

Product Specifications

Industrial 4G LTE Cellular Wireless Gateway with 5-Port 10/100/1000T

ICG-2510W-LTE-EU/US

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Version 1.0

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Change History:

Revision	Date	Author	Change List
1.0	2019/9/16	Simon Yeh	Initial release

Author	Simon Yeh	Editor:	Mark Kao
Reviewed by:	Jonas Yang	Approved by:	Kent Kang

1. PRODUCT DESCRIPTION



Making Network Connection Easy with 4G LTE Cellular Gateway

PLANET ICG-2510W(G)-LTE series is a reliable, secure and high-bandwidth communications industrial-grade cellular gateway for demanding mobile applications, **M2M** (machine-to-machine) and **IoT** deployments. It features **4G LTE** (Long Term Evolution), **2.4G/5G Wi-Fi**, **five** Ethernet ports (4 LAN and 1 WAN), **serial console port**, **DI** and **DO** interfaces, and **VPN** technology bundled in a compact yet rugged metal case. It establishes a fast cellular connection between Ethernet and serial port equipped devices.

High-performance 4G LTE

The ICG-2510W(G)-LTE series supports LTE 2x1 DL MIMO technology which can reach a download (DL) speed of up to 150Mbps and an upload (UL) speed of 50Mbps. The Cellular Gateway also supports multi-band connectivity including LTE FDD/TDD, WCDMA and GSM for a wide range of applications.

Dual SIM Design

To enhance reliability, the ICG-2510W(G)-LTE series is equipped with dual SIM slots that support **failover** and roaming over to ensure uninterrupted connectivity for mission-critical cellular communications. Besides, the ICG-2510W(G) series supports **load balance** function to improve network efficiency. It provides a more flexible and easier way for users to create an instant network sharing service via 4G LTE whenever in public places like transportation, outdoor event, etc.

GPS Included

The ICG-2510WG-LTE is equipped with one convenient feature and that is GPS (global positioning system). It is a positioning system based on a network of satellites that continuously transmits necessary data. More signals transmitted

from more satellites can triangulate its location on the ground, meaning any location can be easily tracked.

Dual-band WLAN Solution

PLANET ICG-2510W(G) series, adopting the IEEE 802.11b/g/n/ac standard, provides a high-speed transmission of power and data, meaning two remote nodes in the 5GHz frequency band can be bridged. The 2.4GHz wireless connection can also be used simultaneously. The Wireless Protected Access (WPA/WPA2 with TKIP/AES) and Wireless Encryption Protocol (WEP) features enhance the level of transmission security and access control over wireless LAN.

Cost-effective VPN Solution

The ICG-2510W(G)-LTE series provides a complete data security and privacy feature for access and exchange of sensitive data. The full VPN capability of the ICG-2510W(G)-LTE series including built-in **PPTP**, **L2TP**, **OpenVPN**, **GRE** and **IPSec VPN** functions with DES/3DES/AES encryption and MD5/SHA-1/SHA-2 authentication makes the shared connection more secure and flexible. The IPSec VPN also makes the private tunnel over Internet more secure for enterprises doing business transactions.

Remote Manageable Solution for Ethernet to RS232/RS485 Application

PLANET ICG-2510W(G)-LTE series' serial RS232/RS485 communication interface can be converted over the Fast Ethernet networking. It can operate as a virtual server or client where IP-based serial equipment can be managed. The ICG-2510W(G)-LTE series helps save the network administrator's valuable time in detecting and locating network problems, rather than visual inspection of cabling and equipment.

Superior Management Functions

For networking management features, the ICG-2510W(G)-LTE series provides such functions as DHCP server, DMZ and port forwarding, as well as full secure functions including Network Address Translation (NAT), WAN access policy, URL/Packet/MAC filtering. The ICG-2510W(G)-LTE series has 4G and WAN connection failover characteristics, which can automatically switch over to the redundant, stable WAN connection to keep users always online without missing any fascinating moments.

User-friendly and Secure Management

For efficient management, the ICG-2510W(G)-LTE series is equipped with console, web, SNMP and CMS (Central Management System) management interfaces. With the built-in web-based management interface, the ICG-2510W(G)-LTE series offers an easy-to-use, platform-independent management and configuration facility. The ICG-2510W(G)-LTE series supports SNMP and it can be managed via any management software based on the standard SNMP v1 or v2 Protocol. Moreover, the ICG-2510W(G)-LTE series offers the remotely secure management by supporting **SSH** connection where the packet content can be encrypted at each session. The CMS is able to manage multiple devices and achieve instant status.

2. PRODUCT FEATURES

➤ **Physical Port**

- **Four 10/100/1000BASE-T** RJ45 LAN ports, auto-negotiation, auto MDI/MDI-X
- **One 10/100/1000BASE-T** RJ45 WAN port, auto-negotiation, auto MDI/MDI-X
- **Two** 4G LTE antennas
- **One** 2.4G/5G WiFi antenna
- **Two** SIM card slots
- **One GPS** antenna (for ICG-2510WG-LTE)
- **One** serial console port (RS232 or RS485)
- **One** reset button
- **One** MicroSD slot to save files for serial port data

➤ **Cellular Interface**

- Supports multi-band connectivity with FDD LTE/ TDD LTE/ WCDMA/ GSM/ LTE Cat4
- Supports failover and load band lance functions
- Built-in SIM and broadband backup for network redundancy
- Two detachable antennas for 4G LTE connection
- LED indicators for signal strength and connection status

➤ **Wi-Fi Interface**

- Complies with IEEE 802.11b/g/n/ac 2.4/5GHz
- Supports AP, Client, Repeater and Repeater Bridge modes
- One detachable dual band antenna for wireless connection
- 64/128-bit WEP, WPA/WPA2 with TKIP/AES encryption
- LED indicator for connection status

➤ **Industrial Case and Installation**

- IP30 metal case
- DIN-rail/desktop design
- Power requirement: 5~36V DC
- Supports EFT protection for 1.5KV DC power and 15KV DC Ethernet ESD protection
- -35 to 75 degrees C operating temperature

➤ **Digital Input and Digital Output**

- 2 digital input (DI)
- 1 digital output (DO)
- 1 relay

➤ **Advanced Features**

- Supports NAT, demilitarized zone (DMZ), port forwarding and virtual IP mapping
- Supports VLAN to improve the performance of a network or apply appropriate security features
- Supports static routing and dynamic routing for gateway and router operating modes
- Supports QoS to manage WAN bandwidth
- Supports PPTP, L2TP, OpenVPN, IPSec and GRE VPN modes
- Supports IPSec (3DES, AES128, AES256, MD5, SHA1, SHA2-256, SHA2-512)

- Supports TCP, UDP, TCP Server and Modbus TCP
- Supports Dynamic DNS and PLANET DDNS
- Provides Firewall and access policy functions
- Supports WAN connection types: DHCP-4G, DHCP Client, Static IP, PPPoE Client, 3G Link1, 3G Link 2, DHCP-Backup 4G
- Secures network connection
 - WAN access
 - URL filter
 - Packet filter
 - MAC filter

➤ **Management**

- Switch management interfaces
 - Console/Telnet Command Line interface
 - Web user interface management
 - SNMP v1, v2c
 - SSH secure access
- Keep Alive (schedule reboot)
- System Maintenance
 - Firmware upload via HTTP
 - Reset button for system reboot or reset to factory default
 - Configuration backup and restore
- System log
- Remote system log
- NTP (Network Time Protocol) client support
- Support CMS to manage multiple devices

3. PRODUCT SPECIFICATIONS

3.1 MAIN COMPONENTS

Main Chip:	MT7621A	x 1
PHY:	5-port Gigabit Ethernet PHY (integrated into MCU)	x 1
CPU:	MT7621A 880MHz	x 1
Flash:	Winbond W25Q256FV 256Mbit	x 1
DDR RAM:	UniIC HX115H4G160AF-13K 4Gbit	x 1
Cellular Module	ICG-2510W(G)-LTE-EU: SIMCom SIM7600E-H-PCIE ICG-2510W(G)-LTE-US: Quectel EC25-A	x 1

3.2 FUNCTION SPECIFICATIONS

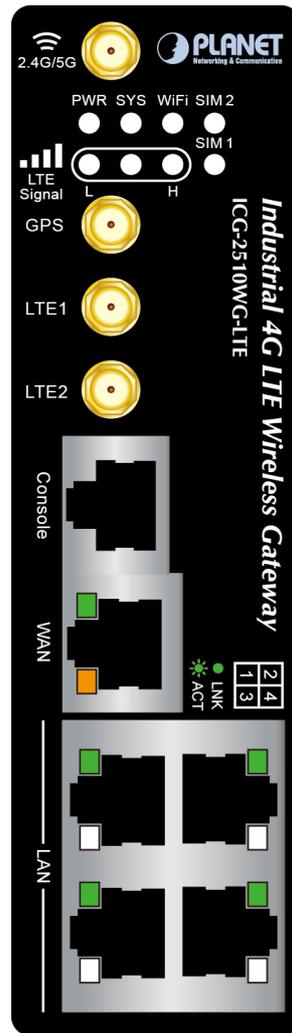
Product	ICG-2510W-LTE	ICG-2510WG-LTE
Hardware Specifications		
Copper Ports	4 LAN 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports 1 WAN 10/100/1000BASE-T RJ45 auto-MDI/MDI-X port	
Serial Interface	DB9 to RJ45 serial console port <ul style="list-style-type: none"> ■ TCP/UDP PAD mode ■ Modbus (ASCII, DTU, variable) ■ PPP ■ Reverse Telnet 	
SIM Interface	2 SIM card slots with mini SIM card tray	
Cellular Antenna	2 5dBi external antennas with SMA connectors for LTE	
Wi-Fi Antenna	1 1dBi (2.4~2.5G)/3dBi (5.15~5.85G) external antenna with RP-SMA-J connector for dual-band Wi-Fi	
GPS Antenna	-	1 28dB gain external antennas with SMA connectors - 3m
DI & DO Interfaces	<ul style="list-style-type: none"> ■ 2 Digital Input (DI) ■ 1 Digital Output (DO) ■ 1 Relay Input ON Voltage: DC 5 -30 V Input OOFF Voltage: DC 0-3 V Output < 50mA@DC 30V Relay: AC 250V/DC 30V, 1A	
Connector	1 removable 2-pin terminal block for power input 2 removable 3-pin terminal block for DI/DO and relay interface	
Storage	1 MicroSD (TF) slot for saving serial port data	

Switch Architecture	Store-and-Forward
Flow Control	IEEE 802.3x pause frame for full duplex Back pressure for half duplex
Reset Button	< 15 sec: Factory default
Surge Protection	1.5KV DC
ESD Protection	15KV DC
Enclosure	IP30 metal case
Installation	DIN rail, desktop
LED	<p>System: PWR (Blue) SYS (Blue)</p> <p>Wireless Interface : WiFi Active (Blue)</p> <p>Ethernet Interfaces (Port1-4 and WAN Port): LNK/ACT (Green)</p> <p>LTE SIM and Signal : SIM1 and SIM2 (Blue) LTE signal: High and low (Blue)</p>
Dimensions (W x D x H)	133 x 115.7 x 45 mm
Weight	564g
Power Requirements – DC	5~36V DC, 1.5A
Power Consumption	8.4 watts/28.6 BTU
Multi Band Supports	
EU Model	<ul style="list-style-type: none"> ■ FDD LTE B1/B3/B5/B7/B8/B20 (2100/1800/850/2600/900/800) ■ TDD LTE B38/B40/B41 (2600/2300/2500) ■ WCDMA B1/B5/B8 (2100/850/900) ■ GSM/EDGE B3/B8 (1800/900)
US Model	<ul style="list-style-type: none"> ■ FDD LTE B2/B4/B12 (1900/AWS1700/700) ■ WCDMA B2/B4/B5 (1900/AWS1700/850)
LTE Data Rate	1.4/3/5/10/15/20MHz bandwidth: 150Mbps (DL), 50Mbps (UL)
Wireless Specifications	
Standard	IEEE 802.11 b/g/n/ac
Wireless Mode	AP, Client, Repeater, Repeater Bridge
Band Mode	2.4G / 5G concurrent mode
Frequency Range	<p>2.4GHz FCC: 2.412~2.462GHz ETSI: 2.412~2.472GHz</p> <p>5GHz FCC: 5.180~5.240GHz, 5.745~5.825GHz</p>

	ETSI: 5.180~5.700GHz
Operating Channels	FCC: 36, 40, 44, 48, 149, 153, 157, 161, 165 (9 Channels) ETSI: 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 132, 136, 140 (16 Channels) *5GHz channel list will vary in different countries according to their regulations.
Channel Width	20MHz, 40MHz, 80MHz
Encryption Security	WEP, WPA Personal, WPA Enterprise, WPA2 Personal, WPA2 Enterprise, WPA2 Personal Mixed, WPA2 Enterprise Mixed
Data Rate	Up to 300Mbps
Max. Transmit Power (dBm)	26
Max. Clients	30
Advanced Functions	
VPN	<ul style="list-style-type: none"> ■ PPTP server and PPTP client ■ L2TP server and L2TP client ■ Open server and Open client ■ IPSec ■ GRE <p>Tunnel Number</p> <ul style="list-style-type: none"> ■ PPTP: 1 ■ L2TP: 1 ■ OpenVPN: 1 ■ IPSec: 12 ■ GRE: 12
WAN Connection Types	DHCP-4G, DHCP Client, Static IP, PPPoE Client, 3G Link1, 3G Link 2, DHCP-Backup 4G
Secure Network	WAN access, URL filter, Packet filter, MAC filter
Other	Supports demilitarized zone (DMZ) Supports QoS for bandwidth management Supports VLAN, 15 VLAN ID Supports Modbus TCP (only functions with console) Supports Port Forwarding Supports Dynamic DNS and PLANET DDNS Supports NTP client
Management	
Basic Management Interfaces	Console, Telnet, HTTP, HTTPS, SNMP v1, v2c, CMS
Secure Management	SSH, Firewall

Interfaces	
SNMP MIBs	RFC 1158 MIB, RFC 1213 MIB, RFC 1269 MIB, RFC 1271 MIB, RFC-1285 MIB, RFC 1316 MIB, RFC 1381 MIB, RFC 1382 MIB, RFC 1414 MIB
Standards Conformance	
Regulatory Compliance	CE
Standards Compliance	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3ab Gigabit 1000BASE-T IEEE 802.3x flow control and back pressure RFC 768 UDP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP
Environment	
Operating	Temperature: -35 ~ 75 degrees C Relative Humidity: 90%@60 degrees C (non-condensing)
Storage	Temperature: -40 ~ 85 degrees C Relative Humidity: 90%@60 degrees C (non-condensing)

Front View



■ LED Definition

■ System

LED	Color	Function	
PWR	Blue	Lights	Indicates the system is powered on.
		Off	Indicates the system is powered off.
SYS	Blue	Blinking	Indicates the system works properly.
		Off	Indicates the system does not work.
Wi-Fi	Blue	Lights	Indicates the Wi-Fi is active.
		Off	Indicates the Wi-Fi is not active.
LTE Signal (L)	Blue	Lights	Indicates the signal is low.
LTE Signal (H)	Blue	Lights	Indicates the signal is normal or high.
SIM1 & 2	Blue	Lights	Indicates the SIM1 or SIM2 is connecting successfully.
		Off	Indicates the SIM1 or SIM2 is connecting unsuccessfully or no SIM card inserted.

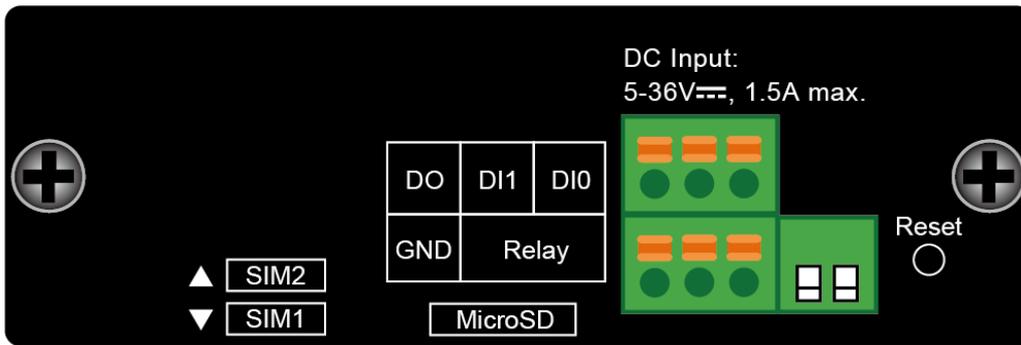
■ 10/100/1000BASE-T LAN Port Interfaces (Port-1 to Port-4)

LED	Color	Function	
Ethernet	Green	Lights	Indicates that the link is successfully established.
		Blinking	Indicates that the port is actively sending or receiving data.

■ 10/100/1000BASE-T WAN Port Interfaces

LED	Color	Function	
Ethernet	Green	Lights	Indicates that the link is successfully established.
		Blinking	Indicates that the port is actively sending or receiving data.

■ Upper Panel:



3.4 ENVIRONMENTAL SPECIFICATIONS

Operating:

Temperature: -35 ~ 75 degrees C
Relative Humidity: 90%@60 degrees C (non-condensing)

Storage:

Temperature: -40 ~85 degrees C
Relative Humidity: 90%@60 degrees C (non-condensing)

3.5 ELECTRICAL SPECIFICATIONS

Full Loading: 8.4 watts

3.6 REGULATORY COMPLIANCE

FCC Part 15 Class A, CE

3.7 RELIABILITY

MTBF > 100,000hrs @ 25 degrees C

3.8 BASIC PACKAGING

<input checked="" type="checkbox"/> The ICG-2510W(G)-LTE-EU/US Cellular Gateway	x 1
<input checked="" type="checkbox"/> Quick Installation Guide	x 1
<input checked="" type="checkbox"/> 4G LTE Antenna	x 2
<input checked="" type="checkbox"/> GPS Antenna	x 1
<input checked="" type="checkbox"/> Wi-Fi Antenna	
<input checked="" type="checkbox"/> 1m Cat5e UTP RJ45 Cable	x 1
<input checked="" type="checkbox"/> DIN-rail Kit	x 1
<input checked="" type="checkbox"/> Side Panel with Two Screws	x 1
<input checked="" type="checkbox"/> Antenna Dust Cap (for ICG-2510WG-LTE)	x 4

3.9 PACKING INFORMATION

Box Dimensions	300 x 258 x 70 mm
Weight	1034 g
Carton Dimensions	560 x 345 x 390 mm
Weight	11.04 kg
Quantity	10pcs in one carton