TPC-B510

Modular TPC - Computing Box Module with Intel® 8th Gen. Core™ i CPU

Vertrieb durch AMC
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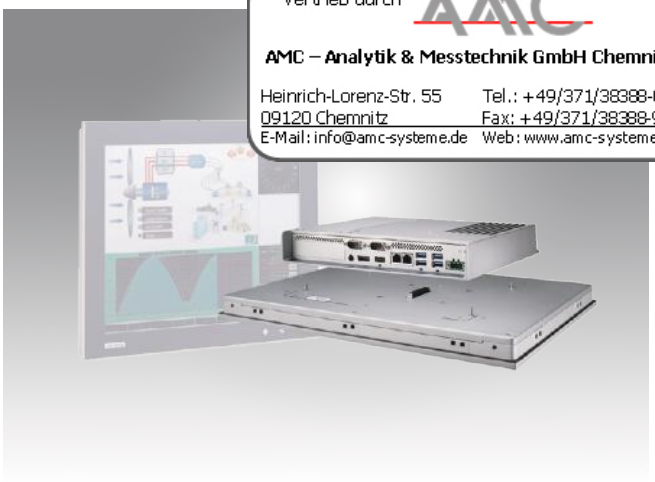


Features

- Modular Computing Box powered by 8th Gen. Intel® Core™ i3- 8145UE dual-core/i5-8365UE quad-core/ i7-8665UE quad-core processor with built-in 8 GB DDR4 SO-DIMM
- Dual channel memory slots support up to 32GB in total
- Compact, fanless embedded system with chassis grounding protection
- Support expansion via Full-size Mini PCIe and two M.2 slots (NVMe, 5G)
- Diverse system I/O and isolated digital I/O via iDoor technology
- Support fieldbus protocols/GPS/GPRS/Wi-Fi capabilities via iDoor technology
- Support TPM2.0 hardware security
- Modular Front Panel modules ranging from 12.1" to 23.8" with P-CAP multi-touch in selection (12.1" & 19" features 5-wire resistive touch)

Introduction

Advantech's TPC-B510 computing box module, as a member of the Modular Series TPC family, is powered by 8th Generation Intel Core processors. With its compact and fanless design, TPC-B510 delivers high performance that not simply meets your demands for a daily-operation control panel, but a genuine Industry 4.0-era-tailored Industrial PC that features bountiful I/Os including four USB 3.1 ports, expansions with M.2 NVME SSD and 5G/Wi-Fi module support for ultra speed data transmission. With an easy pairing with modular series FPM module, the whole system makes an IP66-grade powerful Panel PC that ranges from 12.1" to 23.8" with up to FHD resolution, adapting to your corporate demands both visually and technically.

*For other Modular Series TPC/FPM family members, please find 'TPC-B610', 'TPC-B500', 'TPC-B200'and 'FPM-B700' on Advantech's official website.

Specifications

General

- **BIOS** AMI UEFI
- **Certification** BSMI, CCC, CE, FCC Class A, CB/UL
- **Cooling System** Fanless design
- **Dimensions (W x H x D)** 268.96 x 202.96 x 39.5 (mm)
- **Enclosure** Back housing: Die cast aluminum alloy
- **Mounting** VESA Mount, Desktop, Wall or Panel Mount
- **OS Support** Win 10, Android, Linux
- **Security** TPM 2.0 (built-in)
- **Power Consumption** Typ. 29W; Max. 65W
- **Power Input** 24 V_{DC} ± 20%
- **Watchdog Timer** 15-255 sec (system)
- **Weight (Net)** 4.5kg

System Hardware

- **CPU** 8th Gen. Intel® Core™ i3- 8145UE 2.20GHz Dual-core/ i5-8365UE 1.60GHz Quad-core/i7-8665UE 1.70GHz Quad-core processor
- **Memory** Dual channel DDR4 SO-DIMM (Each channel supports up to 16G)
  1 x 8G DDR4 SO-DIMM (Built-in)
- **LAN** 1 x 1GbE and 1 x 2.5GbE
- **Expansion Slot** 1 x Full-size mini PCIe
  1 x SIM card slot
- **Storage Slot** 1 x M.2 B key 2242 (SATA)
  3042, 3052 (5G) USB3/PCIE
- **I/O** 2 x RS-232/422/485
  1 x USB 2.0
  4 x USB 3.1 (Gen.2)
  1 x iDoor slot
  1 x Displayport (Video output)
  1 x Audio line out/ mic in

Environment

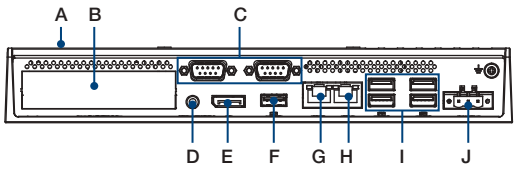
- **Humidity** 95% RH @ 40°C, non-condensing
- **Ingress Protection** IP66-rated front panel
- **Operating Temperature** -10~55°C (14~131°F) (w/o air flow)
- **Storage Temperature** -20~70°C (-4~158°F)
- **Vibration Protection** With SSD: 1 Grms (5 ~ 500 Hz) (Operating, random vibration)

Power Consumption with Panel Module

Item	Power Consumption		Screen Size	Resolution	Aspect Ratio
	Typ.	Max.			
TPC-B510	29W	65W	N/A	N/A	N/A
w/ FPM-D12T-BE	41W	77W	12.1"	1024x768	4:3
w/ FPM-D15T-BE	43W	79W	15"	1024x768	
w/ FPM-D17T-BE	53W	89W	17"	1280x1024	
w/ FPM-D15W-FBE	47W	83W	15.6"	1920x1080	16:9
w/ FPM-D18W-BE	40W	76W	18.5"	1366x768	
w/ FPM-D21W-BE	43W	79W	21.5"	1920x1080	
w/ FPM-D24W-BE	55W	91W	23.8"	1920x1080	

*Please find below the Ordering Information for the Panel Module.

Rear View



A. Default HDD/SSD Bay
B. iDoor slot
C. RS-232/422/485
D. Audio line out/ mic in
E. Display Port
F. USB 2.0
G. 1GbE LAN port
H. 2.5GbE LAN port
I. USB 3.1
J. Power Receptor

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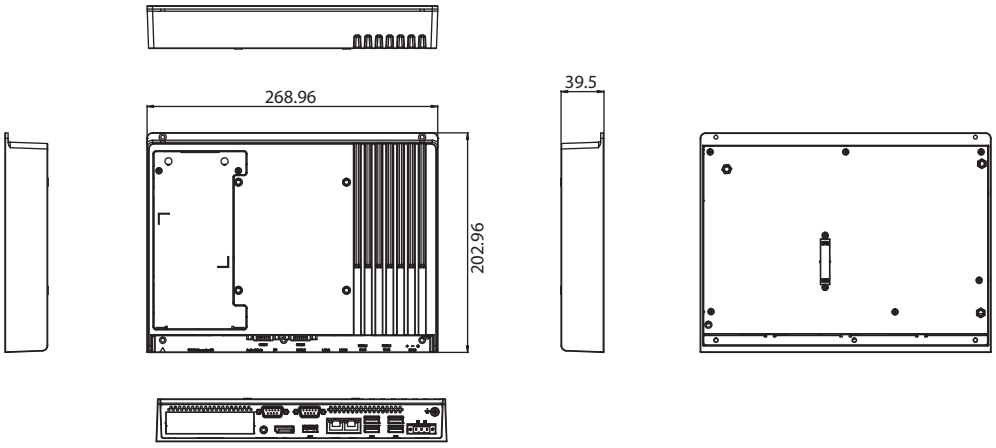
Dimensions

Unit: mm



Ordering Information

- **TPC-B510-833BE** Intel® Core™ i3-8145UE 2.20GHz Dual-core Processor, 8G DDR4 RAM, 2.5GbE LAN
- **TPC-B510-853BE** Intel® Core™ i5-8365UE 1.60 GHz Quad-core Processor, 8G DDR4 RAM, 2.5GbE LAN
- **TPC-B510-873BE** Intel® Core™ i7-8665UE 1.70GHz Quad-core Processor, 8G DDR4 RAM, 2.5GbE LAN
- **TPC-B510-833BC** Intel® Core™ i3-8145UE 2.20GHz Dual-core Processor, 8G DDR4 RAM (Mfg: China)
- **TPC-B510-853BC** Intel® Core™ i5-8365UE 1.60 GHz Quad-core Processor, 8G DDR4 RAM (Mfg: China)
- **TPC-B510-873BC** Intel® Core™ i7-8665UE 1.70GHz Quad-core Processor, 8G DDR4 RAM (Mfg: China)

Panel Module P/N	FPM-D12T-BE	FPM-D15T-BE	FPM-D17T-BE	FPM-D19T-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	19" 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

Note: Display modules **cannot** work independently. A computing box (TPC-B200/500) or a monitor box (FPM-B700) is compulsory to operate the display module.

Packing List

Item	Part No.	Depiction	Qty
Grounding cable	1703011001-11	A Cable G-TEM 4.3 100CM C=GR/Y	1
Plug-In Block	1652007930-01	Plug-In Block 1x3P/5.08mm/PA66/F/VA	1
Manual	2003TPC01A	Simplified Chinese manual for TPC Series 11th Ed	1
Warranty	2190000902	CARDBOARD-WARRANTY REV. A2	1
BOX Fix Screw	1930000881	Screw M3*8L S/S D=5.0 H=1.3 + ST Ni NK	5
VESA Screw	1930005204	Screw M4x10L R/S DH=6.8x2.50 + ST ZBK PL	4
HDD Screw	1930001361	Screw M3x4L S/S D=5 H=1.2 (2+) ST Ni NK	4
DDR Thermal Pad	1990019810N000	THERMAL PAD 60x23x2t XR-HL	1
China rohs	202KAKMC00	China rohs for AKMC model name 1st ed	1

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Optional Accessories

- **96PSA-A120W24T2-3** 120W 24V_{DC} power supply
- **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

Embedded OS

- **20704WX1HS0008** WIN10 LTSC for TPC-B510-873BE
- **20704WX1VS0008** Win10 LTSC for TPC-B510-833BE/853BE
- **Android**
- **Advantech Linux**

iDoor Modules

- **PCM-24D2R4-BE** Isolated RS-422/485, DB9 x 2, (USB type)
- **PCM-24D2R2-BE** Isolated RS-232, DB9 x 2, (USB type)
- **PCM-24R1TP-AE** 1-Port Gigabit Ethernet, Intel® 82574L, mPCIe, RJ45
- **PCM-27D24DI-AE** Digital I/O, 16 DI / 8 DO, Isolation, DB37 x 1
- **PCM-24S2WF-CE** 802.11 a/b/g/n/ac 2T2R w/BT4.1, Intel AC9260
- **PCM-26D2CA-AE** 2-Port Isolated CANBus mPCIe, CANOpen, DB9
- **PCM-23U1DG-CE** Internal locked USB Slot for USB Dongle, mPCIe

Application Software

WebAccess/SCADA	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 IoT 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.
WebAccess/HMI	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.

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.