

OPTION

# CloudGate

## LORAWAN EXPANSION CARD



## CONNECTING LoRaWAN SENSORS to the Cloud

Option LoRaWAN 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 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:

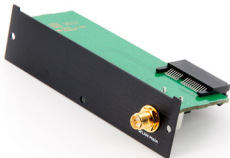
LoRaWAN sensor node in the LoRaWAN application (see specifications)

LORAWAN FUNCTIONALITY	
Feature	Description
Radio protocol	• LoRaWAN
Baseband processor	• Semtech SX1301
Regional variants	• 902-928MHz, 868MHz, 433MHz (future)
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
	CE, FCC/ISED



### Additional features

- Compliant with Chirpstack and LoraIoT LoRaWAN network controllers
- Complaint with Actility ThingPark Enterprise and ThingPark Wireless with optional LRR forwarder
- Can communicate with LoRaWAN class A and class C devices



OPTIONAL WLAN FUNCTIONALITY	
WiFi expansion card in CloudGate gateway front slot with back-to-front connector card	
Feature	Description
Number of users	up to 8 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

