

EPC-R680E

Expandable Vision AI Box PC



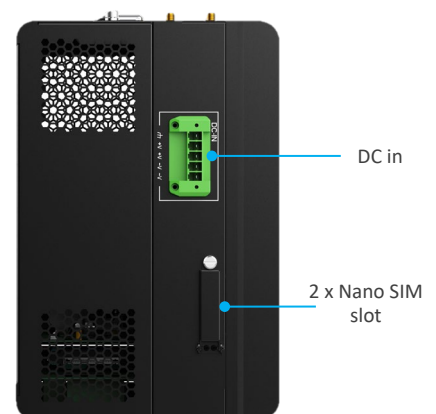
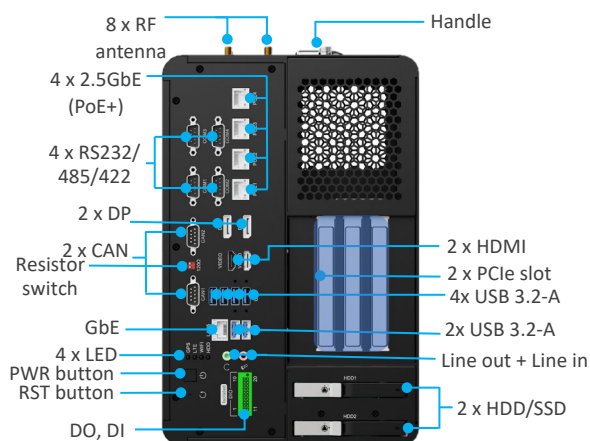
Product Brief

The EPC-R680E is a high-performance AI box PC designed specifically for visual inspection applications. Powered by the robust performance of the Intel® 12th/13th/14th Gen Core™ processor, it integrates advanced computing technology, a reliable hardware architecture, and rich I/O resources, enabling precise vision-based system control and intelligent defect recognition even in demanding environments.

The device is equipped with comprehensive I/O interfaces including USB, DB9 connectors supporting RS232/485/422, isolated CAN buses, DI, and DO to ensure flexible and stable connectivity with a wide range of industrial automation and vision inspection equipment. It also provides extensive expansion capacity through M.2 slots. For high-speed networking, the unit integrates one standard GbE port and four 2.5GbE ports with Power-over-Ethernet (PoE) support, along with optional 4G/5G cellular and Wi-Fi & Bluetooth, ensuring secure, rugged connectivity.

Designed to withstand harsh operating conditions, the EPC-R680E supports wide-temperature operation from -40°C to 70°C and features an IP50-rated enclosure for reliable operation. It adopts a wide-voltage power input design ranging from DC 9V to 60V. The device delivers reliable performance and flexible scalability to support advanced visual inspection and AI-powered quality control, making it an ideal solution for manufacturing lines, automated inspection stations, and industrial process monitoring.

Exterior and Features



12th/13th/14th Gen Intel® Core™ processor



Rich I/O for flexible connectivity: USB, COM, DO, DI, CAN



4 independent displays, up to 4K video output



1 x GbE, 4 x 2.5GbE (PoE+ supported)



Fanless design, wide operating temp.: -40°C~70°C



Wide input voltage (9V~60V DC), ACPI 5.0 compliant



iAMT support, Wake-on-LAN (WoL), PXE boot

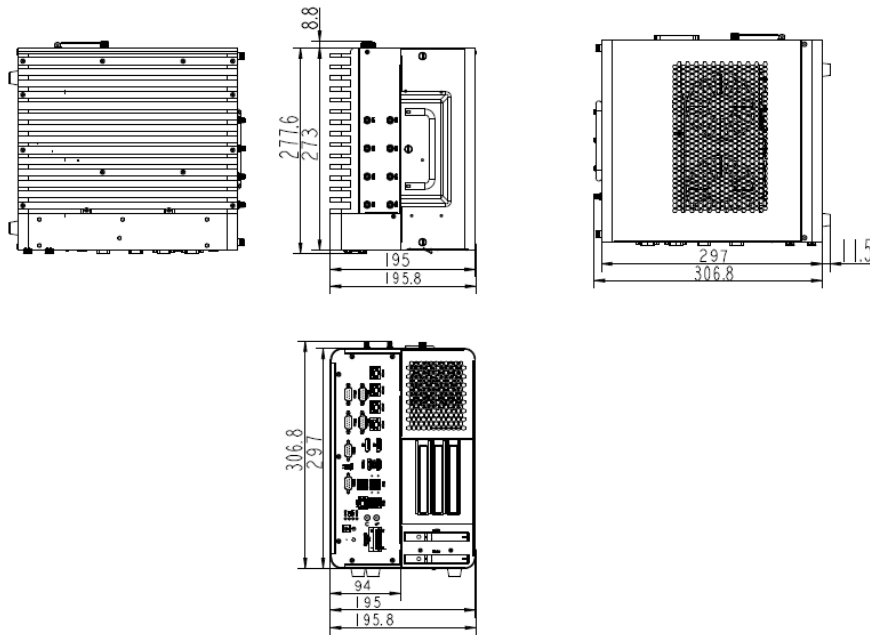


Windows 10/11 IoT, Ubuntu 22.04

Specifications

EPC-R680E			
System	CPU	Intel® Desktop 12 th /13 th /14 th Gen Core™ processor	
	GPU	Mainstream dual-fan GPUs supported (expansion via the PCIe 5.0 x16 slot)	
	Memory	2 x DDR5 SO-DIMM socket, up to 96GB (ECC/Non-ECC supported)	
	Storage	2 x Front-access 2.5" HDD/SSD tray	2 x SATA 3.0 (support software RAID 0/1)
Communication	Ethernet	1 x RJ45, 1000Mbps (iAMT supported)	
		4 x RJ45, 2.5Gbps (PoE+ supported, IEEE 802.3at, 30W/48V)	
	4G/5G	Optional (Expansion via M.2 B-key)	
	Wi-Fi & Bluetooth	Optional (Expansion via M.2 E-key)	
RF	GNSS	Optional (GPS, BDS, GLONASS, Galileo, QZSS supported)	
Media	Display (up to 4 independent displays)	2 x HDMI1.4b, up to 3840 x 2160 @30Hz	
		2 x DP 1.4a, up to 4096 x 2304 @60Hz	
	Audio	1 x 3.5mm Line in jack	1 x 3.5mm Line out jack
I/O	USB	6 x USB 3.2 Type-A	
	Serial port	4 x Isolated RS232/485/422, DB9 (115200)	
	CAN	2 x Isolated CAN, DB9 (J1939)	
	DIO	8 x Isolated DI (9~60V DC)	8 x Isolated DO (30V@200mA)
	SIM slot	2 x Nano SIM slot	
	Antenna	2 x SMA connector for Wi-Fi & BT	1 x SMA connector for GNSS
Expansion	PCIe	1 x PCIe 5.0 x16 (Supports x16 or x8/x8) for GPU (max. length x height: 250mm x 180mm)	
		1 x PCIe 3.0 x4 for add-on card	
	M.2	1 x M.2 M-key (2242/2280), PCIe x4/SATA for SSD	
		1 x M.2 B-key (2242/2280), SATA/PCIe x2 for SSD	
		1 x M.2 B-key (3042/3052), PCIe x1/USB 3.0/USB 2.0 for 4G/5G	
		1 x M.2 E-Key (2230), PCIe x1/USB 2.0/CNVi for Wi-Fi & BT	
System Control	Button	1 x Power button	1 x Reset pinhole button
	LED indicator	1 x GNSS LED	1 x Cellular status LED
		1 x Wi-Fi status LED	1 x HDD activity LED
Miscellaneous	RTC	Supported	
	Watchdog timer	Supported	
	Security	TPM 2.0	
	Smart management	iAMT, Wake-on-LAN (WoL), PXE boot	
Power	HW monitoring	Auto throttling control for overheat protection	CPU temperature & voltage monitoring
	Input	9V~60V DC, Typical: 12V/24V/48V DC	1 x 5 x 7.62mm Terminal block
Software	BIOS	Insyde UEFI BIOS	
	Operating system	Windows 10/11 IoT, Ubuntu 22.04, other Linux distros upon request	
Mechanical	Dimensions	286.4 mm x 195.8 mm x 317.8 mm	
	IP rating	IP50	
	Installation	Desktop (Anti-skid feet & handle provided)	
	Shock test	IEC 60068-2-27 (SSD: 50G @ wall-mount, Half-sine, 11ms)	
	Vibration test	IEC 60068-2-64 (SSD : 5Grms, 5Hz to 500Hz, 3 Axes)	
Environmental Condition	Temperature	Operating: -40°C ~ 70°C for 35W TDP CPU -40°C ~ 55°C for 65W TDP CPU	Storage: -40°C~85°C
	Humidity	5%~95% RH (Non-condensing)	
	Certification (In progress)	FCC, CE	

Product Outlines



Ordering Information

Nomenclature

EPC-R680E-[P]-[W]-[C]-[G]

P (CPU): 14-14th-Gen i5-14500; 13-13th-Gen i5-13500; 12-12th-Gen i5-12500; more variants available*

W (Wi-Fi & BT): Null-Not provided; **WLAN**-Wi-Fi IEEE 802.11 a/b/g/n/ax + BT 5.4

C (Cellular): Null-Not provided; **S4**-Single 4G; **D4**-Dual 4G; **D5**-4G+5G

G (GNSS): Null-Not provided; **GS**-GNSS

Example Ordering No.	CPU	Wi-Fi & Bluetooth	Cellular	GNSS
EPC-R680E-14-WLAN-GS	14 th -Gen i5-14500	IEEE 802.11 a/b/g/n/ax + BT 5.4	-	Yes
EPC-R680E-13-WLAN-S4	13 th -Gen i5-13500	IEEE 802.11 a/b/g/n/ax + BT 5.4	Single 4G modem	-
EPC-R680E-12-D4-GS	12 th -Gen i5-12500	-	Dual 4G modem	Yes

* Please contact Technical Support for additional CPU options, as well as RAM + storage offerings.

Packing List	
EPC-R680E Vision AI box PC	1
Power connector	1
I/O mating connector	1

Optional Accessories	
Wi-Fi & BT antenna	2
Cellular antenna	2/4/5
GNSS antenna	1