

# C4G Rail

4G Cellular Router for Rail & Wayside Applications



## Overview

EtherWAN's C4G Rail is a high-performance ruggedized Dual-SIM 4G router, developed for the world's most demanding mission-critical rail applications, connecting network assets and infrastructures in fixed and mobile deployments. The C4G Series offers extensible multi-network connectivity with Dual-SIM Cellular (CAT12 / 600Mbps), Wi-Fi AC (up to 866Mbps), 4 x Ethernet (1Gbps ports), M12 screw type, I/O ports supporting vehicle power/connectivity, and Location and Timing Services (GPS). 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.

## Highlights

### + EN 50155/50121 Rail Certified

Designed to withstand extreme temperatures and conditions (ie: shock, vibrations, etc) for reliable and uninterrupted operation  
Rail Certified M12 connectors withstand high shock and vibration

### + High Capacity Router Ultra Low Power

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

### + Build Your Own Application

Docker - open platform developer tool for developing & running custom applications

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

Die cast aluminum housing sealed to meet IP54  
Dual-SIM 4G Failover

# 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

### VRRP

Virtual Router Redundancy on Ethernet or Bridge Interface

### Docker

Open platform Developer Tool for developing and running applications

### IP Applications

DDNS, DNS Proxy/Spoofing, DHCP/DHCPv6 server, relay, client, Opt. 82, NTP, SNTP

### VPN & VLAN

IPSec, OpenVPN, VPN Failover, VLAN Access

### I/O

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

## + Main Features Cont.

### Logging, Reporting & Alerts

Sys Log, Event Type, Report Type, Alerts & Monitoring, Triggers Status Screen Report, Data Usage, Diagnostic

### Management

SNMPv1/v2/v3, SMS Control, Load Balancing, CLI, LDAP, Login Banner, Email, Ping, Telnet, FTP, RESTful API

### Antenna Connectors

Wifi: TNC Male (2), LTE: TNC RP Male (2), GPS: TNC RP Male (1)

### Ports

4x M12 X-Coded Female Gigabit Ethernet, 1x M12 L-Coded Female GPIO Analog, Input Monitoring

### Wireless LAN

802.11 a/b/g/n/ac Dual Band 2.4/5GHz with speeds up to 867Mbps

### Cellular Options

Worldwide LTE-A (up to CAT12/600Mbps) cellular card options

### Location & Timing Service

GPS

## + Environmental

### Operating Temp

-40 to 70°C/-40 to 158°F (MIL-STD-810G)

### Operating Humidity

0% to 95% non-condensing

### Operating Altitude

<3000m/10,000ft

### MTBF (Hours)

>20 years (Calculation model based on MIL-HDBK-217-FN2@30°C)

### Ingress Protection Rating

IP54 for the die cast aluminium enclosure

## + Power

### Power Input

12/24/48 VDC Nominal (9.6 to 60 VDC) Power connector

### Power Line Protection

Surge: 8KV (EN61000-4-5 common mode), 2KV (EN61000-4-5 differential and common modes)

### Power Consumption

Typical Use (Connected/with Activity) 4.67W-5.09W

## + Miscellaneous

### Vibration, Mechanical, & Thermal Shock

SAE J1455 & MIL-STD-810G

### Railways

Euro: EN 50155/ EN 50121-1/ EN 50121-3-2/ EN 50121-4 &

### Vibration, Mechanical & Thermal Shock

SAE J1455 & MIL-STD-810G

## + Pinouts

### Ethernet M12 X-Coded Female

Please refer to datasheet for diagrams

### Power M12 L-Coded Male

Please refer to datasheet for diagrams

### Load Shed Connector M12 L-Coded Female

Please refer to datasheet for diagrams

## + 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

## + Cellular

### Cellular/Telecom Regulatory Approvals

FCC/ICES, RED, PTCRB/CTIA, CE

### Carrier Certifications

Verizon, AT&T, T-Mobile

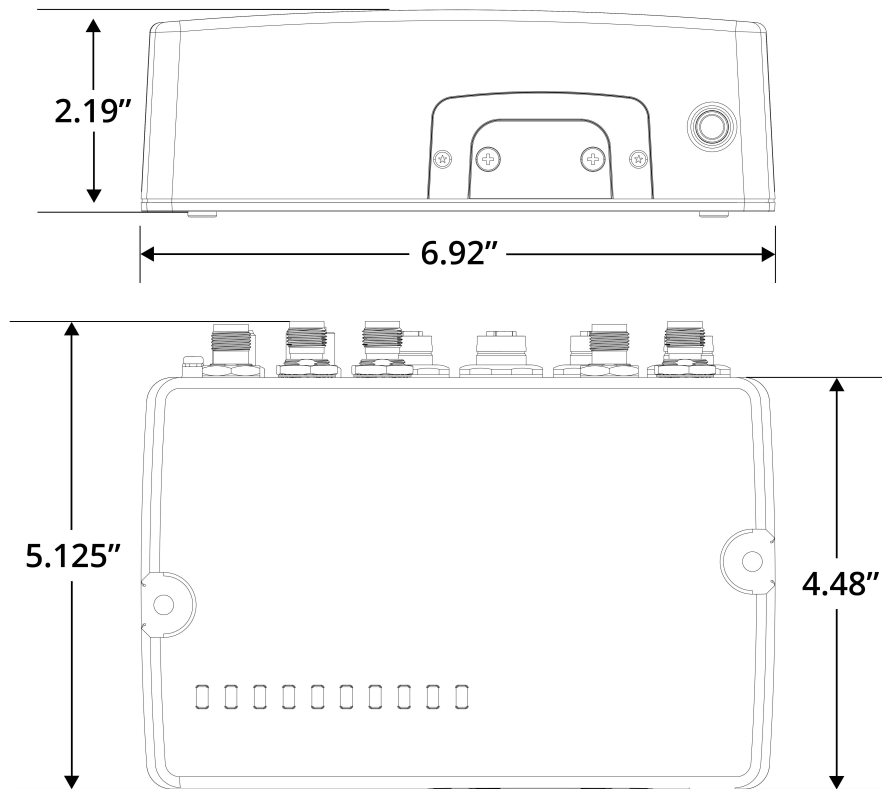
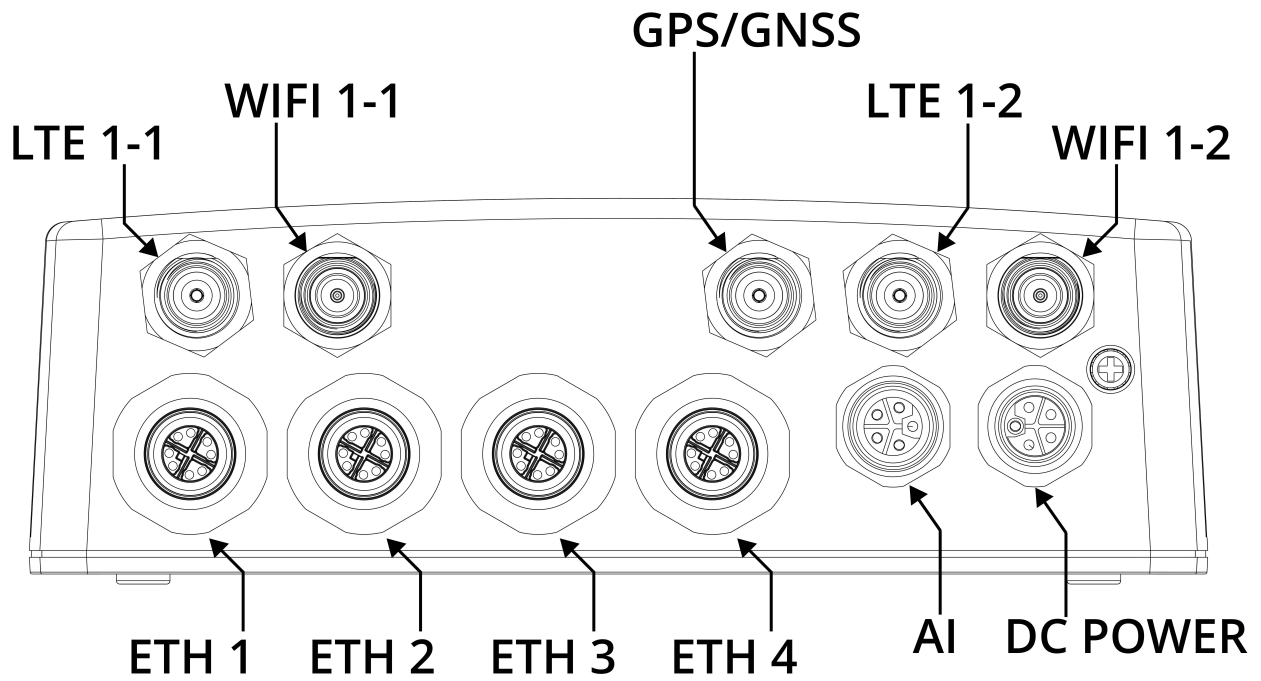
### Cellular/WWAN Radio Standards

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

## Dimensions



## Ordering Info

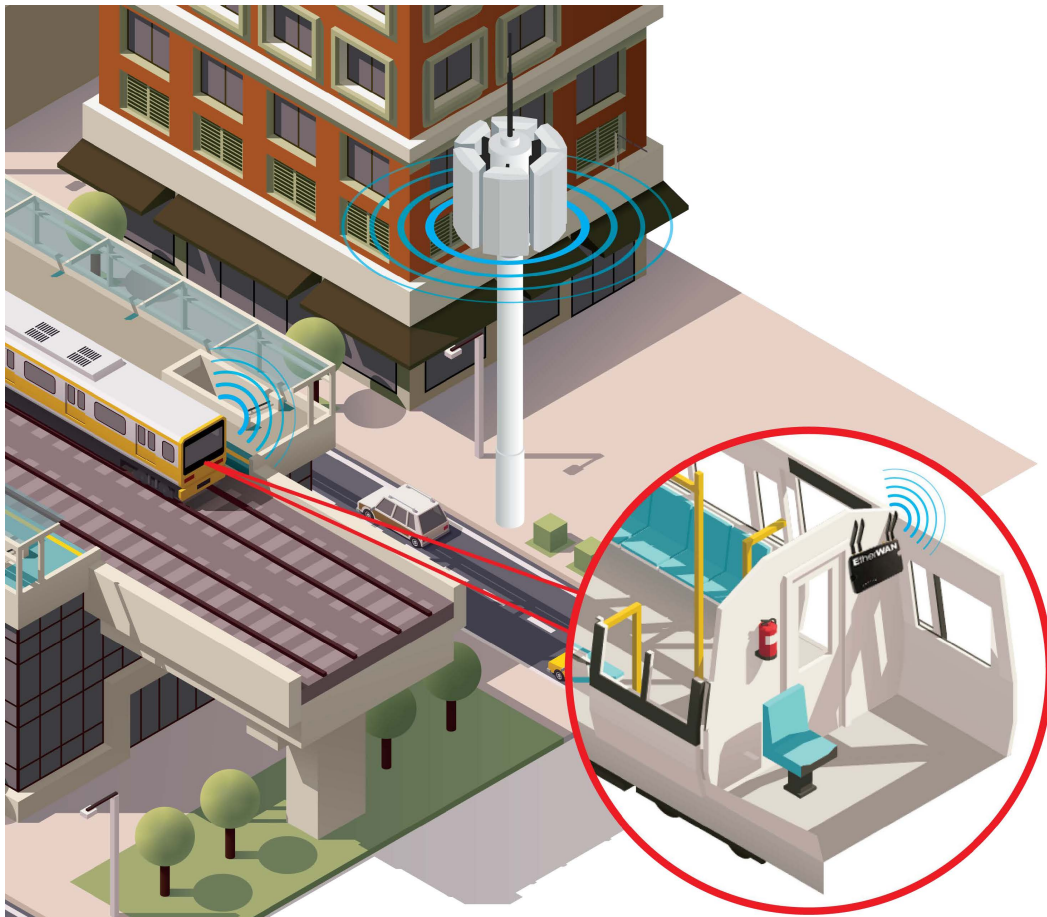
### + Model

<b>C4G-M-4P6MWR</b>	Rail Certified (EN 50155/50121) 4G Router with integrated: LTE-A PRO (CAT12 600M / 150M), GPS/GNSS, Wireless LAN (2.4/5 GHz), 4 x10/100/1000 M12 X-Coded Ethernet, M12 L-Coded power connector, GPIO Analog input & IP54 enclosure.
<b>Cable M12-RJ45</b>	Ethernet Setup Cable m12 x coded to Rj-45 (Shielded)
<b>Cable C4G-IO</b>	Analog input cable m12 L-code Male pigtail 3M
<b>M12LCODEDCPWR</b>	Analog input cable m12 L-code male pigtail 3M
<b>C4G-TNCF</b>	TNC Female Antenna
<b>C4G-TNCFRP</b>	TNC Female RP Antenna
	*Other custom cable accessories available upon request

### + What's in the Box

C4G Rail unit & Quick Install Guide

## Application





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EtherWAN is constantly developing and improving products. Specifications are subject to change without notice and without incurring any obligation.