OPTION

CloudGate nano

LTE CAT M1/NB1

AVAILABLE WITH OPTIONAL WiFi, LoRaWAN or BATTERY

NEW

The ideal Smart Building & Smart Metering Gateway

- CloudGate with LTE CatM1/NB1 modem
- Ethernet, M-Bus and serial (RS232/RS485) interface
- Optional WiFi or LoRaWAN or Battery backup

OPTION

Superior indoor performance, ideal for smart building and smart energy

CloudGate nano was created with smart buildings in mind. The use of a LTE Cat M1/NB1 modem with high-power chipset ensuring better indoor coverage compared to traditional 2G/3G/4G modems, allows to connect devices deep inside buildings. By adding a Modbus and M-Bus connector it is possible to connect electricity, gas, water or calorie meters but also wired sensors that need to send data to a Cloud platform.

With the powerful LuvitRED program on CloudGate it is very straightforward to create the required data flow on the gateway or to perform edge processing on the data before it is sent to the Cloud. Data reduction through edge processing is vital in case of low bandwith (and higher cost per bit) protocols such as CAT-M or NB-IoT to improve data performance and reduce connectivity cost.

LTE Cat-M or NB-IoT

NB-IoT supports ultra-low complexity devices with very narrow bandwidth of 180 kHz. Due to its narrow bandwidth, the data rate peaks at around 60 kbps (for NB1). On the other hand, Cat-M1 operates at 1.08 MHz bandwidth with higher device complexity/cost than NB-IoT. The wider bandwidth allows Cat-M1 to achieve greater data rates (up to 1 Mbps for cat M1) and lower latency (10 to 15ms vs 1.6s to 10s). The link budget (coverage) for NB-IoT is also higher (164dB) than for LTE Cat M1 (155.7dB) and much higher than LTE Cat 4 (142.7dB) which means that coverage under difficult circumstances (like indoor) is best in Cat-NB1 mode.

Most common use cases of NB-IoT include utility meters and sensors. Typical use cases for Cat-M1 include connected vehicles and alarm panels.

Cat-M1 and NB-IoT are considered future-proof and are viewed as 5G technologies.

Feature	Sub Feature	Description
Module	Quectel BG96	• Global multimode LTE Cat M1/NB-IoT/EGPRS module with integrated GNSS
WWAN Modem LTE	Supported frequency bands	• FDD-LTE : B1/ B2/ B3/ B4/ B5/ B8/ B12/ B13/ B18/ B19/ B20/ B25/ B26/ B28 • TDD-LTE : B39 (for Cat M1 only)
	Max. Connectivity speeds	• Cat M1: Max. 375Kbps (DL), Max. 375Kbps (UL) • Cat NB1: Max. 32Kbps (DL), Max. 70Kbps (UL)
WWAN Modem 2G	Supported frequency bands	• 850/900/1800/1900Mhz
	Max. Connectivity speeds	• EDGE: Max. 296Kbps (DL), Max. 236.8Kbps (UL) • GPRS: Max. 107Kbps (DL), Max. 85.6Kbps (UL)
WWAN antenna	Antenna connector	• 1x SMA (WWAN Main)
SIM	Type	• USIM/SIM, class B and class C
	Dimension	• microSIM (3FF)
	Location	• Behind back cover plate
Ethernet interface	Speed	• 10/100Mbps (IEEE 802.3)
	Connector	• 1x RJ45, SW selectable as LAN or WAN
M-Bus interface	Type	• Master only
	Max # slaves	• 4
	Connector	• 2-pin
Serial interface	RS232 mode	• RX, TX, CTS, RTS, GND
	RS485 mode	• Full duplex (RB+, RA-, TB+, TA-, GND) or • Half duplex (TB+, TA-, GND)
	Connector	• 5-pin
LED	3 multi-color	• System • WWAN state • WWAN signal
MicroSD card holder	Available	• On main PCB
	Location	• Behind back cover plate
WLAN (*)	Optional	• 802.15.4 b/g/n. 2.4GHz or 5GHz. Client or access point mode • Max 32 clients can be connected
	Connector	• 1x RP-SMA (back -side)
LoRaWAN(*)	Optional	• software-configurable as 8xxMHz or 9xxMHz
	Connector	• 1x RP-SMA (back -side)
Battery (*)	Optional	• Li-ion battery for last-gasp function (up to 1h) • Capacity 980mAh
Power control	Available	• Timed wakeup. Ignition sensing (with extra 3rd pin on DC power connector)
Programming	Available	• LuvitRED (graphical drag & drop) or SDK (C code)
Aluminum case	Dimension	• 102 x 97 x 26 mm • 4 x 3.8 x 1 in
	Weight	• 220 g/7.7 oz (excl. optional cards)
	Front/back plate mounting	• 5x Torx T10 front, 5x Torx T10 back
	CloudGate mounting	• Bulkhead: 2x4mm front, 2x4mm back • DIN rail: with optional adapter
Environmental	Operating temperature	• -30°C to 70°C (-22°F to 158°F)
	Storage temperature	• -40°C to 85°C (-40°F to 185°F)
Certification		• CE, FCC, PTCRB, ISED, AT&T, Verizon, US Cellular, Telus
Compliance		• RoHS, REACH, WEEE
Accessories		• LTE antenna • AC power supply or DC power cable • DIN rail mount • Battery (not for versions with WLAN card or LoRaWAN card)

Product	PN
CloudGate nano	CM0126-12161
CloudGate nano with battery (WLAN & LoRaWAN not possible)	CM0126-12195
CloudGate nano with WLAN (battery back-up & LoRaWAN not possible)	CM0126-12162
CloudGate nano with LoRaWAN (battery back-up & WLAN not possible)	CM0126-12202