

Industrial LoRaWAN Gateway with 5-Port 10/100/1000T



Built on the Long-range and Low-power Platform

PLANET LCG-300W is an all-in-one industrial-grade LoRaWAN gateway with reliable connectivity for IoT deployments. With LoRaWAN protocol support, it helps to bridge LoRa wireless network to an IP network. The LoRa wireless allows sensors to transmit data over extremely long ranges with low power consumption. The LCG-300W is fully compatible with LoRaWAN protocol and supports connection with up to 300 end-nodes. It also provides pre-configured standard LoRaWAN frequency bands for different countries. PLANET LCG-300W is a best choice to help you to promote the implementation of AIoT network.



All-in-One LoRaWAN Gateway with Wi-Fi 6 Performance

The LCG-300W features five Ethernet ports (4 LANs and 1 WAN), serial port (RS-485), wireless capability of 802.11ax and DI and DO interfaces designed in a compact yet rugged metal case. The LCG-300W also features several main categories across your industrial network deployments:

- Dual band wireless capability (2.4GHz and 5GHz)
- SSL VPN and robust hybrid VPN (IPSec/PPTP/L2TP over IPSec)
- Cybersecurity and SPI firewall security protection
- Easy management with setup wizard, DHCP server and dashboard

LoRaWAN Compatibility

LoRaWAN is a low-power, wide area networking protocol built on top of the LoRa radio modulation technique. LoRaWAN networks and devices such as sensor and gateway

Highlights

- Supports EU868, US915, AS923 (Sub 1G)
- 8 programmable parallel demodulation paths
- 2 x DI/DO and 1 serial port (RS485) for Modbus applications
- Complies with IEEE 802.11ax and IEEE 802.11a/b/g/n/ac standards
- SSL VPN and robust hybrid VPN (IPSec/PPTP/L2TP over IPSec)
- Stateful packet inspection (SPI) firewall and content filtering
- Blocks DoS/DDOS attack, port range forwarding
- Planet NMS controller system and CloudViewer app supported
- -45 to 75 degrees C operating temperature; DIN-rail and fanless designs

Hardware

- 4 x 10/100/1000BASE-T RJ45 LAN ports, auto-negotiation, auto MDI/MDI-X
- 1 x 10/100/1000BASE-T RJ45 WAN port, auto-negotiation, auto MDI/MDI-X
- 1 x LoRa antenna
- 2 x dual band WiFi antennas
- 1 x serial console port (RS485)
- 1 x reset button

LoRa Interface

- Supports EU868/AU915/US915/AS923(Sub 1G)
- 8 programmable parallel demodulation paths

RF Interface Characteristics

- Features 2.4GHz (802.11b/g/n/ax) and 5GHz (802.11a/n/ac/ax) dual band for carrying high load traffic
- 2T2R MIMO technology for enhanced throughput and coverage
- Provides multiple adjustable transmit power control
- High speed up to 1.8Gbps (600Mbps for 2.4GHz or 1200Mbps for 5GHz) wireless data rate

IP Routing Feature

- Static route
- Dynamic route
- OSPF

Firewall Security

- Cybersecurity

allow public or private network to connect multiple applications such as IoT, M2M, smart city, sensor network, and industrial automation applications in the same space. The LCG-300W is LoRaWAN compatible and make sure it works well with LoRa sensor without any problem.

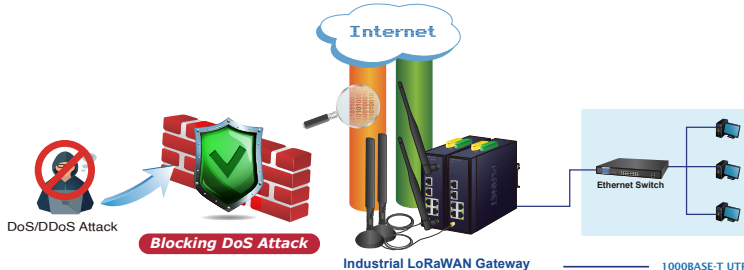
Wireless 11ax Brings Excellent Data Link Speed

The LCG-300W is designed with high power amplifier and 2 highly-sensitive antennas which provide stronger signal and excellent coverage even in the wide-ranging or bad environment. With adjustable transmit power option, the administrator can flexibly reduce or increase the output power for various environments, thus reducing interference to achieve maximum performance. Equipped with the next-generation Wi-Fi 6 (802.11ax) wireless network standard, the total bandwidth reaches **1800Mbps**, and the 2-stream transmission technology improves the transmission efficiency of multiple devices, making AR/VR/IoT applications smoother. The IEEE 802.11ax also optimizes MU-MIMO (Multi-User MIMO) mechanism to serve multiple devices simultaneously.

Excellent Ability in Threat Defense

The LCG-300W has built-in SPI (stateful packet inspection) firewall and DoS/DDoS attack mitigation functions to provide high efficiency and extensive protection for your network. Thus, virtual server and DMZ functions can let you set up servers in the Intranet and still provide services to the Internet users.

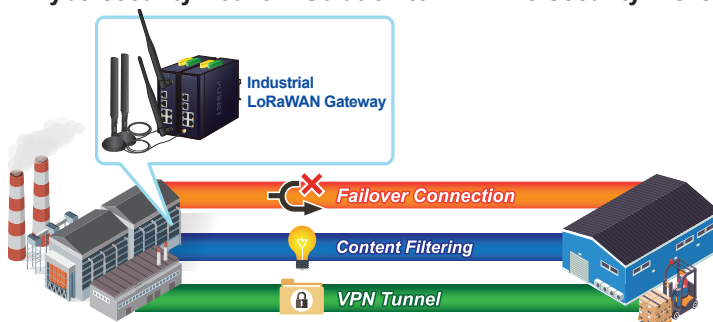
Excellent Ability in Threat Defense



Cybersecurity Network Solution to Minimize Security Risks

The cybersecurity feature included to protect the switch management in a mission-critical network virtually needs no effort and cost to install. For efficient management, the LCG-300W is equipped with HTTPS web and SNMP management interfaces. With the built-in web-based management interface, the LCG-300W offers an easy-to-use, platform independent management and configuration facility. The LCG-300W supports SNMP and it can be managed via any management software based on the standard SNMP protocol.

Cybersecurity Network Solution to Minimize Security Risks



- Stateful Packet Inspection (SPI) firewall
- Blocks DoS/DDoS attack
- Content filtering
- MAC filtering and IP filtering
- NAT ALGs (Application Layer Gateway)
- Blocks SYN/ICMP flooding

VPN Features

- IPSec/Remote Server (Net-to-Net, Host-to-Net), GRE, PPTP Server, L2TP Server, SSL Server/Client (Open VPN)
- Max. Connection Tunnel Entries: 60 VPN tunnels,
- Encryption methods: DES, 3DES, AES, AES-128/192/256
- Authentication methods: MD5, SHA-1, SHA-256, SHA-384, SHA-512

Networking

- Outbound load balancing
- Failover for dual-WAN
- Static IP/PPPoE/DHCP client for WAN
- DHCP server/NTP client for LAN
- Protocols: TCP/IP, UDP, ARP, IPv4, IPv6
- Port forwarding; QoS; DMZ; IGMP; UPnP; SNMPv1,v2c, v3
- MAC address clone
- DDNS: PLANET DDNS, Easy DDNS, DynDNS and No-IP

Others

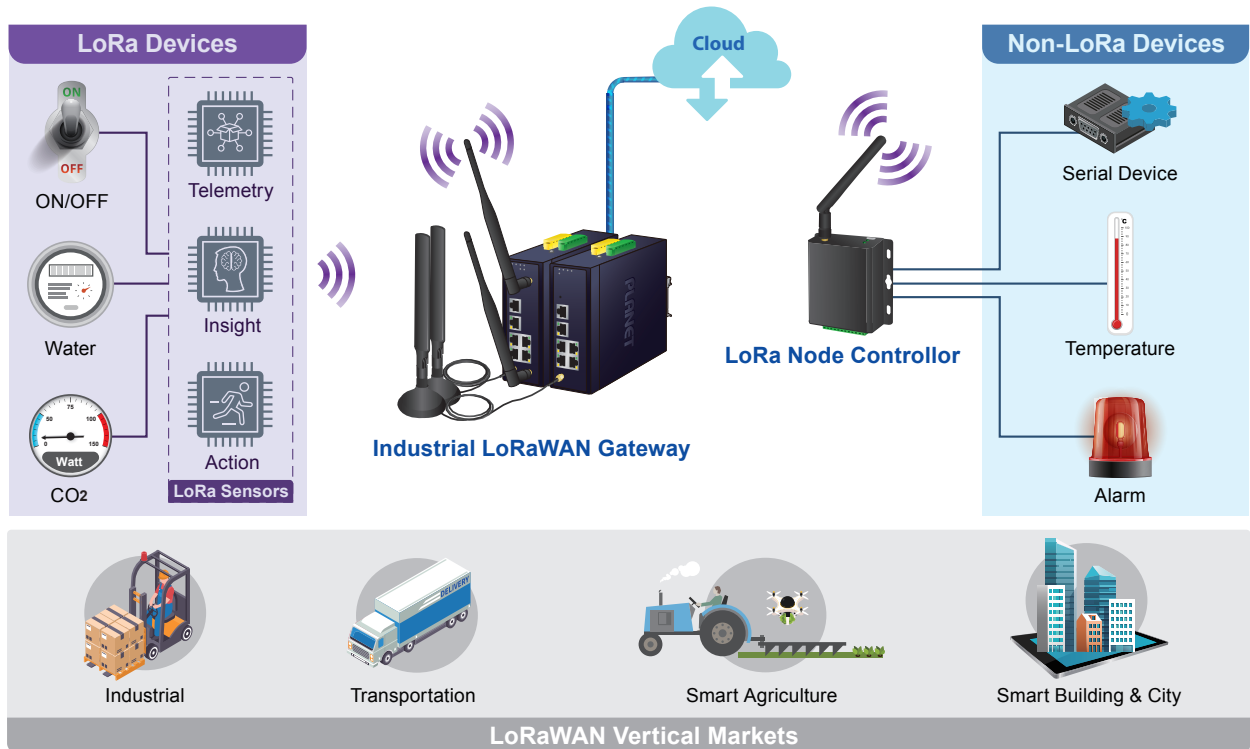
- Setup wizard
- Dashboard for real-time system overview
- Supported access by HTTP or HTTPS
- Auto reboot
- PLANET NMS System and Smart Discovery Utility for deployment management
- Planet CloudViewer app for real-time monitoring

Applications

LoRa Communication Solution

PLANET LCG-300W LoRa gateway supports LoRa and LoRaWAN standard. Transceivers configured with LoRa devices like CO2 and water sensors are embedded into end-nodes, or sensor devices that capture and transmit data to gateways over distances through wireless network. The LCG-300W can send information via Ethernet to the Network Server, which is responsible for network management functions that distribute information to each application accordingly.

LoRa Communication Solution

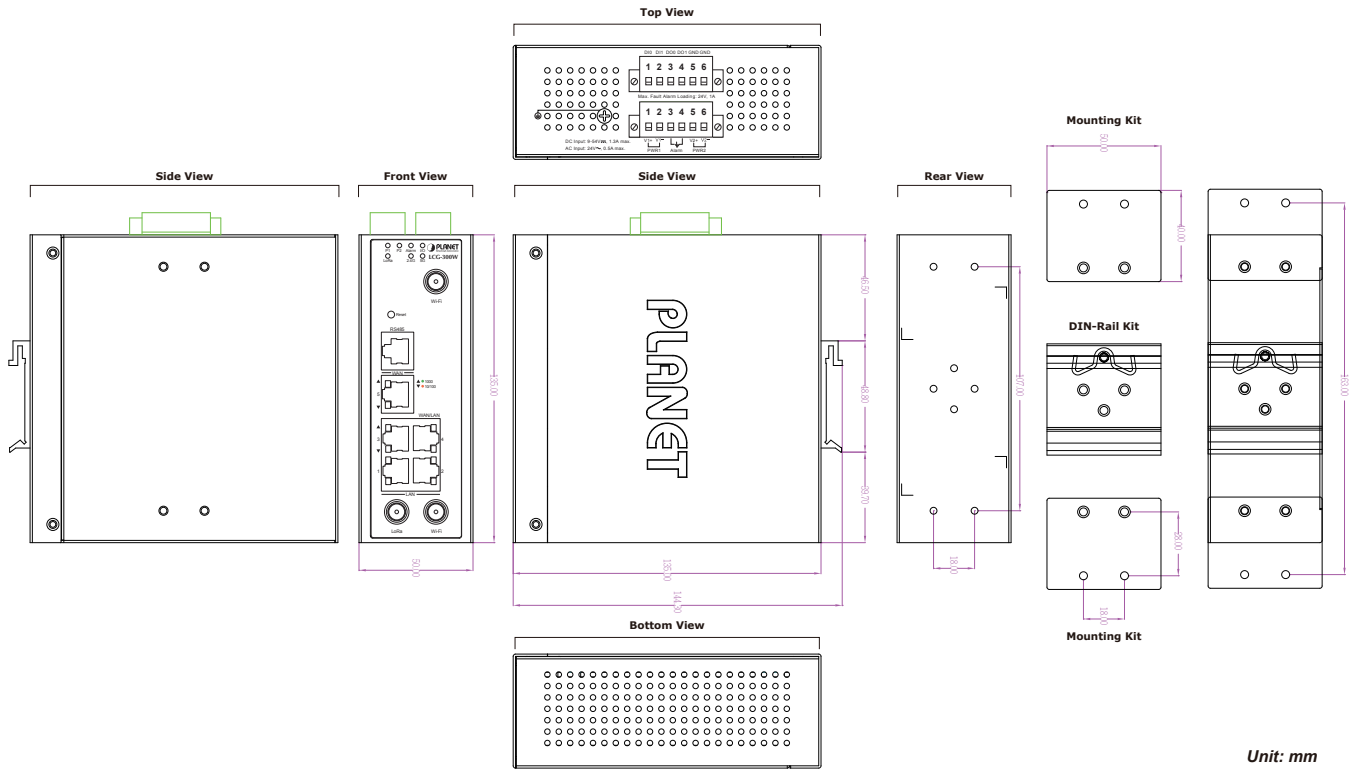


Specifications

Product	LCG-300W	
Hardware Specifications		
Copper Ports	5 10/100/1000BASE-T RJ45 Ethernet ports including 3 LAN ports (Ports 1 to 3) 1 LAN/WAN port (Port 4) 1 WAN port (Port 5)	
Serial Interface	RJ45 serial port	
LoRa Antenna	2 dBi external antennas with SMA connectors for LoRa	
DI & DO Interfaces	2 Digital Input (DI): Level 0: -24V~2.1V (±0.1V) Level 1: 2.1V~24V (±0.1V) Input Load to 24V DC, 10mA max. 2 Digital Output (DO): Open collector to 24V DC, 100mA max.	
Connector	Removable 6-pin terminal block for power input Pin 1/2 for Power 1, Pin 3/4 for fault alarm, Pin 5/6 for Power 2	
Reset Button	< 5 sec: System reboot > 5 sec: Factory default	
Enclosure	IP30 metal case	
Installation	DIN-rail, desktop, wall-mounting	
LED Indicators	System: P1 (Green) P2 (Green) Alarm (Red) I/O (Red) LoRa (Green) Ethernet Interfaces (Ports 1-4 and WAN Port): 1000 LNK/ACT (Green) 10/100 LNK/ACT (Amber) Wi-Fi: 2.4G(Green) 5G(Green)	
Dimensions (W x D x H)	50 x 135 x 135 mm	
Weight	0.9 kg	
Power Requirements – DC	9~54V DC, 1.3A Max.	
Power Consumption	12.5 watts/42.7 BTU	
LoRaWAN		
Frequency Band	LCG-300W-EU:863~870MHz (IN865/EU868/RU864) LCG-300W-US: 902~928MHz (US915/AU915/KR920/AS923)	
Receiving Sensitivity	-142.5dBm	
Output Power	27dBm Max.	
Wireless		
Standard	IEEE 802.11a/n/ac/ax 5GHz IEEE 802.11g/b/n/ax 2.4GHz	
Band Mode	2.4G & 5G concurrent mode	
Frequency Range	2.4GHz	America FCC: 2.412~2.462GHz Europe ETSI: 2.412GHz~2.472GHz
	5GHz	5.15GHz ~5.875GHz
Operating Channels	2.4GHz	America FCC: 1~11 Europe ETSI: 1~13
	5GHz	America FCC: Non-DFS: 36, 40, 44, 48, 149,153,157,161,165 DFS: 52, 56, 60, 64, 100, 104, 108, 112, 116, 132, 136, 140 Europe ETSI: Non-DFS: 36, 40, 44, 48 DFS: 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140 *5GHz channel list may vary in different countries according to their regulations.
Channel Width	20MHz, 40MHz, 80MHz	

Data Transmission Rates	<p>Transmit: 600 Mbps* for 2.4 GHz and 1200 Mbps* for 5 GHz</p> <p>Receive: 600 Mbps* for 2.4 GHz and 1200 Mbps* for 5 GHz</p> <p>*The estimated transmission distance is based on the theory. The actual distance may vary in different environments.</p>
Transmission Power	<p>11g/n HT20: 20dBm +/- 1.5dbm @MCS7 HT40: 17dBm@MCS7</p> <p>11a/n HT20: 19.5dBm+/- 1.5dbm @MCS7 HT40: 17dBm@MCS7</p> <p>11ac HT20: 20+/-1.5dBm @MCS8 HT40: 4.5+/-1.5dBm @MCS9 HT80: 4.5+/-1.5dBm @MCS9</p> <p>11ax HT20: 20+/-1.5dBm @MCS9 HT40: 17 +/- 1.5dBm @MCS9 HT80: 14.5 +/- 1.5dBm @MCS11</p>
Encryption Security	<p>WEP (64/128-bit)</p> <p>WPA / WPA2 (TKIP/AES)</p> <p>WPA-PSK / WPA2-PSK (TKIP/AES) / WPA3-PSK (TKIP/AES)</p> <p>802.1x Authenticator</p>
Wireless Advanced	<p>Wi-Fi Multimedia (WMM)</p> <p>Auto channel selection</p> <p>Wireless output power management</p> <p>MAC address filtering</p>
Advanced Functions	
VPN	<p>IPSec/Remote Server (Net-to-Net, Host-to-Net)</p> <p>GRE</p> <p>PPTP Server</p> <p>L2TP Server</p> <p>SSL Server/Client (Open VPN)</p>
VPN Tunnels	Max. 60
VPN Throughput	Max. 60Mbps
Encryption Methods	DES, 3DES, AES or AES-128/192/256 encrypting
Authentication Methods	MD5/SHA-1/SHA-256/SHA-384/SHA-512 authentication algorithm
Management	
Basic Management Interfaces	<p>Web browser</p> <p>SNMP v1, v2c</p> <p>PLANET Smart Discovery utility/UNI-NMS supported</p>
Secure Management Interfaces	SSHv2, TLSv1.2, SNMP v3
System Log	System Event Log
Others	<p>Setup wizard</p> <p>Dashboard</p> <p>System status/service</p> <p>Statistics</p> <p>Connection status</p> <p>Auto reboot</p> <p>Diagnostics</p>
Standards Conformance	
Regulatory Compliance	CE, FCC
Environment	
Operating	<p>Temperature: -40 ~ 75 degrees C</p> <p>Relative humidity: 5 ~ 90% (non-condensing)</p>
Storage	<p>Temperature: -40 ~ 85 degrees C</p> <p>Relative humidity: 5 ~ 90% (non-condensing)</p>

Dimensions



Ordering Information

LCG-300W-EU	Industrial LoRaWAN Wireless Gateway with 5-Port 10/100/1000T (802.11ax 1800Mbps, 2 DI/DO, -40~75 degrees C, EU868 Sub 1G)
LCG-300W-US	Industrial LoRaWAN Wireless Gateway with 5-Port 10/100/1000T (802.11ax 1800Mbps, 2 DI/DO, -40~75 degrees C, US915 Sub 1G)

Related Products

LCG-300	Industrial LoRaWAN Gateway with 5-Port 10/100/1000T
LN501	IP67 LoRaWAN Node Controller
LN1152	IP30 LoRaWAN Node Controller