Universal Bracket		▪ 2x Universal I/O Bracket
CFM (Control Function Module) Interface	▪ 2x CFM Interface for optional IGN or PoE Module Expansion	
CDS (Convertible Display System) Technology	▪ 1x Convertible Display System (CDS) Interface	

Other Function

Clear CMOS Switch	▪ 1 x Clear CMOS Switch
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

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 or 24V/5A 120W
Remote Power On/Off	▪ 1x Remote Power On/Off Connector, 2-pin Terminal Block

Physical

Dimension(W x D x H)	▪ 254.5 x 190 x 41.5mm	▪ 254.5 x 190 x 61 mm
Weight Information	▪ 2.2 kg	▪ 2.7 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	▪ 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
MTBF	▪ 231,243 hours

Operating System

Microsoft® Windows®	▪ Windows®10
Linux	▪ Supports by project

Environment

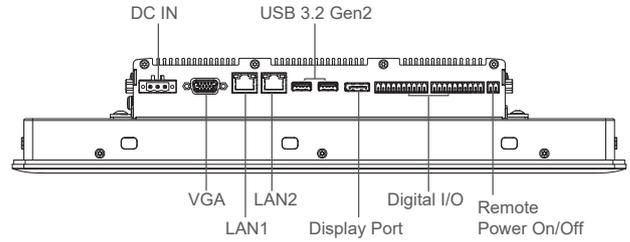|		
Operating Temperature	▪ Ambient with Air Flow: -40°C to 70°C (with Extended Temperature Peripherals)	
Storage Temperature	▪ -40°C to 70°C	
Relative humidity	▪ 95% RH @ 70°C (Non-condensing)	
Shock	▪ Operating, 50 Grms, Half-sine 11ms Duration (w/ SSD, according to IEC60068-2-27)	

Vibration	▪ Operating, 5 Grms, 5-500 Hz, 3 Axes
	  (w/ SSD, according to IEC60068-2-64)
		▪ Operating, 5 Grms, 5-500 Hz, 3 Axes
		  (w/ SSD, according to IEC60068-2-64)
		▪ Operating, 1 Grms, 10-500 Hz, 3 Axes
		  (w/ CV-W124 only, according to IEC60068-2-6)

EMC	▪ CE, UKCA, FCC, ICES-003 Class A	

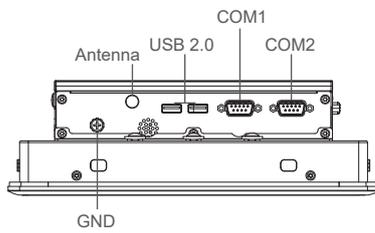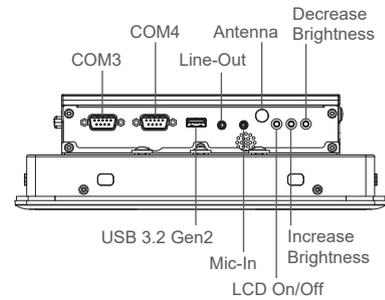| EMI	• CISPR 32 Conducted & Radiated: Class A
	• EN/BS EN 55032 Conducted & Radiated: Class A
	• EN/BS EN IEC 61000-3-2 Harmonic current emissions: Class A
	• EN/BS EN61000-3-3 Voltage fluctuations & flicker
	• FCC 47 CFR Part 15B, ICES-003 Conducted & Radiated: Class A
EMS	• EN/IEC 61000-4-2 ESD: Contact: 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, EN62368-1
Fire Protection	• EN 45545-2

CS-W115FH/P2102 External Layout

Front I/O

IGN Setting Switch
SIM Card Slot
HDD LED
Power LED
Antenna
Antenna
AT/ATX Switch
Reset
Power On/Off
Removable HDD
Clear CMOS

Rear I/O

DC IN
USB 3.2 Gen2
VGA
LAN2
Digital I/O
LAN1
Display Port
Remote Power On/Off

Left I/O

COM1
USB 2.0
COM2
Antenna
GND

Right I/O

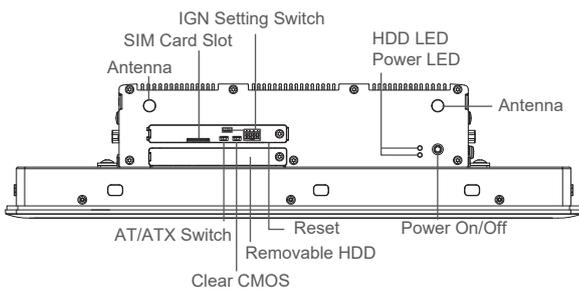Decrease Brightness
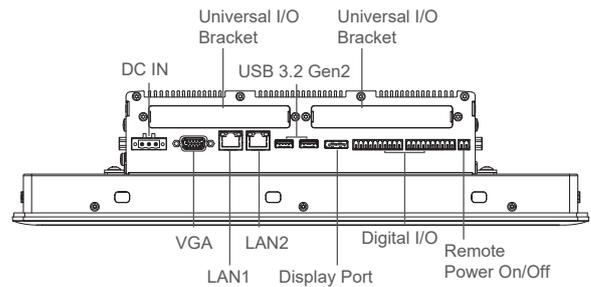COM4
Antenna
COM3
Line-Out
USB 3.2 Gen2
Increase Brightness
Mic-In
LCD On/Off

CS-W115FH/P2102E External Layout

Front I/O

IGN Setting Switch
SIM Card Slot
HDD LED
Power LED
Antenna
Antenna
AT/ATX Switch
Reset
Power On/Off
Removable HDD
Clear CMOS

Rear I/O

Universal I/O Bracket
Universal I/O Bracket
DC IN
USB 3.2 Gen2
VGA
LAN2
Digital I/O
LAN1
Display Port
Remote Power On/Off

Left I/O

COM1
USB 2.0
COM2
Antenna
GND

Right I/O

Decrease Brightness
COM4
COM3
Line-Out
Antenna
USB 3.2 Gen2
Increase Brightness
Mic-In
LCD On/Off
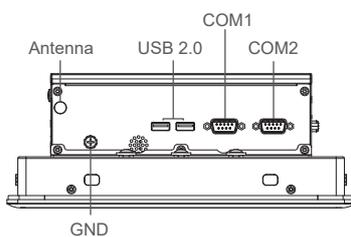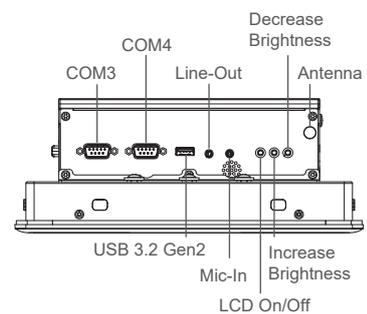
CS-W115FH/P2102 Dimensions
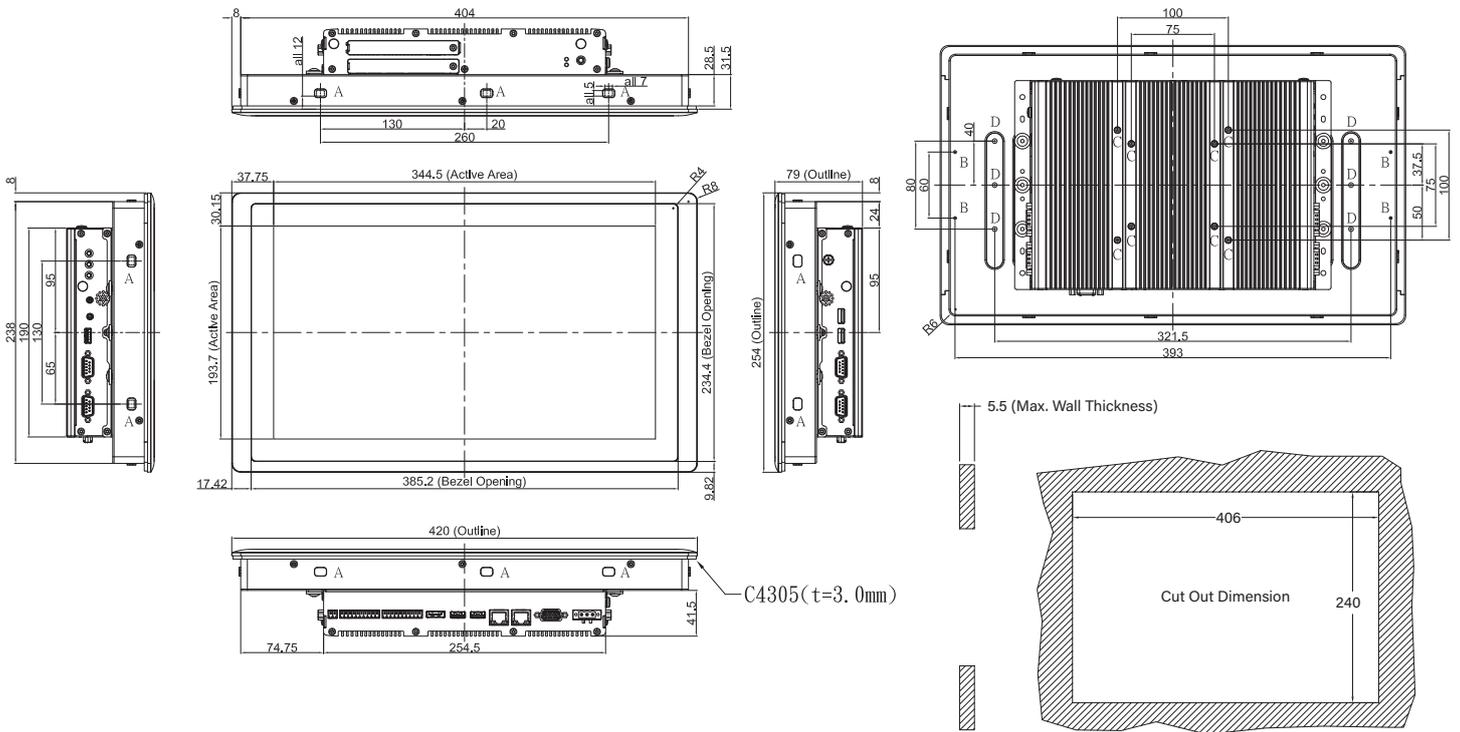
CS-W115FH/P2102E Dimensions

Unit: mm
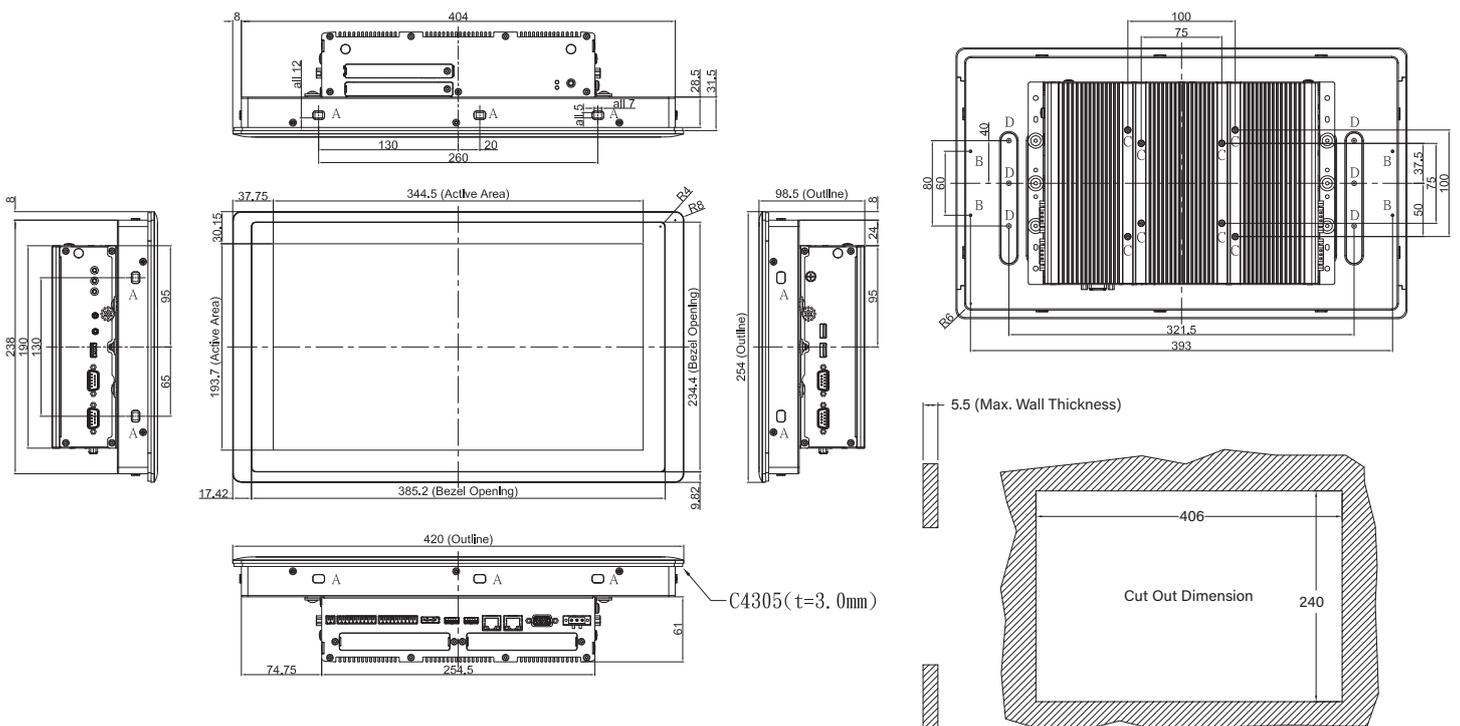
Ordering Information

Available Models

Model No.	Description
CS-W115FHC-R20/P2102-i5-R10	15.6" TFT-LCD 1200 nits Full HD Sunlight Readable Display Modular Panel PC with 8th Gen. Intel Core i5-8365UE Quad Core Processor and P-Cap. Touch
CS-W115FHC-R20/P2102E-i5-R10	15.6" TFT-LCD 1200 nits Full HD Sunlight Readable Display Modular and Expandable Panel PC with 8th Gen. Intel Core i5-8365UE Quad Core Processor and P-Cap. Touch
CS-W115FHC-R20/P2102-i3-R10	15.6" TFT-LCD 1200 nits Full HD Sunlight Readable Display Modular Panel PC with 8th Gen. Intel Core i3-8145UE Dual Core Processor and P-Cap. Touch
CS-W115FHC-R20/P2102E-i3-R10	15.6" TFT-LCD 1200 nits Full HD Sunlight Readable Display Modular and Expandable Panel PC with 8th Gen. Intel Core i3-8145UE Dual Core Processor and P-Cap. Touch

Model Configuration

	CS-W115FHC	P2102(i3/i5)	P2102E(i3/i5)
CS-W115FHC/P2102	V	V	--
CS-W115FHC/P2102E	V	--	V

V : Compatible

Package Checklist

▪ CS-W115FH/P2102 Series Panel PC x 1	▪ Power Terminal Block Connector (Female) x 1
▪ Panel Mounting Kit x 10	▪ Screw Pack x 5
▪ Thermal Pad (for CPU Thermal Block) x 1	▪ Remote Power On/Off Terminal Block Connector x 1
▪ DIO Terminal Block Connector (Female) x 2	▪ PCI / PCIe Card Installation Kit x 1(For P2102E only)

Optional Modules and Accessories

Model No.	Description
MEC-COM-M212-DB9	Mini-PCIe Module with 2x RS-232 Serial Ports, 1x Standard DB9 Cable (For P2102E Only)
MEC-COM-M334-TDB9	Mini-PCIe Module with 4x RS-232/422/485 Serial Ports, 2x Thin DB9 Cable (For P2102E Only)
MEC-LAN-M102-30	Mini-PCIe Module with 2x LAN Ports, 2x 30cm (For P2102E Only)
MEC-USB-M102-30	Mini-PCIe Module with 2x USB 3.2 Gen1 Ports (For P2102E Only)
CFM-IGN101	CFM Module with Power Ignition Sensing Control Function, 12V/24V Selectable
CFM-PoE04	PoE Control Function Module, Individual Port 25.5W (For P2102 only)
CFM-PoE05	PoE Control Function Module, Individual Port 25.5W (For P2102E only)
RC-E4-02	Riser Card with 1x PCIex4 Slot (For P2102E only)
RC-PI-02	Riser Card with 1x PCI Slot (For P2102E only)
UB1203	Universal Bracket with 2x DB9 Cutout (For P2102E only)
UB1211	Universal Bracket with 2x RJ45 Cutout (For P2102E only)

UB1214	Universal Bracket with 2x USB Cutout (For P2102E only)
URM01	Universal 19" Rack Mount Kit for Industrial Panel PC & Industrial Monitor
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 (For P2102E only)
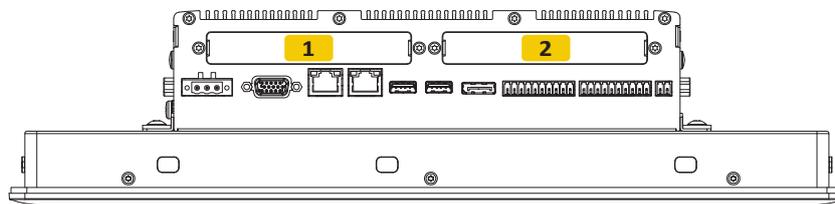
Model No.	Description	P2002	P2002E
MEC-COM-M212-TDB9/UB1203	Mini-PCIe Module with 2x COM Ports, 1x Standard DB9 Cable, 2x Universal Bracket each with 1x DB9 Cutout	V	V
MEC-COM-M334-TDB9/UB1203	Mini-PCIe Module with 4x RS-232/422/485 Serial Ports	V	V
MEC-LAN-M102-30/UB1211	Mini-PCIe Module with 2x LAN Ports, 2x 30cm cable, w/ 1x Universal Bracket with 2x RJ45 Cutout	V	V
MEC-USB-M102-30/UB1214	Mini-PCIe Module with 2x USB 3.2 Gen1 Ports, 1x 30cm cable, 1xUniversal Bracket with 2x USB Cutout	V	V

V : Compatible