AMAX-PT700 V2

Intel Atom® Panel Controller



Features

- Optimized BIOS & Embedded OS for real-time control (Windows and Linux)
- Achieve 32-axis motion control with 500us EtherCAT cycle time under Linux
- OPC UA and Modbus TCP/RTU as IT connectivity enabled by CODESYS
- EtherCAT, Profinet, Ethernet I/P, CANopen as OT connectivity enabled by CODESYS
- Unlimited I/O points, fieldbus networks, and visualization variables for CODESYS applications
- CODESYS Visualization (Target and Web), SoftMotion and CNC/Robotics support by different package
- Advantech Data Connect (ADC) Library provides flexible and highly efficient data connection with 3rd party application software through symbols (PLC Handler) & shared memory (C++/C#)
- Modular Computing Box designed with Intel Atom® x6425E with one DDR4 SODIMM slot (up to 32GB)
- Multiple-sized front panel modules offered with P-Cap multi-touch sensor (12.1" & 19" with robust 5-wire resistive touch)
- Retained memory for CODESYS data retention function (optionally installation)
- One M.2 Key-E 2230 for Wi-Fi + BT module
- Onboard TPM 2.0 provides hardware-based security
- Wide operating temperature range (-20 ~ 60 °C/-40 ~ 140°F)

Windows 10 Enterprise LTSC | Real-time Ubuntu | IDoor | CE FCC

Introduction

AMAX-PT700 V2, an Intel Atom® Panel Controller, is designed for all IoT control requirements. AMAX-PT700 V2 is a modular box design to provde high flexibility with diffrent-sized front panel combinations.

Each AMAX control platform is system-level optimized (1ms real-time with low jitter) to provide an effective real-time environment for running CODESYS Softlogic under Windows OS and Linux OS respectively. The AMAX control platform will come with pre-install CODESYS license to enable EtherCAT for OT networks, and supports Modbus, OPC UA and MQTT for IT networks. With optional NVRAM installation, the data retention feature can be reliably executed while running CODESYS. Moreover, Advantech also provides flexible expansion modules, such as EtherCAT I/O from the Slice I/O series and Block I/O series and CODESYS-ready i-Door.

AMAX delivers a diverse array of control systems in various form factors tailored to meet the demands of different application scenarios.

Hardware Specifications

Part Number		AMAX-PT700-100X6A AMAX-PT700-102X6A AMAX-PT700-106X6A AMAX-PT700-108X6A AMAX-PT700-200X6A AMAX-PT700-202X6A AMAX-PT700-206X6A AMAX-PT700-208X6A
System Hardware	Processor	Intel Atom® x6425E 2.0GHz, Quad Core, 1.5MB L2 cache
	BIOS	Optimized BIOS for real-time performance
	Memory	1 x DDR4 3200 SO-DIMM slot (up to 32GB)
	Storage	1 x M.2 M key 2280 SATA SSD optional
	Retain Memory	Optional, PCM-2300MR-BE (4MB) for CODESYS Retain/Persistence
	Ethernet	Intel® i226-IT GbE(LAN A/B)
	LED Indicator	Power LED on FPM
	Expansion	1 x Full-size mini PCIe (PCIE/USB2.0) 1 x M.2 E key 2230 (PCIE/USB2.0)
I/O Interface	Local Digital I/O	N/A
	Seriel Port	2 x RS-232/422/485 (DB9), 50 ~ 115.2kbps
	LAN Port	2 x 10/100/1000/2500BASE-T Fast Ethernet (RJ45)
	USB Port	3 x USB 3.2, 1 x USB 2.0
	Display	1 x DP 1.4a, up to 4096 x 2160 @ 60Hz
	Grounding Protection	Chassis grounding
	Power Connector	1 x 3 pin

All product specifications are subject to change without notice.

Hardware Specifications (Cont.)

General	OS Support	Win10 2021 LTSC 64bits / Win11 LTSC 2024 64bits AdvLinuxTU V4 64bit (EdgeLinux 22.04)
	Power Requirements	24 V_{DC} ± 20%
	Power Consumption	29W (typical), 50W (max.)
	Enclosure	Aluminum alloy housing
	Mounting	VESA Mount, Wall or Panel Mount
	Weight (Net)	Approximate 2.1kg
	Dimensions (W x D x H)	269 x 30 x 203 mm
	Certification	CE, FCC Class A, CB/UL
Environment	Operating Temperature	-20 ~ 60°C (-40 ~ 140°F) (SATA SSD)
	Storage Temperature	-20~70 °C (-4~158 °F)
	Relative Humidity	10 ~ 95% RH @ 40°C, non-condensing
	Shock Protection	Operating, IEC 60068-2-27, 10G, half sine, 11 ms (SSD)
	Vibration	Operating, IEC 60068-2-6, 1 Grms, random, 5 ~ 500 Hz (SSD)

CODESYS Package for Windows

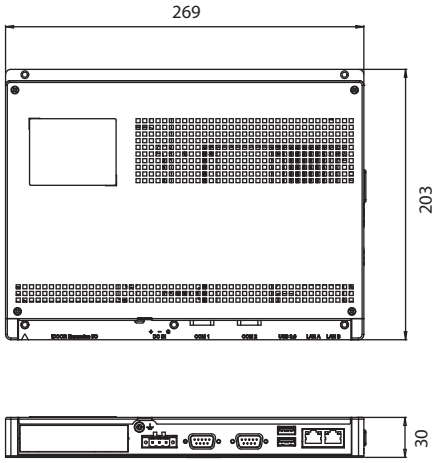
Part Number		AMAX-PT700-100X6A	AMAX-PT700-102X6A	AMAX-PT700-106X6A	AMAX-PT700-108X6A
CODESYS Basic Run Time	Runtime	CODESYS Control RTE V3.5 SP20			
	OT Network	EtherCAT MainDevice, Profinet Controller CIFX, Ethernet I/P Scanner CIFX, CANopen Manager			
	IT Network	Modbus/TCP Client and Server, Modbus/RTU Client, OPC UA Server			
	EtherCAT I/O Connection	No I/O Points Limitation			
CODESYS HMI	Visualization	N/A	Target Visualization (TV, Local HMI) & Web Visualization (WV, Web Browser).		
	Tags		Unlimited tags		
CODESYS SoftMotion	Motion Control Benchmark	N/A		16 axis with 1ms cycle time [Tested under Windows CODESYS, EtherCAT CSP mode, PTP (point-to-point) command]	
	EtherCAT Servo Connection			No Axes Limitation in EtherCAT Servo Drive connections.	
CODESYS CNC & Robotics	CNC Interpolator	N/A	N/A	N/A	No axes interpolation limitations

CODESYS Package for Linux

Part Number		AMAX-PT700-200X6A	AMAX-PT700-202X6A	AMAX-PT700-206X6A	AMAX-PT700-208X6A
CODESYS Basic Run Time	Runtime	CODESYS Linux Control V3 SP20			
	OT Network	EtherCAT MainDevice, Profinet Controller IEC, Ethernet I/P Scanner IEC, CANopen Manager			
	IT Network	Modbus/TCP Client and Server, Modbus/RTU Client/Server, OPC UA Server			
	EtherCAT I/O Connection	No I/O Points Limitation			
CODESYS HMI	Visualization	N/A	Web Visualization (WV, Web Browser)		
	Tags		Unlimited tags		
CODESYS SoftMotion	Motion Control Benchmark	N/A	N/A	32 axis with 500us cycle time [Tested under Linux CODESYS, EtherCAT CSP mode, PTP (point-to-point) command]	
	EtherCAT Servo Connection			No Axes Limitation in EtherCAT Servo Drive connections.	
CODESYS CNC & Robotics	CNC Interpolator	N/A	N/A	N/A	No axes interpolation limitations.

Dimensions

Unit: mm



Ordering Information

Below part number is ONLY controller platform with CODESYS license sticker. All working systems shipment shall **follow BTO process to complete the accessories selection, OS installation and CODESYS activation**.

P/N	Description
AMAX-PT700-100D5A	Intel Panel Controller,Intel Atom x6425E,Win CDS Control
AMAX-PT700-102X6A	Intel Panel Controller,Intel Atom x6425E,Win CDS Control+Target/WebVisu
AMAX-PT700-106X6A	Intel Panel Controller,Intel Atom x6425E,Win CDS Control+Target/WebVisu+SoftMotion
AMAX-PT700-108X6A	Intel Panel Controller,Intel Atom x6425E,Win CDS Control+Target/WebVisu+SoftMotion+CNC & Robotics

P/N	Description
AMAX-PT700-200X6A	Intel Panel Controller,Intel Atom x6425E,linux CDS Control
AMAX-PT700-202X6A	Intel Panel Controller,Intel Atom x6425E,linux CDS Control+WebVisu
AMAX-PT700-206X6A	Intel Panel Controller,Intel Atom x6425E,linux CDS Control+WebVisu+SoftMotion
AMAX-PT700-208X6A	Intel Panel Controller,Intel Atom x6425E,linux CDS Control+WebVisu+SoftMotion+CNC&Robotics

Panel Module P/N	Description
FPM-D12T-CE	12.1" XGA TFT LED LCD
FPM-D12T-HE	12.1" XGA TFT LED LCD High Brightness 1000 nits
FPM-D15T-CE	15" XGA TFT LED LCD
FPM-D15T-HE	15" XGA TFT LED LCD High Brightness 1800 nits
FPM-D17T-CE	17" SXGA TFT LED LCD
FPM-D19T-CE	19" SXGA TFT LED LCD
FPM-D15W-FCE	15.6" FHD TFT LED LCD
FPM-D15W-FHE	15.6" FHD TFT LED LCD High Brightness 1200 nits
FPM-D18W-FCE	18.5" HD TFT LED LCD
FPM-D21W-CE	21.5" FHD TFT LED LCD
FPM-D21W-HE	21.5" FHD TFT LED LCD High brightness 1400 nits
FPM-D24W-CE	23.8" FHD TFT LED LCD

Power Consumption with Panel Module

Item	Power Consumption		Screen Size	Resolution
	Typ.	Max.		
AMAX-PT700	21W	50W	N/A	N/A
w/ FPM-D12T-CE	33W	62W	12.1"	1024x768
w/ FPM-D12T-HE	35W	64W	12.1"	1024x768
w/ FPM-D15T-CE	30W	59W	15"	1024x768
w/ FPM-D15T-HE	45W	74W	15"	1024x768
w/ FPM-D17T-CE	37W	66W	17"	1280x1024
w/ FPM-D19T-CE	35W	64W	19"	1280x1024
w/ FPM-D15W-FCE	37W	66W	15.6"	1920x1080
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-CE	42W	71W	23.8"	1920x1080

AMAX Assembly Accessories

DDR4 Memory for AMAX-PT700

- **SQR-SD4I4G3K2HNPG** 260pin SODIMM DDR4 3200 4GB 1.2v 512x16 (-40-85)
- **SQR-SD4I8G3K2HNBG** 260pin SODIMM DDR4 3200 8GB 1.2v 1Gx8 (-40-85)
- **SQR-SD4I16G3K2HNBG** 260pin SODIMM DDR4 3200 16GB 1.2v 1Gx8 (-40-85)
- **SQR-SD4I32G3K2HNAG** 260pin SODIMM DDR4 3200 32GB 1.2v 2Gx8 (-40-85)

M.2 M 2280 SATA SSD for AMAX-PT700

- **SQF-S8BV1-64GDSDM** SQF SATA M.2 2280 650-D 64G 3D TLC BiCS5 (-20~85°C)
- **SQF-S8BV1-128GDSDM** SQF SATA M.2 2280 650-D 128G 3D TLC BiCS5 (-20~85°C)
- **SQF-S8BV1-256GDSDM** SQF SATA M.2 2280 650-D 256G 3D TLC BiCS5 (-20~85°C)
- **SQF-S8BV2-512GDSDM** SQF SATA M.2 2280 650-D 512G 3D TLC BiCS5 (-20~85°C)
- **SQF-S8BV4-1TDSDM** SQF SATA M.2 2280 650-D 1T 3D TLC BiCS5 (-20~85°C)
- **SQF-S8BV4-2TDSDM** SQF SATA M.2 2280 650-D 2T 3D TLC BiCS5 (-20~85°C)
- **SQF-S8BV1-64GDSDE** SQF SATA M.2 2280 650-D 64G 3D TLC BiCS5 (-40~85°C)
- **SQF-S8BV1-128GDSDE** SQF SATA M.2 2280 650-D 128G 3D TLC BiCS5 (-40~85°C)
- **SQF-S8BV1-256GDSDE** SQF SATA M.2 2280 650-D 256G 3D TLC BiCS5 (-40~85°C)
- **SQF-S8BV2-512GDSDE** SQF SATA M.2 2280 650-D 512G 3D TLC BiCS5 (-40~85°C)
- **SQF-S8BV4-1TDSDE** SQF SATA M.2 2280 650-D 1T 3D TLC BiCS5 (-40~85°C)
- **SQF-S8BV4-2TDSDE** SQF SATA M.2 2280 650-D 2T 3D TLC BiCS5 (-40~85°C)

NVRAM Module

- **PCM-2300MR-BE** 4MB MRAM, mPCIE interface

Embedded OS

- **20701WX1ES0004** Img WIN10 LTSC V6.08 B059 TPC-B300 Entry
- **20701U22DS0018** Img AdvLinuxTu-IOTG_x64 V4.3.5 ATPC (TWM9) series

Windows Real-Time Control Software (CODESYS RTE)

- **32OTADVWX86004** Software CODESYS WRTE Driver V3.5.2010.2

Linux Real-Time Control Software (CODESYS Control V3 for Linux)

- **32OTADVLX86004** SW CDS x86Linux Driver V3.5.20P4.2098(w/o TV)

Optional Accessories

- **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
- **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
- **1700000596-11** Power cable (China/Australia) 1.8 M