TPC-B300

Modular TPC - Computing Box Module with Intel Elkhart Lake Atom and Celeron



Features

- Computing Box powered by Intel® Atom™ X6425E/Celeron® J6412 with DDR4 SODIMM slot (up to 32GB)
- Multiple sized front panel module offering with P-Cap multi-touch sensor (12.1" & 19" w/ robust 5-wire resistive touch)
- 1 x Full-size mini PCIe for iDoor expansion
- 1 x M.2 Key-E 2230 for WIFI + BT module
- 1 x M.2 Key-M 2280 for SATA SSD
- 1 x 2.5" SATA SSD expansion
- 2 x 2.5 Gb LAN
- Supports TPM2.0 hardware security
- Wide Temp. Support. Range -20~60 °C (Atom™ X6425E)

Introduction

TPC-B300 computing box modules are powered by Intel® Atom™ X6425E/Celeron® J6412 Processors to provide compact and fanless control panel solutions that deliver high-performance computing. With a highly flexible modular design, TPC-B300 allows users to change the panel sizes (12"-23.8").

Specifications

General

- **Certification** CE, FCC Class A, CB/UL
- **Cooling System** Fanless design
- **Dimensions (W x H x D)** 269 x 203 x 30 (mm)
- **Enclosure** Metal
- **Mounting** *VESA Mount, Wall or Panel Mount
  *VESA mount required TPC-5000T-VMKE
- **OS Support** Windows 10 IoT Enterprise LTSC
- **Power Input** 24 V_{DC} ± 20%
- **Weight (Net)** 2.1 kg (4.6 lbs)

System Hardware

- **CPU** Intel® Elkhart Lake
  Atom™ x6425E 2.00 GHz, quad core
  Celeron® J6412 2.00 GHz, quad core
- **Memory** 1 x DDR4 3200 SO-DIMM slot (up to 32GB)
- **Storage** 1 x M.2 M key 2280 (SATA)
  1 x 2.5" SSD/HDD
- **LAN** 2 x Intel® I226; 2.5GbE
- **Expansion Slot** 1 x Full-size mini PCIe (PCIE/USB2.0)
  *Support iDoor module / 4G&5G LTE SIM slot
  1 x M.2 E key 2230 (PCIE/USB2.0)
- **I/O** 2 x RS-232/422/485
  3 x USB 3.2
  1 x USB 2.0
  1 x Line out
  1 x Display Port (4096x2160@60Hz)
- **Power Input** 24 V_{DC} ± 20%
- **Security** TPM 2.0 (built-in)

Environment

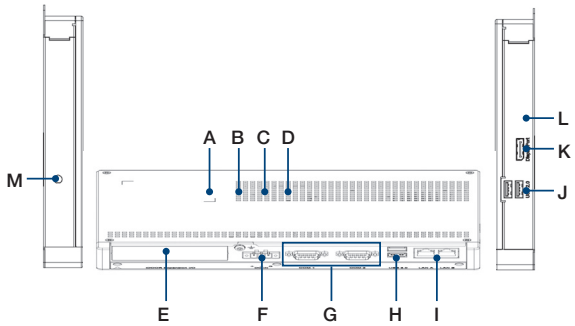
- **Humidity** 95% RH @ 40°C, non-condensing
- **Ingress Protection** IP66 (for optional panel module with "Panel Mount")
- **Operating Temperature** -20°C~60°C (Atom X6425E with SATA SSD)
  0°C~60°C (Celeron J6412 with SATA SSD)
- **Storage Temperature** -40°C~70°C (-40°F~158°F)
- **Vibration Protection** With SSD: Operating, IEC 60068-2-6, 1G, 5-500 Hz, random vibration
- **Shock Protection** With SSD: Operating, IEC 60068-2-27, half sine, 10G, 11 ms

Power Consumption with Panel Module

Item	Power Consumption		Screen Size	Resolution	Aspect Ratio
	Typ.	Max.			
TPC-B300	21W	50W	N/A	N/A	N/A
w/ FPM-D12T-CE/RE	33W	62W	12.1"	1024x768	4:3
w/ FPM-D12T-HE	35W	64W	12.1"	1024x768	
w/ FPM-D15T-CE/RE	30W	59W	15"	1024x768	
w/ FPM-D15T-HE	45W	74W	15"	1024x768	
w/ FPM-D17T-CE/RE	37W	66W	17"	1280x1024	5:4
w/ FPM-D19T-CE	35W	64W	19"	1280x1024	
w/ FPM-D15W-FCE	37W	66W	15.6"	1920x1080	16:9
w/ FPM-D15W-FHE	46W	75W	15.6"	1920x1080	
w/ FPM-D18W-FCE	38W	67W	18.5"	1920x1080	
w/ FPM-D21W-CE	33W	62W	21.5"	1920x1080	
w/ FPM-D21W-HE	63W	92W	21.5"	1920x1080	
w/ FPM-D24W-HE	42W	71W	23.8"	1920x1080	
w/ FPM-S15W-A	33W	62W	15.6"	1920x1080	16:9
w/ FPM-S18W-A	35W	64W	18.5"	1920x1080	
w/ FPM-S21W-A	34W	63W	21.5"	1920x1080	

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

Rear View

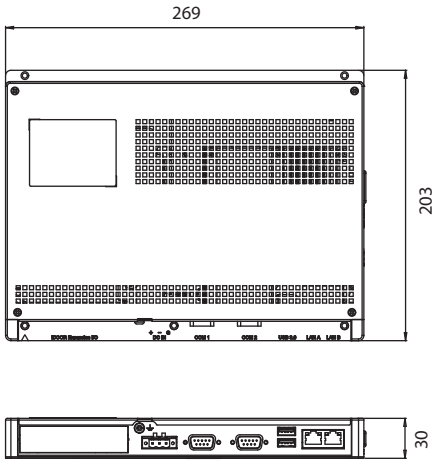


A. 2.5" SSD/HDD slot
B. mPCIe slot (iDoor module)
C. M.2 M key 2280 (SATA)
D. M.2 AE Key 2230 (WiFi+BT)
E. iDoor Slot
F. Power Receptor
G. RS-232/422/485x2
H. USB3.2
I. LAN
J. USB3.2 + USB2.0
K. Display Port (4096x2160 @ 60Hz)
L. 1 x Line out
M. Antenna opening

All product specifications are subject to change without notice.

Dimensions

Unit: mm



Ordering Information

- **TPC-B300-J20A** TPC-B300 Box Module Celeron J6412 (10W)
- **TPC-B300-E20A** TPC-B300 Box Module Atom X6425E (12W)

Panel Module P/N	FPM-D12T-CE/RE	FPM-D12T-HE	FPM-D15T-CE/RE	FPM-D15T-HE	FPM-D17T-CE/RE	FPM-D19T-CE
Description	12" XGA TFT LED LCD 600 nits	12" XGA TFT LED LCD High Brightness 1000 nits	15" XGA TFT LED LCD 300 nits	15" XGA TFT LED LCD High Brightness 1800 nits	17" SXGA TFT LED LCD 350 nits	19" SXGA TFT LED LCD 350 nits

Panel Module P/N	FPM-D15W-FCE	FPM-D15W-FHE	FPM-D18W-FCE	FPM-D21W-CE	FPM-D21W-HE	FPM-D24W-CE
Description	15.6" FHD TFT LED LCD 450 nits	15.6" FHD TFT LED LCD High Brightness 1200 nits	18.5" HD TFT LED LCD 350 nits	21.5" FHD TFT LED LCD 250 nits	21.5" FHD TFT LED LCD High brightness 1400 nits	23.8" FHD TFT LED LCD 350 nits

Panel Module P/N	FPM-S15W-A	FPM-S18W-A	FPM-S21W-A
Description	15.6" FHD TFT LED LCD, SLIM 500 nits	18.5" FHD TFT LED LCD, SLIM 350 nits	21.5" FHD TFT LED LCD, SLIM 250 nits

Note: Display modules cannot work independently. A computing box (TPC-B300/B510/B520/B520L/B610/B620) 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
Warranty	2190000902	CARDBOARD-WARRANTY REV. A2	1
BOX Fix Screw	1930000686	Screw M3x5L S/S D=5 H=1.3 (2+) ST Ni NK	5
iDoor Screw	1930002161	Screw M3x4.0(10.0)L R/S D=5.3 H=2 2+ ST BZn	2
HDD Screw	1930001361	Screw M3x4L S/S D=5 H=1.2 (2+) ST Ni NK	4
CPU Thermal Pad (Celeron J6412)	1990031130N010	Thermal Pad 25x14.7x0.5 K=13 TP PG80B	1
CPU Thermal Pad (Atom X6425E)	1990040910N000	Thermal pad for TPC-B300 PG80B 32X21X0.5 K=13	1
DDR Thermal Pad	1990021846N000	Thermal pad 59x19.5x1.0 K=6 GR-Hm SPC-1840WP	1
M.2 Thermal Pad	1990008165N010	Thermal pad 64x21.5x1.5mm K=2.5 GR25A-OHUNO-3282	1
M.2 Key-E Thermal Pad	1990035990N000	Thermal pad 22x22x1.5mm K=2.5 TP eApus-PG25A	1

Optional Accessories

Part Number	Description
TPC-WLAN-A1	M.2 AE, Intel AX210, Wifi6 + BT5.3, 2T2R,w/Antenna, -40~85°C
96PSA-A120W24T2-4	ADP A/D 100-240V 120W 24V C14 CORD END 62368
96PSA-A150W24T2-4	A/D 100-240V 150W 24V W/PFC C14 TERMINAL 62368
98R1B300V00	TPC-B300 series VESA mounting kit
1702002600	Power cable (US) 1.8 M
1702002605	Power cable (EU) 1.8 M
1702031801	Power cable (UK) 1.8 M
1700000596	Power cable (CN/AU) 1.8 M

Embedded OS

- **20701WX1ES0004** Img WIN10 LTSC V6.08 B059 TPC-B300 Entry
- **20701WLE1S0001** Img WIN11 LTSC V7.01 B002 TPC-B300 Entry
- **20701U22DS0003** Image AdvLinuxTu-IOTG_x64 V4.0.6 for ATPC series
- **20701AI0NS0007** Img Android14 x86 for TPC-B300

iDoor Modules

- **PCM-24D2R2-BE** Isolated RS-232, DB9 x 2, (USB type)
- **PCM-24D2R4-BE** Isolated RS-422/485, DB9 x 2, (USB type)
- **PCM-24D4R2-BE** Non-Isolated RS-232, DB37 x 1 (USB Type)
- **PCM-24D4R4-BE** Non-Isolated RS-422/485, DB37 x 1 (USB Type)
- **PCM-27D24DI-AE** Digital I/O, 16 DI / 8 DO, Isolation, DB37 x 1
- **PCM-24R2GL-AE** 2 Port Giga LAN Intel i350 PCIe mini card
- **PCM-24U2U3-BE** PCM-24U2U3, 2-Port USB 3.0, mPCIe
- **PCM-29R1TX-AE** 1-Port iLink(TX) long-distance display transmitter with RJ45
- **PCM-26D2CA-BE** SJA1000 CANBus, Lattice, CANOpen, DB9 x 2
- **PCM-26D2CA-BE** SJA1000 CANBus, Lattice, CANOpen, DB9 x 2
- ***PCM-23C1CF-CE** 1 slot Cfast iDoor for CFast with PWR cable

*(1700032697-01 the CFast Power cable for PCM-23C1CF-CE)

Application Software

HMINavi	HMINavi Designer is a powerful and intuitive software program for creating comprehensive human machine interface solutions. HMINavi Designer is an easily integrated development tool with proven value in many application fields. The features include solution-oriented screen objects, high-end vector graphics, Windows fonts for multi-language applications, receipts, alarm functions, as well as data and operation logging capabilities. HMINavi Designer also supports utility programs such as Data Transfer Helper (DTH), recipe editor, and text editor. The HMINavi Designer software is free download for usage, user can directly download before purchase. With online/offline simulation user can directly connect to PLC controller to ensure solid connection and screen design without any issue. HMINavi Runtime, a component of HMINavi, guarantees the reliability and performance of Open Platform because of the minimum system overhead, high data communication rates, sub-second screen switching, and 24/7 operation. Additionally, Advantech's fast response software team is continually adding new functions, communication drivers, and solutions to the software to meet dynamic needs.

TPC-B300 Photo

