

AFE-R760

Intel® Core™ Ultra 7/5 Processors AMR control system

NEW



Features

- Intel® Core™ Ultra 7/5 Processors, up to 16 Cores, TDP 28W
- Dual Channel DDR5-5600, up to 96GB
- Support 4x GMSL through connector
- Dedicate I/Os for AMR: 3x 2.5GbE, 2x USB-C, 2x USB-A, 4x COM, 2x CAN-FD, 8-bit DIO
- ESD protection : Contact 8KV, air 15KV
- Supports Ubuntu22.04/ 24.04 LTS, Windows 11 LTSC, Advantech Robotic Suite
- Integrated CPU, GPU, and NPU provide up to 32 TOPS AI performance



WISE-DeviceOn SUSI API



Specifications

Processor System	Processor	Core Ultra 7, 155H	Core Ultra 5, 125H
	Max. Frequency	4.8GHz	4.5GHz
	Base Frequency (P-Core)	1.4GHz	1.2GHz
	Core/ Thread	16, 6P+8E+2LE/ 22	14, 4P+8E+2LPE/ 18
	LLC	24MB	18MB
	TDP	28W	28W
	Chipset	On-package Intel 600 Series Chipset	
	BIOS	AMI EFI 256Mbit	
Memory	Technology	DDR5 5600 MHz	
	Max. Capacity	96 GB	
	Socket	2 x 262-pin SO-DIMM	
Graphics	Chipset	Intel® ARC® Graphics	
	3D/ HW Acceleration	DX12.2, OGL4.6, OCL3.0, HW Encode/ Decode: H.265 (HEVC), H.264, AV1, VP9	
	DP	1 x DP1.4a, up to 4096 x 2160x 36bpp @60Hz	
Ethernet	LAN1/2/3	10/100/1000/2500 Mbps Intel i226-LM GbE, support Wake On Lan	
Audio	Interface	Realtek ALC888s, Line-out/Mic-in (optional by 1700035708-01)	
Others	Watch dog Timer	65536 level, 0-65535 sec	
	TPM	Discrete TPM2.0, fTPM* support by request	
I/O Interface	Serial Port	4 x RS-232/422/485, max. 1Mbps	
	USB Type-C	2 x USB3.2 Gen2x1 10Gbps, support DisplayPort1.4 Alt. Mode, 1 x optional USB4 (Bandwidth min. 20Gbps, max. 40Gbps, with USB4/Display/PCIe)	
	USB Type-A	2 x USB3.2 Gen2x1 10Gbps	
	GPIO	8-bit general purpose input output I/O	
	CANBus	2 x CAN-FD (Data bitrate 1M/ 2M/ 4M/ 6M/ 8Mbps are supported)	
	FAN	1x FAN connector (12V0.35A)	
Expansions	M.2 E Key	1 x E-Key 2230 (PCIex2, USB2.0)	
	M.2 B-Key	1 x B-Key 3052 (PCIe x2, SATA, USB2.0) w' Nano SIM	
	M.2 M-Key	2 x M-Key 2280 (PCIex4 Gen.4 NVMe)	
	GMSL	Up to 4x FAKRA, expanded through GMSL interfaced card, MIOe-GMSL (Optional)	
Software Support	Microsoft Windows	Windows 10/ 11	
	Linux	Ubuntu 22.04/ 24.04	
	ROS2	Ready by Advantech Robotic Suite	
Power Requirements	Power Input Voltage	12-24V _{DC}	
	Power Source	DC Battery or AC to DC 150W adapter (Optional)	
Power Consumption (CPU/Memory Only)	Typical (OS idle mode)	9.12W	
	Max. (Full loading)	45.12W	

#1 SIM holder and M.2 slot are hardware interfaces for wireless communication integration only. System level RF certification is not available.

ADVANTECH

AMR CONTROLLER

All product specifications are subject to change without notice.

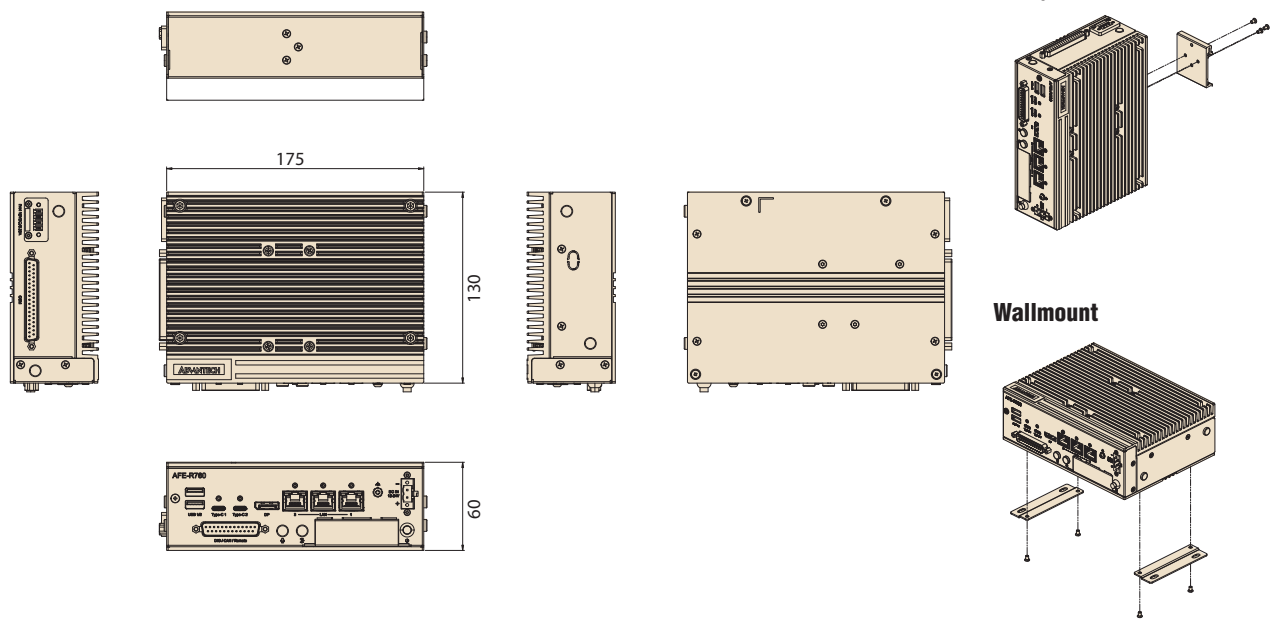
Last updated: 2-Jan-2026

Specifications (Cont.)

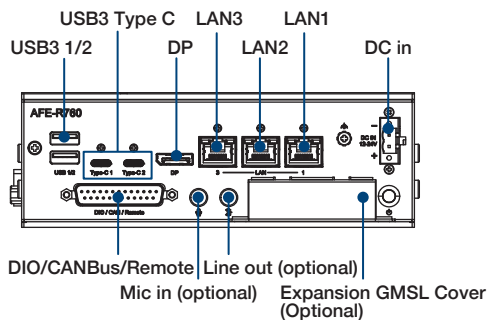
Mechanical	Construction	Aluminum housing
	Mounting	DIN-Rail mounting, Wall mounting (Optional)
	Dimensions (W x H x D)	175 x 60 x 130 mm
	Weight	1.6 kg (3.5 lb)
Environment	Operating Temperature	with extended temp peripherals: -20 ~ 60° C with 0.7m/s air flow
	Storage Temperature	-40 ~ 85° C
	Relative Humidity	95% @ 40° C (non-condensing)
	Vibration During Operation	3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis.
	Shock During Operation	30 G, IEC 60068-2-27, half sine, 11 ms duration
	EMC	Heavy industrial certificates, CE/FCC Class B, UKCA, CCC, BSMI
	Safety	CB, UL, UKCA, CCC, BSMI

Dimensions

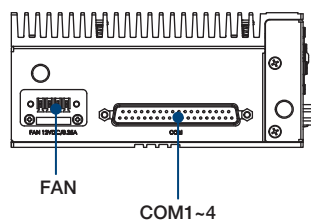
Unit: mm



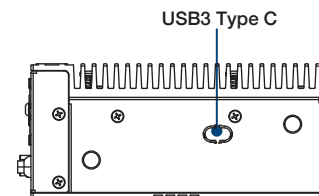
Front Panel I/O



Left Side Panel I/O



Right Side Panel I/O



Ordering Information

Part No.	CPU	Core	DDR5	Gbe	DP	CANBus	RS-232/422/485	USB	M.2 B key	SIM	M.2 E Key	M.2 M key	GPIO	Made in
AFE-R760-Q5A1	Core Ultra 5, 125H	14C, 4P+8E+2LPE	Up to 96GB	3	1	2	4	4	1	1	1	2	8bit	China
AFE-R760-Q8A1	Core Ultra 7, 155H	16C, 6P+8E+2LPE	Up to 96GB	3	1	2	4	4	1	1	1	2	8bit	China

Note: Memory, storage, and operating system bundled by request.

Compatible Sensors List

Compatible Sensors for Autonomous Applications						
Sensors	Manufacturer	Spec	Sensor MPN	Camera Resolution	Camera sensor	Advantech PN
GMSL Camera	RealSense	2D+3D	D457	1 MP (RGB) 1 MP (depth)	OMNIVISION OV9782	96ICAM-D457
	oToBrite	2D	oToCAM222	2 MP	Sony ISX021	96ICAM-222
	Appro	2D	E-09	8.3MP	Sony IMX415	-
	Appro	2D	E-10	5 MP	Sony IMX335	-
	Appro	2D	E-11	2.3MP	Onsemi AR0234	TBD
	Appro	2D	E-12	2 MP	Sony IMX290	-
	Appro	2D	E-13	8.3MP	Onsemi AR0822	-
USB Camera	D3 Embedded	2D	DesignCore@ Discovery Series	3 MP	Sony ISX031	-
	Orbbec	2D+3D	Gemini 335L	1 MP (RGB) 1 MP (depth)		TBD
	Innodisk	2D	EV8U-LSM1	8.3MP	IMX415	-
IMU	e-con	2D	See3CAM_CU81	8.3MP	AR0821	-
	Movella	9-axis	MTi-3-5A-DK			-
Lidar	Movella	9-axis	Xsens MTi-320			TBD
	Slamtec	2D	RPLIDAR-A2M12			-
	Slamtec	2D	RPLIDAR C1 LiDAR			-
	SICK	2D	NanoScan3			-
	SICK	3D	multiScan100			-

Packing List

Part Number	Description
-	AFE-R760 Unit
-	User Manual (Simplified Chinese)
-	China RoHS
1652000099	1 x 2-pin plug-in block for power in

Embedded OS/ API

Part Number	Description
20706WLH1S0115	WIN11 IoT LTSC 21H2 64bit for Ultra 7
20706WLV1S0115	WIN11 IoT LTSC 21H2 64bit for Ultra 5
20706U24DS0030	UbuntuD 64b 24.04 ENU + Preempt-RT patch + Advantech Robotic Suite (ROS2)
Software API	Download from website SUSI5 for AFE-R760
ROS2	Ready by Advantech Robotic Suite

Default SKU Option Items

Optional Item for Default SKU

Part Number	Description
96PSA-A150W24T2-4	AC to DC adapter, DC 24V 150W, -10 ~ 60 °C (10% derating@60 °C)
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801-11	Power cable 3-pin 183cm, UK type
1700000237	Power cable 3-Pin 183cm, PSE type
1751000759-01	FAKRA Cable 1M, Z Type
1950016395T10C	DIN RAIL
1960099390N002	Wall mount Bracket (Please order 2pcs)
1700021869-01	DB37(male) to 4 x DB9(male) cable (Please refer to user manual for Pin Definition)
1700035708-01	AFE-R760 Internal Audio Cable/Line out/Mic IN
1960110006N000	M.2 3042/2242 to 3052 extension bracket
AMK-A0053	AFE-R760 Fan Kit
MIOE-GMSL-4PA1	MIOE-GMSL Module, 4x FAKRA port (Please order it along with the GSML cover)