

VPC-R5744

Expandable In-Vehicle AI Box PC



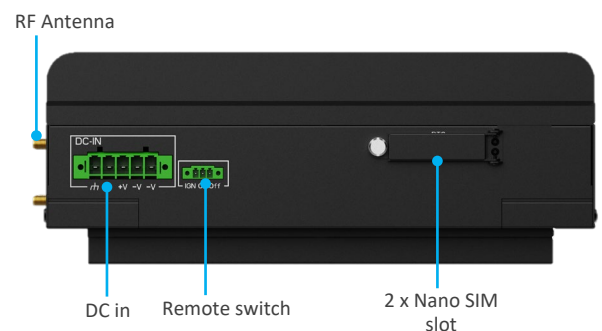
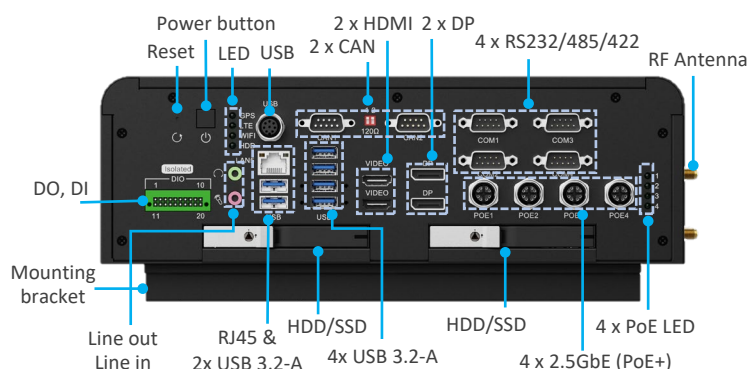
Product Brief

The VPC-R5744 is a high-performance AI box PC designed specifically for in-vehicle applications. Powered by the robust performance of the Intel® 12th/13th/14th Generation Core™ processor, it integrates advanced computing technology, a reliable hardware architecture, and rich I/O resources. It enables precise vehicle system control, data acquisition and processing, intelligent decision support even in demanding in-vehicle environments.

The unit 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 various vehicle-mounted devices. It also provides extensive expansion capacity through multiple 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 in M12 connectors to ensure secure, rugged connectivity.

Designed to withstand harsh operating conditions, the VPC-R5744 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 extensive scalability to power intelligent vehicle upgrades and V2X communication applications, making it an ideal solution for commercial vehicles, special-purpose vehicles, and new energy vehicles alike.

Exterior and Features



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



Rich I/O for V2X communication: 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) with ignition control



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

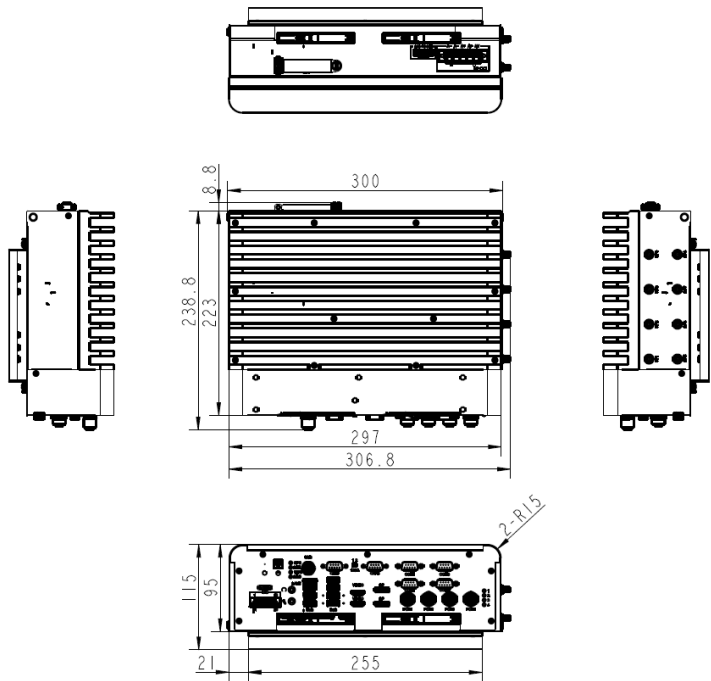


Windows 10/11 IoT, Ubuntu 22.04

Specifications

VPC-R5744			
System	CPU	Intel® Desktop 12 th /13 th /14 th Gen Core™ processor	
	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		Expansion via M.2 M-key & B-key supported	
	Ethernet	1 x RJ45, 1000Mbps (iAMT supported) 4 x M12 X-coded, 2.5Gbps (PoE+ supported, IEEE 802.3at, 30W/48V)	
	4G/5G	Optional (Expansion via M.2 B-key/Mini PCIe)	
RF	Wi-Fi & Bluetooth	Optional (Expansion via M.2 E-key)	
	GNSS	GPS, BDS, GLONASS, Galileo, QZSS (Automotive dead reckoning 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
	USB	6 x USB 3.2 Type-A	1 x USB 3.2 (M12 A-coded)
I/O	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	Mini PCIe	1 x Full-size Mini PCIe, PCIe x1/USB 2.0 for 4G/5G	
	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
		4 x PoE status LED	
Miscellaneous	RTC	Supported	
	Watchdog timer	Supported	
	Security	TPM 2.0	
	Smart management	iAMT, Wake-on-LAN (WoL), PXE boot	
Power	HW monitoring	CPU temperature & voltage monitoring	Auto throttling control for overheat protection
	Input	9V~60V DC, Typical: 12V/24V/48V DC	1 x 5-Pin terminal block
	Ignition control	16-Mode software ignition control	1 x 3-Pin remote switch
Software	BIOS	Insyde UEFI BIOS	
	Operating system	Windows 10/11 IoT, Ubuntu 22.04, other Linux distros upon request	
Mechanical	Dimensions	306.8 mm x 238.8 mm x 115mm	
	IP rating	IP50	
	Installation	Mounting bracket with VESA holes	
	Shock test	IEC 60068-2-27 (SSD: 50G @ wall-mount, Half-sine, 11ms)	
Environmental Condition	Vibration test	IEC 60068-2-64 (SSD : 5Grms, 5Hz to 500Hz, 3 Axes)	
	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, EN50155:2021, EN50121-3-2:2015, E-mark ECE R10 (E13)	

Product Outlines



Ordering Information

Nomenclature

VPC-R5744-[P]-[W]-[C]

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

Example Ordering No.	CPU	Wi-Fi & Bluetooth	Cellular
VPC-R5744-14-WLAN	14 th -Gen i5-14500	IEEE 802.11 a/b/g/n/ax + BT 5.4	-
VPC-R5744-13-WLAN-S4	13 th -Gen i5-13500	IEEE 802.11 a/b/g/n/ax + BT 5.4	Single 4G modem
VPC-R5744-12-D4	12 th -Gen i5-12500	-	Dual 4G modem

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

Packing List	
VPC-R5744 in-vehicle AI box PC	1
Power connector	1
GNSS antenna	1
I/O mating connector	1

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