

# TPC-2000 Series

## Modular Industrial Thin-Client Panel Computer with 12" XGA / 15" XGA / 17" SXGA / 15.6" FHD / 18.5" HD / 21.5" FHD / 23.8" FHD and Intel Atom E3940/Celeron J3455 Processor



### Features

- Intel Atom E3940 quad-core, 1.60 GHz/Celeron J3455 quad-core, 1.50 GHz, processor with 4GB DDR3L SODIMM
- Modular design enables flexible configuration and easy maintenance and upgrades
- Front panel module with P-CAP multi-touch sensor available in various sizes (the 12.1" module is equipped with 5-wire resistive touch control)
- Industrial-grade LED LCD with a lifetime of 50,000 hours (18.5" 30,000 hours)
- Built-in intelligent home key and i-key (only for models with P-CAP touch control)
- System status LED indicators in front panel
- Supports 1 x full-size mini PCIe, 1 x iDoor module, and 1 x HDD bay
- IP66-rated front panel and panel mount
- Optional Wi-Fi antenna and NFC reader on front panel
- Integrated power isolation to minimize field interference
- Supports Advantech's WISE-PaaS/RMM remote device management software
- Up to 3 levels of logo customization (optional)

### Introduction

The TPC-2000 series is the first modular range of Advantech's industrial thin-client offerings. TPC-2000 series comprise a computing box module and a display module, featuring a low-power Intel® Atom® E3940/Celeron® J3455 with 4GB of DDR3L SODIMM and an industrial-grade LCD with 6H surface hardness and P-CAP or 5-wire resistive touch control, TPC-2000 series systems offer a sufficient display area and excellent computing performance in a compact, fanless form factor. The modular design ensures flexible configuration according to usage requirements and easy maintenance/upgrades. The system's robust enclosure is equipped with a die-cast aluminum alloy front bezel and IP66 rating for protection from dust and water ingress, making the TPC-2000 series suitable for harsh environments. TPC-2000 systems also feature a mini-PCIe slot that can be used to integrate Advantech's iDoor technology to support additional I/O, isolated digital I/O, fieldbus protocols, 3G/GPS/GPRS communication, and MRAM in order to satisfy the requirements of various industrial automation applications. Moreover, optional Wi-Fi/NFC can be built into the front panel for enhanced connectivity and signal reception.

### System Specifications

#### General

- BIOS**: AMI UEFI
- Certification**: BSMI, CCC, CE, FCC Class A, UL, EAC
- Cooling System**: Fanless design
- Enclosure**: Front bezel: Die cast aluminum alloy  
Back housing: SECC
- Mount Options**: Panel mount kit; VESA mount kit (optional)
- OS Support**: Windows 10 IoT Enterprise LTSB Entry
- Power Input**: 24 V<sub>DC</sub> ± 20%
- Power Consumption**: Typ. 24W; Max. 55W
- Watchdog Timer**: 1 ~ 255 sec (system)

#### System Hardware

- CPU**: Intel Atom E3940, 1.60 GHz/Celeron J3455, 1.50GHz
- Memory**: 4 GB of DDR3L 1600 MHz SODIMM SDRAM (up to 8 GB)

- LAN**: 2 x Intel® I210 10/100/1000BASE-T
- Expansion Slots**: 1 x full-size mini PCIe with support for a GSM 11.11 SIM card
- Storage**: 1 x M.2 (2242)  
1 x 2.5" SATA SSD  
2 x RS-232/422/485
- I/O**: 2 x USB 3.0  
2 x USB 2.0  
1 x Audio line out  
1 x DisplayPort 1.2 out

#### Environment

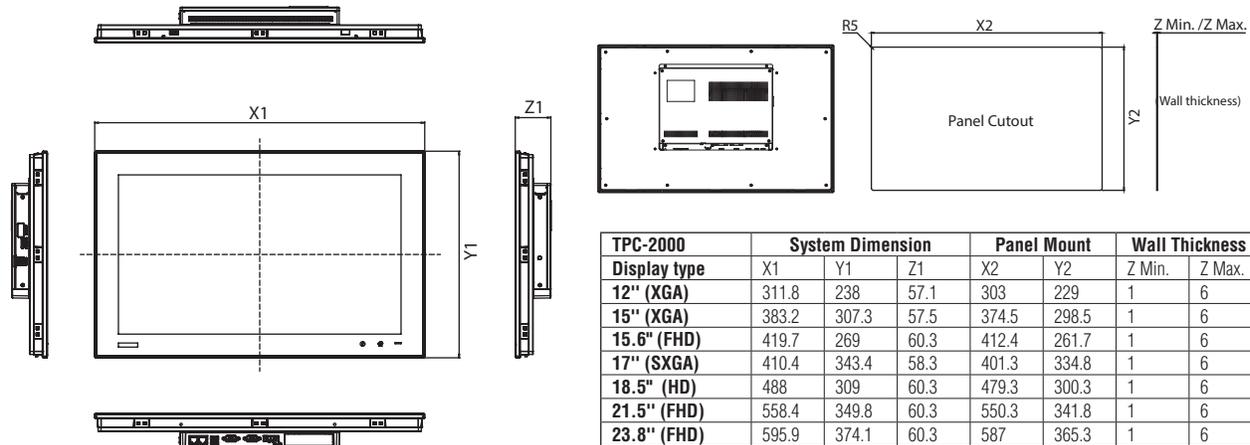
- Humidity**: 10 ~ 95% RH @ 40 °C, non-condensing
- Ingress Protection**: IP66 rating for the front panel
- Vibration Protection**: With SSD: 1 Grms (5 ~ 500 Hz) (operating, random vibration)
- Operating Temperature**: -0 ~ 50 °C (32 ~ 122 °F)
- Storage Temperature**: -40 ~ 60 °C (-40 ~ 140 °F)

### Display Panel Modules

Part Number		FPM-D12T-BE	FPM-D15T-BE	FPM-D17T-BE	FPM-D15W-FBE	FPM-D18W-BE	FPM-D21W-BE	FPM-D24W-BE
LCD Panel	Display Size	12"	15"	17"	15.6"	18.5"	21.5"	23.8"
	Display Type	XGA TFT LED LCD	XGA TFT LED LCD	SXGA TFT LED LCD	FHD TFT LED LCD	HD TFT LED LCD	FHD TFT LED LCD	FHD TFT LED LCD
	Aspect Ratio	4:3		5:4	16:9			
	Max. Resolution	1024 x 768	1024 x 768	1280 x 1024	1920 x 1080	1366 x 768	1920 x 1080	1920 x 1080
	Max. Color	16.2M	16.7M	16.7M	16.7M	16.7M	16.7M	16.7M
	Luminance	600 cd/m <sup>2</sup>	300 cd/m <sup>2</sup>	350 cd/m <sup>2</sup>	450 cd/m <sup>2</sup>	250 cd/m <sup>2</sup>	250 cd/m <sup>2</sup>	350 cd/m <sup>2</sup>
	Viewing Angle (H/V)	178°/178°	176°/176°	160°/140°	170°/170°	170°/160°	178°/178°	178°/178°
	Backlight Life	50,000 hr	70,000 hr	50,000 hr	50,000 hr	30,000 hr	50,000 hr	30,000 hr
Contrast Ratio	1000:1	2000:1	800:1	800:1	1000:1	1000:1	1000:1	
Touchscreen	Type	5-Wire resistive	PCAP	PCAP	PCAP	PCAP	PCAP	PCAP
	Light Transmission	Above 75%	90% ± 3%	90% ± 3%	90% ± 3%	90% ± 3%	90% ± 3%	90% ± 3%
	Anti-Glare Treatment	Yes						
	Built-In iKey	N/A	Yes	Yes	Yes	Yes	Yes	Yes
Expandibility	WiFi/NFC Support on Front Panel	N/A						Optional (Please contact Advantech for more information.)

## Dimensions

Unit: mm



## Ordering Information

### Configurable System

Box Module	TPC-B200-J12AE	TPC-B200-E12AE
Description	Intel® Celeron® J3455, 1.50 GHz, processor with 4 GB DDR3L	Intel® Atom® E3940, 1.60 GHz, processor with 4GB DDR3L

Panel Module P/N	FPM-D12F-BE	FPM-D15F-BE	FPM-D17F-BE	FPM-D15W-FBE	FPM-D18W-BE	FPM-D21W-BE	FPM-D24W-BE
Description	12.1" XGA TFT LED LCD	15" XGA TFT LED LCD	17" SXGA TFT LED LCD	15.6" FHD TFT LED LCD	18.5" HD TFT LED LCD	21.5" FHD LED LCD	23.8" FHD TFT LED LCD

### Pre-configured System

- TPC-2121T-J12BE Modular TPC with 12.1" XGA LCD, Intel® Celeron® J3455 quad-core (1.50 GHz) processor, 4 GB RAM, and resistive touch control
- TPC-2151T-J12BE Modular TPC with 15" XGA LCD, Intel® Celeron® J3455 quad-core (1.50 GHz) processor, 4 GB RAM, and P-CAP touch control
- TPC-2181W-J12BE Modular TPC with 18.5" HD LCD, Intel® Celeron® J3455 quad-core (1.50 GHz) processor, 4 GB RAM, and P-CAP touch control

## Optional Accessories

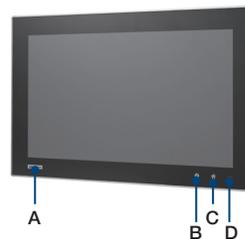
- PWR-247-DE 60W DC 24V/2.5A power adaptor
- 1702002600 Power cable (US) 1.8 M
- 1702002605 Power cable (EU) 1.8 M
- 1702031801 Power cable (UK) 1.8 M
- 1700000596-11 Power cable (China/Australia) 1.8 M
- 20703WX9ES0002 Win10 IoT Ent 2019 LTSC Entry for TPC-2000 series
- TPC-5000T-VMKE VESA mount kit for TPC-2000/5000 Series
- TPC-RUSB-W10LTSBE Win10 Recovery USB for TPC-2000 series
- 98R35000000 USB NFC/RFID module ADT-006 (via CTOS)
- Wi-Fi Contact your sales rep. for front panel Wi-Fi module

## iDoor Modules

- PCM-26D2CA-AE SJA1000 CANBus with CANOpen and 2 x DB9
- PCM-26D1DB-MAE Hilscher netX100 with FieldBus, ProfiBus, and 1 x DB9
- PCM-27D24DI-AE Digital I/O with 16 x DI/8 x DO, isolation, and 1 x DB37
- PCM-24D2R4-AE OXPc1e-952 UART with isolated RS-422/485 and 2 x DB9
- PCM-24D2R2-AE OXPc1e-952 UART with isolated RS-232 and 2 x DB9
- PCM-24R2GL-AE 2-port Gigabit LAN Intel i350 PCIe mini card
- PCM-24R1TP-AE Intel 82574L with GbE, IEEE 1588 PTP, and 1 x RJ45
- PCM-23C1CF-BE 1 x CFast Slot via SATA (note: additional cable is required)

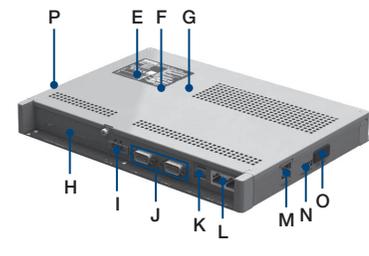
\* Contact Advantech for more options.

## Front View



- A. Logo
- B. iKey
- C. Home key
- D. Power indicator

## Rear View



- E. Hard disk bay
- F. mPCIe
- G. M.2 (SATA only)
- H. iDoor
- I. Power input
- J. 2 x RS-232/422/485
- K. 2 x USB 3.0
- L. 2 x LAN (10/100/1000)
- M. 2 x USB 2.0
- N. DisplayPort
- O. Audio Line Out
- P. Antenna

## Application Software

<b>WebAccess/SCADA</b>	Advantech WebAccess/SCADA is a 100% browser-based IIoT software platform aimed at supervisory control and data acquisition (SCADA) operations. WebAccess/SCADA provides open interfaces that allow our customers and partners to develop unique IIoT applications for different vertical markets. In addition to supporting traditional SCADA functions, the platform features an HTML5-based user interface and intelligent dashboard to facilitate cross-platform, cross-browser data analysis. Moreover, WebAccess/SCADA not only offers built-in widgets, but is also equipped with an innovative Widget Builder that enables customers to build their own widgets.
<b>WebAccess/HMI</b>	Advantech WebAccess/HMI is human-machine interface (HMI) software based on Microsoft's Windows operating system. This software features excellent communication and monitoring capabilities, supports more than 350 PLC communication protocols, and offers a wide choice of screen design objects to satisfy diverse integrations of factory automation and HMI operation and monitoring requirements.