

AMAX-PT800

Intel Core-i Panel Controller

NEW



Features

- Modular Computing Box powered by 13th Gen. Intel® Core™ i5-1335UE deca-core/ i7-1365URE deca-core processor
- Modular Front Panel modules ranging from 12.1" to 23.8" with P-CAP multi-touch in selection (12.1", 15", 15.6", 21.5" with high brightness panel option)
- Single DDR5 Memory slot supports up to 32GB
- Support expansion via three M.2 slots (NVMe, Wifi, 5G)
- LAN, POE, isolated serial port and isolated digital I/O via iDoor technology
- Support Type C connector with USB 3.2, DP 1.4a, 15W power delivery
- Support 3 displays with clone/extend mode (FPM-D/DP/Type C)
- Performance, fanless embedded system with chassis grounding protection
- RAID 0 and 1 Support
- CODESYS Pre-Licensed

Introduction

Advantech AMAX series is designed for all IoT control requirements. Our entire product range is built on cutting-edge computing technology, providing the essential value for IoT connectivity. With an optimized real-time control system (1ms latency with low jitter) for CODESYS integration and data retention design during power outages, AMAX delivers a diverse array of control systems in various form factors tailored to meet the demands of different application scenarios.

Specifications

Model		AMAX-PT800	AMAX-PT800
Part Number		AMAX-PT800-102DxA AMAX-PT800-106DxA	AMAX-PT800-202DxA AMAX-PT800-206DxA
Description		Intel® Core™ Panel Controller	Intel® Core™ Panel Controller
SoftLogic	Runtime Version	CODESYS V3.5 SP16 CODESYS V3.5 SP18 CODESYS V3.5 SP20	CODESYS Linux Control V4
	Visualization	Target Visualization (Local HMI) Web Visualization (Web Browser)	Target Visualization (Local HMI) Web Visualization (Web Browser)
	Motion Control	SoftMotion CNC Robotic (optional from AMAX-PT800-BT0)	SoftMotion CNC Robotic (optional from AMAX-PT800-BT0)
	Ind. Ethernet Fieldbus Support	EtherCAT MainDevice PROFINET IO-Controller EtherNet/IP Scanner (IEC/CIFX) MODBUS/TCP Server (Slave) and Client (Master)	EtherCAT MainDevice MODBUS/TCP Server (Slave) and Client (Master)**
	Ind. Fieldbus Support	MODBUS/RTU Client (Master) PROFIBUS Master & CANopen Master	**
	Uplink Communication	OPC UA Server(CODESYS), ODBC(CODESYS) MQTT (Sparkplug) via CODESYS Agent from Advantech	OPC UA Server(CODESYS)
	Motion Control Benchmark	EtherCAT, CSP mode, PTP, 64axis 250us achievable	EtherCAT, CSP mode, PTP, 64axis 250us achievable
System Hardware	BIOS	Real-time optimize BIOS	
	Processor	Intel® Core™ i7-1365URE 1.7GHz, 2P8E, 12MB SmartCache Intel® Core™ i5-1335UE 1.3GHz, 2P8E, 12MB SmartCache	
	Memory	1 x DDR5 SO-DIMM optional	
	Ethernet	Intel® i226-IT GbE(LAN A/B)	
	LED Indicators	-	
	Storage(Flash)	M.2 M key NVME optional	
	Retain Memory	AMAX-PT800-BT0 Optional	
	Expansion	1 x M.2 B Key 3042, 3052, 3080 for iDoor	
I/O Interfaces	Local Digital IO	-	
	Serial Ports	2 x RS-232/422/485 (DB9), 50 ~ 115.2kbp	
	LAN Ports	2 x 10/100/1000/2500BASE-T Fast Ethernet (RJ45)	
	USB Ports	2 x USB 3.2 (Gen1), 2 x USB 2.0	
	Display	1 x Displayport 1.4a (Video output) 1 x Type C (USB 3.2 Gen.2, DP 1.4a, 5V w/ 3A max)	
	Grounding Protection	Chassis grounding	
	Power Connector	1 x 3 Pins	

Specifications (Cont.)

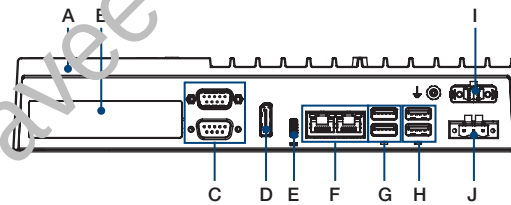
General	Power Requirement	19 - 24 V _{DC} ± 15%
	Power Consumption	Typ. 29W; Max. 65W
	OS Support	Win10 LTSC 2021 LTSC 64bits, Win11 AdvLinux V4 (Ubuntu 22.04)
	Enclosure	Aluminum Alloy housing
	Mounting	VESA Mount, Desktop, Wall or Panel Mount
	Weight (Net)	Approx. 2.65kg
	Dimensions (W x H x D)	269 x 203 x 50 mm
	Certification	CE, FCC Class A, CB/UL, CCC, BSMI
Environment	Operating Temperature	-10~60 °C (14~140 °F) (i5 w/o air flow) -20~60 °C (-4~140 °F) (i7 w/o air flow)
	Storage Temperature	-30~70 °C (-22~158 °F)
	Relative Humidity	10 ~ 95% RH @ 40°C, non-condensing
	Shock Protection	Operating, IEC 60068-2-27, half sine, 10G 11 ms (SSD)
	Vibration Protection	Operating, IEC 60068-2-6, 1G, 5-500 Hz, random vibration (SSD)

Power Consumption with Panel Module

Item	Power Consumption		Screen Size	Resolution	Aspect Ratio
	Type	Max.			
TPC-B520	29W	65W	N/A	N/A	N/A
w/ FPM-D12T-CE	41W	77W	12.1"	1024x768	04:03
w/ FPM-D12T-HE	43W	79W	12.1"	1024x768	
w/ FPM-D15T-CE	38W	74W	15"	1024x768	
w/ FPM-D15T-HE	53W	89W	15"	1024x768	
w/ FPM-D17T-CE	45W	81W	17"	1280x1024	05:04
w/ FPM-D19T-CE	43W	79W	19"	1280x1024	
w/ FPM-D15W-FCE	45W	81W	15.6"	1920x1080	16:09
w/ FPM-D15W-FHE	54W	90W	15.6"	1920x1080	
w/ FPM-D18W-FCE	46W	82W	18.5"	1920x1080	
w/ FPM-D21W-CE	41W	77W	21.5"	1920x1080	
w/ FPM-D21W-HE	71W	107W	21.5"	1920x1080	
w/ FPM-D24W-CE	50W	86W	23.8"	1920x1080	

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

Rear View

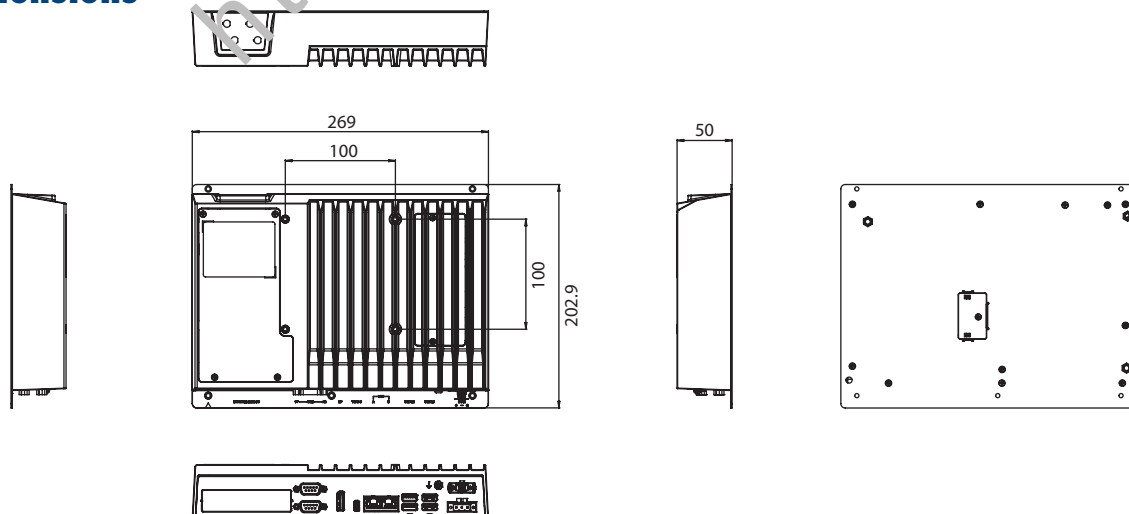


- A. Default sku for iDoor installation (optional 2.5" SSD / 2 x speakers)
- B. iDoor slot
- C. RS-232/422/485
- D. Display Port
- E. TYPE-C

- F. 2.5GbE LAN port
- G. USB 3.2
- H. USB 2.0
- I. Remote Button
- J. DC In

Dimensions

Unit: mm



VESA 100 x 100

Ordering Information

- **AMAX-PT800-102D5A** Modular Panel Controller Box, Core i5-1335UE, WCDS+TW
- **AMAX-PT800-106D5A** Modular Panel Controller Box, Core i5-1335UE, WCDS+TWS
- **AMAX-PT800-102D7A** Modular Panel Controller Box, Core i7-1365URE, WCDS+TW
- **AMAX-PT800-106D7A** Modular Panel Controller Box, Core i7-1365URE, WCDS+TWS

Panel Module P/N	FPM-D12T-CE	FPM-D12T-HE	FPM-D15T-CE	FPM-D15T-HE	FPM-D17T-CE	FPM-D19T-CE
Description	12.1" XGA TFT LED LCD	12.1" XGA TFT LED LCD High Brightness 1000 nits	15" XGA TFT LED LCD	15" XGA TFT LED LCD High Brightness 1800 nits	17" SXGA TFT LED LCD	19" SXGA TFT LED LCD

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	15.6" FHD TFT LED LCD High Brightness 1200 nits	18.5" HD TFT LED LCD	21.5" FHD TFT LED LCD	21.5" FHD TFT LED LCD High brightness 1400 nits	23.8" FHD TFT LED LCD

Note: Display modules cannot work independently. A computing box (TPC-B200/300/510/600) is compulsory to operate the display module.

Packing List

Item	Part No.	Depiction	Qty
Memory Thermal Pad	1990019810N000	THERMAL PAD 60x23x2t XR-HL	1
NVMe Thermal Pad	1990034862N040	Thermal pad POC-615 PG45A 59x24.3x1 K=6	1
Grounding cable	1703011001-11	A Cable G-TEM 4.3 100CM C=GR/Y	1
Power Connector	1652007930-01	Plug-In Block 1x3P/5.08mm/PA66/F/VA/Sw/G	1
Remote Connector	1652002202	PLUG-IN BLOCK 2P 90D(F) SMD 5ESD/M492	1
Cable Lock Rail	1990022422S000	Fixed rail 71.3Lx6.2W mm YJC-64C for UL C-DS31	3
Cable Lock Ring	1990022423S000	Fixed ring DIA:7.5-8.5 FWM-8K for UL C-DS31	3
BOX Fix Screw	19310305C0	Screw M3x5L S/S D=5 H=1.2 (+) ST BZn NK	5
VESA Screw	1930005204	Screw M4x10L R/S DH=5.8x2.5 (+) ST ZBK PL	4
M.2 Screw	1930008738	Screw M3x3L F/S D=5 H=1.2 (+) ST Ni NK	1
M.2 Post for B key 3042/3052	1910004609	POST F=M3x5.5 L=M=M3x5L B=5 H=6.5 CU NK	1
China rohs	202KAKMC00	China rohs for AKMC model name 1st ed	1
Warranty	2190000902	CARDBOARD-WARRANTY REV. A2	1
Manual	2003TPC01A	Simplified Chinese manual for TPC Serie	1

Optional Accessories

- **TPC-WLAN-A1** M.2 AE, Intel AX210, WiFi 6 + BT 5.3, 2T2R,w/Antenna, -40~85°C
- **96PSA-A120W24T2-4** 120W 24V_{DC} power supply
- **96PSA-A150W24T2-4** 150W 24V_{DC} power supply for FPM-Dxxx-HE and Type-C with Power Delivery
- **98R1B520000** TPC-B520 2.5" SSD Expansion Kit
- **98R1B520001** TPC-B520 Speaker (2W 4Ω 82dB) Expansion Kit
- **98R1B520002** TPC-B520 Power Button Extension Kit
- **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

- **20701WX1HS0009** Win10 LTSC for TPC-B520-D70AE
- **20701WX1VS0009** Win10 LTSC for TPC-B520-D50AE
- **20701WLH1S0000** Win11 LTSC for TPC-B520-D70AE
- **20701WLH1S0000** Win11 LTSC for TPC-B520-D50AE
- **20701U22DS0018** Image AdvLinuxTu-IOTG_x64 V4.3.5 for TPC-B520 series

iDoor Modules

- **PCM-34D2R2-AE** 2-Port Isolated RS-232, M.2 B key(2242, USB), DB9
- **PCM-34D2R4-AE** 2-Port Isolated RS-422/485, M.2 B key(2242, USB), DB9
- **PCM-34D4R2-AE** 4-Port Non-Isolated RS-232, M.2 B key(2242, USB), DB37 cable
- **PCM-34D4R4-AE** 4-Port Non-Isolated RS-422/485, M.2 B key(2242, USB), DB37 cable
- **PCM-34R1TP-AE** 1-Port 2.5Gigabit Ethernet, Intel® I225 B+M key(3042, PCIe*1)
- **PCM-34R2GL-AE** 2-Port Gigabit Ethernet, Intel® I350, B+M Key (2242, PCIe*1)
- **PCM-37D24DI-AE** 24-Channel Isolated Digital I/O, M.2 B+M key (3042, PCIe*1), DB37

Application Software



CODESYS Control RTE

The product CODESYS Control RTE SL is a real-time software PLC designed for PC-based industrial controllers running on Windows. It features its own real-time kernel, ensuring deterministic behavior with jitter values in the microsecond range without needing additional hardware components or operating system extensions. This makes it ideal for applications requiring precise timing and reliability. The system supports various fieldbuses, including CANopen, EtherCAT, and Modbus, and can be extended with options like SoftMotion and WebVisu. With CODESYS Control RTE SL, users can leverage the powerful IEC 61131-3 development environment to create robust and efficient automation solutions.

Interface

- OPCUA Server
- ODBC
- MQTT from Advantech Agent

Fieldbus Support

- EtherCAT MainDevice
- PROFINET IO-Controller
- EtherNet/IP Scanner (IEC/CIFX)
- MODBUS/TCP Server (Slave) and Client (Master)
- MODBUS/RTU Client (Master)
- PROFIBUS Master
- CANopen Master

CODESYS Linux Control

CODESYS Linux Control is a versatile and robust operating system tailored for industrial automation applications. Leveraging the stability and flexibility of Linux, this platform supports a wide range of hardware and software configurations, making it suitable for diverse control tasks. It offers real-time capabilities through PREEMPT-RT patches, ensuring low-latency and deterministic performance. CODESYS Linux Control integrates seamlessly with CODESYS, providing a powerful environment for developing and deploying automation solutions. With extensive support for networking, security, and various industrial protocols, CODESYS Linux Control is an excellent choice for building scalable and reliable control systems.

Interface

- OPCUA Server

Fieldbus Support

- EtherCAT MainDevice
- MODBUS/TCP Server (Slave) and Client (Master)
- MODBUS/RTU Client (Master)
- CANopen Master

AMAX-PT800 Photo



*Note: Request to order FPM-D CE/HE front touch display kit

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.