

## Industrial LTE Cat. 1 cellular gateways



### Features and Benefits

- Low power consumption (40 mW in standby)
- GuaranLink for reliable cellular connectivity
- Dual cellular operator backup with dual-SIM
- Cellular WAN and Ethernet WAN backup mechanism for a complete path redundancy
- Rugged hardware design well suited for hazardous locations (ATEX Zone 2/ IECEx)
- VPN secure connection capability with IPsec, GRE, and OpenVPN protocols

### Certifications



## Introduction

The OnCell 3120-LTE-1 Series is a set of reliable, secure, low power consumption LTE gateways with state-of-the-art global LTE Cat 1 coverage. These LTE cellular gateways provide reliable connections from remote serial and Ethernet devices to a cellular network so that your applications can be easily implemented for IIoT remote-access scenarios. With its efficient power saving features, the OnCell 3120-LTE-1 Series lowers power consumption to less than 40 mW when in standby mode which can be managed using schedules. To enhance industrial reliability, the OnCell 3120-LTE-1 features GuaranLink to ensure robust cellular connectivity.

### Remote Access Gateway with VPN and Network Security

- Secure and reliable VPN support with NAT/OpenVPN/GRE/IPsec functionality
- Cybersecurity features based on IEC 62443-4-2

### Industrial-grade Reliability

- Rugged hardware design well suited for hazardous locations (ATEX, C1D2, IECEx)
- GuaranLink for reliable cellular connectivity
- WAN backup between cellular and Ethernet
- -30 to 70°C wide operating temperature
- Low power consumption: Less than 40 mW in standby mode

## Specifications

### Cellular Interface

|                    |                                                                                                                                                                                                                     |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cellular Standards | LTE Cat. 1<br>HSPA<br>UMTS<br>EDGE<br>GPRS<br>GSM                                                                                                                                                                   |
| LTE Data Rate      | 10 MHz bandwidth: 10.2 Mbps DL, 5.2 Mbps UL                                                                                                                                                                         |
| HSPA Data Rates    | 7.2 Mbps DL, 5.76 Mbps UL                                                                                                                                                                                           |
| Band Options (EU)  | LTE Band 1 (2100 MHz) / LTE Band 3 (1800 MHz) / LTE Band 7 (2600 MHz) / LTE Band 8 (900 MHz) / LTE Band 20 (800 MHz) / LTE Band 28A (700 MHz)<br>UMTS/HSPA 900 MHz / 1800 MHz / 2100 MHz<br>GSM 900 MHz / 1800 MHz  |
| Band Options (AU)  | LTE Band 1 (2100 MHz) / LTE Band 3 (1800 MHz) / LTE Band 5 (850 MHz) / LTE Band 8 (900 MHz) / LTE Band 9 (1800 MHz) / LTE Band 18 (850 MHz) / LTE Band 19 (850 MHz) / LTE Band 26 (850 MHz) / LTE Band 28 (700 MHz) |

|                                       |                                                                                                                                                                                                                                               |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                       | UMTS/HSPA 2100 MHz / 850 MHz / 800 MHz / 900 MHz                                                                                                                                                                                              |
| Band Options (US)                     | LTE Band 2 (1900 MHz) / LTE Band 4 (1700MHz (AWS)) / LTE Band 5 (850 MHz) / LTE Band 12 (700 MHz) / LTE Band 13 (700 MHz) / LTE Band 14 (700 MHz) / LTE Band 66 (1700 MHz) / LTE Band 71 (600 MHz)<br>UMTS/HSPA 1900 MHz / 1700 MHz / 850 MHz |
| No. of SIMs                           | 2                                                                                                                                                                                                                                             |
| SIM Format                            | Nano SIM                                                                                                                                                                                                                                      |
| Cellular Antenna Connectors           | 2 SMA female                                                                                                                                                                                                                                  |
| <b>Ethernet Interface</b>             |                                                                                                                                                                                                                                               |
| 10/100BaseT(X) Ports (RJ45 connector) | 2                                                                                                                                                                                                                                             |
| <b>USB Interface</b>                  |                                                                                                                                                                                                                                               |
| No. of USB Ports                      | 1                                                                                                                                                                                                                                             |
| USB Connector                         | USB Type A                                                                                                                                                                                                                                    |
| USB Standards                         | USB 2.0                                                                                                                                                                                                                                       |
| <b>Serial Interface</b>               |                                                                                                                                                                                                                                               |
| No. of Ports                          | 1                                                                                                                                                                                                                                             |
| Connector                             | DB9 male                                                                                                                                                                                                                                      |
| Serial Standards                      | RS-232/422/485                                                                                                                                                                                                                                |
| Data Bits                             | 5, 6, 7, 8                                                                                                                                                                                                                                    |
| Stop Bits                             | 1, 1.5, 2                                                                                                                                                                                                                                     |
| Parity                                | None, Even, Odd, Space, Mark                                                                                                                                                                                                                  |
| Baudrate                              | 75 bps to 921.6 kbps                                                                                                                                                                                                                          |
| Console Port                          | RS-232 (TxD, RxD, GND), 4-pin header output (115200, n, 8, 1)                                                                                                                                                                                 |
| <b>Serial Signals</b>                 |                                                                                                                                                                                                                                               |
| RS-232                                | TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND                                                                                                                                                                                                        |
| RS-422                                | Tx+, Tx-, Rx+, Rx-, GND                                                                                                                                                                                                                       |
| RS-485-2w                             | Data+, Data-, GND                                                                                                                                                                                                                             |
| RS-485-4w                             | Tx+, Tx-, Rx+, Rx-, GND                                                                                                                                                                                                                       |

## Ethernet Software Features

|                 |                                                                                                                                                                                                                            |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Management      | GuaranLink<br>DHCP server<br>DDNS<br>ARP<br>Telnet<br>TCP/IP<br>UDP<br>SMTP<br>Remote SMS Control<br>Power Saving<br>Syslog<br>SNMPv1/v2c/v3<br>Serial Console<br>Telnet Console<br>Web Console<br>Wireless Search Utility |
| Firewall        | Filter: MAC, IP protocol, port-based<br>Access IP list                                                                                                                                                                     |
| Security        | HTTPS                                                                                                                                                                                                                      |
| Time Management | SNTP Client                                                                                                                                                                                                                |

### IPsec VPN

|                        |                                      |
|------------------------|--------------------------------------|
| Authentication         | PSK/X.509/RSA                        |
| Encryption             | DES, 3DES, AES, MD5, SHA-1, DH2, DH5 |
| Concurrent VPN Tunnels | 5                                    |

### NAT

|          |                                                     |
|----------|-----------------------------------------------------|
| Features | NAT loopback<br>1-to-1<br>N-to-1<br>Port forwarding |
|----------|-----------------------------------------------------|

### OpenVPN

|                        |                                                                          |
|------------------------|--------------------------------------------------------------------------|
| OpenVPN                | OpenVPN (client and server), Tunnel mode (routing) and TAP mode (bridge) |
| Encryption             | Blowfish CBC, DES CBC, DES-EDE3 CBC, AES-128/192/256 CBC                 |
| Concurrent VPN Tunnels | 5                                                                        |

### Power Parameters

|                             |                |
|-----------------------------|----------------|
| Input Current               | 0.8 A (max.)   |
| Input Voltage               | 9 to 36 VDC    |
| Power Consumption           | 5 W (typ.)     |
| Power Connector             | Terminal block |
| Reverse Polarity Protection | Supported      |
| Power Button                | Reset button   |

### Physical Characteristics

|            |                                              |
|------------|----------------------------------------------|
| Housing    | Metal                                        |
| IP Rating  | IP30                                         |
| Dimensions | 128.5 x 26 x 89.1 mm (5.06 x 1.02 x 3.51 in) |

|                                        |                                                                                                                                                                                                                                                                  |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Weight                                 | 550 g (1.22 lb)                                                                                                                                                                                                                                                  |
| Installation                           | DIN-rail mounting<br>Wall mounting (with optional kit)                                                                                                                                                                                                           |
| <b>Environmental Limits</b>            |                                                                                                                                                                                                                                                                  |
| Operating Temperature                  | Standard Models: 0 to 55°C (32 to 131°F)<br>Wide Temp. Models: -30 to 70°C (-22 to 158°F)                                                                                                                                                                        |
| Storage Temperature (package included) | -40 to 85°C (-40 to 185°F)                                                                                                                                                                                                                                       |
| Ambient Relative Humidity              | 5 to 95% (non-condensing)                                                                                                                                                                                                                                        |
| <b>Standards and Certifications</b>    |                                                                                                                                                                                                                                                                  |
| EMC                                    | EN 55032/35<br>EN 61000-6-2/-6-4                                                                                                                                                                                                                                 |
| EMI                                    | CISPR 32, FCC Part 15B Class A                                                                                                                                                                                                                                   |
| EMS                                    | IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m<br>IEC 61000-4-4 EFT: Power: 1 kV; Signal: 1 kV<br>IEC 61000-4-5 Surge: Power: 1 kV; Signal: 1 kV<br>IEC 61000-4-6 CS: 10 V; 150 kHz to 80 MHz<br>IEC 61000-4-8: 30 A/m |
| Freefall                               | IEC 60068-2-32                                                                                                                                                                                                                                                   |
| Hazardous Locations                    | ATEX<br>IECEX<br>Class I Division 2                                                                                                                                                                                                                              |
| Radio Frequency                        | PTCRB<br>FCC ID SLE-LE910CXNF                                                                                                                                                                                                                                    |
| Radio                                  | RCM<br>KC<br>JATE<br>NCC<br>TELEC                                                                                                                                                                                                                                |
| Carrier Approvals                      | Verizon<br>AT&T                                                                                                                                                                                                                                                  |
| Cellular Standards                     | EN 301511<br>EN 301908-1<br>EN 62311(MPE SAR)<br>AS/CA S042<br>EN 301489-1/-52                                                                                                                                                                                   |
| Safety                                 | IEC 60950-1<br>IEC 62368-1<br>UL 60950-1<br>UL 62368-1                                                                                                                                                                                                           |
| Shock                                  | IEC 60068-2-27                                                                                                                                                                                                                                                   |
| Vibration                              | IEC 60068-2-6                                                                                                                                                                                                                                                    |
| Green Product                          | RoHS, CRoHS, WEEE                                                                                                                                                                                                                                                |
| <b>MTBF</b>                            |                                                                                                                                                                                                                                                                  |
| Time                                   | 585,775 hrs                                                                                                                                                                                                                                                      |
| Standards                              | Telcordia SR332                                                                                                                                                                                                                                                  |

## Warranty

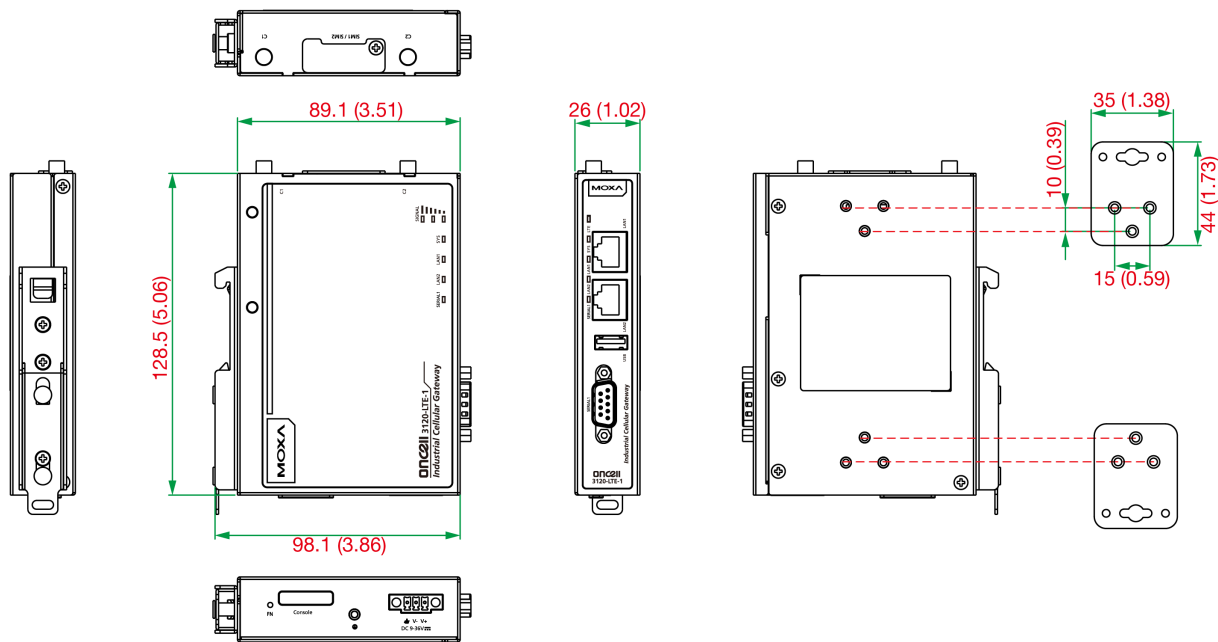
|                 |                                                                      |
|-----------------|----------------------------------------------------------------------|
| Warranty Period | 5 years                                                              |
| Details         | See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a> |

## Package Contents

|                  |                                                                |
|------------------|----------------------------------------------------------------|
| Device           | 1 x OnCell 3120-LTE-1 Series LTE cellular gateway <sup>1</sup> |
| Installation Kit | 1 x DIN-rail kit                                               |
| Documentation    | 1 x quick installation guide<br>1 x warranty card              |

## Dimensions

Unit: mm (inch)



## Ordering Information

| Model Name             | Cellular Standard | LTE Band                                                                                                                                    | Operating Temp. | Mounting       |
|------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| OnCell 3120-LTE-1-EU   | LTE Cat 1         | B1 (2100 MHz) / B3 (1800 MHz) / B7 (2600 MHz) / B8 (900 MHz) / B20 (800 MHz) / B28A (700 MHz)                                               | -0 to 55°C      | Wall, DIN rail |
| OnCell 3120-LTE-1-EU-T | LTE Cat 1         | B1 (2100 MHz) / B3 (1800 MHz) / B7 (2600 MHz) / B8 (900 MHz) / B20 (800 MHz) / B28A (700 MHz)                                               | -30 to 70°C     | Wall, DIN rail |
| OnCell 3120-LTE-1-AU   | LTE Cat 1         | B1 (2100 MHz) / B3 (1800 MHz) / B5 (850 MHz) / B8 (900 MHz) / B9 (1800 MHz) / B18 (850 MHz) / B19 (850 MHz) / B26 (850 MHz) / B28 (700 MHz) | -0 to 55°C      | Wall, DIN rail |
| OnCell 3120-LTE-1-AU-T | LTE Cat 1         | B1 (2100 MHz) / B3 (1800 MHz) / B5 (850 MHz) / B8 (900 MHz) / B9 (1800 MHz) / B18 (850 MHz) / B19 (850 MHz) / B26 (850 MHz) / B28 (700 MHz) | -30 to 70°C     | Wall, DIN rail |

1. An activated nano SIM card (not included) must be provided by a third party Cellular Service Provider.

| Model Name             | Cellular Standard | LTE Band                                                                                                                      | Operating Temp. | Mounting       |
|------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| OnCell 3120-LTE-1-US   | LTE Cat 1         | B2 (1900 MHz) / B4 (1700 MHz) / B5 (850 MHz) / B12 (700 MHz) / B13 (700 MHz) / B14 (700 MHz) / B66 (1700 MHz) / B71 (600 MHz) | -0 to 55°C      | Wall, DIN rail |
| OnCell 3120-LTE-1-US-T | LTE Cat 1         | B2 (1900 MHz) / B4 (1700 MHz) / B5 (850 MHz) / B12 (700 MHz) / B13 (700 MHz) / B14 (700 MHz) / B66 (1700 MHz) / B71 (600 MHz) | -30 to 70°C     | Wall, DIN rail |

## Accessories (sold separately)

### Antennas

|                  |                                                                         |
|------------------|-------------------------------------------------------------------------|
| ANT-LTEUS-ASM-01 | GSM/GPRS/EDGE/UMTS/HSPA/LTE, 1 dBi, omnidirectional rubber-duck antenna |
| ANT-LTE-ASM-02   | GPRS/EDGE/UMTS/HSPA/LTE, 2 dBi, omnidirectional rubber-duck antenna     |

### Wireless Antenna Cables

|                   |                                                                                                    |
|-------------------|----------------------------------------------------------------------------------------------------|
| A-CRF-SMSF-R3-100 | Wireless antenna cable with SMA (male) to SMA (female) connectors, magnetic base, RG-174 type, 1 m |
|-------------------|----------------------------------------------------------------------------------------------------|

### Mounting Kits

|          |                                                                               |
|----------|-------------------------------------------------------------------------------|
| WK-35-04 | Wall-mount kit with 2 plates (35 x 44 x 2.5 mm), 6 screws (FTS x 6 M3 x 4 mm) |
|----------|-------------------------------------------------------------------------------|

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