

CCG-1500 Series

Industrial private 5G cellular gateways



Features and Benefits

- Qualcomm® Snapdragon™ X55
- 5G-ready media converter with industrial-grade FCC/UL/NCC/JET/Telec certifications
- Dual SIM slots
- 2 auto-sensing 10/100/1000 Mbps Ethernet ports
- 1 RS-232/422/485 serial port
- LEDs for easy installation and maintenance
- -40 to 70°C wide-temperature design

Certifications



Introduction

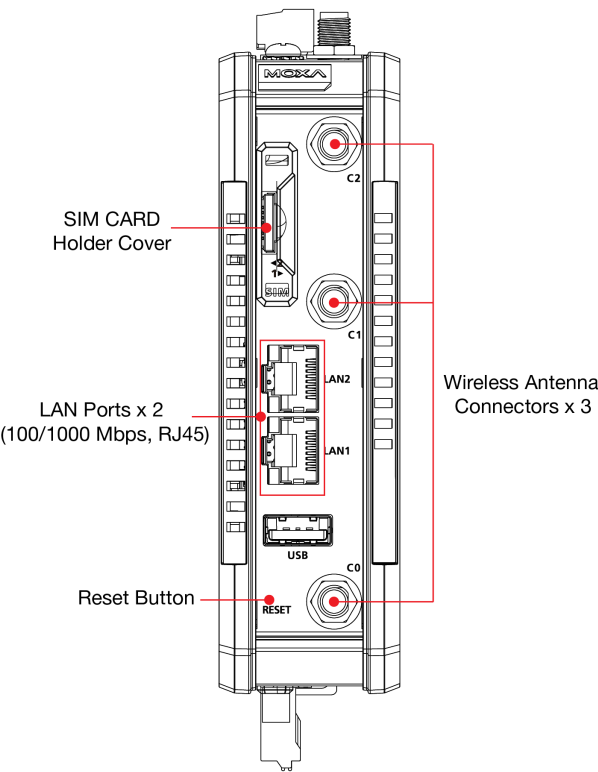
The CCG-1500 Series is designed both as a media converter and a protocol converter. The media converter includes 5G-to-ethernet and 5G-to-serial ports, which can be used for private networks. The protocol converter is mainly for Modbus TCP/RTU conversion. The 5G interface can use Modbus TCP while the serial interface can process Modbus RTU.

The CCG-1500 is built around a Qualcomm® Snapdragon™ X55 Cortex-A7 processor that has been optimized for use in media-conversion scenarios, and is also widely applicable to a variety of industrial solutions. With flexible interfacing options, this tiny, embedded converter is a reliable and secure gateway for data processing at field sites as well as a useful communications platform for large-scale deployments.

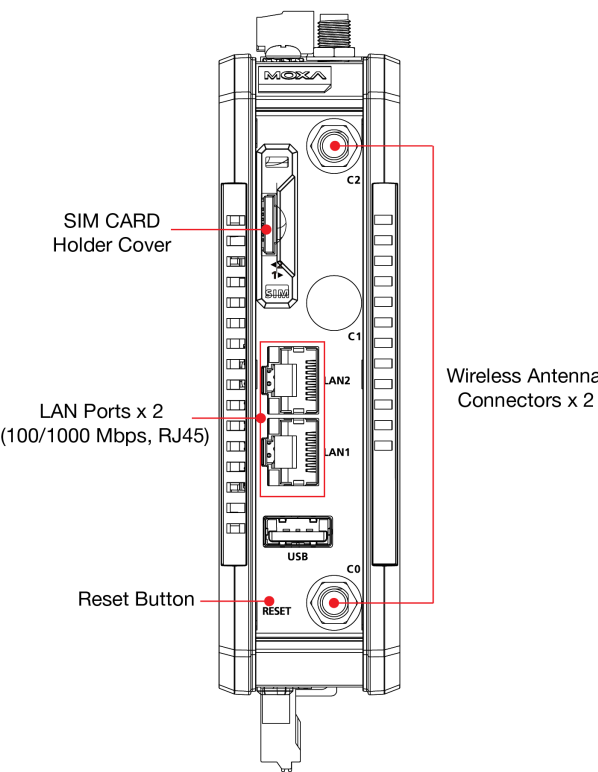
Wide temperature 5G-enabled models are available for extended temperature applications. All units are thoroughly tested in a testing chamber, guaranteeing that the 5G-enabled computing platforms are suitable for wide-temperature applications.

Appearance

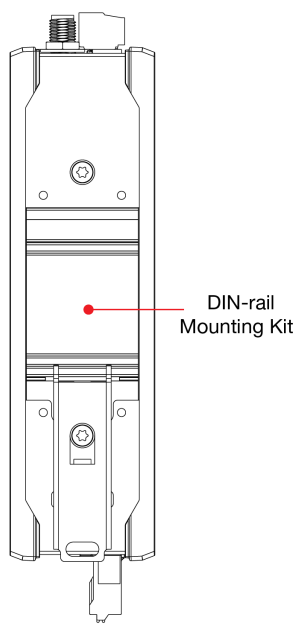
CCG-1510 Front View



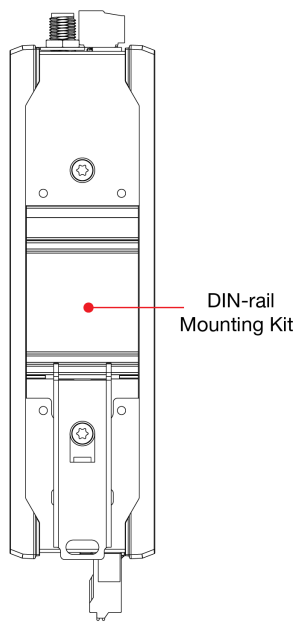
CCG-1520 Front View



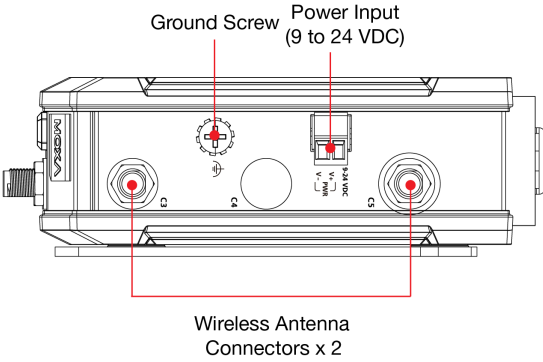
CCG-1510 Rear View



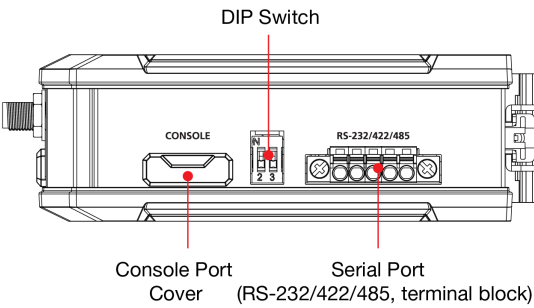
CCG-1520 Rear View



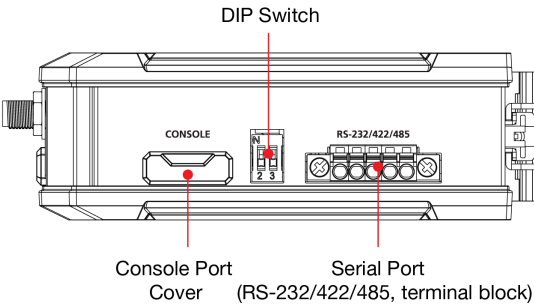
Top View



CCG-1510 Bottom View



CCG-1520 Bottom View



Specifications

Media Converter Interface

Ethernet Ports	Auto sensing 10/100/1000 Mbps ports (RJ45 connector) x 2
Serial Ports	RS-232/422/485 ports x 1 (5-pin terminal block)
Cellular Antenna Connector (with GPS)	CCG-1510 models: SMA x 6 CCG-1520 models: SMA x 4
SIM Format	Nano
Number of SIMs	2

Ethernet Interface

10/100/1000BaseT(X) Ports (RJ45 connector)	2
Standards	IEEE 802.3 for 10BaseT IEEE 802.3ab for 1000BaseT(X) IEEE 802.3u for 100BaseT(X)
Magnetic Isolation Protection	1.5 kV (built-in)

Serial Interface

Console Port	1 x [X2]-pin header to DB9 console port
Data Bits	5, 6, 7, 8
Parity	None, Even, Odd, Space, Mark
Stop Bits	1, 1.5, 2
Baudrate	9600 to 115200 bps

Serial Signals

RS-232	TxD, RxD, RTS, CTS, GND
RS-422	Tx+, Tx-, Rx+, Rx-, GND
RS-485-4w	Tx+, Tx-, Rx+, Rx-, GND

Ethernet Software Features

Configuration Options	Web Console (HTTPS)
Management	LwM2M Client Account Permission
Network Protocols	IP Passthrough Modbus RTU to TCP NAT - Port Forwarding, VPN Passthrough VxLAN
Firewall	Filter: ICMP, IP Address, DoS

Cellular Interface

Cellular Standards	5G Release 15
Frequency Bands Supported	CCG-1510-TW-T: NR: N1 / N3 / N28 / N41 / N78 LTE: B1 / B3 / B7 / B8 / B28 / B38 CCG-1510-US-T: NR: N48 CCG-1510-T: NR: N1 / N3 / N28 / N41 / N48 / N77 / N78 LTE: B1 / B3 / B7 / B8 / B28 / B38 CCG-1520-T: NR: N79

LED Indicators

System	Power x 1 SIM card indicator x 1 5G / LTE indicator x 1
Wireless Signal Strength	Cellular x 3

Power Parameters

Input Voltage	9 to 24 VDC
Power Consumption	Average: 8 W Peak: 11 W
Input Current	9 to 24 VDC @ 1.33 to 0.5 A min
Power Connector	Terminal block

Physical Characteristics

Dimensions	100 x 125 x 35.2 mm (3.93 x 4.92 x 1.38 in)
Housing	Metal SECC
Installation	DIN-rail mounting Wall mounting (with optional kit)
IP Rating	IP30 Note: The rubber SIM cover and console port cover should be attached. For CCG-1520-T, the SMA protection cover must also be attached.
Weight	750 g (1.65 lb)

Environmental Limits

Operating Temperature	-40 to 70°C (-40 to 158°F)
Storage Temperature (package included)	-20 to 70°C (-4 to 158°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

Standards and Certifications

EMC	EN 61000-6-2/-6-4
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 16000-4-2 ESD: Contact:4kV ; Air: 8kV ¹ IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 16000-4-3 RS: 1.8 GHz to 5 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 16000-4-5 Surge: DC: L-G: 2 kV; LAN: L-G: 2 kV; Serial port: 0.5 Kv ² IEC 16000-4-6 CS: 0.15 MHz to 10 MHz: 3V; 10 MHz to 30 MHz: 3~1 V; 30 MHz to 80 MHz: 1V ³ IEC 61000-4-8 PFMF
Cybersecurity	EN 18031-1
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-64

MTBF

Time	1,036,724 hrs
Standards	Telcordia Standard SR-332

Warranty

Warranty Period	5 years
Details	See www.moxa.com/warranty

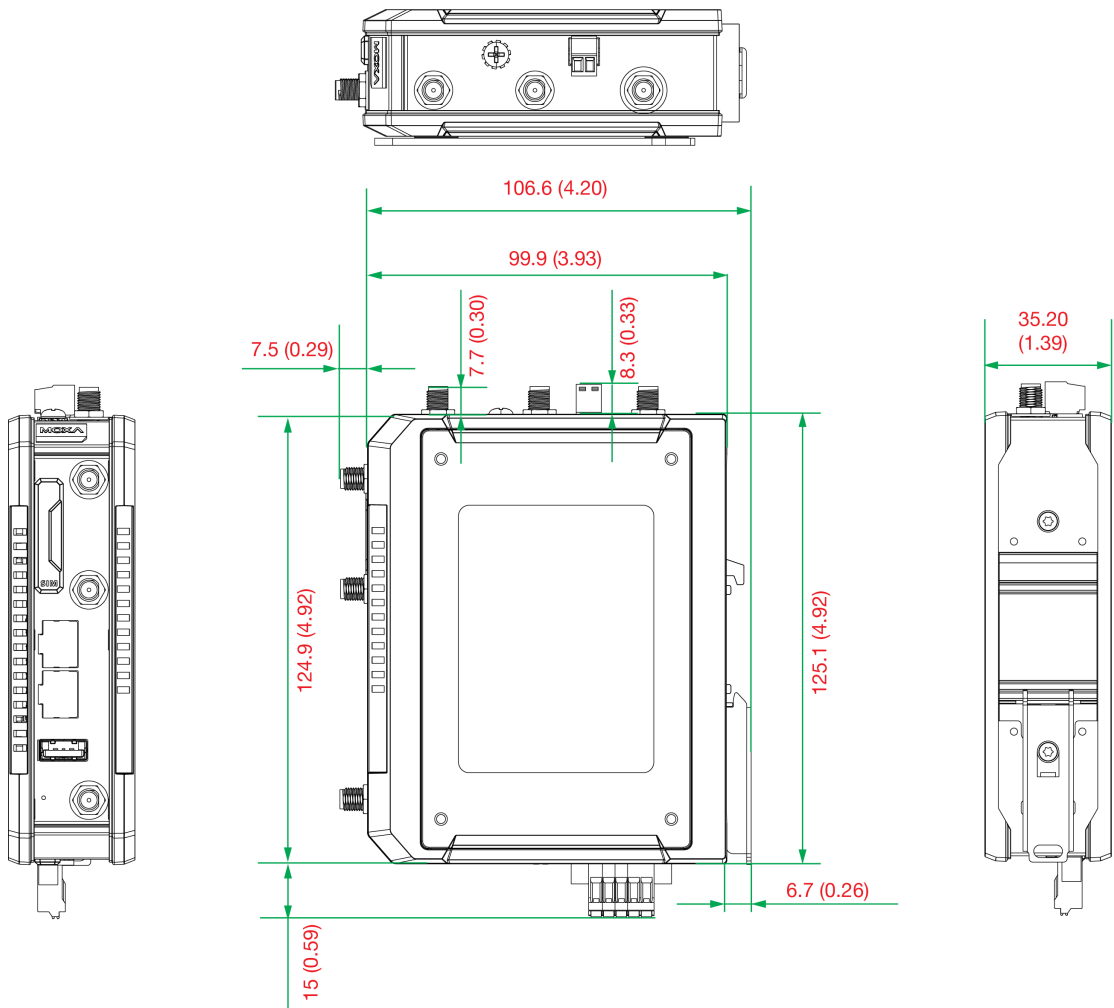
1. support up to Contact:8kV ; Air: 15kV
2. support up to 1kV
3. support up to 0.15MHz ~ 80MHz: 10V

Package Contents

Device	1 x CCG-1500 Series media and protocol converter
Antenna	CCG-1510 models: Antennas x 6 CCG-1520 models: Antennas x 4
Installation Kit	1 x DIN-rail kit
Documentation	1 x quick installation guide 1 x warranty card

Dimensions

Unit: mm (inch)



Ordering Information

Model Name	Ethernet Ports	Cellular/Band	Serial Ports
CCG-1510-TW-T	2	5G R15/ NR: N1 / N3 / N28 / N41 / N78 LTE: B1 / B3 / B7 / B8 / B28 / B38	1
CCG-1510-US-T	2	5G R15/ NR: N48	1

