

# CS-W121C/P2002

21.5" TFT-LCD Sunlight Readable Touch Panel PC with 6th Gen. Intel® Core™ Processor



- 21.5" TFT-LCD with Ultra High Brightness up to 1,000 nits and 1920 x 1080 Resolution
- Onboard Intel® 6th Generation Core™ Processor U Series (15W)
- Supports 2x DDR4 SO-DIMM Socket, up to 32 GB
- Integrated Intel® HD Graphics 520, Triple Display Support
- 2x 2.5" SATA Drive Bay, 1x mSATA, and 1x CFAST Socket
- Rich I/O (2x GbE LAN, 6x COM, 5x USB, 16x Isolated DIO)
- 2x Full-size Mini-PCIe Socket for Wireless and I/O Expansion
- Wide Range Operating Temperature 0°C to 70°C
- Designed with Aluminum Die-casting Front Frame
- True Flat IP65 Front Panel Protection
- Supports Panel / VESA / Rack Mounting
- Convertible Display System (CDS) Technology Supported

## Overview

CS-W121C/P2000 Series is a 21.5" TFT-LCD sunlight readable touch panel PC offering 1,000 nits ultra high brightness and 1920 x 1080 resolution. The system is equipped with high-performance Intel® 6th generation Core™ U series processor and provides extensive I/O including 2x GbE, 5x USB, 6x RS232/422/485, 8x DI/8x DO, 1x VGA and 1x DVI-D. It also supports 2x Mini-PCIe slot and 1x SIM socket for a variety of wireless connections, such as BT/WiFi and 3G/LTE. In addition, there are 3 types of storage devices including 2.5" SATA HDD (RAID 0/1), mSATA and CFAST. The accessible design of these storage devices allows quick data access and easy maintenance.

CS-W121C/P2000 Series supports Convertible Display System (CDS) technology. Comparing to regular standalone panel PCs, it can lower maintenance cost and reduce unplanned downtime.

For greater flexibility, CS-W121C/P2000 Series has PCI/PCIe expandable version and PoE/power ignition functions by additional CFM (Control Function Module). Furthermore, CS-W121C/P2000 Series is a truly rugged display system supporting wide range operating temperature (0°C to 70°C), IP65 dust/waterproof front panel, wide range DC power input (9 to 48VDC) and rigorous industrial protections.

## Specifications

### Display

LCD Size	• 21.5" (16:9)
Max. Resolution	• 1920x1080 (Full HD)
Brightness (cd/m2)	• 1,000
Contrast Ratio	• 5,000:1
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)

### Audio

Audio Codec	• Realtek ALC888-GR
Line-out	• 1x Line-out Phone Jack 3.5mm
Mic-in	• 1x Mic-in, Phone Jack 3.5mm

### System

Processor	<ul style="list-style-type: none"> <li>• Onboard 6th Intel® Core™ U Processors (Skylake Lake)</li> <li>- Intel® Core™ i5-6300U Processor (3M Cache, up to 3.00 GHz)</li> <li>- Intel® Core™ i3-6100U Processor (3M Cache, up to 2.30 GHz)</li> <li>- TDP: 15 W</li> <li>- BIOS: AMI 64Mbit SPI BIOS</li> </ul>
Memory	<ul style="list-style-type: none"> <li>• 2x DDR4 2400 MHz 260-Pin SO-DIMM Socket</li> <li>• Supports up to 64 GB (un-buffered and non-ECC)</li> </ul>
BIOS	• AMI 64Mbit SPI BIOS

### Graphics

Graphics Engine	• Intel® HD Graphics 520
Maximum Display Output	• Triple display with 1x VGA, 1x DVI-D and 1x CDS interface

### Touch

Projected Capacitive	V
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**External I/O Interface**

VGA	• 1x VGA (Up to 1920 x 1080 @ 60Hz), DB-15
DVI	• 1x DVI-D (Up to 1920 x 1080 @ 60Hz)
CDS	• 1x CDS Interface, Compact PCI Connector
LAN	<ul style="list-style-type: none"> <li>• 2x GbE LAN (Support WoL, Teaming, Jumbo Frame and PXE), RJ45</li> <li>- GbE1: Intel I219LM</li> <li>- GbE2: Intel I210</li> <li>• 2x PoE+ (with Optional CFM PoE Module)</li> <li>- Comply with IEEE 802.3at, Offers Up to 25.5W Per Port</li> </ul>
COM	• 6x RS-232/422/485 with Auto Flow Control (Support 5V/12V), DB9
USB	<ul style="list-style-type: none"> <li>• 4x USB 3.0, Type-A</li> <li>• 1x USB 2.0, Type-A</li> </ul>

**DIO**

DIO	• 16x Isolated DIO (8x DI/8x DO), 20-Pin Terminal Block
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**Storage**

SSD/HDD	• 2x 2.5" SATA HDD/SSD Bay, Support RAID 0/1 (Gen3)
mSATA	• 2x mSATA (One Shared by Mini-PCIe Socket) (Gen2)
CFast	• 1x CFast Socket (Gen3)

**Expansion**

CFM (Control Function Module) Interface	<ul style="list-style-type: none"> <li>• 1x CFM IGN Interface</li> <li>• 1x CFM PoE Interface</li> </ul>
Mini PCIe Express	• 2x Full-size Mini-PCIe Socket
UB	• 1x Universal I/O Bracket
SIM Socket	• 1x SIM Socket
Antenna Hole	• 4x Antenna Hole

**Other Function**

Internal Speaker	• AMP 2W + 2W
Power Ignition Sensing	• Support Power Ignition Sensing (IGN)
Rest Button	• 1x Reset Button
Instant Reboot	• Supports Instant Reboot Technology (0.2 sec)
Watchdog Timer	• Software Programmable Supports 256 Levels System Reset
OSD Function	• LCD On/Off, Brightness Up, Brightness Down for CDS Display Module
External FAN Connector	• 1x External FAN Connector, 4-pin Terminal Block

**Power**

Power Button	• 1x AT/ATX Switch
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 Connector, 2-pin Terminal Block
Power Adapter (Optional)	• AC/DC 12V/5A 60W or AC/DC 24V/5A 120W

**Physical**

Dimension ( W x D x H )	• 550 x 330.5 x 88.5 mm
Weight Information	• 8.48 Kg
Front Panel Construction	• Die-casting Flat Surface
Mounting	• Panel / VESA / *Rack Mounting (*with optional mounting kit)
Physical Design	<ul style="list-style-type: none"> <li>• Fanless Design</li> <li>• Jumper-less Design</li> </ul>

**Reliability & Protection**

Reverse Power Input Protection	• Yes
Over Voltage Protection	<ul style="list-style-type: none"> <li>• Protection Range: 51~58V</li> <li>• Protection Type: shut down operating voltage, re-power on at the preset level to recover</li> </ul>
Over Current Protection	• 15A
Surge Protection	• 3.84 kV (impedance 12 ohm 1.2/50µs waveform)
CMOS Battery Backup	• SuperCap Integrated for CMOS Battery Maintenance-free Operation
ESD Protection	• +/-8kV (air), +/-4kV (contact)

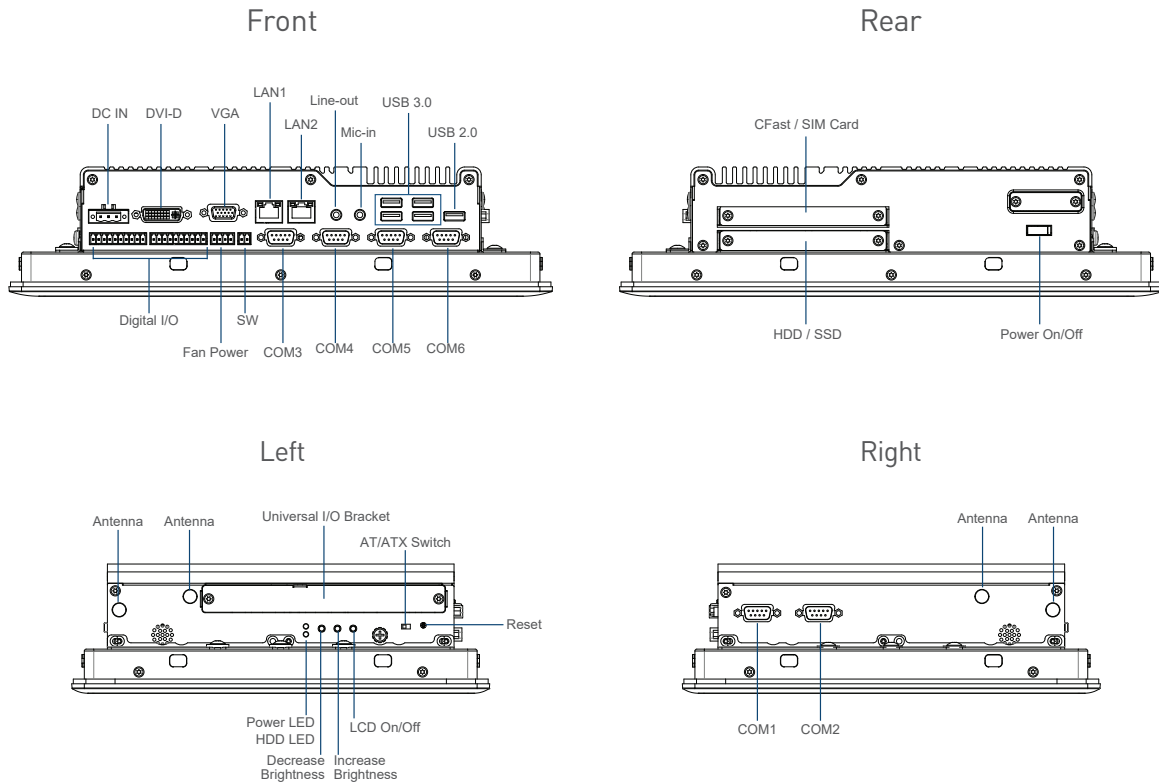
**Operating System**

Windows	<ul style="list-style-type: none"> <li>• Windows® 10</li> <li>• Windows® 8.1</li> <li>• Windows® 7</li> </ul>
Linux	• Support by Project

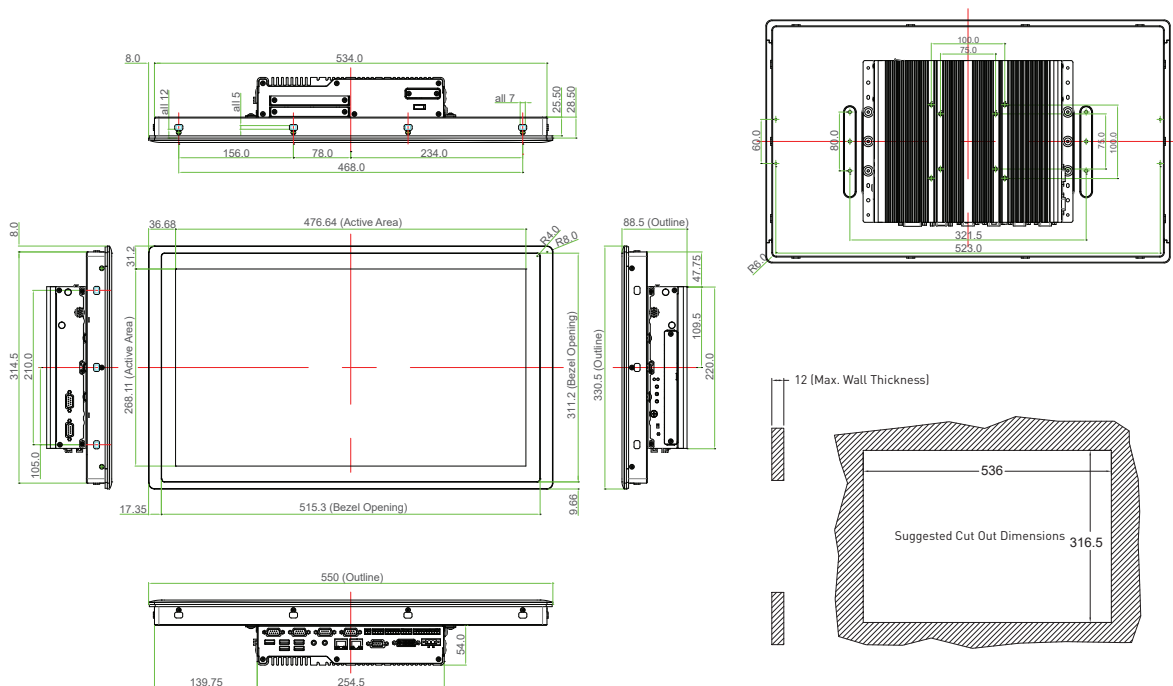
**Environment**

Operating Temperature	• 0°C to 70°C (with Industrial Grade Peripherals; Ambient with air flow)
Storage Temperature	• -20°C to 70°C
Relative Humidity	• 95% RH @ 39°C (Non-condensing)
EMC	• CE, FCC, ICES-003 Class A
IP Level	• IP65 Compliant Front Panel

**External Layout**



**Dimensions**



Unit: mm

## Ordering Information

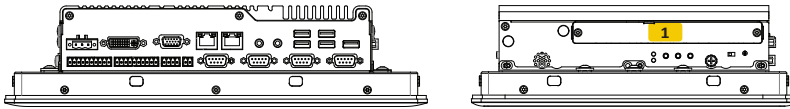
### Available Models

Model No.	Description
CS-W121C-R10/P2002-i5-R10	21.5" TFT-LCD Full HD 16:9 Panel PC with Projected Capacitive Touch and Intel 6th Gen. Core i5-6300U Fanless Computer, CFM Interface, CDS Interface
CS-W121C-R10/P2002-i3-R10	21.5" TFT-LCD Full HD 16:9 Panel PC with Projected Capacitive Touch and Intel 6th Gen. Core i3-6100U Fanless Computer, CFM Interface, CDS Interface

### Package Checklist

• CS-W121C/P2002 Panel PC x 1	• DIO Terminal Block Connector x 2
• Fan Terminal Block Connector x 1	• Utility Driver DVD x 1
• Power Terminal Block Connector x 1	• Screws Pack x 1
• Power On/Off Terminal Block Connector x 1	• Panel Mounting Kit x 1

### Optional Module Configuration



Model No.	Description	1
MEC-COM-M212-DB9/UB0503	Mini-PCIe Module with 2x COM Ports, 2x Universal Brackets (154 x 17 mm)	V
MEC-COM-M334-TDB9/UB0504	Mini-PCIe Module with 4x RS-232/422/485 Serial Ports, 1x Universal Bracket (154 x 17 mm)	V
MEC-LAN-M102-30/UB0511	Mini-PCIe Module with 2x LAN Ports, 2x 30cm cable / 1x Universal Bracket with 2x RJ45 Cutout for P2000 Series	V
MEC-USB-M102-30/UB0514	Mini-PCIe Module with 2x USB 3.0 Ports, 1x Universal Bracket (154 x 17 mm)	V

V : Compatible

### Optional Function Modules

Model No.	Description
CFM-IGN100	CFM Module with Power Ignition Sensing Control Function, 12V/24V Selectable (41 x 35 mm)
CFM-PoE100	PoE Control Function Module, Individual Port 25.5W (50 x 44 x 15 mm) (For CS-100/P2002 only)
URM01	Universal 19" Rack Mount Kit for Industrial Panel PC & Industrial Monitor

### Optional Accessories

Model No.	Description
GST60A12-CIN1	Adapter AC/DC 12V 5A 60W, GST60A12-CIN1, wide temp(-30°C ~ +70°C)
GST120A24-CIN	Adapter AC/DC 24V 5A 120W, GST120A24-CIN, wide temp (-30°C ~ +70°C), level VI
GST220A24-CIN	Adapter AC/DC 24V 9.2A 220W with 3pin Terminal Block Plug 5.0mm Pitch, with TUBES, GST220A24-CIN

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