



## EtherWAN C4G-M-4P6M Router Hardware Guide



# Preface

## Audience

This guide is for the network or computer technician responsible for installing the EtherWAN C4G-M-4P6M router. Familiarity with the concepts and terminology of LTE, GNSS, Ethernet and LAN (local area networks) is required.

## Purpose

EtherWAN routers provide users, networking equipment as well as M2M & IoT appliances with network connectivity for fixed locations (i.e. buildings, POS, Kiosks, ...etc) and mobile (i.e. vehicle, trains, robots) applications. When used in vehicular applications, the router provides connectivity and is not involved in the operation of the vehicle or direct interaction with the operators.

This document describes the hardware and physical characteristics of the EtherWAN Series of Routers. It covers hardware features as well as installation and operation. This document does not cover how to configure your EtherWAN router. Information to configure your EtherWAN router can be found in the Router's User Guide and the Router's CLI Reference Guide on the EtherWAN website. Quick Start information can be found in the Cellular LTE Router Quick Start Guide that came with your product.

## Key Features

- Supports bridging/switching and routing
- LTE coverage spanning 30 frequency bands for global coverage
- Fully automatic network switching supporting dual network SIMs
- Routing with Primary/Backup route
- LTE and VPN Fail-over
- Provides network connectivity via LTE, Ethernet, USB-C
- Active GPS for tracking equipment
- Security via remote authentication (Radius and TACACS+)
- Meets industry-grade certifications

## Document Conventions

This document contains the following conventions:

Most text is presented in the typeface used in this paragraph. Other typefaces are used to help you identify certain types of information. The other typefaces are:

**Note:** *Means reader take note:* notes contain helpful suggestions.

**Caution:** Means reader be careful. In this situation, you might perform an action that could result in equipment damage or loss of data.

**Warning: IMPORTANT SAFETY INSTRUCTIONS**

Means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.

## Important Notice

Due to the nature of wireless communications, transmission and reception of data can never be guaranteed. Data may be delayed, corrupted (i.e., have errors) or be totally lost. Although significant delays or losses of data are rare when cellular devices such as the EtherWAN Series Routers are used in a normal manner with a well-constructed network. The EtherWAN Series Routers should not be used in situations where failure to transmit or receive data could result in damage of any kind to the user or any other party, including but not limited to personal injury, death, or loss of property. Ether-WAN accepts no responsibility for damages of any kind resulting from delays or errors in data trans-mitted or received using our products.

## Safety and Hazards

The driver or operator of any vehicle should not operate the while in control of a vehicle. Doing so will detract from the driver or operator's control and operation of that vehicle. The EtherWAN is Listed to UL121201 and CSA C22.2 No. 213 and are suitable for use in Class I, Division 2, Groups A, B, C and D Hazardous Locations.



The following warnings and instructions apply:

## Limitation of Liability

The information in this manual is subject to change without notice and does not represent a commitment on the part of EtherWAN for any and all direct, indirect, special, general, incidental, consequen-tial, punitive or exemplary damages including, but not limited to loss of profits or revenue or anticipated profits or revenue arising out of the use or inability to use any EtherWAN C4G-M-4P6M series router even if EtherWAN has been advised or the possibility of such damages or they are foreseeable or for claims by any third party. Notwithstanding the foregoing, in no event shall EtherWAN aggregate liability arising under or in connection with the EtherWAN product, regardless of the number of events, occurrences, or claims giving rise to liability, be in excess of the price paid by the purchaser for the EtherWAN product.

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## General cautions and warnings

13		IEC 60417-5041 (2002-10)	Caution, hot surface
14			Refer to manual/safety

**Warning:** Power sources must be off prior to beginning the power connection steps. Read the installation instructions before you connect the unit to its power source.

**Avertissement:** Les sources d'alimentation doivent être éteintes avant de commencer les étapes de connexion d'alimentation. Veuillez lire les instructions d'installation avant de connecter l'appareil à sa source d'alimentation.

**Warning:** Ensure that the voltage and current ratings of the intended power source are appropriate for the EtherWAN Series of Routers as indicated on the product label.

**Avertissement:** Assurez-vous que les valeurs nominales de tension et de courant de la source d'alimentation prévue conviennent aux routeurs de la série EtherWAN, comme indiqué sur l'étiquette du produit.

**Warning:** Ensure that the installation and electrical wiring of the equipment is performed by trained and qualified personnel and that the installation complies with all local and national electrical codes. **Avertissement:** Assurez-vous que l'installation et le câblage électrique de l'équipement sont effectués par du personnel formé et qualifié et que l'installation est conforme à tous les codes électriques locaux et nationaux.

**Warning:** This equipment must be used in the manner specified by the manufacturer.

**Avertissement:** Cet équipement doit être utilisé dans les matières spécifiées par le fabricant.

**Warning:** In case of malfunction or damage, no attempts at repair should be made by the user. Do not dismantle this product. In case of malfunction or damage, contact EtherWAN Technical support at <https://www.EtherWAN.com>

**Avertissement:** En cas de dysfonctionnement ou de détérioration, aucune tentative de réparation ne doit être effectuée par l'utilisateur. Ne démontez pas ce produit. En cas de dysfonctionnement ou de dommage, contactez le support technique de EtherWAN à l'adresse <https://www.EtherWAN.com>

**Warning:** If the ambient temperature is to exceed 50°C (122°F), the unit should be installed in a restricted access location where access can only be gained by service personnel or users who have been instructed about the reasons for the restrictions applied to the location and about any precautions that shall be taken; and access is through the use of a tool or lock and key, or any means of security, and is controlled by the authority responsible for the location.

**Avertissement:** Si la température ambiante doit dépasser 50 ° C, l'unité doit être installée dans un emplacement à accès restreint, auquel seul le personnel de service ou les utilisateurs informés des raisons des restrictions appliquées peuvent accéder. sur le lieu et sur les précautions à prendre; et l'accès se fait au moyen d'un outil ou d'un verrou et d'une clé, ou de tout moyen de sécurité, et est contrôlé par l'autorité responsable du lieu.

**Warning:** The working voltage inputs are designed for operation with Safety extra low Voltage (SELV). Connect only to SELV circuits with voltage restrictions in line with IEC/EN 62368-1. **Avertissement:** Les entrées de tension sont conçues pour fonctionner avec une tension de sécurité très basse (SELV). Connectez uniquement aux circuits SELV avec des restrictions de tension conformes à IEC / EN 62368-1.

**Warning:** For equipment installed within the same end-product enclosure ensure leads are segregated or insulated the leads from different circuits.

**Avertissement:** Pour les équipements installés dans le même boîtier de produit final, assurez-vous que les conducteurs sont séparés ou isolés des conducteurs de circuits différents.

## Hazardous Location Warnings

### Specific Conditions of Use

1. EtherWAN Routers are intended for installation into an IECEx/ATEX certified and IP54 minimum rated enclosure in accordance with IEC/EN 60079-0 and accessible only by the use of a tool. Les modèles de routeurs EtherWAN sont destinés à être installés dans un boîtier certifié IECEx/ATEX qui conforme à la norme IP54 conformément à la norme IEC/EN 60079-0 et accessible uniquement à l'aide d'un outil.
2. The equipment shall only be used in an area of not more than pollution degree 2, as defined in IEC/EN 60664-1. L'équipement ne doit être utilisé que dans une zone où le degré de pollution n'est pas supérieur à 2, tel que défini dans la IEC/EN 60664-1.

**Warning:** These devices are open-type devices that are to be installed in an enclosure with tool removable cover or door, suitable for the environment.

**Avertissement:** Ces périphériques sont des périphériques de type ouvert à installer dans un boîtier avec un couvercle ou une porte amovible pour outils, adapté à l'environnement.

**Warning:** This equipment is suitable for use in Class I, Division 2, Groups A, B, C, D, or only non hazardous locations.

**Avertissement:** Cet équipement est adapté à une utilisation dans les zones non dangereuses de classe I, division 2, groupes A, B, C, D

**Warning:** WARNING-EXPLOSION HAZARD - Do not connect or disconnect equipment unless power has been removed or the area is known to be non-hazardous.

**Avertissement:** DANGER D'EXPLOSION ET D'AVERTISSEMENT - Ne pas connecter ou déconnecter l'équipement tant que l'alimentation n'est pas débranchée ou que la zone n'est pas dangereuse.

**Warning:** WARNING-EXPLOSION HAZARD - Substitution of any components on this unit may impair suitability for Class I, Division 2.

**Avertissement:** DANGER DANGER D'EXPLOSION - La substitution de tout composant de cet appareil peut compromettre l'adéquation à la Classe I, Division 2.

**Warning:** Power supply of the equipment must be rated appropriately (see Appendix for specifications) with limited power. Limited power means complying with one of the following requirements. Class 2 circuit according to Canadian Electrical Code, Part 1, C22.1

Class 2 circuit according to National Electrical Code, NFPA-70; Limited Power Supply (LPS) according to EN/IEC 60950-1; Limited-energy circuit according to EN/IEC 61010-1

**Avertissement:** l'alimentation de l'équipement doit être correctement dimensionnée (voir annexe pour les spécifications) avec une puissance limitée. Une puissance limitée signifie que vous vous conformez à l'une des exigences suivantes.

Circuit de classe 2 selon le code électrique Canadien, partie 1, C22.1; Circuit de classe 2 selon le code électrique national NFPA-70; Alimentation électrique limitée (LPS) selon EN / IEC 60950-1; Circuit à énergie limitée selon EN / IEC 61010-1

**Warning:** If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

**Avertissement:** Si cet équipement est utilisé d'une manière non spécifiée par le fabricant, la protection fournie par l'équipement peut être altérée.

**Warning:** In case of malfunction or damage, no attempts at repair should be made. Do not dismantle the product. All repairs need to be made by a qualified EtherWAN representative. Contact EtherWAN Systems Technical support at <https://www.EtherWAN.com>

**Avertissement:** En cas de dysfonctionnement ou de dommage, aucune tentative de réparation ne doit être effectuée. Ne démontez pas le produit. Toutes les réparations doivent être effectuées par un représentant qualifié de EtherWAN. Contactez le support technique de EtherWAN Systems à l'adresse <https://www.EtherWAN.com>

**Warning:** This router is not intended for use close to the human body. The unit should be mounted in such that Antennas are at least 20cm (8 inches) away from any person.

**Avertissement:** Ce routeur n'est pas destiné à être utilisé à proximité du corps humain. L'appareil devrait être monté de façon à ce que les antennes soient à au moins 20 cm (8 po) de toute personne.

**Warning:** Explosion hazard. Do not connect or disconnect while the circuit is live or unless the area is free of ignitable concentrations.

**Avertissement:** Risque d'explosion. Ne pas connecter ou déconnecter le circuit est sous tension ou à moins que la zone ne présente aucune concentration inflammable.

**Warning:** Do not use the USB connector unless the area is free of ignitable concentrations.

**Avertissement:** N'utilisez pas le connecteur USB à moins que la zone ne soit exempte de concentrations inflammables.

**Warning:** Do not use the reset button unless the area is free of ignitable concentrations.

**Avertissement:** N'utilisez pas le bouton de réinitialisation à moins que la zone ne soit exempte de concentrations inflammables.

## RF Exposure

In accordance with FCC/IC requirements of human exposure to radio frequency fields, the radiating element shall be installed such that a minimum separation distance of 20 cm should be maintained from the antenna and the user's body.

Conformément aux exigences de la FCC/IC relatives à l'exposition humaine aux champs de radiofréquences, l'élément de rayonnement doit être installé de manière à ce qu'une distance de séparation minimale de 20 cm soit maintenue par rapport à l'antenne et au corps de l'utilisateur.

THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS GUIDE ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS IN THIS GUIDE ARE BELIEVED TO BE ACCURATE BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio-frequency energy and, if not installed and used in accordance with this hardware guide may cause harmful interference to radio communications.

Modifications to this product not authorized by EtherWAN could void the FCC approval and negate your authority to operate the product.

EtherWAN reserves the right to make changes without further notice, to any products to improve reliability, function, or design.

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## Overview

EtherWAN's C4G-M-4P6M router is a compact, rugged, fully featured communications platform for real-time wireless capabilities. It has multiple communication ports including Ethernet, and a USB port that can be used as a console port or as an additional Ethernet port. It supports LTE/4G wireless solutions for both fixed and mobile applications (IoT). The LTE/4G supports Cat-12 technology with peak download rates of 600 Mbps and uploads speeds of 150 Mbps. The C4G-M-4P6M includes integrated GNSS receiver (GPS, GLONASS, Bei-dou and Galileo) satellite support.

### Application uses:

- Remotely monitoring and controlling equipment on pipelines, meters, pumps and valves in any energy, utility, or industrial application
- Tracking the location of heavy equipment and assets in the field
- Providing reliable Internet access to a mobile workforce

### What's Included

The following components are included with your product:

- The router
- 2 LTE antennas (depending on model)
- Quick Start Guide
- Optional – GPS passive or active antenna (orderable from EtherWAN)

### What You Need to Supply

Before you can begin, you need to have the following:

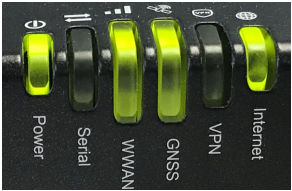
- A SIM card/s (provided by your mobile network operator)
- #1 Phillips screwdriver (if you are installing the SIM card)
- Computer or laptop computer with Ethernet interface and cable
- An Ethernet CAT5e or CAT6 10/100/1000BASE-T cable/to connect the router to the network


# Hardware




## Front View




## LEDs



Power LED (P1 and P2) 	Normal Mode	Power Saving Mode	Special Notes: Power must be applied to the Power inputs P1 and P2 in order for the LEDs to light
Off	Router powered off	Router powered off	
Green-Solid	Normal operating mode	N/A	Power must be applied
Green - Blip	N/A	Normal operating mode	
Green - Flashing	Booted - No configuration	N/A	
Amber - Blip	Standby mode	Standby mode	Blips every 5 seconds
Amber - Flashing	Router booting	Router booting	
Red - Blip	Overheat standby	Overheat standby	
Red - Solid	Hardware error	Hardware error	

<b>WWAN</b> 	<b>Normal Mode</b>	<b>Power Saving Mode</b>	<b>Special Notes</b>
Off	Disabled	Disabled	
Solid	Connected	Connected - Turns off after 5 seconds	Green = Good signal Amber = Fair signal Red = Poor signal
Flashing	Connection in progress	N/A	Same as above
Blip	Not connected	Not connected	Same as above
<b>GNSS</b> 	<b>Normal Mode</b>	<b>Power Saving Mode</b>	<b>Special Notes</b>
Off	Disabled	Disabled	
Green-Solid	Location Fix	Location Fix - Turns off after 5 seconds	
Green - Blip	Initializing	off	
Amber - Flashing	No Fix	N/A	
Amber - Blip	N/A	No Fix	
<b>VPN</b> 	<b>Normal Mode</b>	<b>Power Saving Mode</b>	<b>Special Notes</b>
Off	No VPN	No VPN	
Green-Solid	VPN connected	VPN connected - Turns off after 5 seconds	
Green - Flashing	VPN connecting	N/A	
Red - Flashing	VPN failed	N/A	

Internet 	Normal Mode	Power Saving Mode	Special Notes
Off	Disabled	Disabled	
Green-Solid	Internet/WAN connection	Internet/WAN connection - Turns off after 5 seconds	
Green - Blip	Not connected	N/A	
Amber - Solid	Backup mode	N/A	
Red - Solid	Connection failed	N/A	
Red - Blip	N/A	Connection failed	

## SIM Card/s

The C4G-M-4P6M supports two SIM cards. See [Inserting the SIM card](#) for the installation procedure. SIM/s Interface 1.8V/3V



## Antenna/s

The router has three SMA antenna connectors Main, Diversity and GNSS. For more information on connecting the antennas see [Connecting the Antenna/s](#). For more information on recommended LTE Antenna specifications see [Antenna/s](#).

## USB-C Port

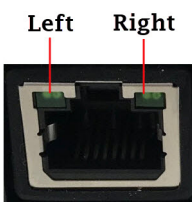
The USB port is used as a console port providing direct access to CLI (Command Line Interface) as well as status, logging and troubleshooting information. In addition, this sport can increase the methods by which data can be sent and received from a connected computer. The USB port can be set as a Ethernet over USB port or as a console port.

See [Connecting to the USB-C port in Console Mode](#) and [Connecting to the USB-C port as an Ethernet over USB Port](#).



## Ethernet LAN Ports

Once the ports have been connected and the link is established, the speed LED will turn on. The LED will indicate whether you have a 10, 100 or 1000 Mbps link on the Ethernet port.



## Ethernet Link Status

Link/Speed Indicator		Description
Left LED Green	Link + Flashing with activity	1000 Mbps
Both LEDs	Link + Flashing with activity	100 Mbps
Right LED Green	Link + Flashing with activity	10 Mbps
Off	Off	No LAN connected

## GNSS Connector

GPS+GLONAS+GAILEO



Passive Antenna – SMA(M) straight connector See Technical Specifications for electrical details.

## Terminal Block-Power Connector

The power plug has two power connections, one relay connection and one digital input connection. See [Connecting the Power](#)

## Installation

The steps for a typical installation are:

1. Inserting the SIM card/s. See [Inserting the SIM card](#)
2. Connecting the antenna/s. See [Antenna/s](#)
3. Connecting the Ethernet Port. See [Ethernet LAN Ports](#)
4. Connecting to the Console Port in Console Mode. See [Connecting to the USB-C port in Console Mode](#)
5. Using the Console port as a virtual Ethernet port. See [Connecting to the USB-C port as an Ether-net over USB Port](#)
6. Connecting the power. See [In this mode, the USB-C port behaves as if a PC is connected to the Ethernet port, allowing access to networks and the Internet. See the EtherWAN User's Guide for more information.](#)
7. Logging into the C4G-M-4P6M router. See [Fast Setup](#) or [Connecting to the USB-C port in Con-sole Mode](#)

### Inserting the SIM card

The C4G-R-4P6M comes with two SIM sockets for mini-SIM (2FF) cards. Ensure the power is disconnected before you insert the SIM card/s.

1. Using your Phillips screwdriver, removed the two screws from the panel covering the SIM slots. Gently pry the cover loose from the opening.
2. Align the SIM card so that the SIM card will slide into the top slot (slot#1). Each SIM card has a notched corner for orientation and the SIM card can only be inserted the correct way. You will hear an audible click when the SIM is inserted correctly. Always populate slot#1 first. Add a second SIM card if your network setup requires it.
3. Align the SIM cover plate and secure the plate with the screws.

**Note:** Do not force the SIM(s) card in or you may damage the card on your C4G-M-4P6M.






### Connecting the Antenna/s

The router has three SMA female antenna connectors:

- Main Cellular antenna connector
- Rx Diversity antenna connector
- GNSS antenna connector



1. Connect your cellular antenna to the SMA cellular antenna connector labeled **Main** 
2. Connect your GPS antenna to the SMA GPS antenna connector labeled **GNSS**. 
3. Mount the GPS antenna where it has a good view of the sky (at least 90°).
4. Connect the diversity antenna to the SMA diversity antenna labeled **Diversity** 

**Warning: For Zone 2 and/or Class I, Division 2 hazardous location applications. Antennas intended for use with the product must be installed within the end use enclosure. For remote mounting of the antennas in unclassified or classified locations, routing and installation of the antennas shall be in accordance with the appropriate location regulations.**

**Note:** When attaching the antennas to the SMA connectors hand tighten only (do not use tools to tighten (maximum torque is 7Kgf-cm/1.1 N-m(10 in-lb)).

## Connecting to the Ethernet Ports

The Ethernet RJ45 ports provide the standard Ethernet interface speeds of 10/100/1000 Mbps through twisted pair (UTP) cables of up to 100 meters (328ft) in length. Cat5e or Cat6 cables are recommended for 1000 Mbps connections.

## Connecting to the USB-C port in Console Mode

By default, the USB-C port is set to console mode.

In this mode, the USB-C port acts as a console port.

1. Connect the power. See connecting power.
2. Allow the router to complete the boot up sequence.
3. Connect a USB cable to the PC's USB port, then connect the other end of the cable to the router's USB-C connector.
4. On the PC Choose Start -> Control Panel -> Hardware and Sound (or equivalent) on the Windows Operating System. Choose the Device Manager, and expand the Ports section. The assigned COM port can be identified.
5. Start a terminal emulation program (such as Putty or SecureCRT) on the com port where you have connect the cable to the PC.
6. Press the Enter key on the keyboard and the prompt will display.

See the EtherWAN Series Router CLI Reference Guide for more information on using CLI commands.

**Warning: If you connect or disconnect the console cable with the power applied to the router or any device on the network, an electrical arc can occur. This could cause an explosion when installed in a hazardous location. Ensure the power is removed from all devices prior to making the cable connection**

**Warning: Do not use the USB port in a potentially explosive environment.**

## Connecting to the USB-C port as an Ethernet over USB Port

In this mode, the USB-C port behaves as if a PC is connected to the Ethernet port, allowing access to networks and the Internet. See the EtherWAN User's Guide for more information.

## Connecting the Power

The power connector can be found at the top of the router. The connector can be removed from the unit for easy insertion of wires. Once all wires have been secured to the power connector, the connector can be re-inserted into the top of the router.

The connector includes the following items.

- P1 - Primary power connection
- P2 - Secondary power connection
- R- Relay connection
- IN - Digital Input connection

A “Grounding Lug” is available if your installation requires additional grounding.

The C4G-M-4P6M Router has two power inputs that can be connected simultaneously to provide redundant power. If one power source fails, the other source acts as a backup and powers the Router.

Wiring with suitable temperature ratings must be used. Refer to specification section for details. Use copper wire only if the terminal is only for connection to copper wire.

1. Ensure the power source is off prior to connection
2. Strip both (18-22AWG) wires 7 mm (2.76 inch)
3. Loosen the terminal block screws and connect positive (+) / negative (-) wires into the +/- terminals
4. Tighten terminal screws (0.5-0.6 Nm torque). Ensure the wires are securely fastened.
5. Re-insert the Terminal Block connector if removed, Turn on power source. Check LED indicators in the guide for power status
6. Connect P2 (power source 2, beginning at Step 1)
7. Ensure that there is one individual conductor for each clamping point.

If you are using a cable that is longer than two meters, we recommend the following: Wire gages (AWG):

- 22 gauge wire or up to 4 meters (13ft)
- 20 gauge wire for up to 6 meters (20ft)
- 18 gauge wire for up to 12 meters (40ft)

Cable and connector must be rated for minimum 76°C (168.8°F)

**Note:** Before servicing this product ensure the power source has been disconnected. Electrical installations should be performed by personnel thoroughly trained in safe electrical wiring procedures.

## Operation

### Reset / Factory Default / Safe Mode

The table below shows how the reset button can be used to accomplish the below function.

#### Reset Button



Mode	Description	LEDs	System Status
Restart	Press and Release the Reset button when the router is running	Power LED will begin to blink amber	Reboots. All configuration and files will remain the same.
Factory default	Press Reset and Hold for 10 seconds when the router is running	All LEDs flash Amber, release Reset button, then Power LED flashes Amber.	Reboots and resets the configuration to the EtherWAN factory default configuration. All configuration, user IDs, passwords and security certificates are deleted.
Safe Mode	Press the Reset button while powering up	All LEDs, except power blinking Amber	<ul style="list-style-type: none"> <li>• Saves the startup config</li> <li>• Boots with no config file</li> <li>• Allows you to do setup mode</li> </ul>

## Fast Setup

Fast setup mode allow the user to configure basic operating parameters on the router. Your EtherWAN router has been shipped to you in Factory Default mode. When the router is in “Factory Default” mode, it will automatically power up in “Fast setup” mode. When the router is in “Fast Setup” mode, the Power LED will be flashing green. In this mode, when you connect to the router either via the console port or via a Web browser, you will be asked to enter some basic operating parameters including setting up the initial user ID and password for the router.

To connect via the console port, follow the instructions provided in - [Connecting to the USB-C port in Console Mode](#).

If you wish to connect using a Web browser, connect your PC Ethernet cable to an Ethernet port on the router. Ensure that the PC is set up to use DHCP as the method for obtaining its IP address. The router will act as a DHCP server and assign an IP address to the PC. Next, launch the Web browser and browse to “http://192.168.0.1”. You should see the fast setup screen appear.

Refer to the Quick Start Guide or the Router’s User Guide for more information on setup instructions.

## Managing the Router

The C4G-M-4P6M can be configured, operated and monitored using any of the following methods.

### WebManager

The EtherWAN WebManager is an embedded Web based application that provides an easy to use a browser interface for configuring and managing the C4G-M-4P6M. WebManager is accessible through any standard desktop web browser. You must have pre-configured a valid IP address on the before connecting with the WebManager.

### CLI

A text-based Command Line Interface based on industry standard syntax and structure. The CLI can be accessed from the console port. Once a valid IP address is configured on the router, Telnet, SSH or the Web interface can also be used to access the router for administration purposes. See the CLI Router Reference Guide for more information.

### SNMP

The can be managed with an SNMP compatible management station that is running platforms such as HP Openview.

### Fast Setup Mode

If your router is in “Factory Default” mode, when you first connect, you will be in “Fast setup mode”. For more details, see - [Fast Setup](#).

## Overheat Standby

The internal ambient temperature of the router is continuously monitored and if the temperature remains above the router's primary high threshold alarm (default is 95°C/203°F) setting for 5 minutes, then your router will enter into Standby mode and remain in standby until the temperature returns to 5°C/9°F is below the primary high threshold value for 5 minutes. The high threshold can be configured within Alarm Manager /Primary/High Threshold menu.

**Note:** that any value below 60°C/140°F set for this threshold will be ignored and the value of 60°C/140°F will be used for the monitoring for overheat standby.

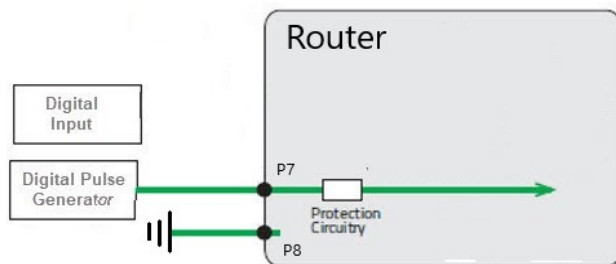
## I/O Configurations

You can use the digital input on the power connector as:

- Pulse counter
- Digital input

### Pulse Counter / Digital Input

You can connect the digital input pin to a pulse counter to monitor frequencies to 512 Hz, with duty cycle between 25%-75%. or a digital input to detect the state of a switch or to monitor an external device such as a motion detector, a remote solar panel, or a remote camera. Digital input can also be used with the Standby Timer.

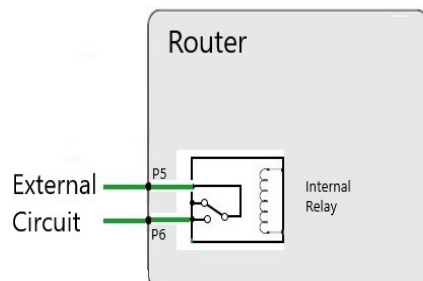


Input Range	State
0 - 1V	Low
2.7 - 36V	High

### Relay

Pins 5 and 6 of the power connector can be connected to an external circuit which will be controlled by the internal relay. When the relay is engaged, the external circuit will be completed. The relay is a NO relay.

The relay is rated at a maximum of 1A@24VDC.



## Appendix A - Technical Specifications

Technical Specifications	
<b>General</b>	
<b>Power Requirements</b>	Input: 9.6-60VDC, 1000 mA max
<b>Power Line Protection</b>	Fast transients 1.5KV (ENG61000-4-4 Criteria B) Surge 2KV (EN61000-4-5 common mode), 1.5KV (EN61000-4-5 differential and common modes)
<b>Power</b>	Built-in protection against voltage transient including 5 VDC engine cranking and +200 VDC load dump SAE J1455, MIL-STD-810G
<b>Interfaces</b>	
<b>Ethernet Port</b>	4 Ethernet 10/100/1000 Auto-neg Isolation 1.5 kV IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX and 100Base-FX IEEE 802.3ab for 1000Base-T IEEE 802.3x for Flow Control
<b>USB</b>	1 Type USB 3.0 Type-C Can be used as a console or additional Ethernet port.
<b>SIM</b>	2 15*25mm (2FF)
Environmental Specifications	
<b>Operating Temperature Ranges</b>	-40°C to 70°C (40°F to 158°F)
<b>Storage Temperature</b>	-40°C to 85°C (40°F to 185°F)
<b>Operating Humidity Ranges</b>	0% to 95% non-condensing
<b>Storage Humidity Ranges</b>	0% to 95% non-condensing
<b>Operating Altitude</b>	Up to 3,048 meters (10,000 feet)
<b>MTBF</b>	287,215 hours
Standards and Certifications	
<b>Safety</b>	UL/ULC/EN 62368-1 (previously 60950-1) CE Mark CAN/CSA-C22.2 No. 62368-1-14 UL 61010-1 and 61010-2-201



<b>Technical Specifications</b>	
<b>EMI/EMC</b>	FCC 47 Part 15, Subpart B, Class B ICES-003 Issue 6 Class B (Canada) EN302489 (Vehicle Installation) CISPR 32:2015/EN 55032:2015 (Class A) CISPR 25:2016/EN 55025 CISPR 24:2010/EN 55024:2010 CISPR 35:2016/EN 55035:2017 EN 61000-3-2 Limits for Harmonic Current Emissions EN 61000-3-3 Limits of Voltage Fluctuations and Flicker
	EN 61000-4-2 (ESD): Contact: 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 61000-6-4:2007 +A1:2011 ISO 7637-2:2004
<b>Hazloc</b>	ATEX Class 1 Zone 2 ANSI/ISA 12.12.01, Class 1 Division2, Group A, B, C, D
<b>Railway</b>	EN 50155:2017 Clause 4.3.6 EN 50121-1:2017, 50121-3-2:2016, 50121-4:2016 IEC 60571:2012 for Clause 12.2.8 and 12.2.9 IEC 62236-1:2018, 62236-3-2:2008, 62236-4:2018
<b>GSM/UMTS certifications</b>	PTCRB, RED
<b>Environment Testing</b>	
<b>Shock and Vibration</b>	SAE J1455 (Shock and Vibration) MIL-STD-810G EN 61373
<b>IP rating</b>	Complaint to IP64
<b>Drop</b>	ISTA 2A 2001, test categorizes 1, 4,5, and 6
<b>Power connector</b>	
<b>Digital input and pulse counting</b>	Digital Input & Pulse Counting VDC: 0 for $\leq 1V$ , 1 for $\geq 2.7$
<b>Relay</b>	Normally Open (NO) dry contact 1A@24VDC

<b>Technical Specifications</b>	
<b>GNSS</b>	
<b>Frequency range</b>	GNSS: 1599-1606 MHz GPS: 1575.42 MHz Galilo: 1575.42 MHz BeiDou: 1561.098 MHz GLONASS: 1602 MHz
<b>Bandwidth</b>	45 MHz
<b>Impedance</b>	50 Ohm
<b>VSWR</b>	2.0 Typical
<b>Gain</b>	RHCP
<b>Polarization</b>	4 dBic (typical)
<b>Axial Ratio at elevation</b>	5 dB (typical)
<b>Cellular</b>	
<b>Cellular/Telecom Regulatory Approvals</b>	FCC/ICES, RED, PTCRB/CTIA, CE
<b>Carrier Certifications</b>	AT&T, Verizon

<b>Technical Specifications</b>		
<b>Network Technology (LTE)</b>	Band 1	2100
	Band 2	1900
	Band 3	1800
	Band 4	1700
	Band 5	850
	Band 7	2600
	Band 8	900
	Band 12	700
	Band 13	700
	Band 20	800
	Band 25	1900 (Block C)
	Band 26	850
	Band 29	700
	Band 30	2300
	Band 41	2500
	<b>HSPA+,UMTS</b>	
	Band 1	2100
	Band 2	1900
	Band 3	1800
	Band 4	1700
	Band 5	850
	Band 8	900








<b>Technical Specifications</b>		
<b>Network Technology (LTE)</b>	Band 1	2100
	Band 2	1900
	Band 3	1800
	Band 4	1700
	Band 5	850
	Band 7	2600
	Band 8	900
	Band 9	1800
	Band 12	700
	Band 13	700
	Band 18	850
	Band 19	850
	Band 20	800
	Band 26	850
	Band 28	700
	Band 29	700
	Band 30	2300
	Band 32	1500
	Band 41	2500
	Band 42	2300
	Band 43	3700
	Band 46	5200
	Band 48	3500
	Band 66	1700
	<b>HSPA+,UMTS</b>	
	Band 1	2100
	Band 2	1900
	Band 4	1700
	Band 5	850
	Band 6	800
	Band 8	900
	Band 9	1700
	Band 19	850
<b>Cellular</b>	EN 301 908-1, EN 301- 908-2, EN 301 908-13 EN 62311:2019 / IEC 62311 Ed. 1.0 b:2007 EN 301 489-1 EN 301 489-17 EN 301 489-19	

<b>Technical Specifications</b>	
<b>Vehicle Usage</b>	E-Mark (UN ECE Regulation 10.04, ISO 7637-2:2011 and ISO 16750-2:2012)
<b>Vehicle Velocity</b>	224 mph for cellular connectivity

### Recommended Main/Diversity Antenna Specifications

Parameter	Requirements	Comments
<b>Antenna System</b>	(LTE/4G) External multi-band 2x2 MIMO, SMA connector antenna system	if Ant2 includes GNSS, then it must also satisfy these requirements.
<b>Operating Bands - Frequency range</b>	704-902-928-960 MHz	
	1427.9-1575.42 MHz	
	1710-2170 MHz	
	2400-2480-2690 MHz	
<b>Impedance</b>	50 OHM	
<b>Gain</b>	2-3 dBi	
<b>VSWR of Ant 1 and Ant 2</b>	< 3.0	On all bands including Band edges.

## Appendix B - Label (sample)

<b>EtherWAN</b>		<b>C4G-R-4P6M</b>		Contains: FCC-ID: N7NEM75 IC: 2417C-EM75	
IMEI: 861824563918001					
					
S/N: 351-121319T00001		DEMKO 18 ATEX 2287X II 3 G Ex ec nC IIC T3 Gc			
					
MAC: 00400293000E					
		IND. CONT. EQ. FOR HAZ. LOC. Class I, Division 2, Groups A,B,C and D Temp Code: T3C Max. Ambient 70 Deg. C Min. Ambient -40 Deg. C		IND. CONT. EQ. Surrounding Air Temp. Max. 70 Deg. C Min. -40 Deg. C	
Input: 9.6-60VDC, 1000mA max.					
Made in Taiwan    Model: C4G-R-4P6MX					

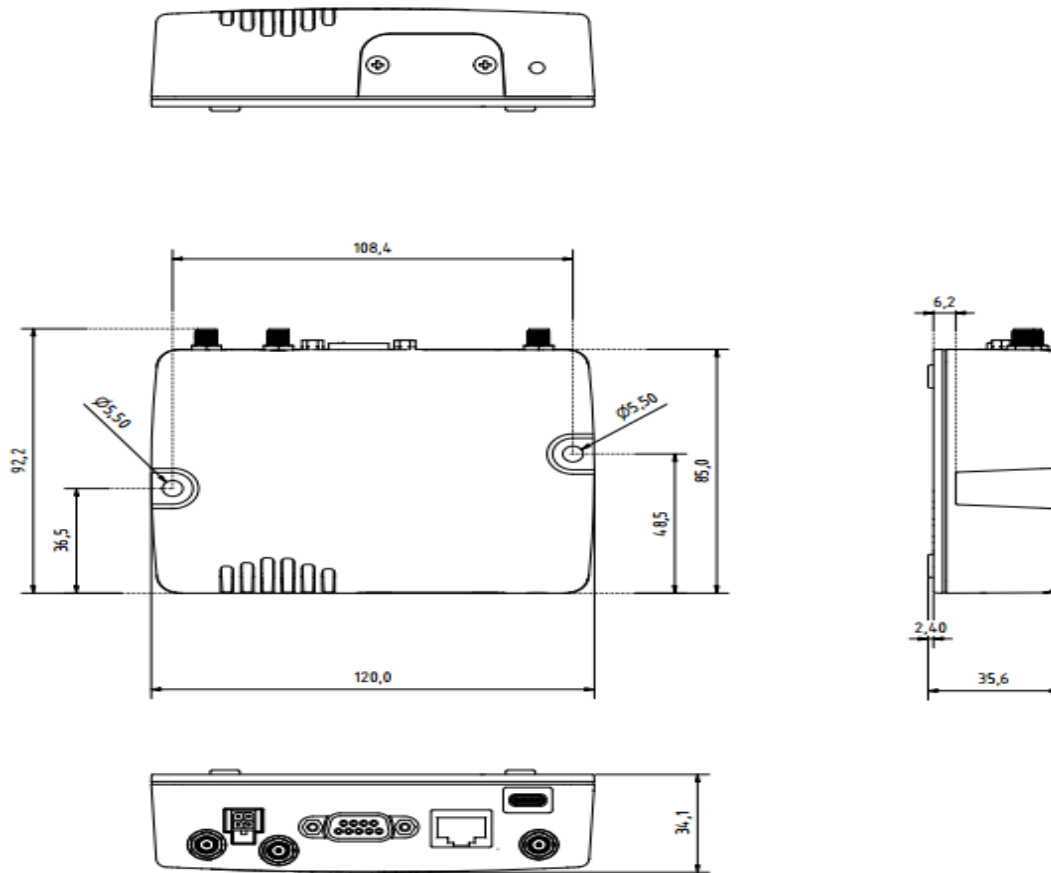
## **Mounting the router on a DIN Rail**

1. The DIN rail clip will be fixed to the back of the router unit when you receive the unit.
2. Position the router such that the top hooks of the DIN rail clip attach onto the top of the DIN rail.
3. Rotate the bottom of the router towards the rail. This will snap the bottom hooks of the DIN rail-clip onto the bottom of the DIN rail.

## **Removing the router from the DIN Rail**

1. The DIN rail attachment clip has a slot at the bottom of the latch that is visible beneath the router when it is mounted.
2. Insert a flat blade screwdriver into the slot and twist the base to release the clip. Alternatively a downward force on the clip will release the clip.
3. When the clip is released, pull the bottom of the router out slightly and remove it from the DIN rail.

## Appendix D - Mechanical





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## Appendix E - Maintaining and Troubleshooting

### Maintaining

- Easy access to the cables
- Cables are not bent, constricted, close to high amperages or exposed to extreme temperatures
- Front panel LEDs are easily visible
- Do not use solvents or cleaning agents on this router, if case gets dirty wipe with a dry cloth