



## Main Features

- 16:9 21.5" Full HD fanless LED panel computer
- Powerful 2nd/3rd generation Intel® Core™ processor
- Two expansion slots for add-on PCI or/and PCIe cards
- Optional 3.5G/Wi-Fi module/2.5" HDD/3 x COM/GPIO/DIO/Dimming control button
- 10 points P-Cap multi-touch with zero bezel flush front design
- Metal housing with robust aluminum front bezel for harsh environment
- IP66 compliant front panel
- Anti-scratch surface: 7H hardness
- Support fieldbus module, JMobile HMI and CODESYS SoftLogic (optional)
- Optional: AC power input model/DC power input model

## Product Overview

IPPC 2160P is a heavy industrial panel PC equipped with powerful 2nd/3rd generation Intel® Core™ processor, TFT LCD panel with LED backlight and user-friendly touch screen. It provides two expansion slots to support PROFINET, PROFIBUS, DeviceNet, EtherNet/IP and EtherCAT protocols. The NEMA4/IP66 rated heavy-duty aluminum front bezel and the vibration-resistant rugged chassis are specifically designed for outdoor and harsh industrial environments. IPPC 2160P is ideal for use in oil and gas rig, wind farms, chemical factories, pharmaceutical factories, and hazardous working area. IPPC 2160P has two isolated RS232/422/485 ports and fieldbus ports.

## Specifications

### Panel

- LED size: 21.5", 16:9
- Resolution: Full HD 1920 x 1080
- Luminance: 300cd/m<sup>2</sup>
- Contrast ratio: 5000
- LCD color: 16.7M
- Viewing angle: 89(U), 89(D), 89(L), 89(R)
- Backlight: LED

### Touch

- Ten points P-Cap (Projected Capacitive Touch)
- Touch light transmission: 87%
- Anti-scratch surface: 7H hardness
- Touch interface: USB
- Windows 8 compliance

### System

- CPU: support 2nd/3rd gen. Intel® Core™ processor family, rPGA 988
  - Intel® Core™ i7-3540M (2 x 3GHz, 4M cache, Max. TDP 35W)
  - Intel® Core™ i5-3610ME (2 x 2.7GHz, 3M cache, Max. TDP 35W) (default)
  - Celeron® 1020E (2.2GHz, 2M cache, Max. TDP 35W)
- BIOS: AMI BIOS
- System chipset: Intel® HM76 Express chipset
- System memory: 1 x 204-pin DDR3 SO-DIMM socket, 4G DDR3 (default), Support up to 8GB DDR3-1066/1333, non-ECC and unbuffered
- Storage device:
  - 1 x external locked CFast socket
  - 2 x hard drive bay: optional 2 x 2.5" SATA HDD
- Watchdog timer: Watchdog timeout can be programmable by software from 1 second to 255 seconds and from 1 minute to 255 minutes (tolerance 15% under room temperature 25°C)
- H/W status monitor: monitoring system temperature, and voltage

- Expansion: 2 x Mini-PCIe sockets (support optional Wi-Fi or 3.5G module)
  - 2 x expansion slots for add-on PCI or/and PCIe cards
  - 1 x PCI and 1 x PCIe4 slots (default)
  - 2 x PCIe4 slots
  - 2 x PCI slots
- Panel backlight control button: increase brightness/decrease brightness/backlight on/off/Add (for IPPC 2160PP2E-AC only)

### Rear I/O

#### For All

- 2 x PS2 keyboard/mouse
- 2nd display VGA port: 1 x DB15
- Ethernet: 2 x RJ45
- USB: 4 x USB 2.0
- Audio port: 1 x Line-out; 1 x Line-in; 1 x MIC-in

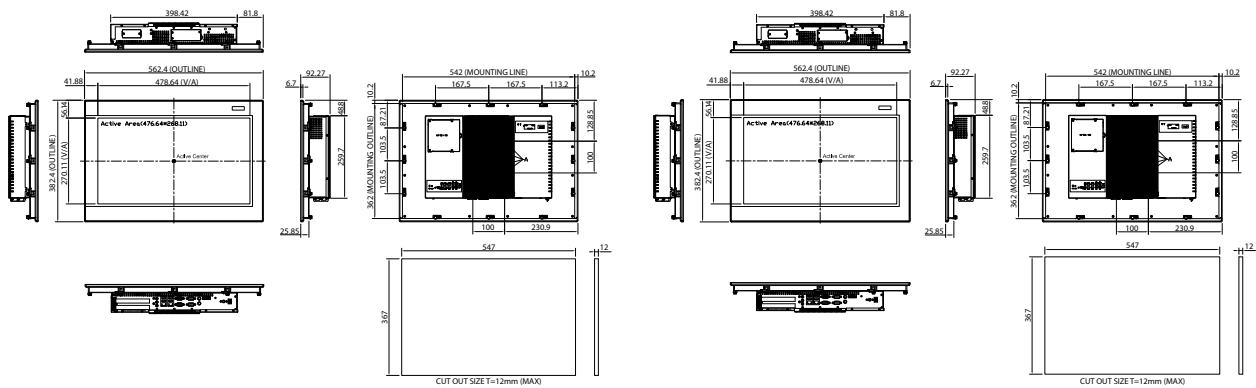
#### For IPPC 2160PP2E-DC only

- COM #1: RS232/422/485 w/ RI or 5V or 12V selection
- COM #2: RS232/422/485 w/ RI or 5V or 12V selection
- COM #3: RS232 w/ RI or 5V or 12V selection
- ATX power switch
- Reset button

#### For IPPC 2160PP2E-AC only

- COM #1: RS232/422/485 w/ 2.5kv isolated protection
- COM #2: RS232/422/485 w/ 2.5kv isolated protection
- COM #3: RS232 w/ RI or 5V or 12V selection
- COM #4: RS232 w/ RI or 5V or 12V selection
- COM #5: RS232
- COM #6: RS232
- DIO w/ 2.5kv isolated protection:
  - 4 x digital input (source type)
  - 4 x digital output (sink type)

## Dimension Drawing



IPPC 2160PP2E

IPPC 2160PP2E-DC

- GPIO: 4 x Digital In/4 x Digital Out
- LPT: parallel port
- AC power switch
- Reset button

### Audio

- HD Codec: Realtek ALC886-GR
- Audio interface: Line-out/Line-in/MIC-in audio Jack

### Ethernet

- LAN chip: dual Intel® 82574L Gigabit LAN
- Ethernet interface: 10/100/1000 Based-Tx Ethernet compatible

### Fieldbus

- IPPC 2160PP2E-DC: support up to two Fieldbus Module (1 universal Kit and 1 special kit)
- IPPC 2160PP2E-AC: support one special Fieldbus Module kit

### Mechanical & Environment

- Color: pantone 432C\RAL 70 24 front bezel
- Enclosure: aluminum front bezel with SPCC nickel plated housing
- IP protection: IP66 front
- Mounting: panel/wall/stand/VESA 100mm x 100mm
- Power

#### For IPPC 2160PP2E-DC

- Power input: 12-30 VDC, 7-2.5 A, Class 2
- Power adapter: optional AC to DC DIN rail power adapter (+24V, 120W)

#### For IPPC 2160PP2E-AC

- Power input: 100-240V~, 1.5A, 50-60Hz; Fuse: 250VAC/3A
- Power connector: AC inlet (IEC60320 C14)
- Power supply: 120W
- Vibration:
  - IEC 68 2-64 (w/ HDD)
  - 1Grms @ sine, 5~500Hz, 1hr/axis (HDD operating)
  - 2Grms @ sine, 5~500Hz, 1hr/axis (C/Fast operating)
  - 2.2Grms @ random condition, 5~500Hz, 0.5hr/axis (non-operating)
- Shock:
  - IEC 68 2-27
  - HDD: 20G @ wall mount, half sine, 11ms
- Operating temperature: -10°C to 50°C
  - \* Intel® Core™ i7/Intel® Celeron® B810: -10°C to 40°C
- Storage temperature: -20°C to 75°C
- Operating humidity: 10%~90% relative humidity, non-condensing
- Dimension: 562.4mm x 382.4mm x 92.27mm
- Weight: 11.9Kg for IPPC2160PP2E-DC  
12.51Kg for IPPC2160PP2E-AC

### Certifications

- CE (including EN61000-6-2/EN61000-6-4)
- FCC Class A
- AC: LVD 60950-1

### OS Support Lists

- Windows 8 32bit/64bit
- Windows 7 32bit/64bit
- WinCE 7.0
- Windows XP 32bit

## Ordering Information

### System

- **IPPC 2160PP2E-DC (P/N: 10I12160P02X0)**  
21.5" Full HD LED backlight fanless touch panel PC, Intel® Core™ i5-3610ME 2.7GHz, touch screen, 4GB DDR3, 3 x COMs, DC power input
- **IPPC 2160PP2E-AC (P/N: 10I12160P00X0)**  
21.5" Full HD LED backlight fanless touch panel PC, Intel® Core™ i5-3610ME 2.7GHz, ten points P-Cap touch screen, 4GB DDR3, 6 x COMs, 4 x 4 GPIO, 4 x 4 DI/O with isolated protection, AC power input

### Optional

- **24V/5A, 120W AC to DC DIN rail power adapter w/ o power cord (P/N: 7440120001X00) (for IPPC 1960TP2EDC only)**
- **Riser card 2 x PCI slots (P/N: 20JK036P200X0)**
- **Riser card 2 x PCIe4 slots (P/N: 20JK036E200X2)**
- **Fieldbus module universal kit (for IPPC 2160PP2E-DC) only)**
- **88J50090E00X0 FBI 90E-PNM kit (w/ 25 cm cable)**  
**PROFINET master**
- **88J50090E01X0 FBI 90E-EP kit (w/ 25 cm cable)**  
**EtherNet/IP master**
- **88J50090E02X0 FBI 90E-ECM kit (w/ 25 cm cable)**  
**EtherCAT master**
- **88J50090E03X0 FBI 90E-PBM kit (w/ 25 cm cable)**  
**PROFIBUS master**
- **88J50090E04X0 FBI 90E-DNM kit (w/ 25 cm cable)**  
**DeviceNET master**