

OPTION

# CloudGate

## LORAWAN MULTI-REGION EXPANSION CARD



## CONNECTING LoRaWAN SENSORS to the Cloud

The LoRaWAN expansion card for CloudGate enables customers to have an end to end LoRa network using one or more CloudGate gateways without the need to connect to an external LoRaWAN server.

Sensor data can be analyzed and reacted to on the CloudGate, forwarded to remote servers and/or exposed using any protocol supported by LuvitRED, for example MODBUS or BACnet.

Option CloudGate LoRaWAN can also function as a normal LoRaWAN gateway connected to external LoRaWAN servers in simple packet forwarder mode.

CloudGate offers a choice of 3G/4G, LAN or wireless LAN backhaul with automatic failover.

# OPTION

## The LoRaWAN base station expansion card for CloudGate gateways

There is an emerging trend of connecting, monitoring and controlling machines and other 'things' in our environment but using wires to do so is often not desirable or even possible. The LoRaWAN expansion card allows the CloudGate gateway to connect to all LoRaWAN wireless sensors.

## LoRaWAN nodes in the LuvitRed application on CloudGate



### 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 (see specifications)

LORAWAN FUNCTIONALITY	
Feature	Description
Radio protocol	• LoRaWAN
Baseband processor	• Semtech SX 1302 second-generation LoRa Core™ Digital Baseband Chip
Transceiver	• Dual SX1250 Tx/Rx front-end, providing a channel range up to 2MHz and up to -141 dBm sensitivity
LoRa Bandwidth	• 125 kHz LoRa reception with 8 x 8 channels LoRa® packet detectors, 8 x SF5-SF12 LoRa® demodulators and 8 x SF5-SF10 LoRa® demodulators
Regional variants	• For use in 868MHz or 902-928MHz mode. Separate card available for 433MHz.
Number of nodes per card	• ~1000 (assuming 30 seconds airtime per node per day)
Security	• 128-bit AES encryption (send/receive)
Antenna connector	• SMA RP (female)
Operating temp.	-30°C to +70°C
Humidity (operational)	5 to 95% RH, non-condensing
Storage temp.	-40°C to +85°C
Certifications	CE, FCC/ISED

## Additional features

- Compliant with Chirpstack, The Things Network and Loriot LoRaWAN network controllers
- Compliant with Actility ThingPark Enterprise and ThingPark Wireless with optional LRR forwarder
- Can communicate with LoRaWAN class A and class C devices
- CloudGate can be used in full private LoRaWAN mode with LoRaWAN server running on gateway



OPTIONAL WLAN FUNCTIONALITY with additional WiFi expansion card in CloudGate gateway front slot with back-to-front connector card	
Feature	Description
Number of users	up to 32 clients (32 from CloudGate firmware 2.92.x onwards)
Wireless Protocols	802.11 a/b/g/n
Frequency Bands	2.4 GHz & 5 GHz
Channels	AP - 20Mhz, no DFS 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, \ 36, 40, 44, 48, \ 149, 153, 157, 161, 165 STA - 20 & 40Mhz + DFS 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, \ 36, 38, 40, 44, 46, 48, \ 52, 54, 56, 60, 62, 64, /*DFS*/ \100, 102, 104, 108, 110, 112, 116, /*DFS*/ \118, 120, 124, 126, 128, 132, 134, /*DFS*/ \136, 140, 142, 144, /*DFS*/ \149, 151, 153, 157, 159, 161, 165
Speed	802.11a/g: 54 Mbps; 802.11b: 11Mbps; 802.11n: MCS0 to MCS7
Wireless mode	Client or access point
Channel bandwidth	20 MHz & 40MHz
Security	WPA, WPA2, WPA Enterprise (client mode, MSCHAP/PEAP)
Antenna connector	SMA RP-female

Product	PN
CloudGate LoRaWAN Multi-region expansion card	CG2131-12193