

Industrial LoRaWAN Gateway over LAN/LTE Network

IoT LAN/LTE LoRaWAN Gateway Industrial LoRaWAN Gateway

IoT LoRaWAN gateway enables end to end LoRa network by one or more gateways without the need to connect to an external LoRaWAN server. Sensor data can be analyzed and reacted to on the Gateway, forwarded to remote servers and/or exposed using any protocol supported by LuvitRED, for example MODBUS or BACnet. LoRa solutions can also function as a normal LORAWAN gateway connected to external LoRaWAN servers in simple packet forwarder mode through LAN or wireless LTE.



Features & Benefits

Reliability and Security

- Software and hardware watchdogs continually monitor for loss of connectivity and will repair the problem if detected
- Software and configuration images are protected with digital signatures
- Secure, redundant firmware and configuration images ensure the unit can revert to previous working settings if a problem is detected
- Management functions are protected by certificate or password and applied over encrypted links

LuvitRED

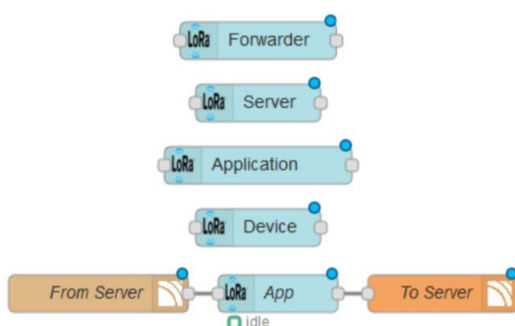
- 'Drag & drop and visual wiring' configuration with minimal programming
- Rapid application development in only minutes
- Supports a wide variety of sensors aka 'node sets'
- Reduces risk/lowers development cost
- Shorter sales cycles
- Drives innovation by enabling 'risktaking'

LoRaWAN

- Radio: LoRa, LoRaWAN
- Region: 902-920MHz, 868MHz, 433MHz
- Max nodes: 1000
- Security: 128-bit AES encryption
- Antenna: SMA RP Female
- Temperature: -30~70C

LTE

- 100Mbps down, 50Mbps up (Cat3)
- 700/800/850/900/1800/1900/2100/2600/AWS (B 1-5, 7, 8, 13, 17, 18, 19, 20)
- High sensitivity A-GPS /A-GLONASS receiver (SUPL 1.0 & SUPL 2.0)
- Active GPS antenna support
- -30°C to +70°C
- CE, FCC, IC, PTCRB, E-mark, EN50155
- AT&T, T-Mobile, Verizon, Latam, Australia, Singapore



LoRaWAN nodes in the LuvitRed application

LoRa Forwarder	LoRaWAN packet forwarder node to communicate with LoRaWAN server
LoRa Server	LoRaWAN server node to communicate with LoRaWAN gateways
LoRa App	Manage LoRaWAN sensors in a LoRaWAN application
LoRa Device	LoRaWAN sensor node in the LoRaWAN application



Interfaces

Reset Button

Power Connector

- 9-33 VDC Micro-Fit 3.0, dual row, 4 circuits

SMA Antenna Socket

- 1 x SMA

Ethernet 100M

System LED

- 1 x System State
- 1 x WWAN State
- 1 x WWAN Signal Strength

System LED

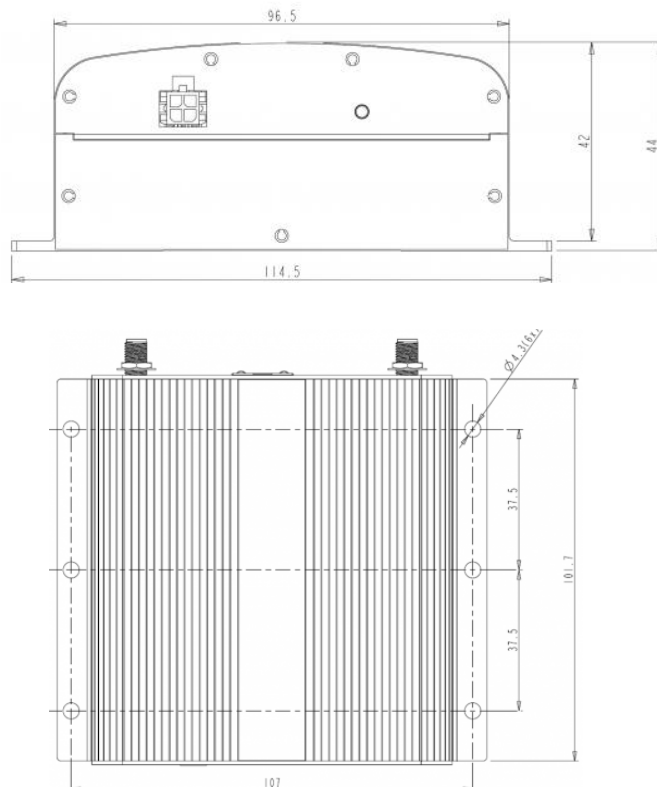
- 1x WLAN State (reserved)
- 1x WLAN Signal Strength (reserved)
- 1x GPS/Aux State
- 1xGPS/Aux signal strength

Pin #	Function
1	Input voltage
2	GND
3	Ignition sense input
4	Not connected



Dimensions

(mm)



Interface	
Ethernet Port	LAN: 1 x 10/100Base-TX RJ45
System LED	1 x Power: On: Green on, Error: Red on, Booting: Orange on 1 x WLAN Status: AP enabled: Green on, Client not connected and AP not enabled: Orange on, Error: Red on 1 x WLAN Client Signal Strength: Good: Green on, Moderate: Orange on, Bad: Red on 1 x GPS/Aux Status: On fix: Green on, On no fix: Orange on, Error: Red on 1 x GPS/Aux Signal Strength: Good: Green on, Moderate: Orange on, Bad: Red on 1 x WWAN Status: On connected: Green on, On not connected: Orange on, Error: Red on 1 x WWAN Signal Strength: Good: Green on, Moderate: Orange on, Bad: Red on
Ethernet Port LED	Link: Green On, Activity: Green Blinking, 100 Mbps speed: Yellow on, 10 Mbps or not connected: Yellow off
Reset	System Reset(less than 10 Seconds) / Default Settings Reset(over 10 Seconds)
SMA Connector	2 x SMA Female, WWAN Main / WWAN Div/GPS
SIM Socket	1 x USIM/SIM class B and class C
Power Input	1 x 4pin Micro-Fit
LoRaWAN Card	1 x SMA Female, LoRa Main 1 x RP-SMA Female, LoRa GPS
Cellular Properties	
Standard	GSM/GPRS/EDGE 3GPP Release 6 UMTS/HSPA 3GPP Release 8 LTE 3GPP Release 11
Data Rate	GPRS: DL: max. 85.6 kbps, UL: max. 85.6 kbps EDGE: DL: max. 236.8 kbps, UL: max. 236.8 kbps HSPA: DL: max. 42 Mbps, UL: max. 5.76 Mbps LTE-FDD Cat.3: DL: max. 100 Mbps, UL: max. 50 Mbps, 2x2 DL MIMO
Band Information:	LTE: FDD B1/2/3/4/5/7/8/13/17/18/19/20 (2100/1900/1800/1700/850/2600/900/700/700/850/850/800Mhz) WCDMA: FDD B1/2/4/5/8 (2100/1900/1700/850/900) GSM: B2/B3/B5/B8 (1900/1800/850/900MHz)
GPS Properties	
GNSS	GPS/GLONASS
GNSS Frequency	GPS: 1575.42±1.023 MHz GLONASS: 1597.5~1605.8 MHz
LoRa Properties (LoRaWAN Card)	
Radio protocol	LoRa, LoRaWAN
Baseband processor	Semtech SX1301
Regional variants	902-928MHz, 868MHz, 433MHz(Feature)
Number of nodes	~1000 (assuming 30 seconds airtime per node per day)
Security	128-bit AES encryption (send/receive)
Antenna connector	SMA RP (female)
Power Requirement	
Input Voltage	9-33 VDC Connector type: Micro-Fit 3.0™, Dual row, 4 circuits
Mechanical	
Installation	Wall mount
Enclosure Material	Aluminum housing
Dimension	115 x 105 x 45 mm (excluding antenna connectors)
Weight	304 g
Environmental	
Operating Temperature & Humidity	-30°C to 70°C , : 5% - 95% non condensing
Storage Temperature	-40°C to 85°C
Warranty	1 year
Certification	CE, FCC, IC, PTCRB
Standard compliance	ROHS, Reach



Ordering Information

Model Name	Description
WR12019	Industrial Secure Cellular Gateway, 1FE, LTE, GPS, FDD B1/3/4/5/7/8/13/17/18/19/20
WR11972	Industrial Secure 1-Port Fast Ethernet Gateway
WR12078	LoRaWAN Card 902-928MHz, 868MHz, 433MHz
	Package List
	Product Unit (No Antenna, No Power Adapter attached)
	Quick Installation Guide



Optional Accessory

Item	
PSD-12-12	12W, 12V, Power Adapter, 4 pin Micro-Fi
A-LTE-3-NM	LTE Antenna, LTE WW 3dBi, N-type male
A-LTE-2-SM	LTE Antenna, LTE WW 2dBi, SMA male
A-LORA-2NM	LORA Antenna, LORA 2dBi, N-type male
A-LORA-2SM	LORA Antenna, LORA 2dBi, RP-SMA male
A-GPS-27-SM-3M	GPS Antenna, GPS 1575MHz 27dBi, SMA male, 3M
C-RF-R-SF_SM-1M	RF cable, SMA female to SMA male, 1M
C-RF-R-SF_RSM-1M	RF cable, SMA female to RP-SMA male, 1M
C-RF-C2-NF_SM-2M	RF cable, N-type female to SMA male, CFD200, 2M
C-RF-C2-NF_RSM-2M	RF cable, N-type female to RP-SMA male, CFD200, 2M