

## EPC-R680E

### Expandable Vision AI Box PC



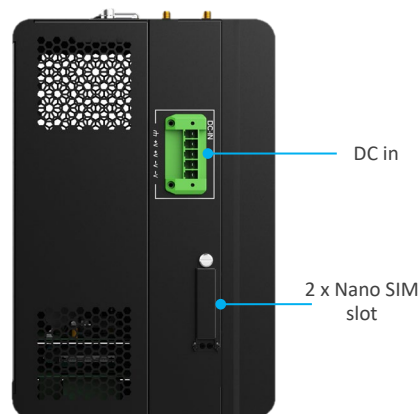
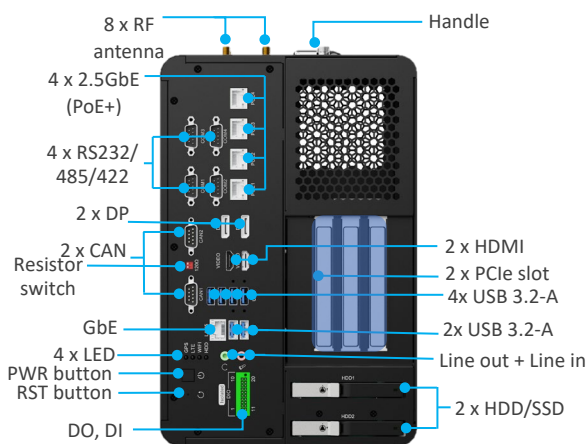
#### Product Brief





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



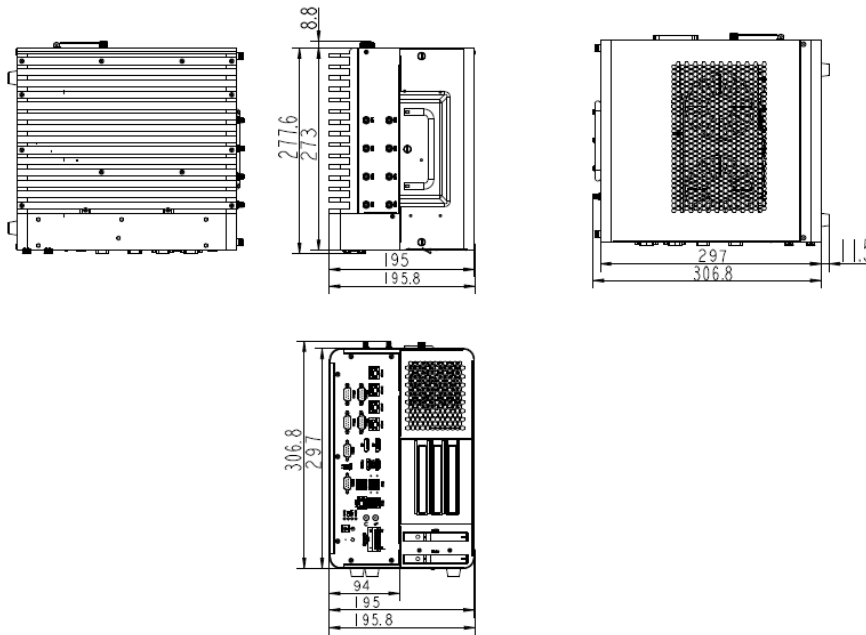
-  12th/13th/14th Gen Intel® Core™ processor
-  Rich I/O for flexible connectivity: USB, COM, DO, DI, CAN
-  4 independent displays, up to 4K video output
-  1 x GbE, 4 x 2.5GbE (PoE+ supported)

-  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, Linux support upon request

## Specifications

EPC-R680E		
<b>System</b>	CPU	Intel® Desktop 12 <sup>th</sup> /13 <sup>th</sup> /14 <sup>th</sup> Gen Core™ processor
	GPU	Mainstream 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) Expansion via M.2 M-key & B-key supported
<b>Communication</b>	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/Mini PCIe)
	Wi-Fi & Bluetooth	Optional (Expansion via M.2 E-key)
<b>RF</b>	GNSS (Optional)	GPS, BDS, GLONASS, Galileo, QZSS
<b>Media</b>	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
	<b>I/O</b>	USB
<b>I/O</b>	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 2/4/5 x SMA connector for 4G/5G WWAN
	<b>Expansion</b>	PCIe
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 (3042/3.52), 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
<b>System Control</b>	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
<b>Miscellaneous</b>	RTC	Supported
	Watchdog timer	Supported
	Security	TPM 2.0
	Smart management	iAMT, Wake-on-LAN (WoL), PXE boot
<b>Power</b>	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
<b>Software</b>	BIOS	Insyde UEFI BIOS
	Operating system	Windows 10/11 IoT, Linux support upon request
<b>Mechanical</b>	Dimensions	286.4 mm x195.8 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)
<b>Environmental Condition</b>	Temperature	Operating: -40°C ~ 70°C for 35W TDP CPU      Storage: -40°C~85°C -40°C ~ 55°C for 65W TDP CPU
	Humidity	5%~95% RH (Non-condensing)
	Certification (In progress)	FCC, CE

## Product Outlines



## Ordering Information

### Nomenclature

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

**P (CPU):** 14-14<sup>th</sup>-Gen i5-14500; 13-13<sup>th</sup>-Gen i5-13500; 12-12<sup>th</sup>-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 <sup>th</sup> -Gen i5-14500	IEEE 802.11 a/b/g/n/ax + BT 5.4	-	Yes
EPC-R680E-13-WLAN-S4	13 <sup>th</sup> -Gen i5-13500	IEEE 802.11 a/b/g/n/ax + BT 5.4	Single 4G modem	-
EPC-R680E-12-D4-GS	12 <sup>th</sup> -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