TPC-5000 Series

Modular Multi-Touch Panel Computer with 12" XGA / 15" XGA / 17" SXGA / 15.6" FHD / 18.5" HD / 21.5" FHD / 23.8" FHD and 6th Gen. Intel® Core™/Celeron® Processor

Features

- Intel® Celeron® 3955U/Core™ i3-6100U/i5-6300U/i7-6600U processor with 4/8 GB DDR4 SODIMM
- Industrial-grade LED LCD with a lifespan of 50,000 hours
- Modular design enables flexible configuration and easy maintenance
- Display modules available in various sizes with projected capacitive or 5-wire resistive touch control
- Programmable home key and iKey for adjusting system settings
- Built-in TPM 2.0 technology
- 2 x full-size mini-PCIe and 1 x half-size PCIe
- IP66-rated front panel protects against water and dust
- 3 x LAN with multiple fieldbus protocol support and LAN surge protection
- Panel logo can be customized
- Supports SSD expansion

Introduction

The TPC-5000 series is the first of Advantech's TPC range of modularized industrial panel solutions. TPC-5000 series systems comprise a box module powered by a 6th Gen Intel® Core™/Celeron® processor combined with an industrial-grade LED LCD module, providing compact and fanless control panel solutions that support high-performance computing. Built to withstand diverse industrial environments, the TPC-5000 display modules feature an IP66-rated front panel for water and dust resistance, a scratch-resistant glass panel that supports projected capacitive or 5-wire resistive touch control, and a robust enclosure with die-cast aluminum alloy front bezel. Meanwhile, the TPC-5000 box modules feature MRAM and TPM 2.0 technology and 3 x LANs with surge protection and multiple fieldbus protocol support for increased data security and network connectivity. Designed for flexible expansion and easy maintenance, TPC-5000 series systems can also be integrated with optional iDoor and Wi-Fi/NFC modules for enhanced functionality.

Specifications

General

- **BIOS** — AMI UEFI
- **Certification** — BSMI, CCC, CE, FCC Class A, UL, EAC, 61010
- **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** — Microsoft® Windows WES7 (32/64-bit), Windows 10 IoT Enterprise LTSB/LTSC
- **Power Input** — 24 V_{DC} ± 20%
- **Power Consumption** — Typ. 41W; Max. 75W
- **Watchdog Timer** — 1 ~ 255 sec (system)

Hardware

- **CPU** — 6th Gen Intel® Celeron® 3955U 2.00 GHz
  6th Gen Intel® Core™ i3-6100U 2.30 GHz
  6th Gen Intel® Core™ i5-6300U 2.40 GHz
  6th Gen Intel® Core™ i7-6600U 2.60 GHz

- **Memory** — TPC-B500-6C2AE: 4 GB DDR4 2133 MHz SODIMM SDRAM (up to 16 GB)
  TPC-B500-633AE/653AE/673AE: 8 GB DDR4 2133 MHz SODIMM SDRAM (up to 32 GB)
- **LAN** — 3 x 10/100/1000BASE-T (2 x Intel® I210, 1 x Intel® I219)
- **Expansion Slots** — 1 x Half-size PCIe
  (Lanes: x1; Max. Dimension: 167.65 mm x 64.41 mm x 14.48 mm (D x W x H))
  2 x Full-size mini PCIe
- **Storage** — 1 x M.2 (2280) SATA slot
  1 x 2.5" SATA SSD slot
  1 x CFast (optional via iDoor module)
- **I/O** — 1 x RS-232, 1 x RS-232/422/485
  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-rated front panel
- **Vibration Protection** — With SSD: 3 Grms (5 ~ 500 Hz) (operating, random vibration)
- **Operating Temperature** — 0 ~ 55 °C (32 ~ 131°F); 0 ~ 50 °C (32 ~ 122 °F) for 18.5" display panel
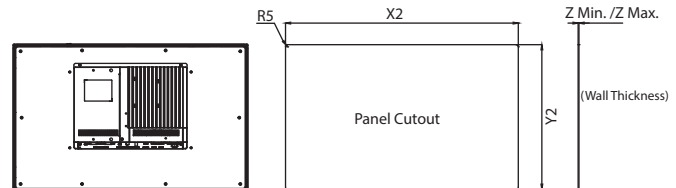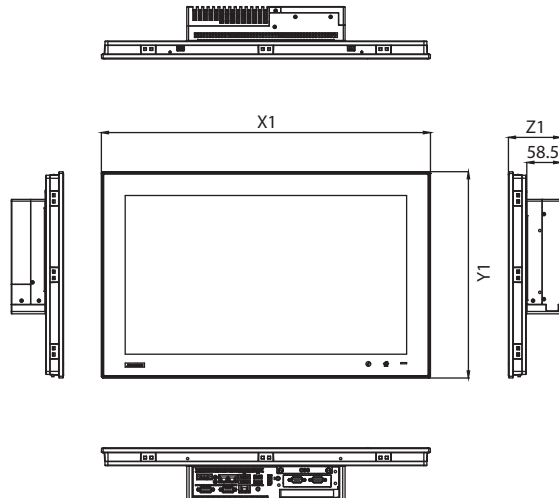- **Storage Temperature** — -20 ~ 60 °C (-4 ~ 140 °F)

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/m²	300 cd/m²	350 cd/m²	450 cd/m²	250 cd/m²	250 cd/m²	350 cd/m²
	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	Yes	Yes	Yes	Yes	Yes	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

X1

Z1

58.5

Y1

R5

X2

Z Min. /Z Max.

Panel Cutout

Y2

(Wall Thickness)

TPC-5000	System Dimension			Panel Mount		Wall Thickness	
Display type	X1	Y1	Z1	X2	Y2	Z Min.	Z Max.
12'' (XGA)	311.8	238	85.6	303	229	1	6
15'' (XGA)	383.2	307.3	86	374.5	298.5	1	6
15.6'' (FHD)	419.7	269	86.8	412.4	261.7	1	6
17'' (SXGA)	410.4	343.4	86.8	401.3	334.8	1	6
18.5'' (HD)	488	309	88.8	479.3	300.3	1	6
21.5'' (FHD)	558.4	349.8	88.8	550.3	341.8	1	6
23.8'' (FHD)	595.9	374.1	88.8	587	365.3	1	6

Ordering Information

Configurable System

Box Modules	TPC-B500-6C2AE	TPC-B500-633AE	TPC-B500-653AE	TPC-B500-673AE
Description	Intel® Celeron® 3955U, 4 GB DDR4	Intel® i3-6100U, 8 GB DDR4	Intel® i5-6300U, 8 GB DDR4	Intel® i7-6600U, 8 GB DDR4

Panel Module P/N	FPM-D12T-BE	FPM-D15T-BE	FPM-D17T-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-5152T-633BE** — 15" XGA touch panel with Intel® Core™ i3-6100U dual-core processor (2.30 GHz) and 8 GB RAM
- **TPC-5172T-633BE** — 17" SXGA touch panel with Intel® Core™ i3-6100U dual-core processor (2.30 GHz) and 8 GB RAM
- **TPC-5212W-633BE** — 21.5" FHD touch panel with Intel® Core™ i3-6100U dual-core processor (2.30 GHz) and 8 GB RAM

*Contact your local sales team for configuration queries.

Optional Accessories

- 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
- 96PSA-A120W24T2 — Adapter 100 ~ 240V 120W 24V 5A
- 98R35000020 — mPCIe HDMI & VGA module for TPC 5000
- 98R35000000 — USB NFC/RFID module ADT-006 (via CTOS)
- 20703WX9VS0005 — Win10 IoT Ent 2019 LTSC Value for Intel® Core™ i3/i5 and Celeron®
- 20703WX9HS0005 — Win10 IoT Ent 2019 LTSC High End for Intel® Core™ i7
- 20703WE7PS0008 — Win7 (WS7P) 64-bit for TPC-5000 series
- 20703LEB1S0011 — Advantech Linux V1.0.8 for TPC-5000 series
- TPC-RUSB-W10LTSBV — Win10 IoT Enterprise LTSB OS with recovery image for Intel® Core™ i3/i5 and Celeron®
- TPC-RUSB-W10LTSBH — Win10 IoT Enterprise LTSB OS with recovery image for Intel® Core™ i7
- TPC-5000T-VMKE — VESA mount kit for TPC-2000/5000 Series
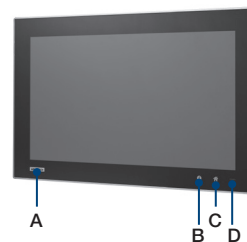- Wi-Fi — Contact your sales rep. for front panel Wi-Fi module

iDoor Modules

- PCM-24D2R4-AE — 2-Port isolated RS-422/485 mPCIe, DB9
- PCM-27D24DI-AE — 24-Channel isolated DI/O w/ counter mPCIe, DB37
- PCM-26D2CA-AE — 2-Port isolated CANBus mPCIe, CANOpen, DB9
- PCM-24R1TP-AE — 1-Port Gigabit Ethernet, Intel® 82574L, mPCIe, RJ45
- PCM-26D1DB-MAE — 1-Port Hilscher netX100 fieldbus mPCIe, PROFIBUS, DB9, master
- PCM-23C1CF-BE — 1 x CFast Slot via SATA (note: additional cable is required)

*Contact Advantech for more options.

Front View

A

B C D

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

Rear View

F H I K
E G J

L N Q
M O P

E. Half-size PCIe
F. 2 x mPCIe
G. M.2 for storage
H. DisplayPort
I. 3 x LAN
J. RS-232
K. RS-232/422/485
L. iDoor expansion
M. SSD bay
N. Audio out
O. 2 x USB 3.0
P. 2 x USB 2.0
Q. Power input

Application Software

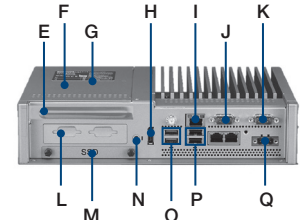| WebAccess/SCADA	Advantech WebAccess is a 100% web-based SCADA (supervisory control and data acquisition) software that serves as an IIoT platform by providing open interfaces for partners to develop IoT applications for diverse vertical markets.
WebAccess/HMI	WebAccess/HMI is human-machine interface (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.
CODESYS	CODESYS is an open control solution that allows users to easily develop a PC-based real-time control system, enables real-time PLC or PLC/SoftMotion control with flexible fieldbus options such as PROFINET, EtherCAT, EtherNet/IP, CANopen, and Modbus TCP/RTU, and facilitates on-site visualized HMI operation. The software/hardware flexibility and the stability of a PC-based cabinet controller are suitable for various control applications in vertical industries.

Please note: If some optional modules are offered with the system, additional system certificates may be required in certain regions/countries.
Please contact Advantech for certificate compliance.

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