

# OnCell G3150A-LTE Series

## *Rugged LTE serial/Ethernet-to-cellular gateway*



- > Dual cellular operator backup with dual-SIM GuaranLink for reliable cellular connectivity
- > Rugged hardware design well suited for hazardous locations (ATEX Zone 2/IECEx)
- > VPN secure connection capability with IPSec, GRE, and OpenVPN protocols
- > Industrial design with dual-power inputs and built-in DI/DO support
- > Power isolation design for better device protection against harmful electrical interference



### Introduction

The OnCell G3150A-LTE is a reliable, secure, LTE gateway with state-of-the-art global LTE coverage. This LTE cellular gateway provides a more reliable connection to your serial connection and Ethernet network for cellular applications.

To enhance industrial reliability, the OnCell G3150A-LTE features isolated power inputs, which together with high-level EMS and wide-temperature support give the OnCell G3150A-LTE the highest level of device stability for any rugged environment. In addition, with dual-SIM GuaranLink and dual power inputs, the OnCell G3150A-LTE supports network redundancy to ensure uninterrupted connectivity.

The OnCell G3150A-LTE also comes with a 3-in-1 serial port for serial over LTE cellular network communication. Use the OnCell G3150A-LTE to collect data and exchange data with serial devices.

### High-Speed Remote Gateway with VPN and Network Security

- Multi-band support
- Secure and reliable VPN support with NAT/ OpenVPN / GRE/ IPSec functionality
- Cybersecurity features based on IEC 62443

### Industrial Isolation and Redundancy Design

- Dual power inputs for power redundancy
- Dual-SIM support for cellular connection redundancy
- Power isolation for power source insulation protection
- 4-tier GuaranLink for reliable cellular connectivity
- -30 to 70°C wide operating temperature support

### Specifications

#### Cellular Interface

**Standards:** GSM/GPRS/EDGE/UMTS/HSPA/LTE

**Band Options:**

EU Band:

- B1 (2100 MHz) / B3 (1800 MHz) / B7 (2600 MHz) / B8 (900 MHz) / B20 (800 MHz)

- UMTS/HSPA 2100/1900/850/800/900 MHz

US Band:

- B2 (1900 MHz) / B4 (AWS) / B5 (850 MHz) / B13 (700 MHz) / B17 (700 MHz) / B25 (1900 MHz)

- UMTS/HSPA 2100/1900/AWS/850/900 MHz

- Universal quad-band GSM/GPRS/EDGE 850/900/1800/1900 MHz

**LTE Data Rate:**

- 20 MHz bandwidth: 100 Mbps DL, 50 Mbps UL
- 10 MHz bandwidth: 50 Mbps DL, 25 Mbps UL

**HSPA Data Rate:** 42 Mbps DL, 5.76 Mbps UL (Category 24, 6)

**EDGE Data Rate:** 237 kbps DL, 237 kbps UL (Class 10, 12)

**GPRS Data Rate:** 85.6 kbps DL, 42.8 kbps UL

#### LAN Interface

**Number of Ports:** 1

**Speed:** 10/100 Mbps, auto MDI/MDIX

**Connector:** 8-pin RJ45

#### Interface

**Cellular Antenna Connectors:** 2, SMA (female), MIMO for LTE, antenna diversity for WCDMA

**GNSS:** 1 SMA (female), GPS (1575.42 MHz), GLONASS (1602 MHz)

**Console Port:** RS-232 (RJ45)

**LED Indicators:** PWR1, PWR2, READY, FAULT, CELLULAR SIGNAL, SIM1, SIM2, 2G, 3G, 4G, GPS, TX/RX

**Ground Screw:** M5

**Reset Button:** Power Reset/Factory Default Reset

#### I/O Interface

**Alarm Contact:** 1 relay output with current carrying capacity of 1 A @ 24 VDC

**Digital Inputs:** 2 electrically isolated inputs

- +13 to +30 V for state "1"
- +3 to -30 V for state "0"

## Software

**Network Protocols:** ICMP, DDNS, TCP/IP, UDP, DHCP, Telnet, DNS, SNMP, HTTP, HTTPS, SMTP, NTP (SNTP client), ARP

**Routing/Firewall:** NAT, VPN tunneling, port forwarding, IP/MAC/Port filtering, Access IP lists

### VPN:

- IPsec VPN:
  - > Encryption: DES, 3DES, AES, MD5, SHA-1, DH2, DH5
  - > Authentication: PSK/X.509/RSA
  - > GRE over IPsec
- OpenVPN:
  - > OpenVPN (Server / Client)
  - > Tunnel mode (routing) and TAP mode (bridge)
  - > Encryption: Blowfish CBC, DES CBC, DES-EDE3 CBC, AES-128/192/256 CBC
- NAT-T, PFS, DPD
- Throughput:
  - > 20 Mbps max.\*
  - > Concurrent VPN Tunnels: Max. of 5 (Responder/Initiator)

\*The maximum throughput is determined using specific testing equipment; the actual throughput depends on the cellular connection environment and conditions.

**Applications:** Real COM, Reverse Real COM, TCP Server, TCP Client, UDP, RFC2217

**Management Options:** Remote SMS Control, SNMPv1/v2c/v3, Web / Telnet / Serial Console, alarm via Email, SMS, SNMP trap

**GPS:** NMEA

## Software Specifications (Moxa Proprietary)

**GuaranLink:** Dual-SIM, 4-tier heartbeat for reliable and persistent cellular connectivity

**OnCell Central Manager:** A powerful tool that makes two sites configured with Private IP addresses to access each other over a public network. Capable large scale centralized device management up to 2000pcs device connection and 200 lines for data transfer. Provide Pie charts present device status and information in a clear and readable format and easy to manage, group, monitor, configure, and upgrade the firmware of all your devices from OnCell Central Manager

**Wireless Search Utility:** Simple device configuration and management

## SIM Interface

**Number of SIMs:** 2, full-sized (1FF)

## Serial Interface

**Number of Ports:** 1

**Serial Standards:** RS-232/422/485, software selectable

**Connector:** DB9 male

## Serial Communication Parameters

**Data Bits:** 5, 6, 7, 8

**Stop Bits:** 1, 1.5, 2 (when parity = None)

**Parity:** None, Even, Odd, Space, Mark

**Baudrate:** 75 bps to 921.6 kbps

## Serial Signals

**RS-232:** TxD, RxD, RTS, CTS, DTR, DSR, GND

**RS-422:** Tx+, Tx-, Rx+, Rx-, GND

**RS-485-4w:** Tx+, Tx-, Rx+, Rx-, GND

**RS-485-2w:** Data+, Data-, GND

## Physical Characteristics

**Housing:** Metal, providing IP30 protection

**Weight:** 492 g (1.08 lb)

**Dimensions:** 126 x 30 x 107.5 mm (4.96 x 1.18 x 4.23 in)

## Environmental Limits

### Operating Temperature:

Standard Models: 0 to 55°C (32 to 131°F)

Wide Temp. Models: -30 to 70°C (-22 to 158°F)

**Storage Temperature:** -40 to 85°C (-40 to 185°F)

**Ambient Relative Humidity:** 5 to 95% (non-condensing)

## Power Requirements

**Number of Power Inputs:** 2 (terminal block), redundant dual inputs

**Input Voltage:** 12 to 48 VDC

**Input Current:** 0.7 A @ 12 VDC; 0.2 A @ 48 VDC

**Reverse Polarity Protection:** Present

## Standards and Certifications

**Safety:** UL 60950-1

**Hazardous Location:** ATEX Zone 2, IECEx (available in April)

**EMC:** EN 61000-6-2/6-4

**EMI:** CISPR 22, FCC Part 15B Class A

### EMS:

IEC 61000-4-2 ESD, Level 4: Contact: 8 kV; Air: 15 kV

IEC 61000-4-3 RS, Level 3: 80 MHz to 1 GHz: 10 V/m

IEC 61000-4-4 EFT, Level 3: Power: 2 kV; Signal: 1 kV

IEC 61000-4-5 Surge, Level 3: Power: 2 kV; Signal: 1 kV

IEC 61000-4-6 CS, Level 3: 10 V; 150 kHz to 80 MHz

IEC 61000-4-8, Level 4: 30 A/m

**Freefall:** IEC 60068-2-32

**Vibration:** IEC 60068-2-6

**Shock:** IEC 60068-2-27

### Radio:

• FCC ID N7NMC7355

• EN 301 489-1, EN 301 489-7, EN 301 511/4

## MTBF (mean time between failures)

**Time:** > 528,596 hrs

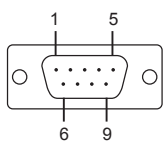
**Standard:** Telcordia SR332

## Warranty

**Warranty Period:** 5 years

**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

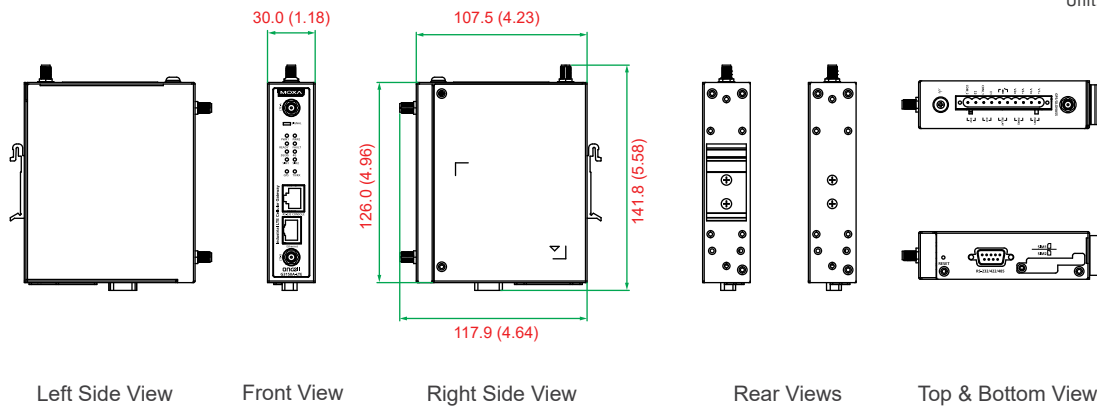
DB9 male connector



PIN	RS-232	RS-422/485-4w	RS-485-2w
1	DCD	TxD-(A)	—
2	RxD	TxD+(B)	—
3	TxD	RxD+(B)	Data+(B)
4	DTR	RxD-(A)	Data-(A)
5	GND	GND	GND
6	DSR	—	—
7	RTS	—	—
8	CTS	—	—
9	—	—	—

## Dimensions

Unit: mm (inch)



## Ordering Information

### Available Models

**OnCell G3150A-LTE-US:** Industrial LTE cellular gateway, B2/B4/B5/B13/B17/B25, 0 to 55°C operating temperature

**OnCell G3150A-LTE-US-T:** Industrial LTE cellular gateway, B2/B4/B5/B13/B17/B25, -30 to 70°C operating temperature

**OnCell G3150A-LTE-EU:** Industrial LTE cellular gateway, B1/B3/B7/B8/B20, 0 to 55°C operating temperature

**OnCell G3150A-LTE-EU-T:** Industrial LTE cellular gateway, B1/B3/B7/B8/B20, -30 to 70°C operating temperature

**Note:** Please visit Moxa's website for a complete list of optional wireless accessories and antennas available for Moxa's wireless products.

### Optional Accessories (can be purchased separately)

**A-CRF-SMSF-R3-100:** 1 m cellular RF cable with SMA connector and magnetic base

**ANT-LTEUS-ASM-01:** 2 x UMTS/LTE cellular antennas (US model)

**ANT-LTE-ASM-02:** 2 x UMTS/LTE cellular antennas (EU model)

**WK-36-02:** Wall-mounting kit

### Package Checklist

- OnCell G3150A-LTE
- 2 x UMTS/LTE cellular antennas
- DIN-rail kit
- Quick installation guide (printed)
- Warranty card



Model Name	A-CRF-SMSF-R3-100	ANT-LTEUS-ASM-01	ANT-LTE-ASM-02	ANT-GPS-OSM-05-3M	WK-36-02
Description	Magnetic Mount Antenna Base: SMA, 1 m	US LTE Antenna, 1 dBi, 2 pcs	EU LTE Antenna, 2 dBi, 2 pcs	GPS Antenna, SMA, 1 m	OnCell G3150A-LTE wall-mounting kit, 2 pcs