

# IPPC-9151G

15" SXGA LED backlight TFT LCD Intel® Core™ i7/i5/i3 Celeron Mobile Processor Industrial Panel PC with 1x PCIe Slot

NEW



## Features

- Intel® Core™ i7/i5/i3 Celeron® μFC-PGA988 processor with Intel QM67 chipset
- 15" XGA LED backlight LCD with low power consumption
- Front access USB connector
- Supports 1 xPCIe x1 or 4 (Gen2)
- Heavy-duty stainless steel chassis with aluminum front panel
- Strengthened glass protects the front panel from shock damage and is NEMA4/IP65 compliant
- Support dual display of HDMI, LVDS, VGA
- Supports 1 x 2.5" SATA II or SATA III HDD and 1 x CFast
- Hard anodic coating to prevent panel abrasion and acid corrosion
- Supports embedded software APIs and Utilities

## Introduction

IPPC-9151G is a fully functional computer system with front USB access, with Intel mobile Core i7-2710QE 2.1GHz / Core i5-2510E 2.5 GHz / Core i3-2330E 2.2 GHz / Celeron B810 1.6 GHz processors up to 6 MB L3 cache and DDR3 SO-DIMM 1066/1333 up to 8 GB and a resolution up to 1024 x 768 to meet the demands of today's high-end industrial software. The IPPC-9151G is a rugged unit with an aluminum panel, 15" TFT LCD with LED backlight, a stainless steel structure and a PCIe slot. The IPPC-9151G is rugged enough to handle the toughest industrial operating environments. With optional mounting accessories, from panels to racks, it can be mounted anywhere.

## Specifications

### General

- BIOS** AMI EFI 64 Mbit SPI
- Certifications** BSMI, CCC, CE, FCC, UL
- Cooling System** 2 x 10.1 CFM fans w/50,000 hrs MTBF
- Dimensions (W x H x D)** 428 x 310 x 96.5 mm (16.35" x 12.2" x 3.79")
- Disk Drive Bay** Supports 1 x 2.5" SATA II or SATA III HDD
- Enclosure** Stainless steel back case, 10 mm aluminum front panel
- Mounting** Panel, rack
- Power Input** 100~240 V<sub>AC</sub> @ 4A 50~60hz
- Power Supply** 180 W, MTBF: 100,000 hrs
- Weight (Gross)** 10.52 Kg (23.19 lbs)

### System Hardware

- CPU** Supports uFC-PGA988 Intel mobile Core i7-2710QE 2.1 GHz / Core i5-2510E 2.5 GHz / Core i3-2330E 2.2 GHz / Celeron B810 1.6GHz processor
- Chipset** Intel 6 series chipset(QM67)
- Audio Ports** Mic-in, Line-out, Line-in
- Expansion Slots** Supports 1 x PCIe x1 or x4
- PS/2** 1 x keyboard and 1 x mouse
- Lan** 2 x 10/100/1000Mbps
- Memory** 2 x 204 pin DDR3 1066/1333 SODIMM sockets supports up to 8GB(2x 4GB)  
1 x CFast slot
- I/Os**
  - 1 x VGA
  - 1 x HDMI
  - 5 x USB 2.0( one at front)
  - 4 x RS-232

### LCD Display

- LCD Display Type** XGA TFT LCD with LED Backlight
- Display Size** 15"
- Max. Resolution** 1024 x 768
- Max. Colors** 16.2M or 256K Color
- Viewing Angle (H/V°)** 160/140
- Luminance** 350 cd/m<sup>2</sup>
- Backlight Life** 50,000 hrs
- Contrast Ratio** 700 : 1

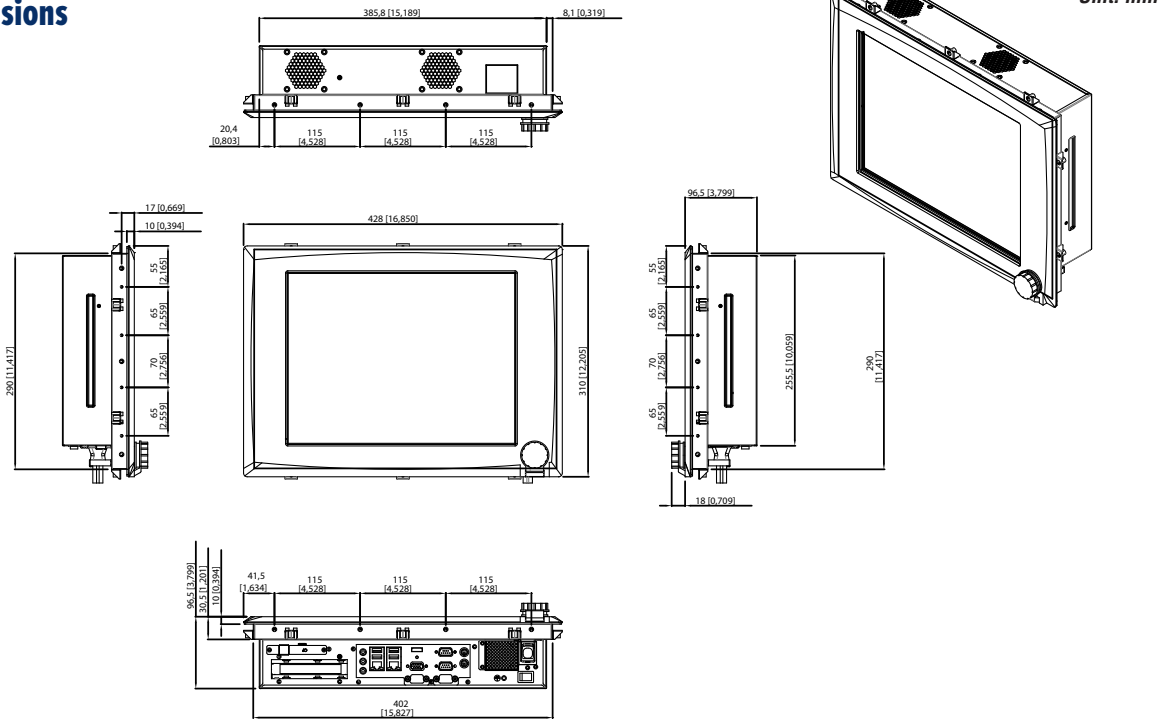
### Touchscreen

- Lifespan** 36 million with a silicone rubber of R8 finger, writing rate is by 250g at 2 times/s
- Light Transmission** > 80%
- Type** Analog resistive (5-wire)

### Environment

- Humidity** 5 ~ 85% @ 40°C (non-condensing)
- Ingress Protection** Front panel: NEMA4/IP65
- Operating Temperature** 0 ~ 50°C (32 ~ 122°F)
- Storage Temperature** -20 ~ 60°C (-4 ~ 140°F)
- Vibration Protection** 5 ~ 500 Hz, 1 G<sub>RMS</sub> random vibration

## Dimensions



Cut Out Dimensions: 404mm(15.90")X292mm(11.49")

## Ordering Information

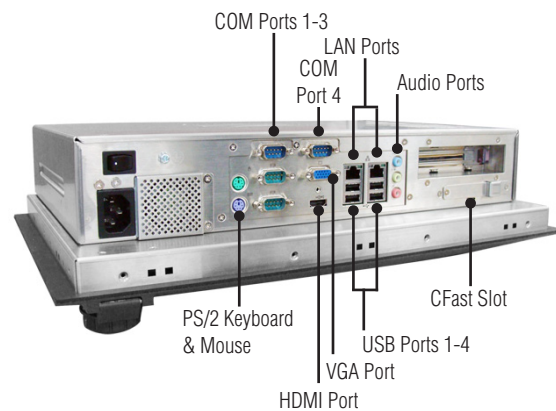
- IPPC-9151G-R1AE 15" XGA Intel® Core™ i7/i5/i3 Celeron with TS

## Accessories

### Notes:

- IPPC-9151G-RMKE IPPC-9151G Rackmount Kit
- When used in a panel mounted environment, the panel's thickness can not be over 5 mm.
    - 1702002600 Power Cable US Plug 1.8 M
    - 1702002605 Power Cable EU Plug 1.8 M
    - 1702031801 Power Cable UK Plug 1.8 M
    - 1702031836 Power Cable China/Australia Plug 1.8 M
  - Dual Display
    - Primary Display LCD
    - Second Display CRT or HDMI

## I/O Overview



## Value-Added Software Services

**Software API:** An interface that defines the ways by which an application program may request services from libraries and/or operating systems. Provides not only the underlying drivers required but also a rich set of user-friendly, intelligent and integrated interfaces, which speeds development, enhances security and offers add-on value for Advantech platforms. It plays the role of catalyst between developer and solution, and makes Advantech embedded platforms easier and simpler to adopt and operate with customer applications.

## Software APIs

### Control



**GPIO**

General Purpose Input/Output is a flexible parallel interface that allows a variety of custom connections. It allows users to monitor the level of signal input or set the output status to switch on/off a device. Our API also provides Programmable GPIO, which allows developers to dynamically set the GPIO input or output status.



**Hardware Control**

The Hardware Control API allows developers to set the PWM (Pulse Width Modulation) value to adjust fan speed or other devices; it can also be used to adjust the LCD brightness.

### Display



**Brightness Control**

The Brightness Control API allows a developer to interface with an embedded device to easily control brightness.



**Backlight**

The Backlight API allows a developer to control the backlight (screen) on/off in an embedded device.

### Monitor



**Watchdog**

A watchdog timer (WDT) is a device that performs a specific operation after a certain period of time if something goes wrong and the system does not recover on its own. A watchdog timer can be programmed to perform a warm boot (restarting the system) after a certain number of seconds.



**Hardware Monitor**

The Hardware Monitor (HWM) API is a system health supervision API that inspects certain condition indexes, such as fan speed, temperature and voltage.

### Power Saving



**CPU Speed**

Make use of Intel SpeedStep technology to reduce power consumption. The system will automatically adjust the CPU Speed depending on system loading.



**System Throttling**

Refers to a series of methods for reducing power consumption in computers by lowering the clock frequency. These APIs allow the user to lower the clock from 87.5% to 12.5%.

## CPU Compatibility

| CPU Family         | Speed   | Spec. | Core Stepping | TDP  | L3 cache | Advantech PN     |
|--------------------|---------|-------|---------------|------|----------|------------------|
| Intel i7-2710QE    | 2.1 GHz | SR02T | D-2           | 45 W | 6 MB     | 96MPI7M-2.1-6M9T |
| Intel i5-2510E     | 2.5 GHz | SR02U | D-2           | 35 W | 3 MB     | 96MPI5M-2.5-3M9T |
| Intel i3-2330E     | 2.2 GHz | SR02V | D-2           | 35 W | 3 MB     | 96MPI3M-2.2-3M9T |
| Intel Celeron B810 | 1.6 GHz | -     | D-2           | 35 W | 2 MB     | 96MPCM-1.6-2M9T  |

## Memory Compatibility

| Brand     | Size | Speed     | Type        | ECC | Vendor PN                    | Memory                                | Advantech PN      |
|-----------|------|-----------|-------------|-----|------------------------------|---------------------------------------|-------------------|
| Transcend | 1GB  | DDR3 1066 | SODIMM DDR3 | N   | TS128MSK64V1U/TS2KSU28200-1S | SEC K4B1G0846D-HCF8 (128x8)           | 96SD3-1G1066NN-TR |
|           | 1GB  | DDR3 1066 | SODIMM DDR3 | N   | TS128MSK64V1U                | SEC HCH9<br>K4B1G0846D (128x8)        | 96SD3-1G1066NN-TR |
|           | 2GB  | DDR3 1066 | SODIMM DDR3 | N   | TS256MSK64V1U/TS5KSU28400-1S | SEC K4B1G0846D-HCF8 (128x8)           | 96SD3-2G1066NN-TR |
|           | 2GB  | DDR3 1066 | SODIMM DDR3 | N   | TS128MSK64V1U                | SEC HCH9<br>K4B1G0846D (128x8)        | 96SD3-2G1066NN-TR |
|           | 4GB  | DDR3 1066 | SODIMM DDR3 | N   | TS7KSN28420-1Y               | HYNIX<br>H5TQ2G83BFR (256x8)          | 96SD3-4G1066NN-TR |
| Apacer    | 1GB  | DDR3 1066 | SODIMM DDR3 | N   | 78.02GC3.420                 | ELPIDA<br>J1108BDBG-DJ-F (128x8)      | 96SD3-1G1066NN-AP |
|           | 2GB  | DDR3 1066 | SODIMM DDR3 | N   | 78.A2GC3.421                 | ELPIDA<br>J1108BDBG-AEE (128x8)       | 96SD3-2G1066NN-AP |
|           | 4GB  | DDR3 1066 | SODIMM DDR3 | N   | 78.B2GC8.AF1                 | HYNIX<br>H5TQ2G83BFR (256x8)          | 96SD3-4G1066NN-AP |
| Kingston  | 2GB  | DDR3 1066 | SODIMM DDR3 | N   | KVR1066D3S7/2G               | KVR1066D3S7/2G (256x8)                | -                 |
| DSL       | 1GB  | DDR3 1066 | SODIMM DDR3 | N   | -                            | ELPIDA J1108BASEDJ-E (128x8)          | -                 |
|           | 4GB  | DDR3 1066 | SODIMM DDR3 | N   | D3SH56082XH18AB              | HYNIX H5TQ2G83BFR (256x8)             | -                 |
| Micron    | 1GB  | DDR3 1066 | SODIMM DDR3 | N   | MT8JSF12864HZ-1G1F1          | Micron 9FF27<br>D9KPT (128x8)         | -                 |
| Samsung   | 2GB  | DDR3 1066 | SODIMM DDR3 | N   | M471B5673DH1-CF8             | SEC 904 HCF8<br>K4B1G0846D<br>(128x8) | -                 |
| G.SKILL   | 4GB  | DDR3 1066 | SODIMM DDR3 | N   | F3-8500CL7S-4GBSQ            | HYNIX<br>H5TQ2G83AFRG7C (256X8)       | -                 |
| Transcend | 1GB  | DDR3 1333 | SODIMM DDR3 | N   | TS128MSK64V3U                | SEC 849 HCH9<br>K4B1G0846D (128x8)    | -                 |
|           | 2GB  | DDR3 1333 | SODIMM DDR3 | N   | TS256MSK64V3U                | SEC 904 HCF8<br>K4B1G0846D (128x8)    | -                 |
|           | 4GB  | DDR3 1333 | SODIMM DDR3 | N   | TS512MSK64V3N                | HYNIX<br>H5TQ2G83BFR (256x8)          | -                 |
| Apacer    | 1GB  | DDR3 1333 | SODIMM DDR3 | N   | 78.02GC6.420                 | ELPIDA<br>J1108BDBG-DJ-F (128x8)      | 96SD3-1G1333NN-AP |
|           | 2GB  | DDR3 1333 | SODIMM DDR3 | N   | 78.A2GC6.421                 | ELPIDA<br>J1108BDBG-DJ-F (128x8)      | 96SD3-2G1333NN-AP |
|           | 4GB  | DDR3 1333 | SODIMM DDR3 | N   | 78.B2GC9.AF1                 | HYNIX<br>H5TQ2G83BFR (256x8)          | -                 |
| DSL       | 1GB  | DDR3 1333 | SODIMM DDR3 | N   | D3SE28081XH15AA              | ELPIDA J1108BDESDJ-<br>F (128x8)      | -                 |
|           | 2GB  | DDR3 1333 | SODIMM DDR3 | N   | D3SE28082XH15AA              | ELPIDA J1108BDESDJ- F (128x8)         | -                 |
|           | 4GB  | DDR3 1333 | SODIMM DDR3 | N   | D3SH56082XH15AA              | HYNIX<br>H5TQ2G83BFR (256x8)          | -                 |
| Kingston  | 1GB  | DDR3 1333 | SODIMM DDR3 | N   | KVR1333D3S9/1G               | ELPIDA<br>J1108BDBG-DJ-F (128x8)      | -                 |
|           | 2GB  | DDR3 1333 | SODIMM DDR3 | N   | KVR1333D3S9/2G               | ELPIDA<br>J1108BDBG-DJ-F (128x8)      | -                 |
| ATP       | 4GB  | DDR3 1333 | SODIMM DDR3 | N   | AW12M64F8BKH9S               | SEC 019 HCH9<br>K4B2G0846C (256x8)    | -                 |