

VC500-CMS-Q470E VC500-CMS-W480E VC500-CMS-H420E



10th Gen Intel® Processors
In-vehicle System



KEY FEATURES



High Performance CPU

10th Gen Intel® Xeon/Core™/Pentium/Celeron Processors



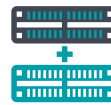
PoE or 10G Fiber ports

4 x PoE ports at 15.4W or
2 x 10G SFP+ ports



Wide Range Power Input

9~50Vdc power input with power ignition management



Multiple Expansions

1 miniPCIe and 4 M.2 slots

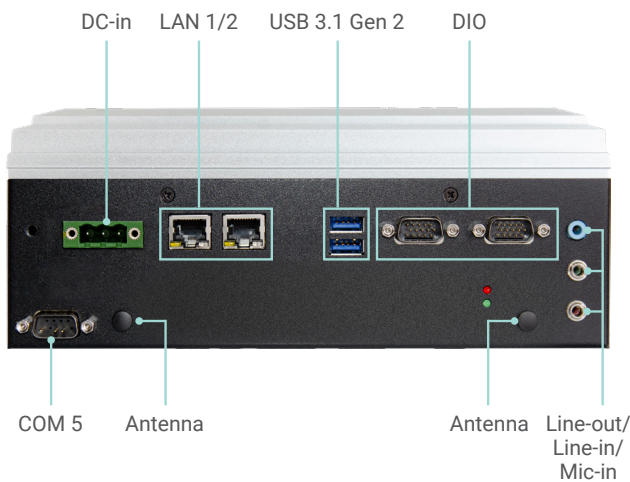


Dual SIM for single modem

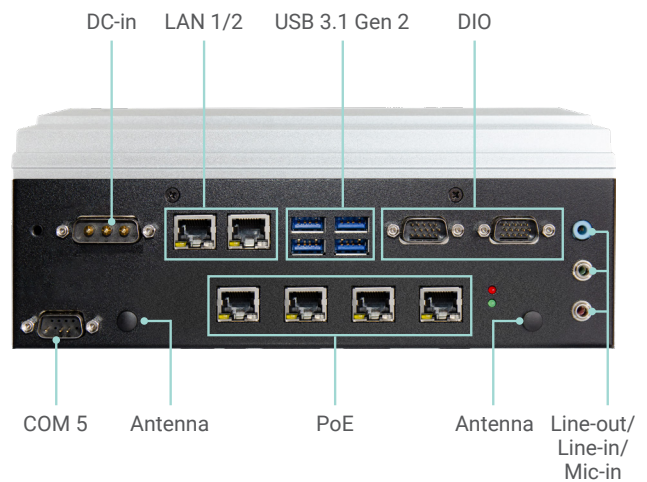
Two SIM cards for 5G/LTE module



PANEL

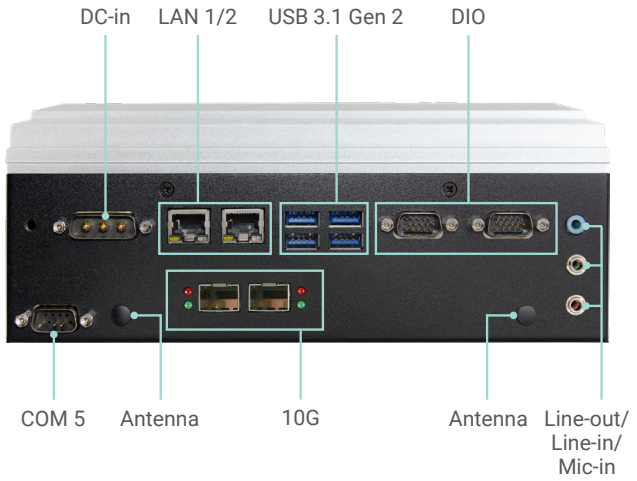


Front View
(w/o PoE)

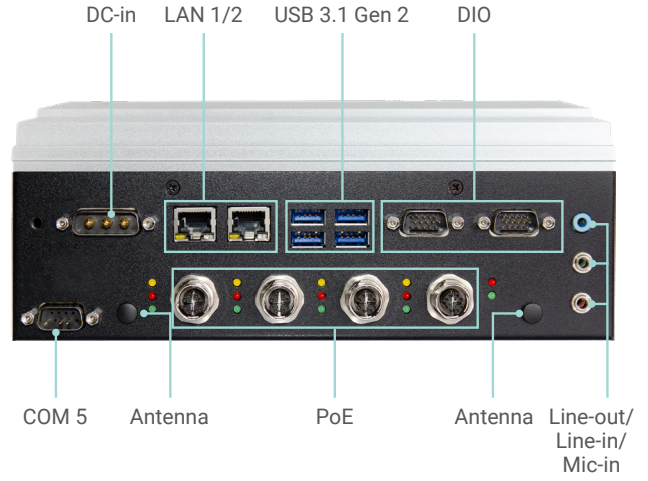


Front View
(4PoE)

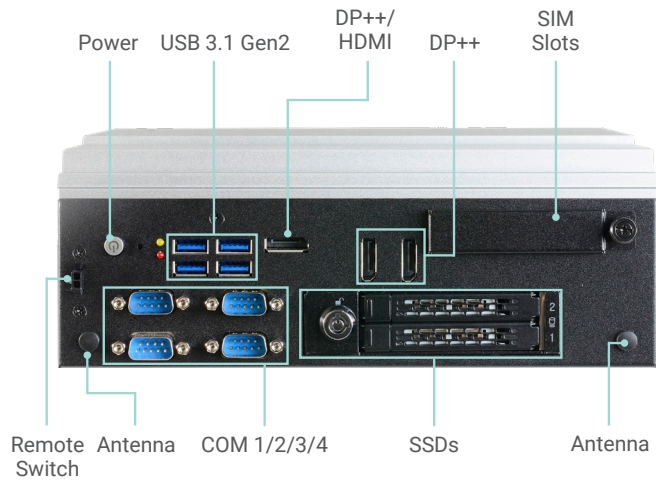
PANEL



Front View (10G)

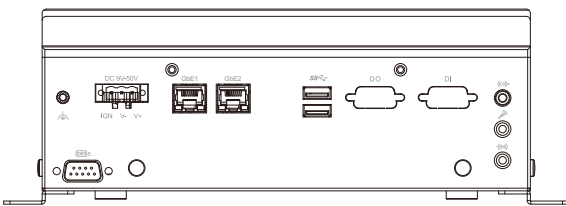


Front View (4PoEM12)

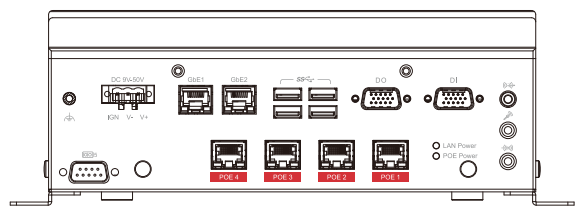


Rear View

DIMENSIONS



Front View (w/o PoE)



Front View (4PoE)

SPECIFICATION

| Model Name | | VC500-CMS-Q470E / VC500-CMS-W480E | VC500-CMS-H420E |
|------------|-----------------|--|--|
| SYSTEM | Processor | 10th Gen Intel® Xeon/Core™/Pentium/Celeron Processors, LGA 1200 Socket Q470E/ W480E: - Intel® Xeon-1270TE (8 Cores, 16M Cache, up to 2.0/4.4 GHz); 35W - Intel® Core™ i9-10900TE (10 Cores, 20M Cache, up to 1.8/4.5 GHz); 35W - Intel® Core™ i7-10700TE (8 Cores, 16M Cache, up to 2.0/4.4 GHz); 35W - Intel® Core™ i5-10500TE (6 Cores, 12M Cache, up to 2.3/3.7 GHz); 35W - Intel® Core™ i3-10100TE (4 Cores, 6M Cache, to 2.3/3.6 GHz); 35W H420E: - Intel® Core™ i3-10100TE (4 Cores, 6M Cache, to 2.3/3.6 GHz); 35W - Intel® Pentium® G6400TE (2 Cores, 4M Cache, 3.2 GHz); 35W - Intel® Celeron® G5900TE (2 Cores, 2M Cache, 3.0 GHz) | |
| | Chipset | Intel® Q470E/W480E Chipset | Intel® H420E Chipset |
| | Memory | Dual SO-DIMM slots (horizontal type) Dual Channel DDR4 2933/2666/2400/2133 SDRAM, up to 64GB ECC support for Xeon-1270TE processor only | Dual SO-DIMM slots (horizontal type) Dual Channel DDR4 2933/2666/2400/2133 SDRAM, up to 64GB ECC support for Xeon-1270TE processor only |
| | BIOS | AMI SPI 256Mbit | AMI SPI 256Mbit |
| GRAPHICS | Controller | Intel® UHD Graphics 630 (processor integrated) | |
| | Feature | OpenGL 4.5, DirectX 12, OpenCL 2.1 HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9 HW Encode: AVC/H.264, MPEG2, JPEG, HEVC/H265, VP8, VP9 | OpenGL 4.5, DirectX 12, OpenCL 2.1 HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9 HW Encode: AVC/H.264, MPEG2, JPEG, HEVC/H265, VP8, VP9 |
| | Display | Support DP++/DP 1.4 Resolution up to 4096x2304 @60Hz for DP 1 x HDMI with lock hole 2 x DP ports with lock hole | Support DP++/DP 1.4 Resolution up to 4096x2304 @60Hz for DP 1 x HDMI with lock hole 2 x DP ports with lock hole |
| | Triple Displays | 1 HDMI + 2 DP++ | 1 HDMI + 2 DP++ |
| STORAGE | External | 2 x swappable 2.5" SATA drive bays with lock on rear panel Supports RAID 0/1 | |
| | Internal | 1 x M.2 2280 M Key slot, supports 2242, 2260 & 2280 devices and NVME SSD PCIe x4 & SATA signal, support boot up function | |
| AUDIO | Audio Codec | Realtek ALC888 | |
| | Interface | 1 x Mic-in and 1 x Line-in | |
| ETHERNET | Controller | 1 x Intel® i219LM with iAMT11.0 support (Core i7/i5 only) 1 x Intel® i210IT | |
| LED | Indicators | 1 x Storage Activity (Red) 1 x Power Status (Yellow) 2 x Programmable general purpose (Green, Blue) | |
| FRONT I/O | Ethernet | 2 x RJ45 GbE ports | |
| | PoE / 10G | 4 x 802.11af PoE ports at RJ45 or M12 X-coded connectors, max 15.4W (PSE side) or 2 x 10G fiber ports at SFP+ cage based on Intel X710-BM2 Ethernet controller | N/A |
| | Serial | 1 x DB-9 RS232 ports (COM 5) | |
| | USB | 4 x USB 3.1 Gen2 | |
| | DIO | 2 x Isolated DIO port by 2 x DB-15 female connectors Supports 8bit DI & 8 bit DO with 2KV isolation | |
| | Audio | 1 x Line-out, 1 x Mic-in and 1 x Line-in with 3.5mm audio jacks | |
| | Antenna | 2 x antenna holes | |
| | DC in | 3 pin terminal block connector | |
| | OOB | Optional RJ45 port for OOB management | |
| REAR I/O | Serial | 4 x DB-9 RS232/422/485 ports by BIOS selection (COM 1/2/3/4) | |
| | USB | 4 x USB 3.1 Gen2 | |
| | Display | 2 x DP++ ports 1 x HDMI port | |
| | Antenna | 2 x antenna holes | |
| | SIM slot | 3 x accessible SIM slots with cover bracket | |
| | CAN bus | 2 x DB-9 ports for CAN bus (optional) | |
| | Remote Switch | 2-pin remote switch | |
| | Power Button | 1 x Power button | |
| SIDE I/O | Reset Button | 1 x Reset button | |
| | Antenna | 2 x antenna holes on right side 2 x antenna holes on left side | |

SPECIFICATION

| Model Name | | VC500-CMS-Q470E / VC500-CMS-W480E | VC500-CMS-H420E |
|------------------------------|------------------------|---|--|
| INTERNAL I/O | Serial | 1 x 2x5 pin block header for RS232 | 1 x 2x5 pin block header for RS232 |
| | Mini PCIe slot | 1 x mini PCIe slot with SIM holer on faceplate Supports WiFi/BT/LTE or CAN bus module | 1 x mini PCIe slot with SIM holer on faceplate Supports WiFi/BT/LTE or CAN bus module |
| | M.2 Slot | Total 3 x M.2 slots 1 x 2230 E-key slot (PCIe x1 & USB2.0) 1 x 3042/3052 B-key (USB3.0 & PCIe x1) with dual SIM slots on faceplate 1 x 2242/2280 M-Key-slot (PCIe gen3 x4 & SATA) supporting Intel® Optane memory (Both of the M10 and H10) and NVMe | Total 3 x M.2 slots 1 x 2230 E-key slot (PCIe x1 & USB2.0) 1 x 3042/3052 B-key (USB3.0 only) with dual SIM slots on faceplate 1 x 2242/2280 M-Key-slot (SATA only) |
| COOLING | FAN | Passive cooling | Passive cooling |
| HARDWARE MONITOR | Gravity Sensor | Support 3-axis femto accelerometer User-selectable ±2g/±4g/±8g/±16g scale Supports 6D/4D orientation detection, Free-fall detection, Motion detection and leep-to-wake and return-to-sleep | Support 3-axis femto accelerometer User-selectable ±2g/±4g/±8g/±16g scale Supports 6D/4D orientation detection, Free-fall detection, Motion detection and leep-to-wake and return-to-sleep |
| SECURITY | TPM | Supports dTPM2.0 by default (disabled by BIOS setting) Optional fTPM2.0 supported | N/A |
| POWER | Type | 3pin 3W3 connector | 3pin terminal block |
| | Supply | Wide Range 9~50VDC with power management (on/off delay) and ignition | Wide Range 9~50VDC with power management (on/off delay) and ignition |
| OS SUPPORT | Microsoft | Windows 11 IoT Enterprise LTSC SW Windows 10 IoT Enterprise RS5 | Windows 11 IoT Enterprise LTSC SW Windows 10 IoT Enterprise RS5 |
| | Linux | Ubuntu Linux 20.04 | Ubuntu Linux 20.04 |
| MECHANISM | Construction | Metal + Aluminum | Metal + Aluminum |
| | Mounting | Wall mount | Wall mount |
| | Dimensions (W x H x D) | 235mmx 87.5mmx 221mm (mounting bracket excluded) | 235mmx 87.5mmx 221mm (mounting bracket excluded) |
| | Weight | 5.5 kg | 5.5 kg |
| | Color | Black and Silver | Black and Silver |
| ENVIRONMENT | Operating Temperature | -20°C to 70°C without turbo boost and throttling is expected | -20°C to 70°C without turbo boost and throttling is expected |
| | Storage Temperature | -40°C to 85°C | -40°C to 85°C |
| | Relative Humidity | 10% to 95% (non-condensing) | 10% to 95% (non-condensing) |
| STANDARDS AND CERTIFICATIONS | Shock | MIL-STD-810G Method 516.6, Procedure 1, OP:10G 11ms, Non-OP: 40G 11ms (Tested by SSD, HDD is not support) | MIL-STD-810G Method 516.6, Procedure 1, OP:10G 11ms, Non-OP: 40G 11ms (Tested by SSD, HDD is not support) |
| | Vibration | MIL-STD-810G Method 514.6C-3, Category 4 Composite wheeled vehicle Table 514.6C-VI | MIL-STD-810G Method 514.6C-3, Category 4 Composite wheeled vehicle Table 514.6C-VI |
| | Certification | FCC, E-Mark (E24), CE, RoHS, UKCA | FCC, E-Mark (E24), CE, RoHS, UKCA |

ORDERING INFORMATION

| Model Name | Part Number | CPU | Power connector | PCH | USB 3.1 | DI | DO | POE | 10G |
|----------------------|------------------|-------------|-----------------|-------|---------|----|----|----------|-----|
| VC500-CMS-POEM12-Q | 750-VC50000-000G | - | 3W3 | Q470E | 8 | 1 | 1 | 4 (M12) | - |
| VC500-CMS-10G-Q | 750-VC50000-100G | - | 3W3 | Q470E | 8 | 1 | 1 | - | 2 |
| VC500-CMS-POE-Q | 750-VC50000-210G | - | 3W3 | Q470E | 8 | 1 | 1 | 4 (RJ45) | - |
| VC500-CMS-H | 750-VC50000-310G | - | Terminal block | H420E | 6 | - | - | - | - |
| VC500-CMS-10G-W-X127 | 750-VC50000-600G | Xeon-1270TE | Terminal block | W480E | 8 | 1 | 1 | - | 2 |
| VC500-CMS-Q | 750-VC50000-700G | - | Terminal block | Q470E | 8 | 1 | 1 | - | - |

OPTIONAL ITEMS

| Optional Items | Part Number | Description |
|--------------------|-----------------|--|
| 2.5" SSD | 785-S251TBG | 2.5" SATA SSD, 1TB MLC, -40 to 85°C, RoHS |
| | 785-S25512G | 2.5" SATA SSD, 512GB MLC, -40 to 85°C, RoHS |
| | 785-S25256G | 2.5" SATA SSD, 256GB MLC, -40 to 85°C, RoHS |
| | 785-S25128G | 2.5" SATA SSD, 128GB MLC, -40 to 85°C, RoHS |
| M.2 SATA SSD | 785-M2SATA64G | 64GB, M.2 2280 SSD, SATA3 B+M Key, MLC, Wide Temp. |
| | 785-M2SATA128G | 128GB, M.2 2280 SSD, SATA3 B+M Key, MLC, Wide Temp. |
| | 785-M2SATA256G | 256GB, M.2 2280 SSD, SATA3 B+M Key, MLC, Wide Temp. |
| | 785-M2SATA512G | 512GB, M.2 2280 SSD, SATA3 B+M Key, 3D TLC, PE: 3K, 30u" -20~75°C |
| Memory | 138-540002-121G | 4GB DDR4 2666Mhz SO-DIMM, -40 to 85°C |
| | 138-580004-104G | 8GB DDR4 2666Mhz SO-DIMM 1Rx8 IND 1Gx8 CL19 1.2V |
| WiFi/BT module kit | 761-AP1235-000G | WiFi/Bluetooth Module AP12356, antenna *2, 200mm SMA cables*2, Mini PCIe Bracket, screws |
| LTE module kit | 761-RC3000-001G | Quectel EG25GGB CAT4 miniPCIe module, antenna*2, 300mm SMA cables*2 |
| 5G module kit | 761-RC3000-100G | SIM8202G-M2 M.2 module, antenna*4, 184mm SMA cables *4 |
| M12 Cable | A81-005038-054G | 8-pin M12 X-coded to RJ45 PoE cable |
| CAN bus module | 770-MPEC21-100G | MPE-CAN2 MiniPCIe Full CAN Module Card Asssembly |
| Power Switch Cable | A81-004363-054G | 3W3 to terminal block 2*4P/4.2mm, L=250 & 300mm with ignition switch button |
| | A81-006065-016G | Terminal Block 1*3P/5.0mm to DC Jack, L=100mm with ignition switch button |
| Power Adapter | 671-133001-000G | 330W, GST360A, Input: 85~264V, Output: 12V/27.5A, 220x95x46mm, L=1000mm, C8P, LV6, 62368-1, GST360A12-C8P(MEAN WELL)RoHS |
| | 671-116005-000G | 160W, GST160A24, Input:100~240V, Output:24V/6.67A, 175x72x35mm, L=1200mm, DC PLUG 5.5*2.5*7.5mm(Lockable), LV6, 62368-1, GST160A24-DFIA(MEAN WELL)RoHS |

PACKING LIST

| |
|-------------------------|
| 1 VC500-CMS system unit |
| 1 Power connector |
| 1 Mounting bracket |
| 1 3W3 adaptor cable |