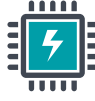# EC90A-GH

AMD Ryzen™ Embedded R1000 Series
Ultra Small Size Embedded System

KEY FEATURES

High Performance CPU
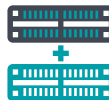Smallest AMD Ryzen™ R1000 system

Ultra Small Size
Dimension: 110 x 80mm x 60mm (W x H x D)

Fanless Design
DFI optimized thermal design

Expansion Options
Options of 2 serials ports or LTE or WiFi

Easy Integration
User friendly of installing SIM card

PANEL

Front View

Rear View

SPECIFICATION

SYSTEM	**Processor**	AMD Ryzen™ Embedded R1606G, Dual Core, 1MB Cache, 3 CU, 2.6GHz (3.5GHz), 12W AMD Ryzen™ Embedded R1505G, Dual Core, 1MB Cache, 3 CU, 2.4GHz (3.3GHz), 12W AMD Ryzen™ Embedded R1305G, Dual Core, 3 CU, 1.5GHz (2.8GHz), 8-10W AMD Ryzen™ Embedded R1102G, Dual Core, 3 CU, 1.2GHz (2.6GHz), 6W	
	Memory	One DDR4 2400 MHz SODIMM down up to 4GB/8GB (memory onboard)	
	BIOS	AMI SPI 64bit	
GRAPHICS	**Controller**	AMD Vega GPU with up to 3 computing units.	
	Feature	H.265 decode/encode support, VP9 decode.	
	Display	2 x Micro HDMI1.4	
STORAGE	**Internal**	eMMC up to 16/32/64/128GB	
EXPANSION	**Interface**	1 x Mini-PCIe (PCIe signal)	
ETHERNET	**Controller**	1 x I211AT PCIe or 1 x Intel I210IT (optional)	
LED	**Indicators**	Power status	
FRONT I/O	**Ethernet**	1 x GbE	
	USB	1 x USB 3.1 Gen2 type C	
	Display	2 x Micro HDMI1.4	
REAR I/O	**Combo Ports**	(option 1) 1 x 8-bit DIO + 1 x SMBus (option 2) 2 x RS-232	two optional sku
	Antenna	2 x Antenna (LTE or WiFi, via module) (optional)	not avaliable if selecting 2 x RS-232
WATCHDOG TIMER	**Output & Interval**	System reset, programmable via software from 1 to 255 seconds	
SECURITY	**TPM**	fTPM 2.0	
POWER	**Type**	12V DC-in	
	Connector	DC Jack with lock	
OS SUPPORT	**OS Support**	Windows 10 IoT Enterprise 64-bit Linux	
ENVIRONMENT	**Operating Temperature**	0~45°C	
	Storage Temperature	-40~85°C	
	Relative Humidity	5 to 90% RH (non-condensing)	
MECHANICAL	**Construction**	Metal + Alumnium	
	Mounting	Wall mount /VESA mount	
	Dimensions (W x H x D)	110 x 80mm x 60mm	
	Weight	700g	
STANDARDS AND CERTIFICATIONS	**Shock**	Non-Operational Half-sine waveform: 5G	
	Vibration	Non-Operational Vibration 1.5 G	
	Certifications	CE, FCC	