

AFE-R770

Intel® 12th&13th&14th Gen Core™ i3/i5/i7/i9 AMR control system

NEW



Features

- Support Intel® 12th&13th&14th Gen. Core™ i3/i5/i7/i9 processor
- Dedicate I/Os for AMR : 4x 2.5GbE, 4x USB3.2, 2x CANBus, 4x RS-232/422/485, 16bit DIO
- 9-36V_{DC} with switchable Ignition/PC power on mode
- Contact 8KV, air 15KV ESD protection
- Wide operating temp from -20-65 °C
- Supports Ubuntu 22.04/24.04, Win10/11, Advantech Robotic Suite



WISE-DeviceOn SUSI API



Specifications

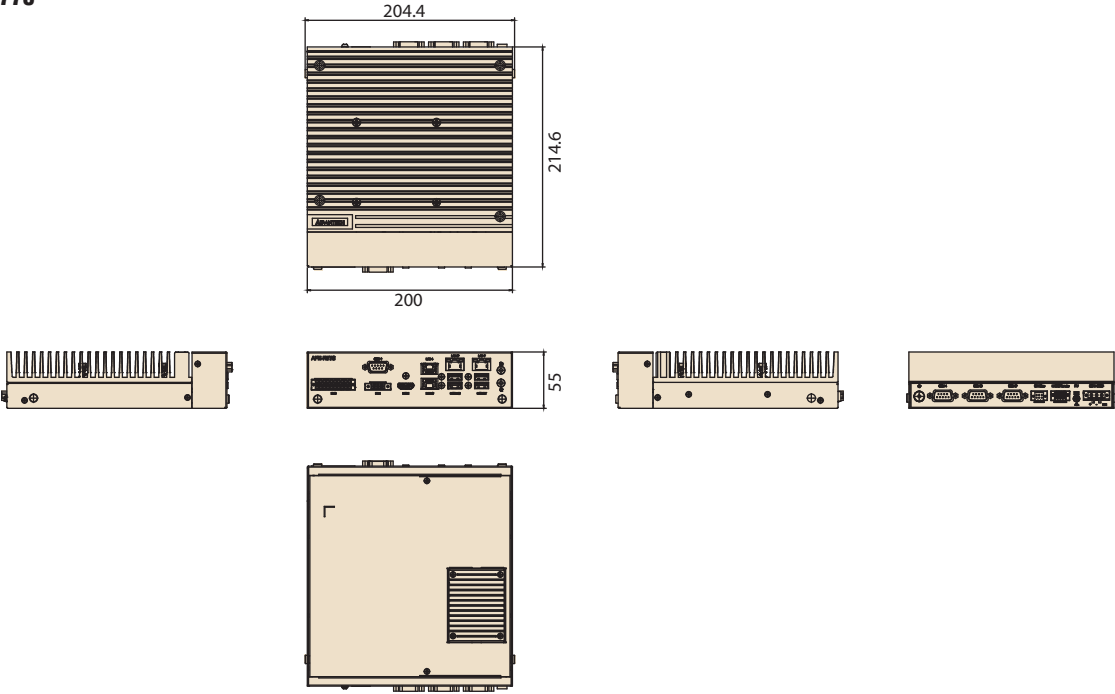
		i9-14900T	i9-13900TE	i9-12900TE	i7-14700T	i7-13700TE	i7-12700TE	i5-14500T	i5-13500TE	i5-12500TE	i3-14100T	i3-13100TE	i3-12100TE	
Processor System	CPU	i9-14900T	i9-13900TE	i9-12900TE	i7-14700T	i7-13700TE	i7-12700TE	i5-14500T	i5-13500TE	i5-12500TE	i3-14100T	i3-13100TE	i3-12100TE	
	Frequency	1.0-5.5GHz	1.0-5.0GHz	1.0-4.8GHz	1.0-5.2GHz	1.1-4.8GHz	1.0-4.6GHz	1.2-4.8GHz	1.1-4.5GHz	1.9-4.3GHz	2.7-4.4GHz	2.4-4.1GHz	2.1-4.0GHz	
	L3 Cache	36MB	36MB	30MB	33MB	30MB	25MB	24MB	24MB	18MB	12MB	12MB	12MB	
	Cores	24	24	16	20	16	12	14	14	6	4	4	4	
	TDP	35W	35W	35W	35W	35W	35W	35W	35W	35W	35W	35W	35W	
	Chipset	H610E/R680E												
Memory	BIOS	AMI EFI 256Mbit												
	Technology	DDR5 5600 MHz												
	Max. Capacity	64 GB												
Graphics	Socket	2 x 262-pin SO-DIMM												
	Chipset	Intel® UHD Graphics 770												
	Graphic Engine	DirectX 12, OpenGL 4.5 HW Encode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, JPEG/MJPEG and VP8. HW Decode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, VC-1/WMV9, JPEG/MJPEG, VP8 and VP9												
Ethernet	LAN1/2/3/4	10/100/1000/2500 Mbps Intel i226-LM GbE, support Wake On Lan												
Audio	Interface	Realtek ALC888S, High Definition Audio, Line-out and Mic-in												
Others	Watch dog Timer	255-level timer interval, setup by software												
	TPM	Infineon SLB9672XU2.0												
I/O Interface	Serial Port	4 x RS-232/422/485 port with auto flow control (COM2 with 5V/12V, COM3 isolated)												
	USB	4 x USB 3.2 (Power up to 1.5A for each port)												
	DIO	isolated 8bit DI/ 8bit DO (Open drain, voltage level 5V)												
	Remote switch	Power switch/Reset/WDT/Power LED/SATA LED												
	CANBus	2x CANBus												
	FAN	1x FAN connector (12V1A)												
Expansions	M.2 E Key	1x M.2 2230												
	M.2 B Key (Share with storage)	1x M.2 2280, 3042/3052 support by extend bracket												
	IMU Socket	Support IMU/ VRU/ AHRS (Option AFE-RM05)												
Storage	NVME+SATA	1x M.2 M key (PCIex4+SATA), 1x M.2 B key (PCIex2+SATA)												
Software Support	Microsoft Windows	Windows 10/11												
	Linux	Ubuntu 22.04/24.04 (Others support by project)												
	ROS2	Ready by Advantech Robotic Suite												
Power Requirements	Power Type	Switchable Ignition Power on (V mode) and PC power on (P mode), default P mode												
	Power Input Voltage	9-36V _{DC}												
	Power Source	DC Battery or AC to DC 150W adapter (Optional)												
Power Consumption (CPU/Memory Only)	Typical (OS idle mode)	23.2W												
	Max. (Full loading)	68.6W												
Mechanical	Construction	Aluminum housing												
	Mounting	Desk mounting, Wall mounting, DIN-Rail mounting												
	Dimensions (W x H x D)	200 x 55 x 215 mm												
	Weight	2.7 kg (6 lb)												
Environment	Operating Temperature	Up to 35W processor with extended temp peripherals: -20 ~ 65° C with 0.7m/s air flow Up to 35W processor with extended temp peripherals and system fan: -20- 70° 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													

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

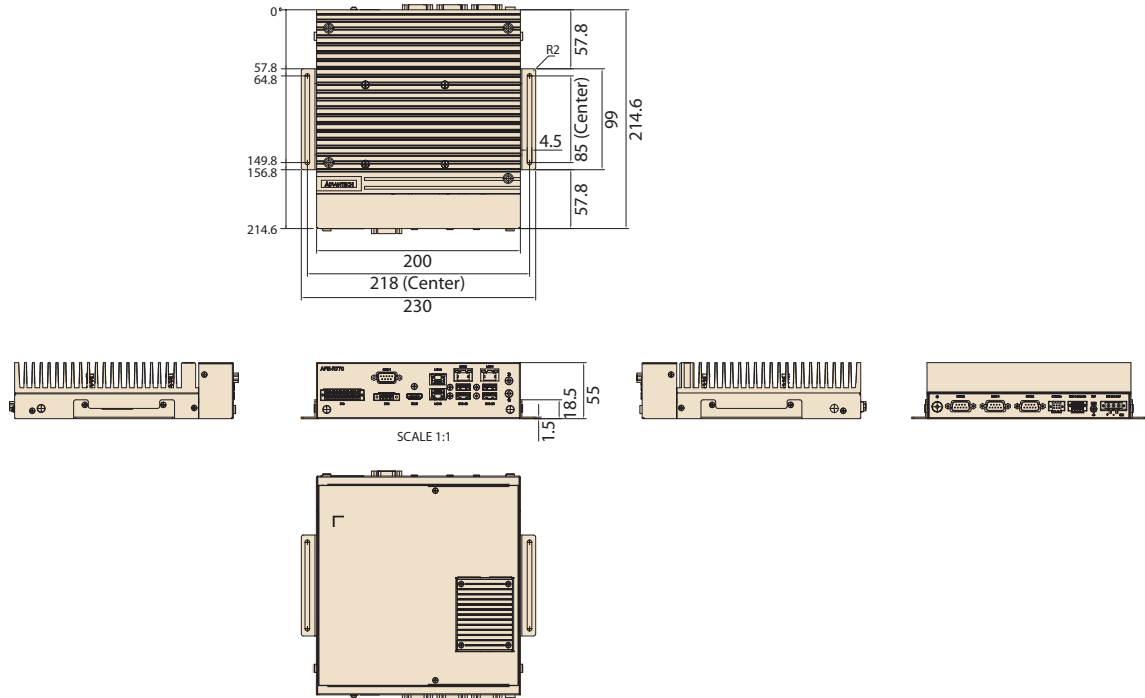
Dimensions

Unit: mm

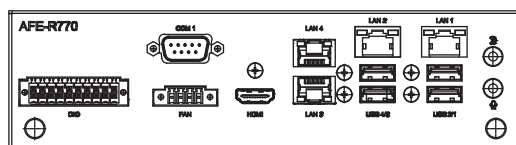
AFE-R770



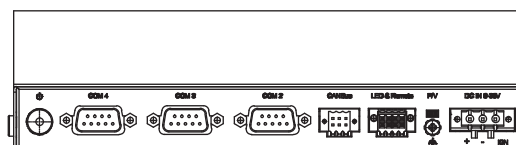
AFE-R770+ Wall mount kit



Front Panel I/O



Real Panel I/O



Ordering Information

Part No.	PCH	CPU	DDR5	Gbe	HDMI	CANBus	RS-232/422/485	USB	M.2 B key	SIM	M.2 E Key	M.2 M key	DIO	vPro	Made in
AFE-R770-00A1	H610E	LGA1700 Socket Type	Up to 64GB	4	1	2	4	4	1	1	1	1	16bit	No	China
AFE-R770-00A1U	R680E	LGA1700 Socket Type	Up to 64GB	4	1	2	4	4	1	1	1	1	16bit	Yes	Taiwan

Note:
 1. CPU/Memory/Storage and operating system bundled by request.
 2. DIO spec: 16bit DIO (8bit DI/ 8bit DO)

Packing List

Part Number	Description
-	AFE-R770 Unit
-	User Manual (Simplified Chinese)
-	China RoHS
-	Mounting kit

Embedded OS

Part Number	Description
20706WX1HS0105	WIN10 IoT LTSC 21H2 64bit for i7/i9
20706WX1VS0105	WIN10 IoT LTSC 21H2 64bit for i3/i5
20706WLH1S0115	WIN11 IoT LTSC 2024 64bit for i7/i9
20706WL1S0115	WIN11 IoT LTSC 2024 64bit for i3/i5
20706U22DS0050	UbuntuD AFE-R770 64b 22.04 PREEMPT_RT
20706U22DS0053	UbuntuD AFE-R770 64b 22.04 Xenomai
20706U24DS0039	UbuntuD AFE-R770 64b 24.04 PREEMPT_RT

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
1960103315N020	M.2 3042/3052 Extension Bracket for AFE-R770
AFE-RM05	Movella Xsens AHRS Sensor
199L000041S000	USB Bracket Nylon
1990040953S000-CM	Cable tie 120x2.5x1.1 Black
AMK-A0051	Fan Kit