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

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

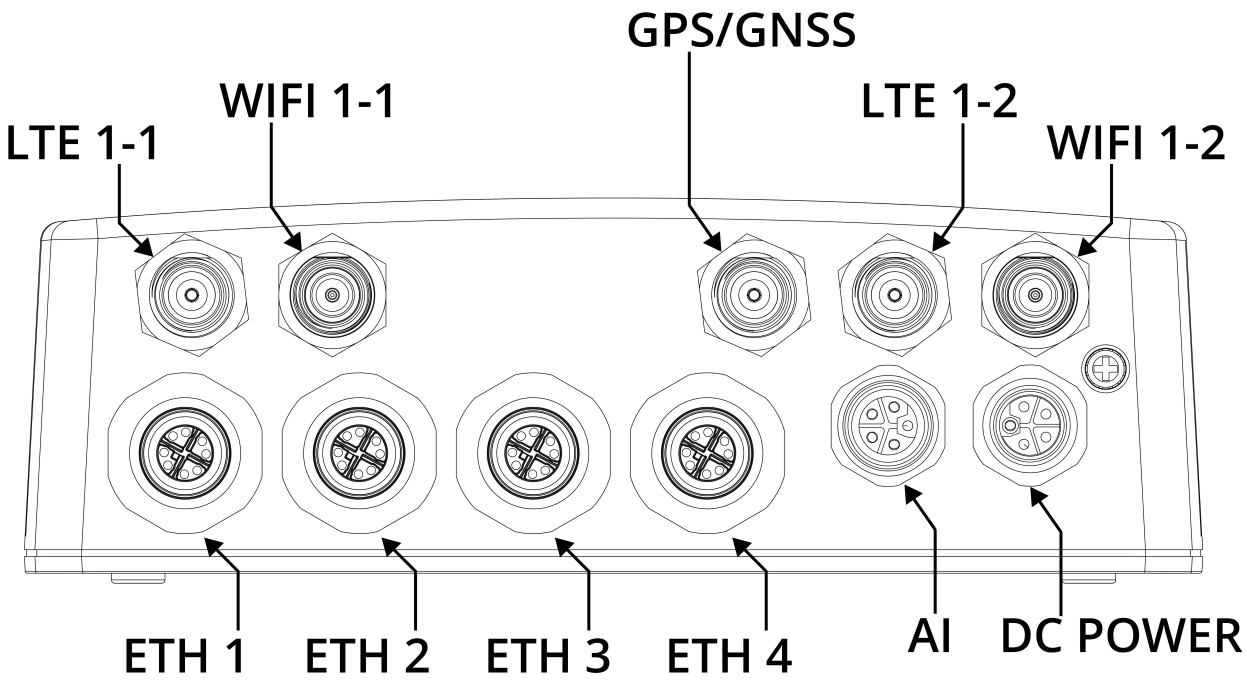
Verizon, AT&T, T-Mobile

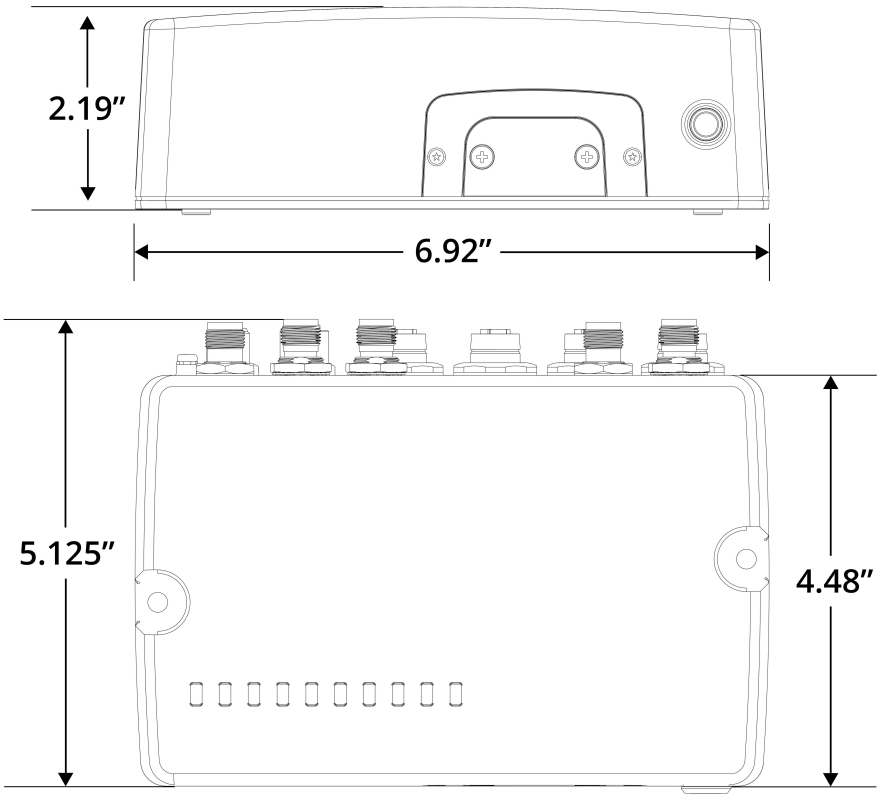
Cellular/WWAN Radio Standards

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

Dimensions


GPS/GNSS
WIFI 1-1
LTE 1-2
LTE 1-1
WIFI 1-2
ETH 1
ETH 2
ETH 3
ETH 4
AI
DC POWER


2.19″
6.92″
5.125″
4.48″

Ordering Info

Model

C4G-M-4P6MWR	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.
Cable M12-RJ45	Ethernet Setup Cable m12 x coded to Rj-45 (Shielded)
Cable C4G-IO	Analog input cable m12 L-code Male pigtail 3M
M12LCODEDCPWR	Analog input cable m12 L-code male pigtail 3M
C4G-TNCF	TNC Female Antenna
C4G-TNCFRP	TNC Female RP Antenna
	*Other custom cable accessories available upon request

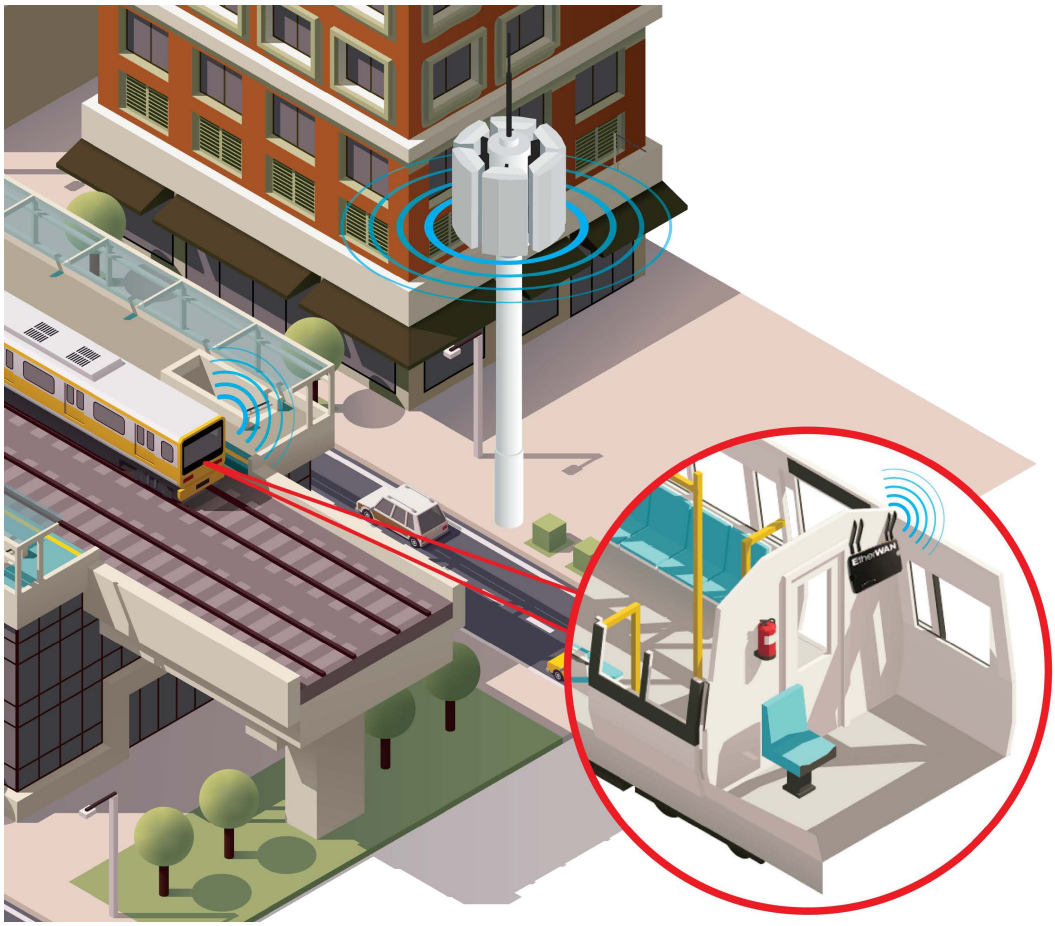
Accessories

LTEW2GPS1	COMBO MIMO, MOBILE/GNSS/WIFI, ROOF SMA ANTENNA for EasyCell or C4G

What's in the Box

C4G Rail unit & Quick Install Guide

Application



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