OPTION

2AR Groupe

CloudGate

OPTION.com

Smart wireless **M2M SOLUTIONS**

- Transportation & Logistics
- Industrial & Remote Asset Monitoring
- Smart Cities & Environmental Monitoring
- Healthcare

Expansion Cards

Wireless cards

WLAN CG 2101-11921

- 802.11 a/b/g/n
- Simultaneous client and access point mode (10 users)
- Failover to Wireless LAN client for WAN connectivity
- Dual SSID

WLAN access point CG 2102-11994

- 802.11 a/b/g/n
- Access point, up to 32 simultaneous users

XBee/Bluetooth 1008826

- XBee or XBee Pro compliant
- Bluetooth LE option available

Ethernet cards

4-port Ethernet

- 4 port 10/100 Base-T, µSD card CG 1104-11936
  or
- 4 port 10/100 Base-T, µSD card with 2 ports Class 4 PoE or 4 ports up to Class 3 Power Over Ethernet (PoE) to allow you to power external devices. (requires special power supply) CG 1103-11936 with PoE

1-port Ethernet CG 1109-11991

- 1 port 10/100 Base-T, µSD card

Serial cards

Low cost serial CG 1101-11919

- One RS-232 serial port. 921.6 Kbaud maximum speed

Industrial serial CG 1102-11920

- One RS-232 serial port. 921.6 Kbaud maximum speed
- One 2KV isolated RS-485 serial port. 921.6 Kbaud maximum speed, Full duplex or half duplex, 2 wire or 4 wire. Switchable termination.

Dual serial 1008828

- Two RS-232 serial ports, 921.6 Kbaud max. speed
- One USB type A Host port

Specialty cards

Telematics CG 1106-11957,
CG 5106-11983 with I/O expander, CG 5106-11984 with CAN I/O expander

- Adds flexible I/O and connectivity for industrial telematics applications to CloudGate
- Built in 3 axis accelerometer for movement detection and other applications
- Additional SIM card slot for backup or roaming SIM
- Built in microcontroller offloads all I/O from CloudGate
- Breakout card available for developers

nanoWiPOM 1008825

- Two RS-232 ports, and one RS-485 port as MODBUS master or slave
- Two Analog Inputs, selectable as 4-20mA, 0-5V or 0-10V
- Four Digital Inputs, Two Digital Outputs (High current)

KNX CG 1110-12012 (CG 5112-12023 with RS485 expander)

- KNX Twisted Pair TP1 interface and 80mA DPSU
- On board Real Time Clock and µSD socket
- USB connector and I/O expander for additional interfacing (2nd KNX TP1 or RS485)
- Built-in microcontroller offloads all I/O from CloudGate

Development cards

Developer CG 1105-11937
for software developer

- Extended format card with headers for all interfaces
- Includes headers for access to USB, USB on the go, RS-232, I2C, SPI/SD and GPIO lines.
- On board temperature sensor, relay, SD card slot and RS232 serial port

Breadboard CG 1108-11980
for hardware developer

SDK + HDK

- Ideal for prototyping your own expansion card
- Supports 3 types of connections:
  - All signals on the back connector can be tapped off on breadboard area near this connector
  - 2.54mm pitch components can be soldered on main breadboard area
  - 3.5mm pitch connectors can be soldered on front two rows to provide a more reliable and longterm connection

Accessories

Power Supply

- Standard 9-33VDC power supply
- Output voltage 12V DC
- Max output current 1A
- Number of pins: 4
- Molex Micro-Fit 3.0 connector (MX-43025-0400)
- Can also be delivered as a DC power cable with Micro-Fit connector (3m)

3G WWAN Antenna

- 800-2200MHz for 3G (GSM or CDMA)
- SMA male connector
- Rotatable hinge design
- 3" length
- Recommended: Taoglas TG.09.0113

4G WWAN/GPS Antenna

- 698-2690 MHz for 2G/3G/4G/GPS
- SMA male connector
- Hinged design
- 7" Length
- Recommended: Taoglas TG.10.0113

WLAN Antenna

- 2.4 and 5 GHz for WiFi
- RP-SMA male connector
- Hinged design
- 6" Length
- Recommended: Taoglas GW.59.3153

Torx T6 Screwdriver

- A Torx T6 screwdriver is needed when installing/removing an expansion card or SIM card

External antenna options also available

CloudGate UNIVERSE (http://cloudgate.option.com)

- Device and Radio Settings:
  - Auto Recovery Settings
  - APNs
  - Connection Monitoring Settings
  - Username/password, etc.
- Drivers for expansion modules
- Applications

CONFIGURE ONE
of your devices for a specific site.

CONFIGURE SOME
of your devices for a particular application or customer.

CONFIGURE ALL
of your devices to the same settings.

OPTION

LoRa™

CloudGate

LORAWAN EXPANSION CARD

CONNECTING LoRaWAN SENSORS
to the Cloud

Option LoRaWAN enables the customer to have an end to end LoRa network using one or more CloudGates 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

CloudGate

MONNIT EXPANSION CARD

CONNECTING
LoRaWAN SENSORS
to the Cloud

Features	Description
LoRaWAN functionality • Radio protocol • Baseband processor • Regional variants • Number of nodes per card • Security • Antenna connector	 • LoRaWAN • Semtech SX1301 • 902-928MHz, 868MHz, 433MHz (future) • ~1000 (assuming 30 seconds airtime per node per day) • 128-bit AES encryption (send/receive) • SMA RP (female)
Optional WLAN functionality • Radio protocols • Frequency bands and channels • Speed • Guest network • Wireless mode • Number of users per card • Security • Antenna connector	 • 802.11 a/b/g/n • 2.4GHz, channels 1-11, 20MHz bandwidth • Up to 65Mbps • Yes (dual SSID) • Simultaneous client & access point • 10 max • WPA-PSK, WPA2-PSK, mixed WPA/WPA2-PSK • SMA RP (female)
Operating temperature	• -30 to +70 °C
Humidity	• 5 to 95% RH, non-condensing
Storage temperature	• -40 to +85 °C

The LoRaWAN base station expansion card for CloudGate

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

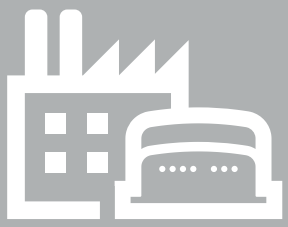
- **LoRa Forwarder**: LoRaWAN packet forwarder node to communicate with LoRaWAN server
- **LoRa Server**: LoRaWAN server node to communicate with LoRaWAN gateways
- **LoRa App**: Manage LoRaWAN sensors in a LoRaWAN application
- **LoRa Device**: LoRaWAN sensor node in the LoRaWAN application (see on the right)

LuvitRED

www.option.com

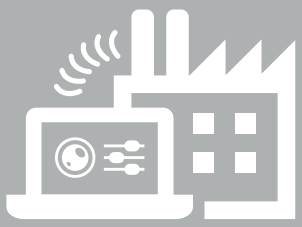
DataSheet_v1.1

1. Place sensors on or around "things" you want to monitor



2. Setup CloudGate to communicate with sensors and send data to Cloud platform

3. Analyze data, receive real-time alerts by text/ email, wherever you are



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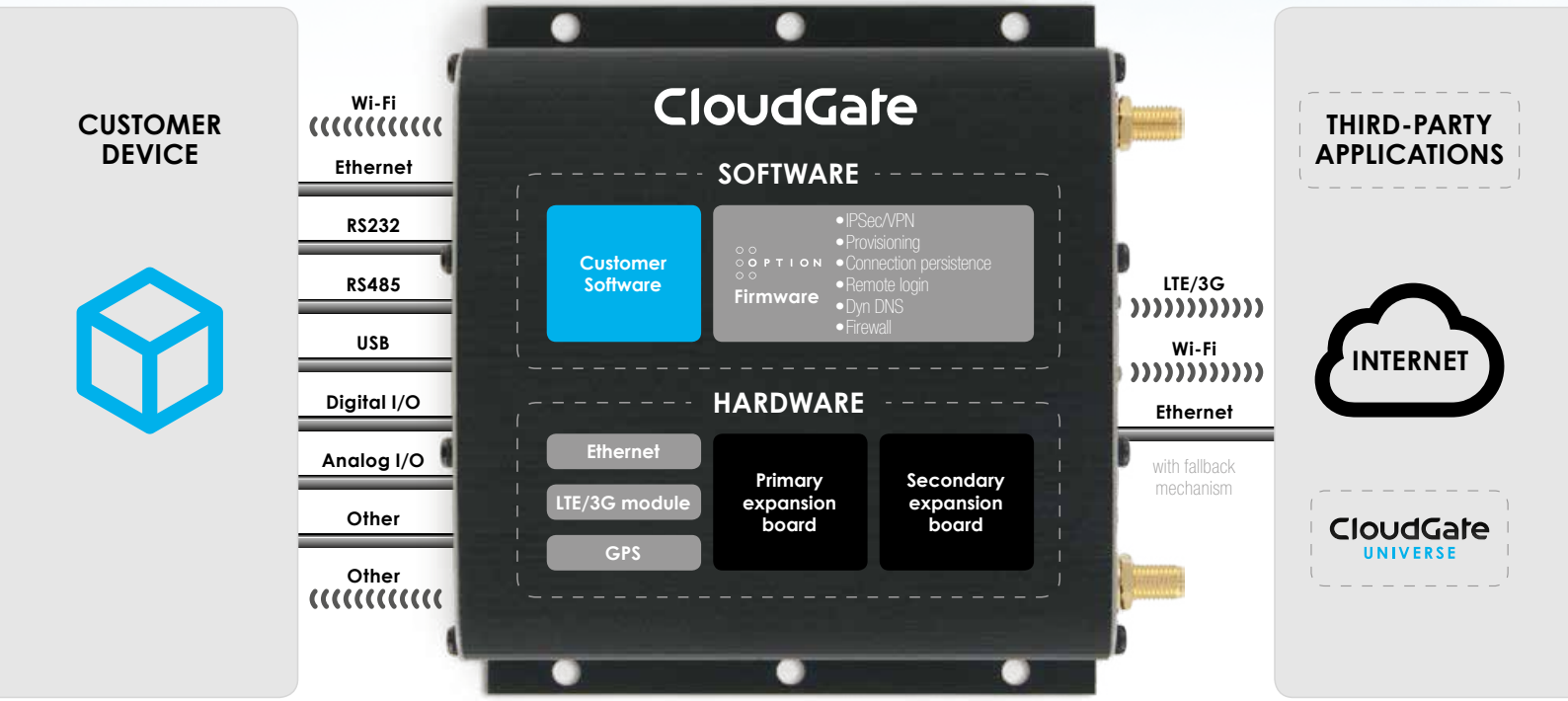
OPTION

CloudGate

Smart wireless
M2M SOLUTIONS

CloudGate is the carrier-approved M2M solution platform that delivers device connectivity, security and processing power for global M2M applications. Quick and cost-effective to implement, each device comes with CloudGate Universe, Option's cloud-based configuration and deployment platform, as well as the CloudGate SDK for rapid application development and the CloudGate HDK for prototyping custom expansion cards. A pre-built library of software applications and a selection of modular hardware extensions means that CloudGate solutions deliver ease of deployment and maximum flexibility. Only Option delivers a complete M2M ecosystem.



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option.com

DataSheet_v1.3

1. Select a CloudGate model with expansion cards and/or accessories to suit your needs

2. Configure CloudGate Universe, the provisioning server

3. ...and start to CONNECT THINGS to the Cloud

OPTION

LuvitRED

The visual editor of LuvitRED is based on the User Interface from IBM's Node-Red. The Node-Red server is rewritten in a Lua server called Luvit. Lua is used because it is a lightweight, simple to learn programming language that has an easy to use native C interface that makes integration of C libraries relatively simple. Option has completely redesigned and enhanced the core set of nodes to focus on the ability to rapidly solve common data collection, transmission and control problems found in B2B IoT/M2M applications.

TIME-SAVER

LuvitRED is a substantial time-saver, the need for no or only minimal programming skills means that people designing M2M applications can focus on innovation and delivering business value, rather than technical concerns.

REDUCED SALES CYCLE

LuvitRED allows people designing M2M applications to focus on innovation and delivering business value, rather than spending time and money on developing proof of concepts.

RAPID PROTOTYPE

Based on the Node-RED user interface, LuvitRED enables CloudGate users to rapidly prototype, adapt and deploy innovative M2M solutions via an easy-to-use method of "visual wiring".

REDUCE COST & RISK

LuvitRED gives Mobile Network Operators(MNOs), resellers/system integrators and IT departments the ability to reduce cost and risk by implementing solutions faster.

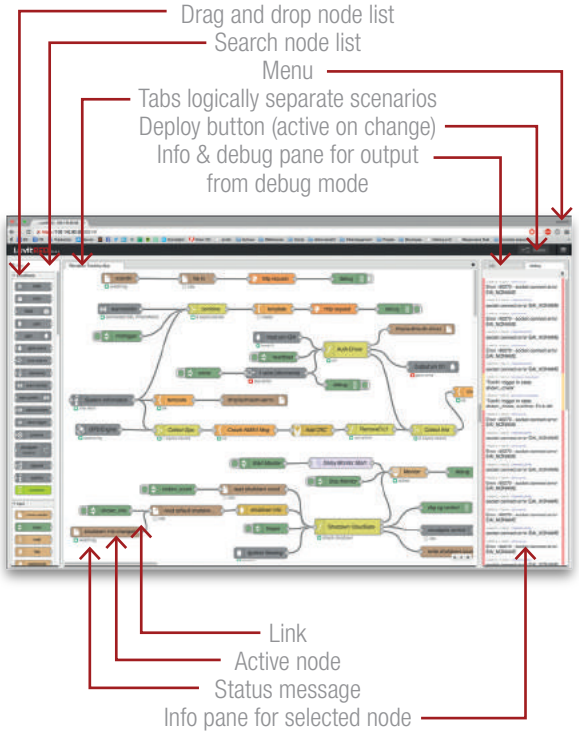
DRIVE GREATER VALUE

LuvitRED helps companies drive greater value from M2M applications. Option is truly delivering on the promise of Smart M2M solutions.
nctionality in a single basic unit. The CloudGate is simple to configure locally or remotely from your PC, tablet or SmartPhone.

KEY BENEFITS

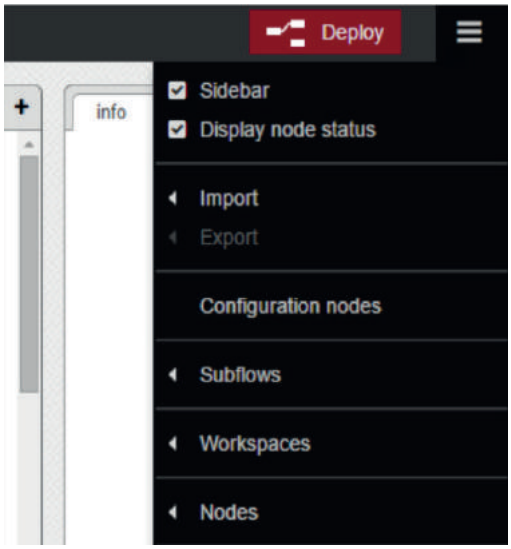
- Ease of Use – a graphical, "drag and drop" link configuration environment for connecting CloudGate devices
- High Performance – with a small memory footprint, LuvitRED is compatible with lightweight, power efficient gateways and helps build responsive M2M apps
- Rapid Deployment – once created, a configuration can be deployed with just a few clicks using CloudGate Universe
- Comprehensive Node Set – LuvitRED offers a rich set of "nodes" for common M2M gateway devices, including Serial, GPS, MODBUS and more
- Multiple Control & Monitoring Points – LuvitRED includes standard protocols such as TCP, UDP, HTTP, MQTT, AMQP, MODBUS, BACnet and SNMP and popular cloud AEP systems such as ThingWorx, Axeda, Exocite and AT&T M2X. LuvitRED incorporates access to wireless and wired sensors, GPIOs and sensor buses such as 1-wire.
- No Cost – LuvitRED is part of the standard toolset provided with the CloudGate solution and extends the value of the CloudGate ecosystem

LUVITRED DEVELOPMENT SCREEN



THE LUVITRED MENU

- Enable node status messages
- Import & export nodes from clipboard or library
- Edit / View / Delete configuration nodes
- Create flows and encapsulate in a node
- Add / Delete tabs
- Allows you to download new nodes from our online LuvitRed repository



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