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FortiExtenderVehicle 511G

FEV-511G

QuickStart Guide

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Packing List

FortiExtenderVehicle 511G

2x WiFi and 1x Bluetooth Antennas

5G/LTE/GNSS Vehicle Antenna (Optional)

Mounting Kit

4x Wall Mounting Anchors

4x Wall Mounting Screws

SIM Card Adapter

Vehicle Power Adapter

1x Drill Template Sticker

Antenna RF connector

INSTALLATION GUIDE

Screw to wall

QuickStart Guide

Product Description

FortiExtenderVehicle 511G is a secure 5G/LTE wireless WAN extender device for vehiclular and industrial applications. It has a single 5G Sub 6 GHz high power module, 2x2 2.4G/5G dual-band WiFi6 (802.11 a/b/g/n/ac/ax) and BLE 5.0 integrated in the device. It features one 2.5GE WAN port, four GE LAN RJ45 ports, one USB 2.0 Type A, one DB9 console port, an industrial digital I/O port of Opto isolated input, and one NO/NC relay output.

Model	Modem
FEV-511G	One Telit FN990A28-HP 5G module.

Notes:

FN990A28-HP is a 5G Sub 6 GHz high power module with data throughput up to 3.4 Gbps (DL) /460 Mbps (UL) @5G NSA or 2.5 Gbps (DL) /900 Mbps (UL) @5G SA, and supports GPS/Glonass/Beidou/Galileo navigation system.

Front Panel LEDs and Controls

Cellular 5G
Cellular LTE
GPS/GNSS
WiFi WAN
WiFi LAN 2.4G
WiFi LAN 5G
BT/BLE

Power/System

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Reset Button

SIM Card Slot Cover
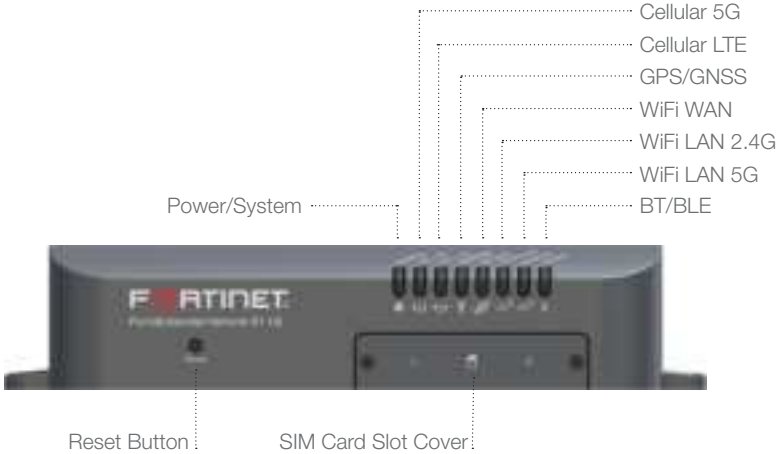
Button Usage

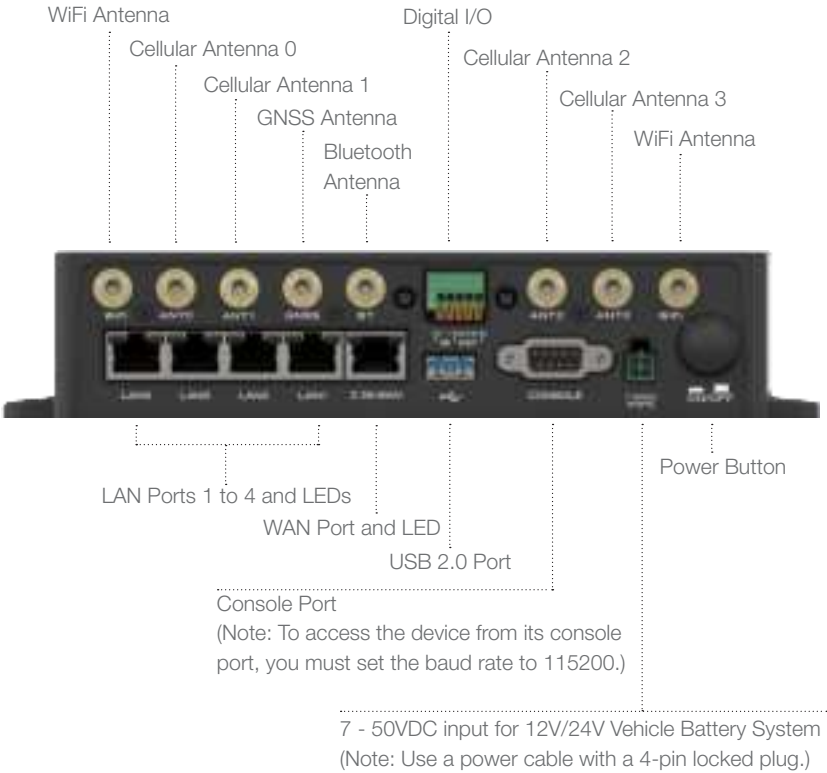| LED	Definition
Reset Button	• Key pressed < 5 sec: System reset • Key pressed >= 5 sec: Back to factory default

LED Behavior

LED	Definition
Power/System (Green/Amber)	• Green Steady ON: System running normal • Green Flashing: Connected • Amber Steady ON: System error • Amber Flashing: System boots up • LED Off: No power
Cellular 5G LNK/ACT (Blue/Amber)	• Blue Steady ON: Connected to 5G with 5G signal level >= 50% • Blue Flashing: 5G activity with 5G signal level >= 50% • Amber LED ON: Connected to 5G with 5G signal level < 50% • Amber LED Flashing: 5G activity with 5G signal level < 50% • Blue(5G)/Green(LTE) both flashing: 5G/LTE modem FW upgrade • LED OFF: Not connected to 5G cellular
Cellular LTE LNK/ACT (Green/Amber)	• Green Steady ON: Connected to LTE with LTE signal level >= 50% • Green Flashing: LTE activity with LTE signal level >= 50% • Amber LED ON: Connected to LTE with LTE signal level < 50% • Amber LED Flashing: LTE activity with LTE signal level < 50% • Blue(5G)/Green(LTE) both flashing: 5G/LTE modem FW upgrade • LED OFF: Not connected to LTE
GPS/GNSS (Green/Amber)	• Green ON: GPS/GNSS locked with > 5 positioning satellites • Amber LED: GPS/GNSS locked with =< 5 positioning satellites • LED OFF: No GPS/GNSS
WiFi WAN (Green/Amber)	• Green Steady ON: 2.5G/1G wired WAN or 5G WiFi connected as WAN • Green Flashing: 2.5G/1G wired WAN or 5G WiFi WAN activity • Amber steady ON: 100M wired WAN or 2.4G WiFi connected as WAN • Amber flashing: 100M wired WAN or 2.4G WiFi WAN activity • LED OFF: No wired WAN or WiFi WAN connection
All five Amber LEDs on	• OS upgrade in process
WiFi LAN 2.4G (Green)	• Green Steady ON: 2.4G WiFi connected as LAN • Green Flashing: 2.4G WiFi LAN activity • LED OFF: No 2.4G WiFi LAN
WiFi LAN 5G (Green)	• Green Steady ON: 5G WiFi connected as LAN • Green Flashing: 5G WiFi LAN activity • LED OFF: No 5G WiFi LAN
BT/BLE (Green)	• Green Steady ON: BT ON • LED OFF: BT OFF

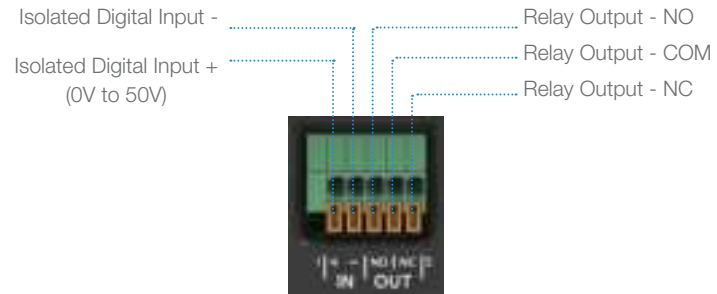## Rear View Ports, LEDs, Buttons, and Antenna Connectors

WiFi Antenna

Cellular Antenna 0

Cellular Antenna 1

GNSS Antenna

Bluetooth

Antenna

Digital I/O

Cellular Antenna 2

Cellular Antenna 3

WiFi Antenna

Power Button

LAN Ports 1 to 4 and LEDs

WAN Port and LED

USB 2.0 Port

Console Port
(Note: To access the device from its console
port, you must set the baud rate to 115200.)

7 - 50VDC input for 12V/24V Vehicle Battery System
(Note: Use a power cable with a 4-pin locked plug.)

Button Usage

Power Button	• Press to lock: Power on. • Press to release: Power off.

LEDs on RJ45

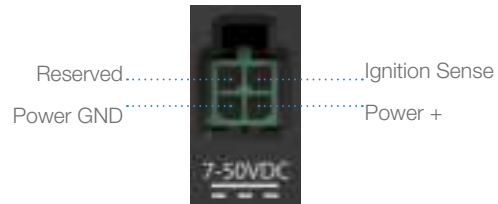| LEDs	Color	Definition
WAN	Blue (Right LED)	• Blue Steady ON: 2.5G Etherent connected • Blue Flashing: 2.5G Etherent activity • LED OFF: No 2.5G Ethernet connection
	Green (Left LED)	• Green Steady ON: 1G or 100M Etherent connected • Green Flashing: 1G or 100M Ethernet activity • LED OFF: No 1G or 100M Ethernet connection
LAN1-4 Ports	Green (Right LED)	• Green Steady ON: 1G Etherent connected • Green Flashing: 1G Ethernet activity • LED OFF: No 1G Ethernet connection
	Amber (Left LED)	• Amber Steady ON: 100M Etherent connected • Amber Flashing: 100M Ethernet activity • LED OFF: No 100M Ethernet connection

Digital I/O Definitions

Isolated Digital Input - .... Relay Output - NO

Isolated Digital Input + ... Relay Output - COM
(0V to 50V) .... Relay Output - NC

Mounting Holes

Mounting Holes .... Mounting Holes

Power Input Pin Definitions

Reserved .... Ignition Sense

Power GND .... Power +

Battery Adapter Cable

1 Basic Connections

To vehicle cigarette lighter socket

1. Press to release the power button to ensure that the device is in power-off state (the power button is fully out).
2. Plug the cigarette lighter connector of the vehicle power adapter into the vehicle cigarette lighter socket.
3. Plug the 4-pin locked plug into the device power input socket, and press to lock the power button to power on the device.

Power Connection to Vehicle Fuse Panel
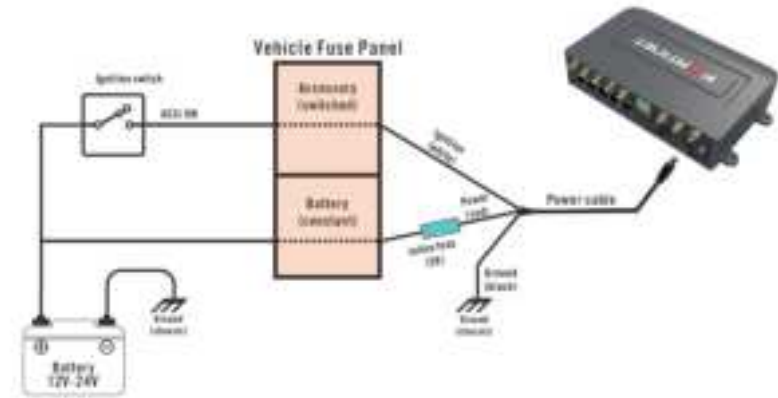
Note: UL/cUL Listing for US/Canada vehicle use does not cover use of products connected to vehicle battery via DC cable/connector.

2 Assembly

1. Unscrew the SIM socket dust cover fastening screws, and remove the dust cover.
2. When inserting your MicroSIM (3FF) SIM card(s) into the SIM socket(s), be sure to observe the following guidelines:
   • If installing one SIM card, you can insert the card into either SIM socket
   • If installing two SIM cards, use SIM1 as the primary socket and SIM2 as the secondary
3. Insert the SIM card(s) into the SIM socket(s), making sure that the card is facing down with the cut corner on the left. (If necessary, press the card again to remove it.)
4. Replace the SIM socket dust cover, tighten the dust cover screws, and attach the antennas.