

# Cellular Modem (Inhand Networks IR615)

[Visit the online store page](#)

Inhand Networks IR615 is a cellular to Ethernet modem that can provide the eGauge unit and related supported equipment with internet access on a 4G LTE T-Mobile network.

A compatible T-Mobile dataplan can be purchased through eGauge Systems. eGauge cannot guarantee support for dataplans from other parties. eGauge supplied data plans are for use with eGauge meters and not third party products, line suspension or termination will occur if there is excessive data usage from third-party devices or general internet usage.

Modems sold by eGauge systems are pre-configured for the T-Mobile service provided by eGauge and utilize InHand Networks device manager for remote troubleshooting and customer assistance.

Metered (not unlimited) data plans can accrue charges for data overages. eGauge recommends against using metered data plans without extensive testing for data usage. Data usage is not fully predictable and will greatly vary with interface access. See [this article](#) for additional information on data usage.

If installing in an underground or high electrical noise area, a custom antenna solution or separate mounting location for the cellular modem may be necessary in order to have sufficient cellular signal.



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*Inhand Networks IR615*

# Specifications

[Full specs \(datasheet PDF\)](#)

## Communication

- T-Mobile LTE CAT1 (LTE-FDD Band 2/4/12)
- 4x LAN ports

## Environmental and Operational

- Operating Temperature: -20 ~ 70°C
- Humidity: 5 ~ 95% relative humidity (noncondensing)
- IP30 protection
- Input voltage: 9-26Vdc
- Consumption: 150mA-320mA @12V (peak 320mA @12V)

## Physical

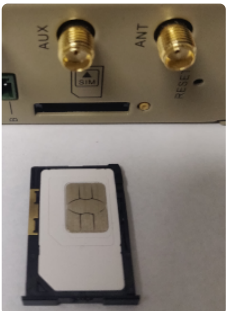
- 4G cellular connections: SMA x2

- 127 x 108.2 x 35mm
- DIN-rail mountable

## Hardware included

- Inhand Networks IR615 box kit
  - 1x IR615 modem
  - 1x DIN rail clip (attached)
  - AC power adapter
  - 1x CAT5 cable
  - SIM size-changer inserts (nano, 2FF, 3FF)
- Cellular router accessory Kit
  - 2x Rubber O-Ring
  - 2x Extension Cable (short, SMA)
  - 2x rubber stick antennas

## Assembly/installation information



The cellular antennas must be located on the outside of any enclosure. Even plastic enclosures can degrade or block a cellular signal.

1. If the modem is ordered with a data plan, an activation instruction sheet will be included with a SIM card. Insert the SIM card into the modem as shown above, **if there are multiple SIM card slots, use the one labeled "SIM 1"**. Follow the data plan activation instructions provided to activate the data plan.
2. Locate a suitable location to install the cell modem. If installing in a Powered Enclosure Kit (PEK), mount on the DIN rail.
3. If using the PEK or other suitable enclosure, use the 2x short SMA extension cables to connect from the ANT and AUX connectors on the modem to create a bulkhead connector on the enclosure.

4. Connect the antennas to the bulkhead connectors on the enclosure, or directly to the cell modem if not using an enclosure.
5. Connect the power cord to the cellular modem.
6. Connect the eGauge meter via Ethernet to a LAN port on the modem.

# Software configuration and troubleshooting

Modems provided by eGauge are pre-configured to work on the T-Mobile network using data plans provided by eGauge Systems.

The APN for plans provided by eGauge with the IR615 modem is `iot.tmowholesale` and is automatically set in the configuration files provided below.

If the modem is not functioning and configuration may have been modified after shipment, perform a factory reset and upload the eGauge-specific cellular configuration if using a dataplan provided by eGauge Systems.

## LED indicator description

The modem has 3 signal LEDs to indicate signal strength:

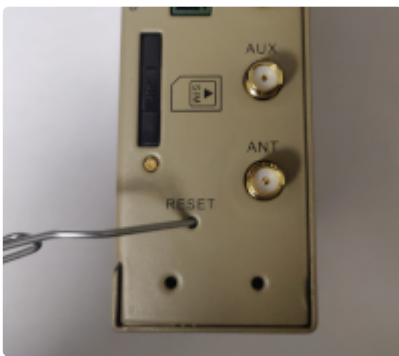
- 1 LEDs: Signal strength 1-9 (Signal strength is weak, please check antenna and the signal strength of current location).
- 2 LEDs: Signal strength 10-19 (signal strength is adequate, and the modem can be used).
- 3 LEDs: Signal strength 20-31 (signal strong).

The other LED behavior is described below:

POWER	STATUS	WARN	ERROR	Description
(Red)	(Green)	(Yellow)	(Red)	
On	Off	Off	Off	Powered On
On	Blinking	On	Off	Powered on succeed
On	Blinking	On	Off	Dialing
On	Blinking	Off	Off	Dialing succeed
On	Blinking	Blinking	Blinking	Upgrading
On	Blinking	On	Blinking	Reset Succeed

## Factory Reset

1. Power on the modem and allow it at least 60 seconds to fully start running. Locate the Reset button below the antenna connections and find a paperclip or pin to push the button.

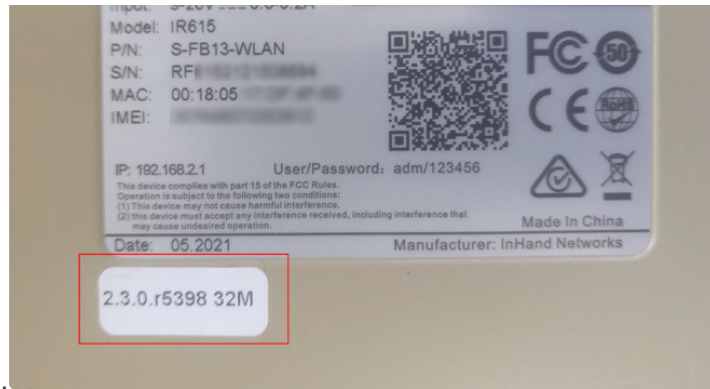


2. Use a push-pin or paperclip to hold down the "Reset" button on the side of the modem until the "STATUS" LED starts flashing and the "ERROR" LED remains solid, then release the button.
3. When the button is released, the "ERROR" LED will turn off. Within 30 seconds, press and hold the "RESET" button again until the "ERROR" LED starts flashing and then release it.
4. The unit will now restore factory default settings. The STATUS, WARN, and ERROR LEDs will all light up solid during the factory reset process. Allow the unit at least 60 seconds to fully factory reset, and then perform the initial configuration steps below.

## Configuration steps

Modems provided by eGauge are pre-configured to work on the T-Mobile network using data plans provided by eGauge Systems.

1. Identify the firmware version on the cell modem. On the bottom of the modem near the label is a sticker that indicates the firmware version. Below shows the modem uses



firmware version **2.3.0**.

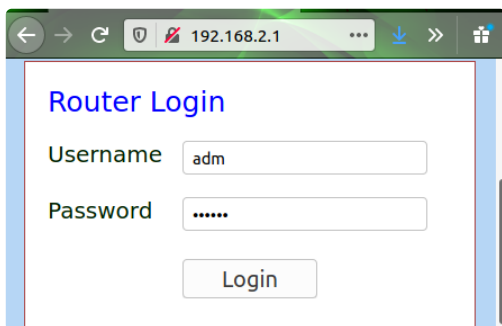
If logged into the modem interface, the firmware version may be found on the main page. This modem shows it runs firmware version **2.4.3**:

InHand Networks					
System	Network	Services	Firewall	QoS	VPN
Name	Router				
Model	IR615-WLAN-DS				
Serial Number	RF6152050493228				
Description	www.inhandnetworks.com				
Current Version	V2.4.3				
Current Bootloader Version	1.1.3.r4872				
Router Time	2020-05-01 08:01:27				
PC Time	2021-06-25 12:41:45 <span>Sync Time</span>				
Up time	0 day, 00:01:31				
CPU Load (1 / 5 / 15 mins)	0.15 / 0.08 / 0.02				
Memory consumption	59.46MB / 32.53MB (54.71%)				
Total/Free					

- Download the configuration file that corresponds to your firmware version where x is any number. This file will be uploaded to the modem in a later step.

2.3.x	<a href="#">v2.3.x-egauge-ir615-DS-cell-config_qts.dat</a>
2.4.x	<a href="#">v2.4.x-egauge-ir615-DS-cell-config.dat</a>

- Connect a computer to a LAN port of the cell modem.
- Open a web browser to <http://192.168.2.1/> and log in with username `adm` and password `123456`.

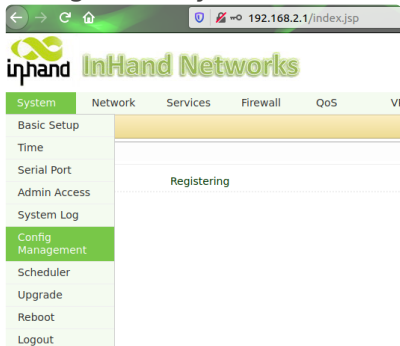


Router Login

Username

Password

5. Navigate to System -> Config Management.

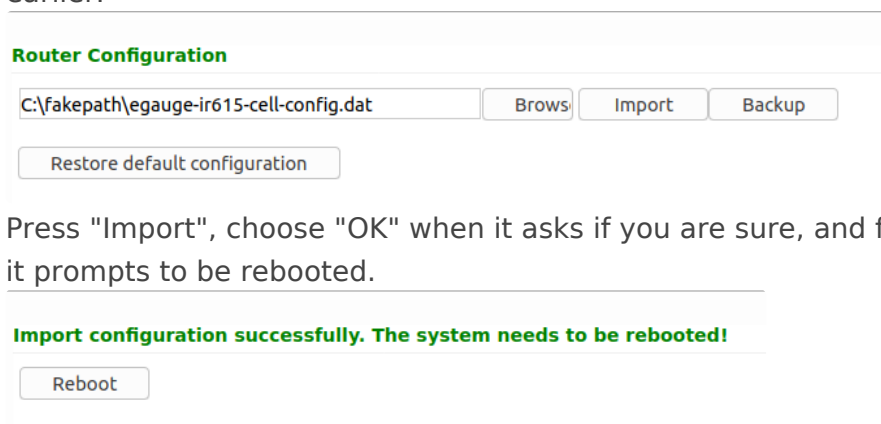


InHand Networks

System Network Services Firewall QoS VF

Basic Setup  
Time  
Serial Port  
Admin Access  
System Log  
**Config Management**  
Scheduler  
Upgrade  
Reboot  
Logout

6. Under "Router Configuration", click the "Browse" button and choose the file downloaded earlier.



Router Configuration

**Import configuration successfully. The system needs to be rebooted!**

7. Press "Import", choose "OK" when it asks if you are sure, and finally press "Reboot" when it prompts to be rebooted.

## Additional diagnostics and troubleshooting

The following pages provide information and diagnostics that can be helpful in identifying poor signal or other issues. Connect a computer to a LAN port of the modem and visit <http://192.168.2.1/> logging in with username  and password . If this does not work, perform a factory reset and initial configuration as described in the above sections.

Page location	Description
Tools -> Ping	Have the modem ping an external IP or domain.
Status -> Modem	Contains signal level, RSSI, SIM card number, network type and other modem-related information
Status -> Network Connections	Dialup (cellular) IP information from cellular provider

Status -> Device List	DHCP list of connected devices to the LAN ports
Status -> Log	Raw log from modem

- The APN for plans provided by eGauge with the IR615 modem is `iot.tmowholesale`.

## Documents

- [OEM owner's manual](#)
- Certification documents and other information may be found on manufacturers website:  
<https://www.inhandnetworks.com/>

## Related Information

- [Multitech MTE-LAT6 \(previously offered modem\)](#)

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Please visit [kb.egauge.net](https://kb.egauge.net) for the most up-to-date documentation.