

C4G Series (4 RJ45-Port)

4G Cellular Router



Product Highlights

➔ Designed for Harsh Environments

- Designed to withstand extreme temperatures and conditions (ie: shock, vibrations, etc) for reliable and uninterrupted operation
- Support for vehicle operation with built-in battery charge protection

➔ High Capacity Router Ultra Low Power

- Support for broadband mission critical applications, allowing over 100 clients to work simultaneously
- Standby Mode protects power sources by dropping power consumption to a target of 53 mW when triggered

➔ Water and Dust Resistant with Field-Proven Cellular/4G Connectivity

- Die cast aluminum housing sealed to meet IP54
- Reliable 4G connectivity in hazardous environmental conditions (ATEX Class 1 Zone 2 / Class 1 Division 2)
- Dual-SIM 4G Failover

➔ Leading Edge Security with 2 Factor Authentication

- Multiple concurrent VPN sessions and 2 Factor Authentication
- Remote authentication (RADIUS, TACACS+) management
- Secure software image CRC control protects against unwanted software corruption (i.e. malware)

Overview

EtherWAN's C4G Series is a high performance ruggedized Dual-SIM 4G router, developed for the world's most demanding mission critical applications, connecting network assets and infrastructures in fixed and mobile (vehicle/train/subway/health) deployments for public, transit (i.e. stop lights), industrial equipment (i.e. video surveillance), field (i.e. oil pipes) and health (i.e. hospitals) deployments.

The C4G Series offers extensible multi-network connectivity from 1 to 4 Ethernet ports: Dual-SIM Cellular (up to CAT12 / 600Mbps), Wi-Fi AC (up to 866Mbps) & Ethernet (1Gbps ports), USB, RS232, RS485 & I/O ports supporting vehicle power connectivity and GNSS (GPS, Galileo, Glonass, Beidou). The C4G Series comes in two enclosure types: a) die cast aluminium enclosure with optional DIN Rail bracket and b) native DIN Rail industrial-grade enclosure. The router supports best-in-class link protection to ensure secure connectivity for all field applications and mobile assets through Dual-SIM and multiple diversity protocols.

Ordering Information

Model

| | |
|--------------------|--|
| C4G-M-4P3M | 4G Router with integrated: LTE-A (CAT6 300M / 50M), GPS/GNSS, 4 x 10/100/1000 RJ45 Ethernet, USB-C Port, RS232, GPIO, IGN (ignition sense pin), 2 x Digital Inputs, Alarm Relay, RS485 half-duplex, IP54 enclosure. North American power adapter included. |
| C4G-M-4P6M | 4G Router with integrated: LTE-A PRO (CAT12 600M / 150M), GNSS, 4 x 10/100/1000 RJ45 Ethernet, USB-C Port, RS232, GPIO, IGN (ignition sense pin), 2 x Digital Inputs, Alarm Relay, RS485 half-duplex, IP54 enclosure. North American power adapter included. |
| C4G-M-4P3MW | 4G Router with integrated: LTE-A (CAT6 300M / 50M), GPS/GNSS, Wireless LAN (2.4/5 GHz), 4 x 10/100/1000 RJ45 Ethernet, USB-C Port, RS232, GPIO, IGN (ignition sense pin), 2 x Digital Inputs, Alarm Relay, RS485 half-duplex, IP54 enclosure. North American power adapter included. |
| C4G-M-4P6MW | 4G Router with integrated: LTE-A PRO (CAT12 600M / 150M), GPS/GNSS, Wireless LAN (2.4/5 GHz), 4 x 10/100/1000 RJ45 Ethernet, USB-C Port, RS232, GPIO, IGN (ignition sense pin), 2 x Digital Inputs, Alarm Relay, RS485 half-duplex, IP54 enclosure. North American power adapter included. |
| C4G-M-4P6FW | FirstNet Ready 4G Router with integrated: LTE-A PRO (CAT12 600M with B14 NA support), GPS/GNSS, Wireless LAN (2.4/5 GHz), 4 x 10/100/1000 RJ45 Ethernet, USB-C Port, RS232, GPIO, IGN (ignition sense pin), 2 x Digital Inputs, Alarm Relay, 485 half-duplex, IP54 enclosure. North American power adapter included. |

What's in the Box

C4G Unit, Power Supply, All appropriate antennas, Quick Install Guide

Accessories

Model

| | |
|---------------------|---|
| C4G-PSU-US-H | Hardened PSU -40 to 75°C (-40 to 167°F) 12 VDC / 2 A with 4 pin Molex connector, 1.8m / 6ft cable and NA wall plug |
| C4G-GPS1ANT | GPS/GNSS (GPS, Galileo, Glonass, Beidou) Passive Antenna with 5m / 16ft cable SMA connector |
| C4G-WIFI2ANT | 2 x Wi-Fi Antenna with RP-SMA direct attach connector |
| C4G-LTE2ANT | 2 x LTE Antenna with SMA direct attach connector |
| C4G-4PIN-PT | Pigtail cable with 4 pin Molex connector, 3m / 10ft for GPIO and power. |
| C4G-8PIN-PT | Pigtail cable with 8 pin Molex connector, 3m / 10ft |
| C4G DIN | Universal DIN Rail Router Mount |
| LTE2GPS1 | Puck GPS/Cellular combination antenna - IP67 Rated - Bolt-thru, magnetic, or adhesive mounts. 2 x LTE + 1 x GPS |
| LTE2W2GPS1 | Puck GPS/Cellular combination antenna - IP67 Rated - Bolt-thru, magnetic, or adhesive mounts. 2 x LTE + 2 x Dual-Band Wi-Fi + 1 x GPS |

Specifications

| Main Features | | + |
|-----------------------------|---|---|
| Functionality | Bridging, Switching, Routing | |
| Routing | IPv4/IPv6, Static Routing, RIP/RIPNg, NAT, OSPFv3, BGP-4, IPv6 Encapsulations (GRE, 6in4), Port Routing, RAW Connections | |
| IP Applications | DDNS, DNS Proxy / Spoofing, DHCP / DHCPv6 server, relay, client, Opt. 82, NTP, SNTP | |
| VPN & VLAN | IPSec, OpenVPN, VPN Failover, VLAN Access | |
| Serial & I/O | RS232, RS485, PPP/SLIP, PPPoE | |
| Diversity | Dual-SIM, Static Routing with Primary/Backup route, VPN Failover | |
| Firewall & Security | ACL (list & ranges & time); Filter based MAC, IP, Port, Protocol, User; Secure HTTP/HTTPS/FTP/Telnet Authentication Proxy; AAA, Radius, TACACS+, LDAP, 802.1x, Certificate Support (X.509), Port Forwarding, BGP Communities, Zone Firewall, 2 Factor Authentication | |
| Logging, Reporting & Alerts | Sys Log, Event Type, Report Type, Alerts & Monitoring, Triggers Status Screen Report, Data Usage, Diagnostic | |
| Management | PerleVIEW Management, SNMPv1/v2/v3, SMS Control, Load Balancing, CLI, LDAP, Login Banner, E-mail, Ping, Telnet, FTP | |
| Ports | 1, 2 or 4 Ethernet Giga, USB-C (5Gbps), RS232, RS485, I/O and I/O Vehicle Power Monitoring | |
| Wireless LAN | 802.11 a/b/g/n/ac Dual Band 2.4 / 5 GHz with speeds up to 867 Mbps | |
| Cellular Options | America & EMEA LTE (up to CAT6 / 300 Mbps) and Worldwide LTE-A (up to CAT12 / 600Mbps) cellular card options | |
| GNSS | GPS, Galileo, Glonass, Beidou | |
| LED Indicators | Power: indicates power status Serial: indicates serial RS232 connection status and Tx data WWAN: indicates Wireless Wide Area Network status GNSS: indicates Global Navigation Systems for GPS, Galileo, Glonass and Beidou status VPN: indicates VPN presence (for Router Models: IRG5520x & IRG5540x only) Internet: indicates Internet connectivity | |
| Environmental | | + |
| Operating Temp. | -40°C to 70°C / -40°F to 158°F (MIL-STD-810G) | |
| Operating Humidity | 0% to 95% non-condensing | |
| Operating Altitude | < 3000m / 10,000 ft | |
| MTBF (Hours) | > 20 years (Calculation model based on MIL-HDBK-217-FN2 @ 30 °C) | |
| Ingress Protection Rating | IP54 for the die cast aluminium enclosure | |

| Regulatory Approvals | | + |
|---------------------------------------|--|---|
| Hazloc | ATEX Class 1 Zone 2 ANSI/ISA 12.12.01, Class 1 Division 2 Groups A-D | |
| Emissions | FCC 47 Part 15 Class B ICES-003 Issue 6 Class B (Canada) EN61000-6-4 (Emissions for industrial environments) CISPR 32:2015/EN 55032:2015 (Class B) EN61000-3-2 Limits for Harmonic Current Emissions EN61000-3-3 Limits of Voltage Fluctuations and Flicker | |
| Immunity | EN55025, EN55035, EN 61000-4-2 (ESD), EN 61000-4-3 (RS), EN 61000-4-4 (EFT), EN 61000-4-5 (Surge), EN 61000-4-6 (CS), EN 61000-4-8 (PFMF), EN 61000-4-11, EN 61000-4-16, EN 61000-6-4, IEC/EN 61000-6-2 (General Immunity for Industrial Environments) | |
| Electrical Safety | UL 61010-1 & UL 61010-2-201 & UL/ULC/EN 62368-1 (including CB/CE) CAN/CSA C22.2 No. 62368-1-14 | |
| Environmental | Reach, RoHS and WEEE Compliant | |
| Power | | + |
| Power Input | 12/24 VDC Nominal (7 to 36 VDC Range) | |
| Power Line Protection | Surge: 8KV (EN61000-4-5 common mode), 2KV (EN61000-4-5 differential and common modes) | |
| Vehicle Power | Built-in protection against voltage transient includes: 5 VDC engine cranking and +200 VDC load dump | |
| Miscellaneous | | + |
| Vehicle Usage | E-Mark (UN ECE Regulation 10.04, ISO 7637-2) | |
| Vehicle Velocity | Max 360km/h / 224 mph for sustainable cellular connectivity | |
| Vibration, Mechanical & Thermal Shock | SAE J1455 & MIL-STD-810G | |
| Railway | Euro: EN 50155/ EN 50121-1/ EN 50121-3-2/ EN 50121-4 & International IEC 60571/ IEC 62236-3-2/ IEC 62236-4 | |

Specifications

General Cellular Specifications (All Models) +

| | |
|--|---|
| Cellular/Telecom Regulatory Approvals | FCC/ICES, RED, PTCRB/CTIA, CE |
| Carrier Certifications | Verizon, AT&T |
| Cellular / WWAN Radio Standards | EN 300 328, EN 301 893, EN 301 489-1, EN 301 489-17, EN 301 489-19, EN 301 489-52, EN 301 908-1, EN 301 908-2, EN 301 908-13, EN 301 511, EN 62311, EN61000-3-2, EN61000-3-3 |
| Cellular / WWAN Radio Approvals | FCC 47 Part 15 Subpart B, Class B / ICES-003 Issue 6 Class B / FCC Part 15.247 Subpart C (2.4 Ghz) / FCC Part 15.407 Subpart E (5 Ghz) / ANSI C63.4 |
| Cellular Antenna | Frequency Range: 704-902-928-960/1427.9-1575.42/1710-2170 /2400-2480-2690MHz Gain: 3 dBi Impedance: 50 ohm Voltage Standing Wave Ratio: <3.0 (typical) Radiation: Omni-Directional Connector: SMA Male (Swivel) Dimensions: 135.6 x 20.1 mm / 5.34 x 0.8 in |
| SIM | Dual Mini-SIM 15 x 25mm (or 2FF) |

10/100/1000 Mbps Ethernet RJ45 Copper +

| | |
|-------------------------------|---|
| Ports | 4 x 10/100/1000 Mbps Ethernet RJ45 Copper |
| Speed | Software selectable 10/100/1000 Ethernet, Auto Software selectable Half/Full/Auto duplex |
| Ethernet Isolation | 1.5Kv Magnetic |
| Standards | IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX & 100Base-FX IEEE 802.3ab for 1000Base-T IEEE 802.3x for Flow Control |
| Processing Type | Store and Forward |
| Mac Address Table Size | 8K |
| VLAN ID Range | 1 to 4000 |

Model Specific Features

Wi-Fi (4P3MW, 4P6MW, 4P6FW) +

| | |
|--|---|
| LAN Standards | IEEE 802.11ac compliant & backward compatible with 802.11a/b/g/n |
| Topology | Infrastructure (AP) and up to 128 Client modes |
| Radio | Dual-Band Radio ; 2.4GHz and 5GHz 20, 40Mhz SISO 2.4-GHz |
| Data Rate | Up to 867Mbps |
| Security | WEP, WPA-PSK, WPA2-PSK & Enterprise (EAP, PEAP, LEAP), 802.11i (includes hardware-accelerated Advanced Encryption Standard [AES]), 802.1x supplicant |
| WLAN Antenna (Optional Accessory) | Frequency Range: 2.4GHz & 5GHz Gain: up to 3 dBi Impedance: 50 ohm Voltage Standing Wave Ratio: 2.0 (typical) Radiation: Omni-Directional Connector: RP-SMA (Swivel) Female Dimensions: 109 x 10.1 mm / 4.3 x 0.4 in" |

Model Specific Features

| 4P3MW | | + |
|---|--|---|
| 4G/LTE Bands | 2100(B1), 1900(B2), 1800(B3), AWS(B4), 850(B5), 2600(B7), 900(B8), 700(B12), 700(B13), 800(B20), 1900(B25), 850(B26), 700(B29), 2300(B30), TDD B41 | |
| 3G HSPA/HSPA+ Bands | 2100(B1), 1900(B2), 1800(B3), AWS(B4), 850(B5), 900(B8) | |
| 10/100/1000 Ports | Four | |
| Wifi Capability? | Yes | |
| Public Safety Bands | Band 26 | |
| Power/Current Consumption Typical Use (Connected with Activity) | 0.34A / 4.07W | |
| Power/Current Consumption Idle Mode (Connected, No Activity) | 0.32A / 3.86W | |
| 4P6MW | | + |
| 4G/LTE Bands | 2100(B1), 1900(B2), 1800(B3), AWS(B4), 850(B5), 2600(B7), 900(B8), 1800(B9), 700(B12), 700(B13), 850(B18), 850(B19), 800(B20), 850(B26), 700(B28), 700(B29), 2300(B30), 1500(B32), TDD B41, TDD B42, TDD B43, TDD B46, CBRS B48, 1700(B66) | |
| 3G HSPA/HSPA+ Bands | 2100(B1), 1900(B2), 1800(B3), AWS(B4), 850(B5), 800(B6), 900(B8), 1700(B9), 850(B19) | |
| 10/100/1000 Ports | Four | |
| Wifi Capability? | Yes | |
| Public Safety Bands | Band 26, 28 | |
| Power/Current Consumption Typical Use (Connected with Activity) | 0.42A / 5.09W | |
| Power/Current Consumption Idle Mode (Connected, No Activity) | 0.39A / 4.67W | |

| 4P6FW | | + |
|---|--|---|
| 4G/LTE Bands | 2100(B1), 1900(B2), 1800(B3), AWS(B4), 850(B5), 2600(B7), 900(B8), 1800(B9), 700(B12), 700(B13), 700(B14), 850(B18), 850(B19), 800(B20), 850(B26), 700(B29), 2300(B30), 1500(B32), TDD B41, TDD B42, TDD B43, TDD B46, CBRS B48, 1700(B66) | |
| 3G HSPA/HSPA+ Bands | 2100(B1), 1900(B2), AWS(B4), 850(B5), 800(B6), 900(B8), 1700(B9), 850(B19) | |
| 10/100/1000 Ports | Four | |
| Wifi Capability? | Yes | |
| Public Safety Bands | Band 14, 26 | |
| Power/Current Consumption Typical Use (Connected with Activity) | 0.42A / 5.09W | |
| Power/Current Consumption Idle Mode (Connected, No Activity) | 0.39A / 4.67W | |

Model Specific Features

| 4P3M | | + |
|--|--|---|
| 4G/LTE Bands | 2100(B1), 1900(B2), 1800(B3), AWS(B4), 850(B5), 2600(B7), 900(B8), 700(B12), 700(B13), 800(B20), 1900(B25), 850(B26), 700(B29), 2300(B30), TDD B41 | |
| 3G HSPA/HSPA+ Bands | 2100(B1), 1900(B2), 1800(B3), AWS(B4), 850(B5), 900(B8) | |
| 10/100/1000 Ports | Four | |
| Wifi Capability? | No | |
| Public Safety Bands | Band 26 | |
| Power/Current Consumption Typical Use (Connected with Activity) | 0.34A / 4.07W | |
| Power/Current Consumption Idle Mode (Connected, No Activity) | 0.32A / 3.86W | |

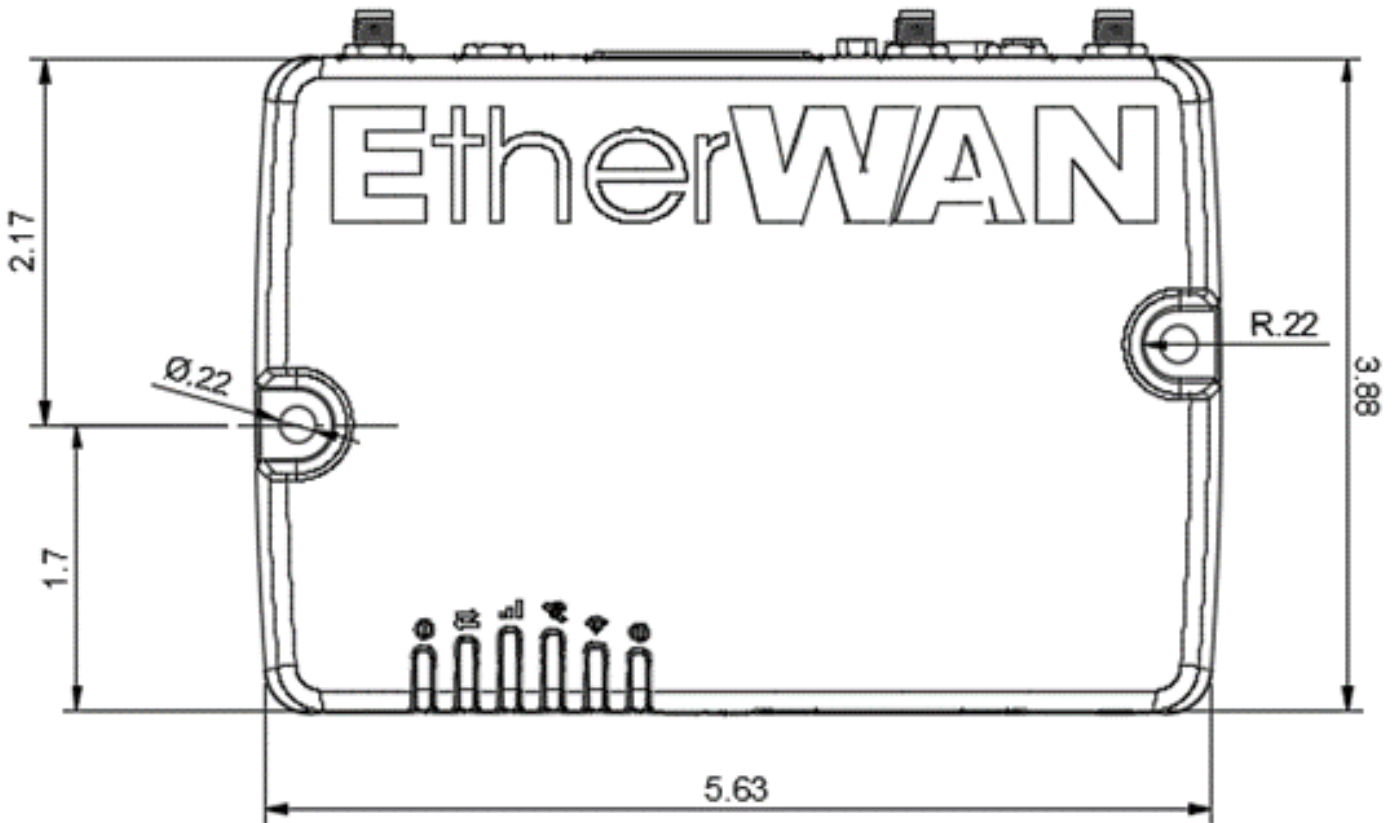
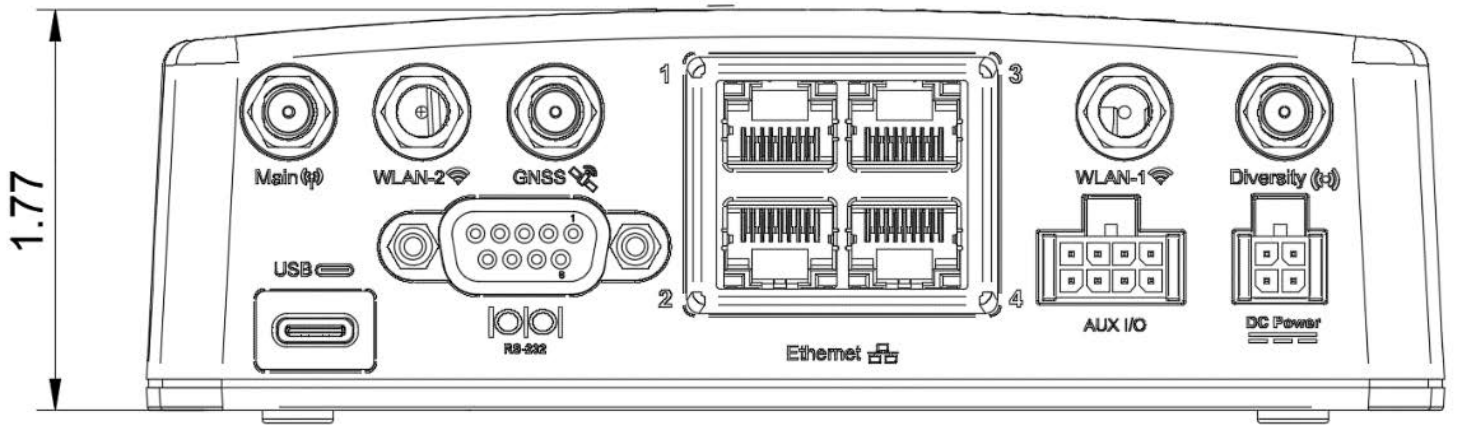
| 4P6M | | + |
|----------------------------|--|---|
| 4G/LTE Bands | 2100(B1), 1900(B2), 1800(B3), AWS(B4), 850(B5), 2600(B7), 900(B8), 1800(B9), 700(B12), 700(B13), 850(B18), 850(B19), 800(B20), 850(B26), 700(B28), 700(B29), 2300(B30), 1500(B32), TDD B41, TDD B42, TDD B43, TDD B46, CBRS B48, 1700(B66) | |
| 3G HSPA/HSPA+ Bands | 2100(B1), 1900(B2), 1800(B3), AWS(B4), 850(B5), 800(B6), 900(B8), 1700(B9), 850(B19) | |
| 10/100/1000 Ports | Four | |
| Wifi Capability? | No | |
| Public Safety Bands | Band 26, 28 | |

Power/Current Consumption

| SKU | Typical use | Idle Mode | Standby Mode |
|-------------|---------------|---------------|----------------|
| C4G-M-4P3M | 0.34A / 4.07W | 0.32A / 3.86W | 3.9mA / 46.8mW |
| C4G-M-4P3MW | 0.39A / 4.70W | 0.37A / 4.46W | 3.9mA / 46.8mW |
| C4G-M-4P6M | 0.38A / 4.52W | 0.35A / 4.14W | 3.9mA / 46.8mW |
| C4G-M-4P6MW | 0.42A / 5.09W | 0.39A / 4.67W | 3.9mA / 46.8mW |
| C4G-M-4P6FW | 0.42A / 5.09W | 0.39A / 4.67W | 3.9mA / 46.8mW |

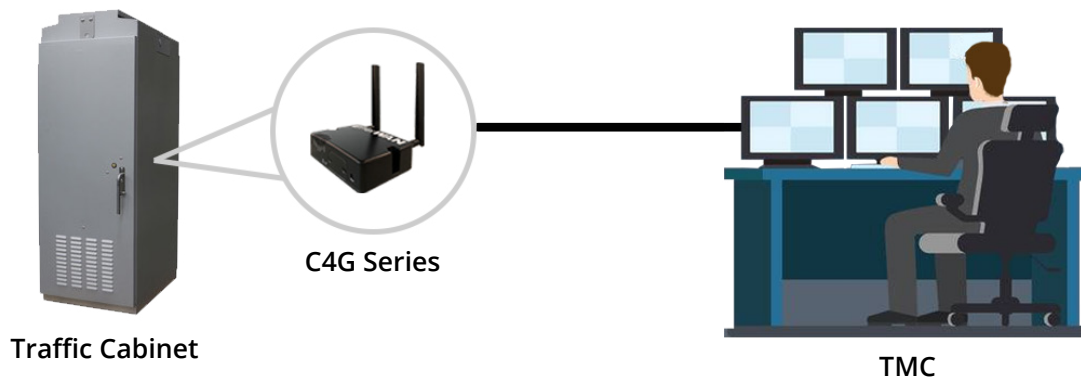
| 4P6F | | + |
|--|--|---|
| 4G/LTE Bands | 2100(B1), 1900(B2), 1800(B3), AWS(B4), 850(B5), 2600(B7), 900(B8), 1800(B9), 700(B12), 700(B13), 700(B14), 850(B18), 850(B19), 800(B20), 850(B26), 700(B29), 2300(B30), 1500(B32), TDD B41, TDD B42, TDD B43, TDD B46, CBRS B48, 1700(B66) | |
| 3G HSPA/HSPA+ Bands | 2100(B1), 1900(B2), AWS(B4), 850(B5), 800(B6), 900(B8), 1700(B9), 850(B19) | |
| 10/100/1000 Ports | Four | |
| Wifi Capability? | No | |
| Public Safety Bands | Band 14, 26 | |
| Power/Current Consumption Typical Use (Connected with Activity) | 0.42A / 5.09W | |
| Power/Current Consumption Idle Mode (Connected, No Activity) | 0.39A / 4.67W | |

Dimensions

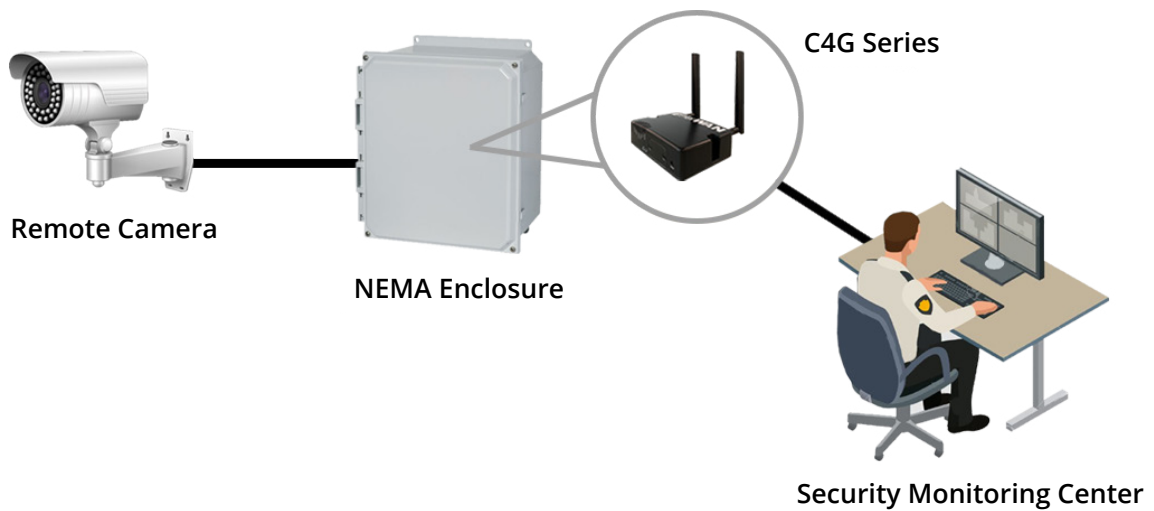


Applications

ITS (Intelligent Transportation Systems) Application



Security Application



"Branch-in-a-Box" Application

