

AMAX-7570 V2

Intel Atom® IPC Controller



Features

- Optimized BIOS & Embedded OS for 1ms real-time control (Windows and Linux)
- Achieve 32-axis motion control with 500 μ s EtherCAT cycle time under Linux
- OPC UA and Modbus TCP/RTU as IT connectivity enabled by CODESYS
- EtherCAT, PROFIT, 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#)
- Intel Atom® x6425RE (1.9GHz) processor with 8GB DDR4 memory
- Port isolation for 8 x DI, 8 x DO, 2 x COM
- Retain memory for CODESYS data retention function (Optionally Installation)
- Modular design for optional CODESYS-Ready iDoor extension
- Onboard TPM 2.0 provides hardware-based security
- Wide operating temperature range (-40 ~ 60 °C/-40 ~ 140 °F)
- Compliance with IEC 61010-2 standard

Introduction



AMAX-7570 V2 is an Intel Atom® IPC Controller, designed for all IoT control requirements. Each AMAX control platform is system-level optimized (1ms real-time with low jitter) to provide an optimal real-time environment for running CODESYS Softlogic under both Windows OS and Linux OS respectively. The AMAX control platform will come with pre-installed 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 & 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-7570-100X6A AMAX-7570-102X6A AMAX-7570-106X6A AMAX-7570-200X6A AMAX-7570-202X6A AMAX-7570-206X6A AMAX-7570-208X6A
System Hardware	Processor	Intel Atom® x6425RE 1.9GHz, Quad Core, 1.5MB L2 cache
	BIOS	Optimized BIOS for real-time performance
	Memory	Built-in 8 GB DDR4, 3200 MHz (up to 32 GB)
	Storage	1 x M.2 M key 2242 PCIe2 optional (shared with M.2 Mkey iDoor) 1 x M.2 E key 2230 PCIe2 (optional)
	Retain Memory	Optional, PCM-2300MR-BE (4MB) for CODESYS Retain/Persistence
	Ethernet	Intel® i226-IT GbE (LAN A/B)
	LED Indicator	LEDs for power, RUN (CODESYS program run), 1 x RTC battery LED
	Expansion	Optional, 1 x iDoor extension module for M.2 Mkey (UNO-137-ID1EC)
I/O Interface	Local Digital I/O	8DI/8DO, isolated 2500V _{DC}
	Serial Port	2 x RS-232/422/485 (terminal), 50 ~ 115.2kbps, isolated 2500V _{DC}
	LAN Port	2 x 10/100/1000/2500BASE-T Fast Ethernet (RJ45)
	USB Port	2 x USB 3.2 (Gen2), 1 x USB 3.2 (Gen1) and 1 x USB 2.0
	Display	2 x DP 1.2, up to 4096 x 2160 @ 60Hz
	Grounding Protection	Chassis grounding
	Power Connector	1 x 2 pin

Hardware Specifications (Cont.)

General	OS Support	Win10 2021 LTSC 64bits / Win11 2024 LTSC 64bits AdvLinuxTU V4.3.5 64bit (Ubuntu 22)
	Power Requirements	10~36V _{DC}
	Power Consumption	21W (typical), 44W (max.)
	Enclosure	Aluminum alloy housing
	Mounting	DIN-rail
	Weight (Net)	Approximate 0.8kg
	Dimensions (W x D x H)	35 x 105 x 150 mm
	Certification	CE, FCC, UL 61010-2-201, CCC, BSMI
Environment	Operating Temperature	-40 ~ 60°C (-40 ~ 140°F) with 0.7m/s airflow
	Storage Temperature	-40 ~ 85°C (-40 ~ 185°F)
	Relative Humidity	10 ~ 95% RH @ 40°C, non-condensing
	Shock Protection	Operating, IEC 60068-2-27, 50G, half sine, 11 ms
	Vibration	Operating, IEC 60068-2-64, 2 Grms, random, 5 ~ 500 Hz, 1hr/axis (SSD)

CODESYS Package for Windows

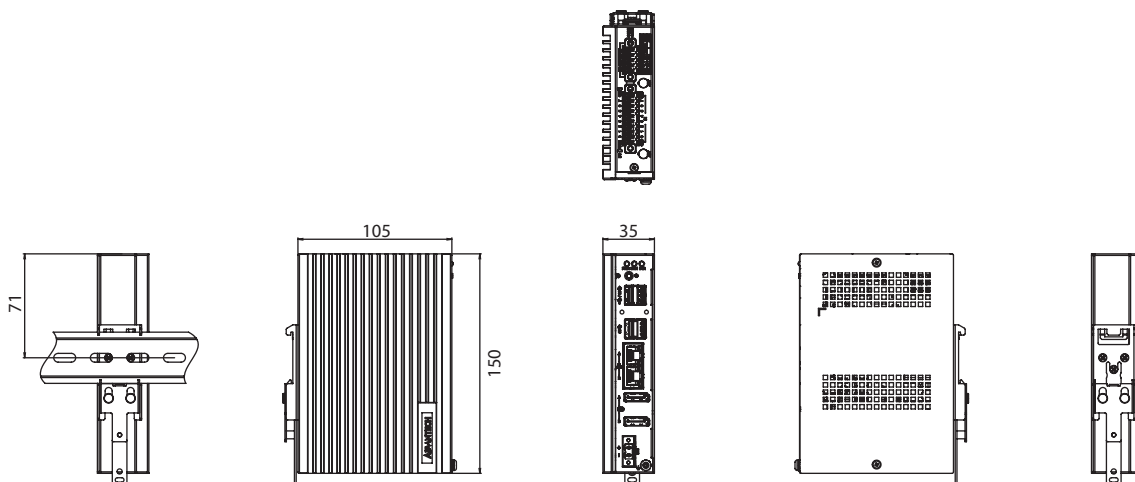
Part Number		AMAX-7570-100X6A	AMAX-7570-102X6A	AMAX-7570-106X6A
CODESYS Basic Run Time	Runtime	CODESYS Control RTE V3.5 SP20		
	OT Network	EtherCAT MainDevice, PROFINET IO-Controller, EtherNet/IP Scanner (IEC/CIFX), PROFIBUS Master & CANopen Manager (Driver from netX of Hilscher®)		
	IT Network	Modbus/TCP Client and Server, Modbus/RTU Client, OPC UA Server, MQTT (Sparkplug), ODBC for Database (via Advantech CODESYS package)		
	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	N/A	32 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	Additionally order P/N: 360TCDSW0CNC0 to support CNC & Robotics package

CODESYS Package for Linux

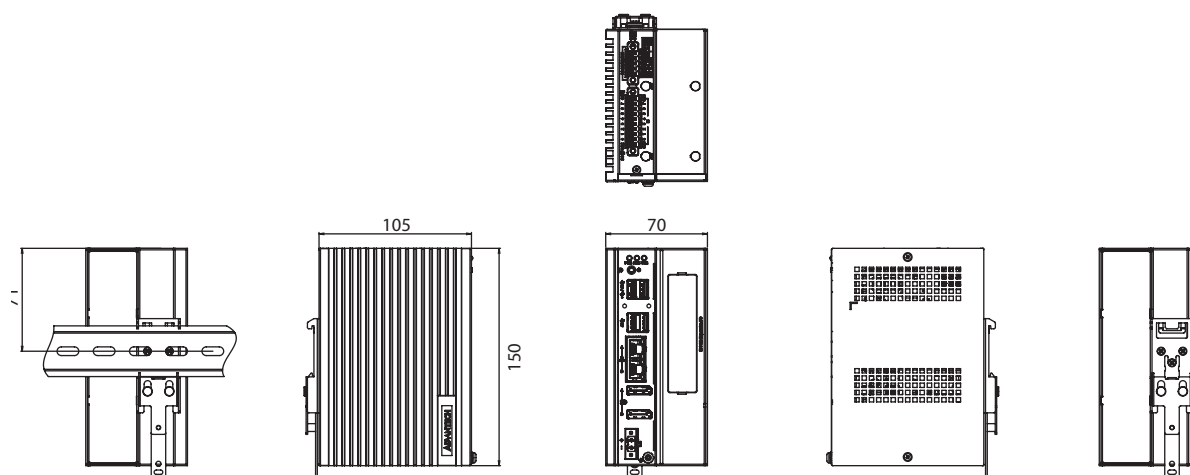
Part Number		AMAX-7570-200X6A	AMAX-7570-202X6A	AMAX-7570-206X6A	AMAX-7580-207X6A
CODESYS Basic Run Time	Runtime	CODESYS Linux Control V3 SP20			
	OT Network	EtherCAT MainDevice, PROFINET IO-Controller, Ethernet I/P Scanner (Master), CANopen Manager			
	IT Network	Modbus/TCP Client and Server, Modbus/RTU Client, OPC UA Server			
	EtherCAT I/O Connection	No I/O Points Limitation			
CODESYS HMI	Visualization	N/A	Web Visualization (WV, Web Browser)		
	Tags		Unlimited tags		
CODESYS SoftMotion	Motion Control Benchmark	N/A	N/A	32 axis with 500 µs 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



(With optional extension kit)



Ordering Information

P/N	Description
AMAX-7570-100X6A	Intel IPC Controller, Intel Atom x6425RE, Win CDS Control
AMAX-7570-102X6A	Intel IPC Controller, Intel Atom x6425RE, Win CDS Control+Target/WebVisu
AMAX-7570-106X6A	Intel IPC Controller, Intel Atom x6425RE, Win CDS Control+Target/WebVisu+SoftMotion

P/N	Description
AMAX-7570-200D5A	Intel IPC Controller, Intel Atom x6425RE, linux CDS Control
AMAX-7570-202D5A	Intel IPC Controller, Intel Atom x6425RE, linux CDS Control+WebVisu
AMAX-7570-206D5A	Intel IPC Controller, Intel Atom x6425RE, linux CDS Control+WebVisu+SoftMotion
AMAX-7570-208D5A	Intel IPC Controller, Intel Atom x6425RE, linux CDS Control+WebVisu+SoftMotion+CNC&Robotics

Extension kit for iDoor module

- **UN0-137-ID1EC** Second stack extension kit with 1 x iDoor slot

AMAX Assembly Accessories

M.2 M2242 PCIe x2/SATA SSD

- **SQF-C4MV2-128GDEDE** SQF PCIe/NVMe Gen.3 M.2 2242 OPAL 720-D 128G 3D TLC BiCS5 (-40~85°C)
- **SQF-C4MV2-256GDEDE** SQF PCIe/NVMe Gen.3 M.2 2242 OPAL 720-D 256G 3D TLC BiCS5 (-40~85°C)
- **SQF-C4MV2-512GDEDE** SQF PCIe/NVMe Gen.3 M.2 2242 OPAL 720-D 512G 3D TLC BiCS5 (-40~85°C)
- **SQF-C4MV4-1TDEDE** SQF PCIe/NVMe Gen.3 M.2 2242 OPAL 720-D 1T 3D TLC BiCS5 (-40~85°C)
- **SQF-C4MV4-2TDEDE** SQF PCIe/NVMe Gen.3 M.2 2242 OPAL 720-D 2T 3D TLC BiCS5 (-40~85°C)

M.2 E2230 PCIe x2 SSD (Optional)

- **SQF-C3AV1-128GDEDE** SQF PCIe/NVMe Gen.3 M.2 2230 OPAL 720-D 128G 3D TLC BiCS5 (-40~85°C)
- **SQF-C3AV1-256GDEDE** SQF PCIe/NVMe Gen.3 M.2 2230 OPAL 720-D 256G 3D TLC BiCS5 (-40~85°C)
- **SQF-C3AV1-512GDEDE** SQF PCIe/NVMe Gen.3 M.2 2230 OPAL 720-D 512G 3D TLC BiCS5 (-40~85°C)

NVRAM Module

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

iDoor Expansion(M.2 B+M) For AMAX-7570 (add UN0-137-ID1EC)

**Only with M.2 E key SSD installation

- **PCM-37D24DI-AE** 24ch Isolation Digital I/O, 16DI/ 8DO, DB37 x1
- **PCM-34D2R2-AE** Isolated RS-232, DB9 x2, M.2 Bkey(2242, USB)
- **PCM-34D2R4-AE** Isolated RS-422/485, DB9 x2, M.2 Bkey(2242, USB)
- **PCM-34R2GL-AE** 2 Port Giga LAN Intel i350, M.2 B+M key

Embedded OS

- **20701WX1ES0002** Img WIN10 LTSC x64 v6.08 B061 UN0-137_V2 Entry
- **20701U22DS0013** Image AdvLinuxTu-IOTG_x64 V4.3.5 for UN01 series

Windows Real-Time Control Software (CODESYS RTE)

- **320TADVWX86004** Software CODESYS WRTE Driver V3.5.2010.2

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

- **320TADVLX86001** SW CDS x86Linux Driver V3.5.20P4.2090 (w/ TV)
- **320TADVLX86002** SW CDS x86Linux Driver V3.5.20P4.2090 (w/o TV)

Optional Accessories

DIN-Rail Type Power Supply Module (60W in general)

- **PSD-A60W24** A/D 100-240V 60W 24V
- **96PSD-A120W24-DL** DIN RAIL A/D 100-240V 120W 24V
- **PSD-A120W24** A/D 100-240V 120W 24V