

# AFE-R770

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

NEW



### Features

- Support Intel® 12<sup>th</sup>&13<sup>th</sup>&14<sup>th</sup> 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<sub>DC</sub> with switchable Ignition/PC power on mode
- Contact 8KV, air 15KV ESD protection
- Wide operating temp from -20-65 °C
- Supports Ubuntu 22.04, Advantech Robotic Suite



WISE-DeviceOn SUSI API

### Specifications

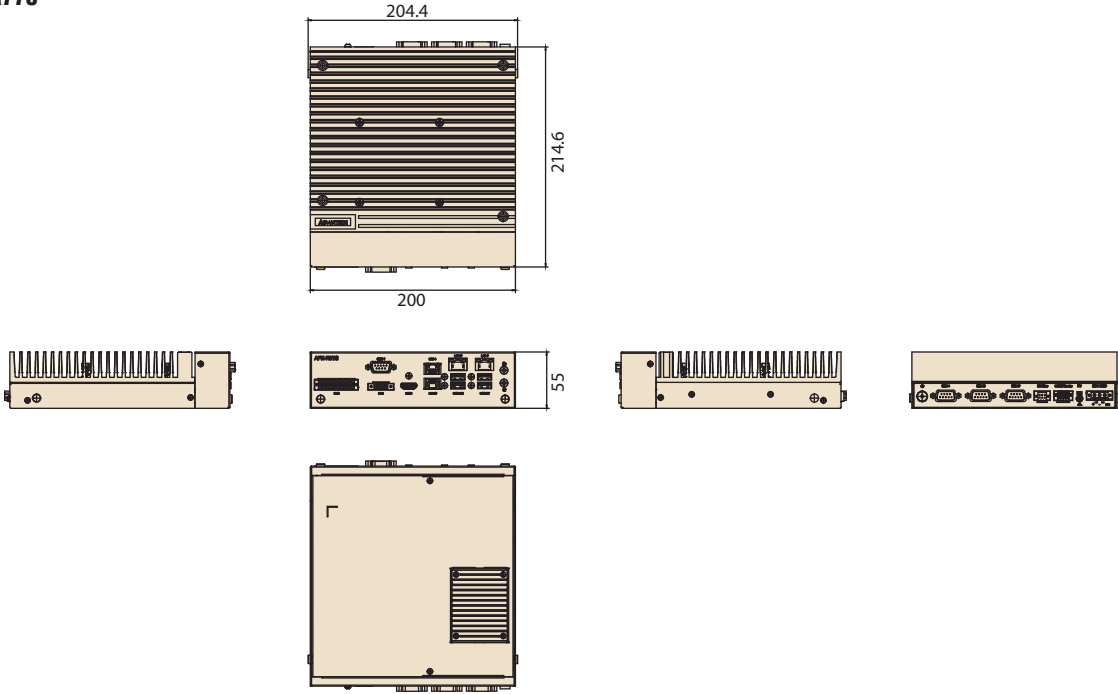
	CPU	i9-14900T	i9-13900TE	i9-12900TE	i7-14700T	i7-13700TE	i7-12700TE	i5-14500T	i5-13500TE	i5-12500TE	i3-14100T	i3-13100TE	i3-12100TE	
Processor System	Frequency	1.0-5.5GHz	1.0-5.0GHz	1.0-4.8GHz	1.0-5.2GHz	1.1-4.8GHz	1.0-4.6GHz	1.2-4.8GHz	1.1-4.5GHz	1.9-4.3GHz	2.7-4.4GHz	2.4-4.1GHz	2.1-4.0GHz	
	L3 Cache	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												
	BIOS	AMI EFI 256Mbit												
Memory	Technology	DDR5 4800 MHz												
	Max. Capacity	64 GB												
	Socket	2 x 262-pin SO-DIMM												
Graphics	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												
	HDMI	1 HDMI port, HDMI 1.4 for HD video playback, 4096x2160@60Hz												
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	2 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 1410034701-01)												
Storage	NVME+SATA	1x M.2 M key (PCIex4+SATA), 1x M.2 B key (PCIex2+SATA)												
Software Support	Microsoft Windows	Windows 10												
	Linux	Ubuntu 22.04 (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 <sub>DC</sub>												
	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.

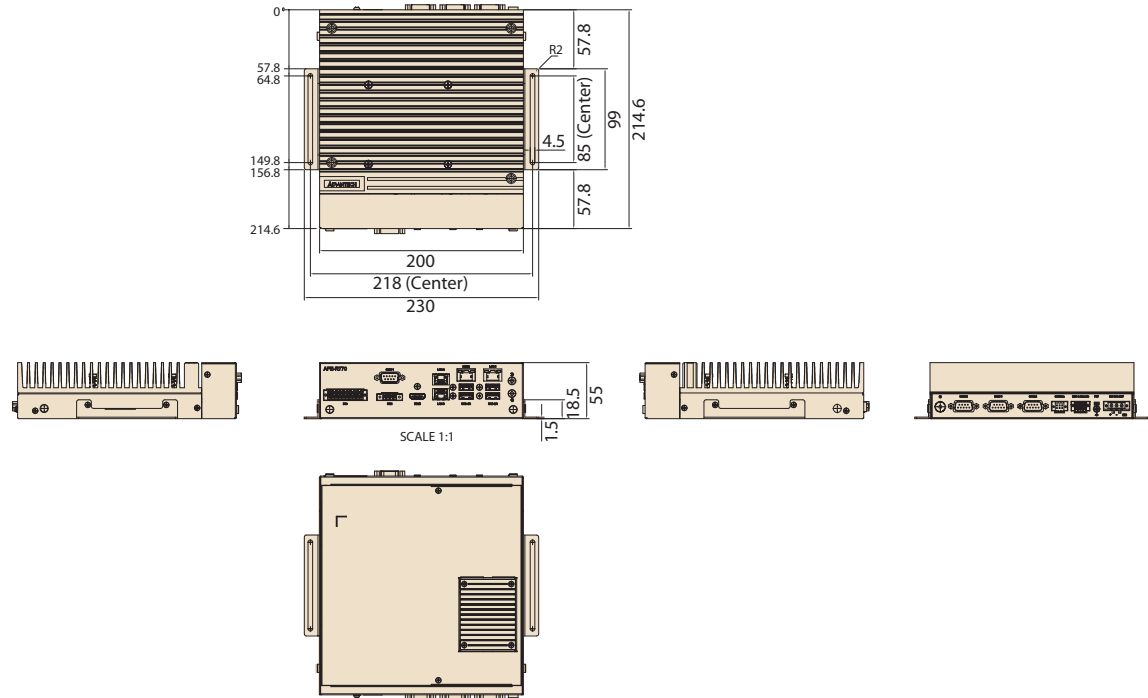
# Dimensions

Unit: mm

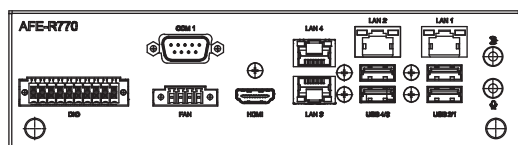
## AFE-R770



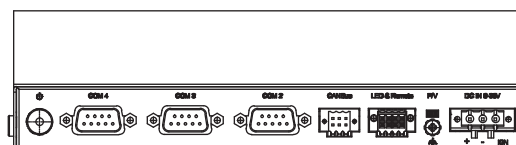
## AFE-R770+ Wall mount kit



## 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	Made in
AFE-R770-00A1	H610E	LGA1700 Socket Type	Up to 64GB	4	1	2	4	4	1	1	1	1	16bit	China
AFE-R770-00A1U	R680E	LGA1700 Socket Type	Up to 64GB	4	1	2	4	4	1	1	1	1	16bit	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
20706U22DS0050	UbuntuD AFE-R770 64b 22.04 PREEMPT_RT
20706U22DS0053	UbuntuD AFE-R770 64b 22.04 Xenomai

## Default SKU Option Items

### Optional Item for Default SKU

Part Number	Description
96PSA-A150W24T2-4	AC to DC adapter, DC 24V 150W, 0 ~ 40 °C
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type
1700000237	Power cable, 3-Pin 183cm, PSE type
1960103315N020	M.2 3042/3052 Extend Bracket for AFE-R770
1410034701-01	Movella Xsens AHRS Sensor
199L000041S000	USB Bracket Nylon
1990040953S000-CM	Cable tie 120x2.5x1.1 Black
AMK-A0051	Fan Kit