

PLANET Networking & Communication

Industrial LoRaWAN Gateway Series

LCG-300 / LCG-300W



LCG-300



LCG-300W

Presentation Outlines

Presentation Outlines

PRODUCT POSITIONING

PRODUCT OVERVIEW

PRODUCT BENEFITS

PRODUCT FEATURES

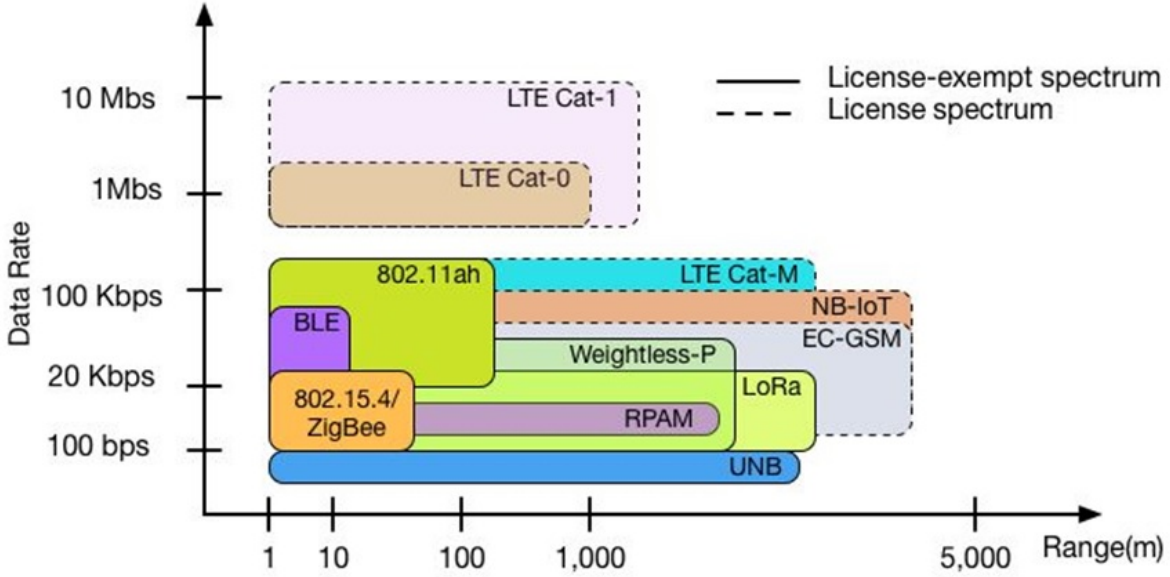
APPLICATIONS

APPENDIX

Product Positioning

What is LoRa?

- LPWAN (Low Power Wide Area Network)
- Long Range, Low Data Rate, Low Energy Consumption, and Low Cost
- Frequency
  - China: 470 MHz
  - EU (800 MHz)
    - 868 MHz(EU)
    - 864 MHz (Russia)
    - 865 MHz (India)
  - US / AU / AS (900MHz)
    - 915 MHz (AU & US)
    - 920 MHz (Korea)
    - 923 MHz (Asia)



Source: LoRa Alliance

Modes of AIoT Application Overview

Factory



Smart City



Energy



Transportation



PLANET Industrial LoRa Products Family

LoRaWAN Application Server

NMS-LoRa
LoRa Connect



Planning
Developing
New Phase-in
Available

LoRaWAN Gateway

LCG-300
Industrial LoRaWAN Gateway



LCG-300W
Industrial LoRaWAN Wireless Gateway



LCG-100F
Fiber LoRaWAN Gateway

LoRa Sensor/ Node

LN501
Outdoor IP67 LoRa Node



LN1152
Indoor IP30 LoRa Node



LS-300 / LS-500 series
Environment Sensor



Temperature & Humidity Sensor



Light Sensor

PLANET Industrial LoRaWAN Gateway Family

Model	LCG-300	LCG-300W
		
Hardware Specifications		
GE RJ45 WAN	1 + 1 (Port 4: LAN/Port 5: WAN)	
GE RJ45 LAN	4	
DI/DO	2 DI & 2 DO	
Serial Interface	RS485	
LoRa Frequency	EU868, US915, AS923	EU868, US915, AS923
Wi-Fi Standard	-	11ax
Wi-Fi Speed	-	2.4GHz: 600Mbps 5GHz: 1200Mbps
Power Input	9-54 VDC	
Dimensions (W x D x H)	50 x 135 x 135 mm	

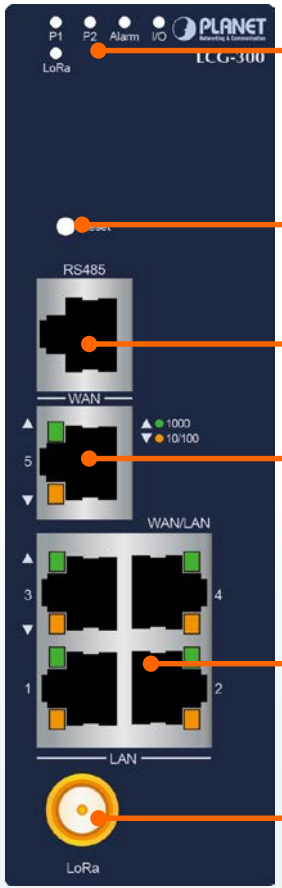
PLANET Industrial LoRaWAN Gateway Family

Model	LCG-300	LCG-300W
		
Software Specifications		
Dynamic / Static IP WAN	■	
WAN Failover	■	
LoRaWAN – Network Server	**The Things Network & AWS (Amazon Web Services)**	
Routing	**RIP V2, OSPF, static route**	
NAT / VLAN / QoS	■	
VPN	■	
Firewall /Content Filtering	■	
Modbus	■	
NMS Controller	■	
Planet CloudViewer	■	

Product Overview

LCG-300 Product Overview

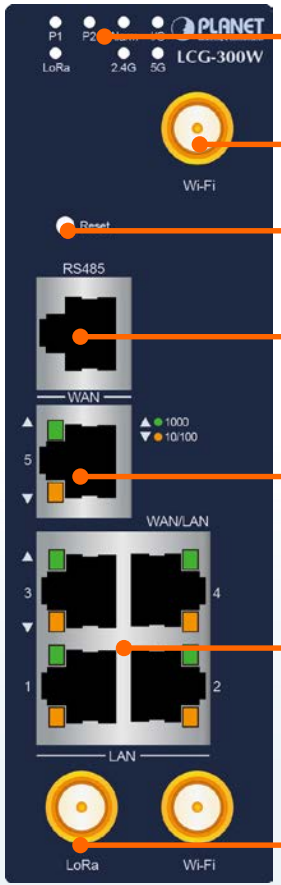
Front Panel



1. LED Indicators for **Power**, **Alarm**, **I/O**, and **LoRa**
2. **Reset** Button
3. Serial Port (**RS485**)
4. 1 x 10/100/1000BASE-T RJ45 Port (WAN)
5. 4 x 10/100/1000BASE-T RJ45 Ports (LAN)
6. 1 x **LoRa Antenna**

LCG-300W Product Overview

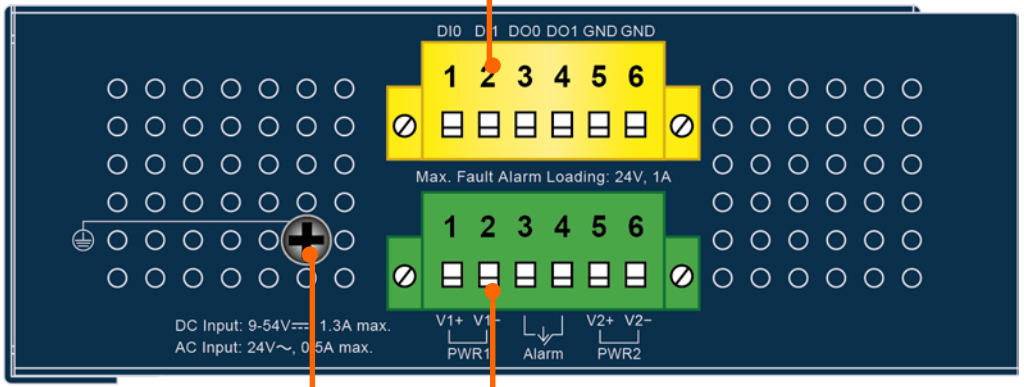
Front Panel



1. LED Indicators for **Power**, **Alarm**, **I/O**, and **LoRa**
2. 2 x **Wi-Fi Antennas**
3. **Reset** Button
4. Serial Port (**RS-485**)
5. 1 x 10/100/1000BASE-T RJ45 Port (WAN)
6. 4 x 10/100/1000BASE-T RJ45 Ports (LAN)
7. 1 x **LoRa Antenna**

Product Overview

Upper Panel

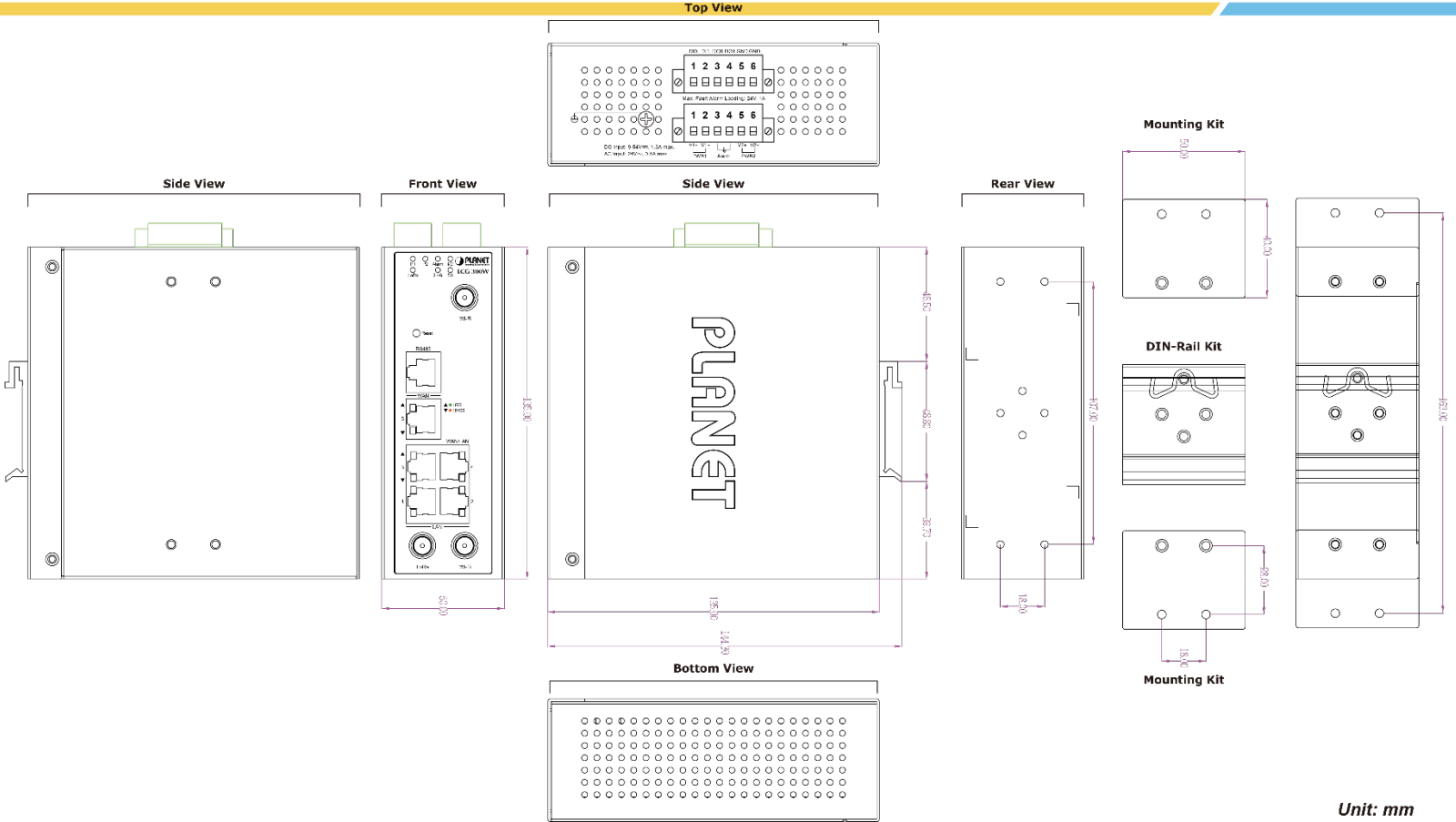


1 2 x **DI/DO**

2 9V~54V DC **Redundant** Power Input

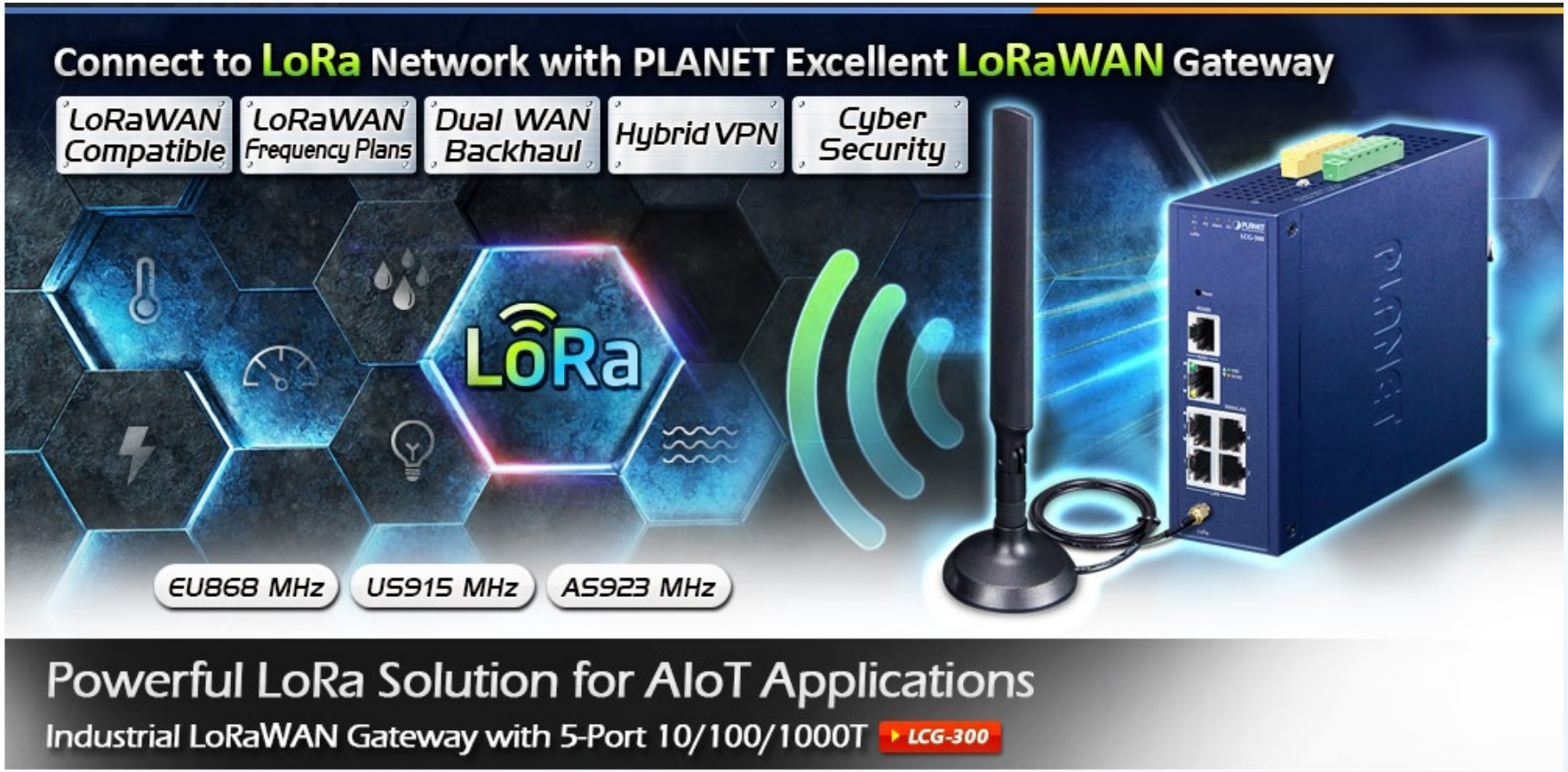
3 Grounding

Dimensions



Unit: mm

Product Benefits


Connect to LoRa Network with PLANET Excellent LoRaWAN Gateway
LoRaWAN Compatible
LoRaWAN Frequency Plans
Dual WAN Backhaul
Hybrid VPN
Cyber Security
LoRa
EU868 MHz
US915 MHz
AS923 MHz
Powerful LoRa Solution for AIoT Applications
Industrial LoRaWAN Gateway with 5-Port 10/100/1000T
LCG-300

Product Benefits

LoRa Transmission offers long range, low energy consumption, and low cost

LoRaWAN Compatibility to ensure it works well with LoRa devices



LCG-300 Series

Complete network protection with **Cyber Security, SPI Firewall** and **Content Filtering**

Full VPN Server Capability provides complete data security and privacy

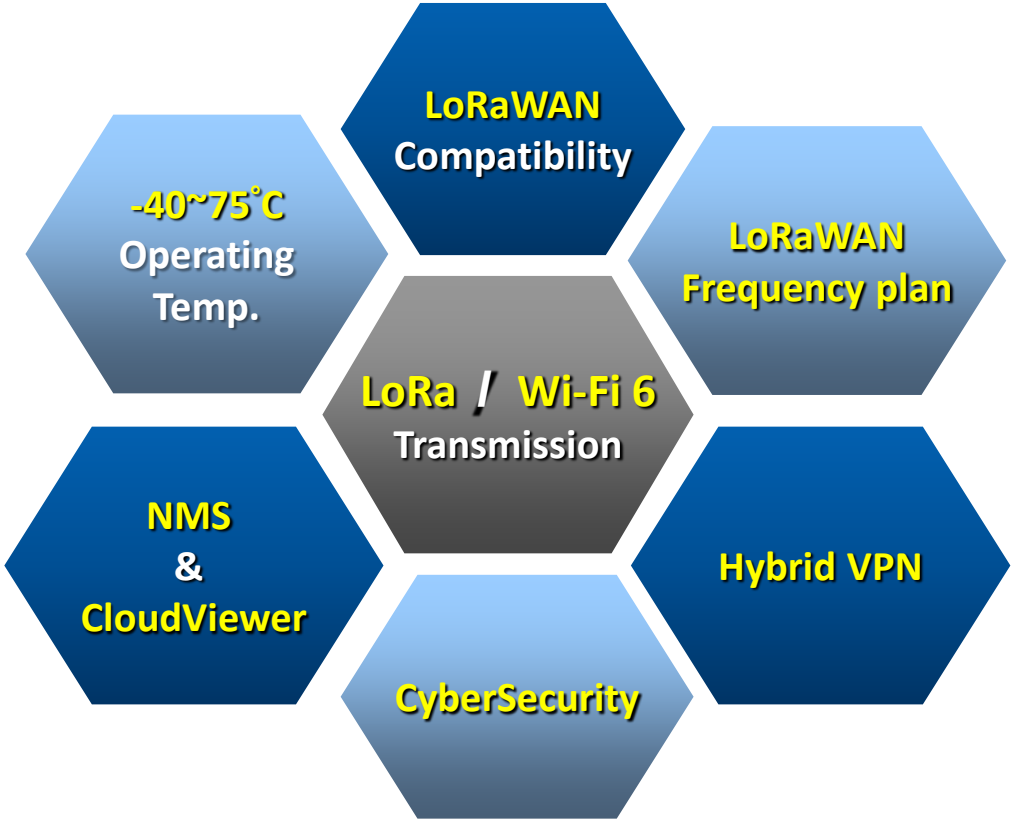
Powerful **LoRa** Solution for **AIoT** Applications

Product Features

Product Features



LCG-300 Series

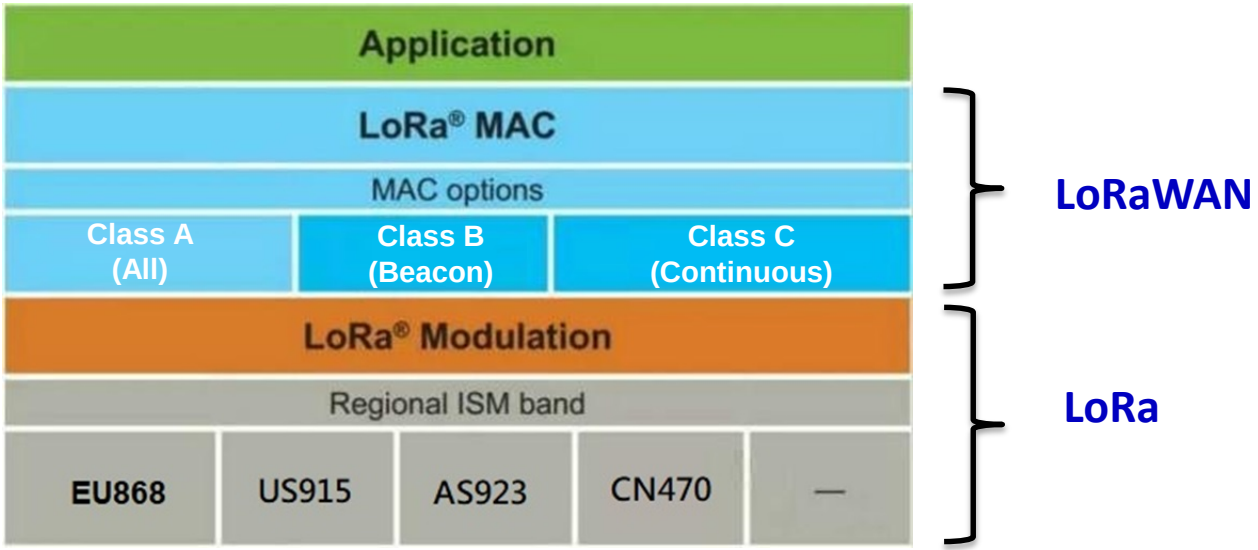


Product Features

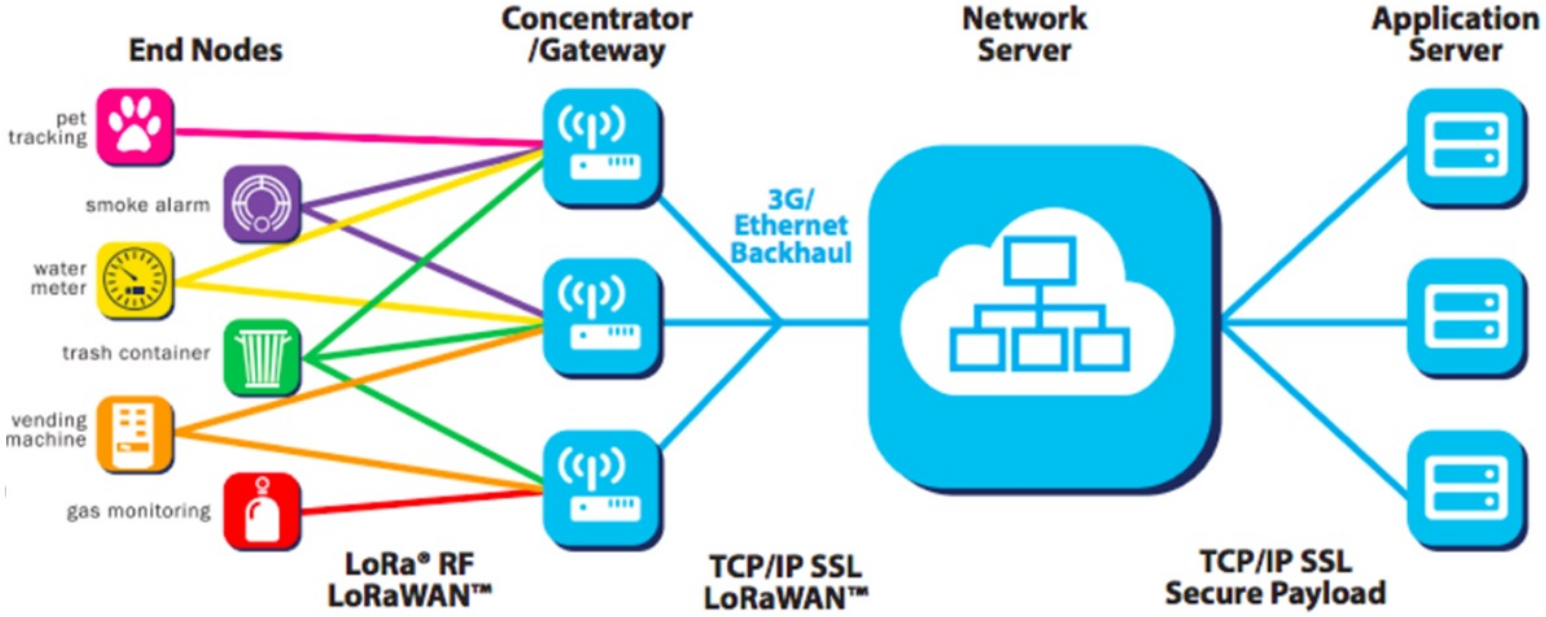
- LoRaWAN Compatibility -

What is LoRaWAN?

- **LoRaWAN is a software layer protocol** which defines how devices use the LoRa hardware, for example, when they transmit, and the format of messages.



LoRaWAN Architecture



Gateways

- Connect to network server via standard IP connections
- Act as a transparent bridge, simply converting RF packets to IP packets and vice versa.

Network servers :

- Cloud-based platform: **The Things Network and AWS (Amazon Web Services)**
- Local server platform
- Connect to gateways and de-dup data packets, and then routes it to the relevant application

Product Features

- Wi-Fi 6 -

(LCG-300W only)

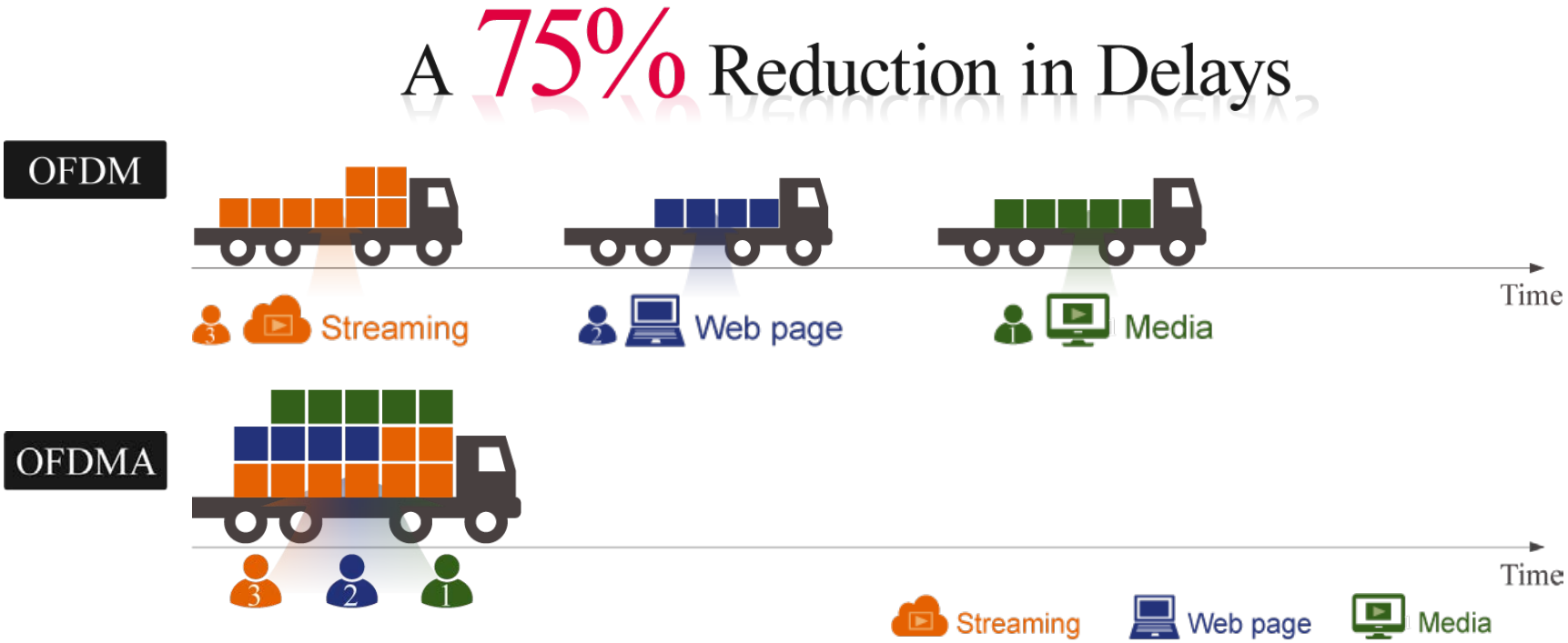
Product Features

802.11ax Wireless

- Concurrent dual band (2.4G and 5G)
- Data rate up to 1800Mbps in 11ax (2.4GHz at 600Mbps and 5GHz at 1200bps)
- OFDMA transmission
- WPA3 security encryption

Product Features – OFDMA

- OFDMA (Orthogonal Frequency Division Multiple Access)



Product Features – WPA3

- WPA3 security encryption

Makes encrypted data transmission more secure with 128-bit WPA3-Personal



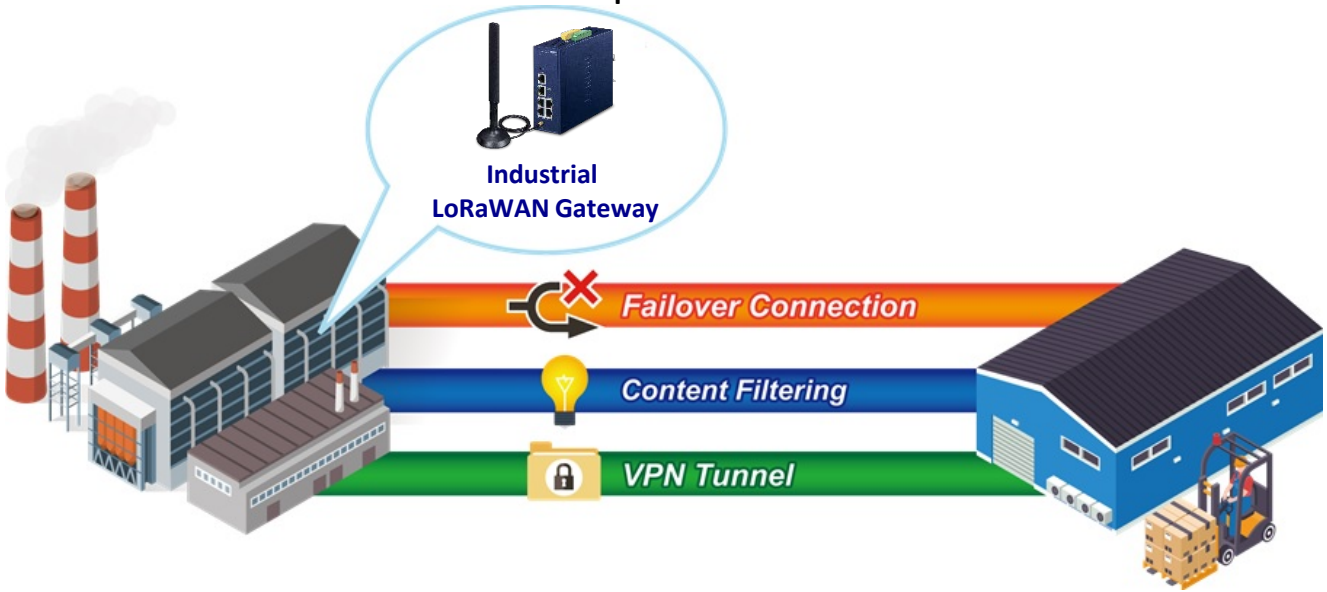
Product Features

- Hybrid VPN & IP Routing -

Product Features

Full VPN Capability

- With IPSec/GRE/PPTP/L2TP/SSL VPN server, the LCG-300 provides secure data communication at the headquarters.



Product Specifications

VPN & IP Routing Features

- Static Routing
- Dynamic Routing
- L3 OSPF Routing
- 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

Product Features

- Cybersecurity -

Product Features

Excellent Ability in Threat Defense

- Built-in Cybersecurity, SPI (stateful packet inspection) firewall and DoS/DDoS attack mitigation functions provide high efficiency and extensive protection for your network.



Product Specifications

Firewall Security Features

- Cybersecurity
- 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

Product Specifications

- Network & Management -

Product Specifications

Network

- IPv4/IPv6 Static IP/PPPoE/DHCP client for WAN
- IPv4/IPv6 DHCP server/NTP client for LAN
- 802.1Q VLAN and Multi LAN Subnets (1 to 4)
- QoS, DMZ and Port forwarding
- IGMP Proxy, UPnP and SNMPv1,v2c,v3
- PLANET DDNS, Easy DDNS, DynDNS and No-IP



Product Specifications

Management

- Dashboard for real-time system overview
- Chart statistics for real-time network traffic overview
- System service and VPN connection for real-time status overview
- Setup wizard, event log and auto reboot
- Supported access by HTTP or HTTPS
- PLANET NMS Controller series
- PLANET CloudViewer app



Product Specifications

- Hardware -

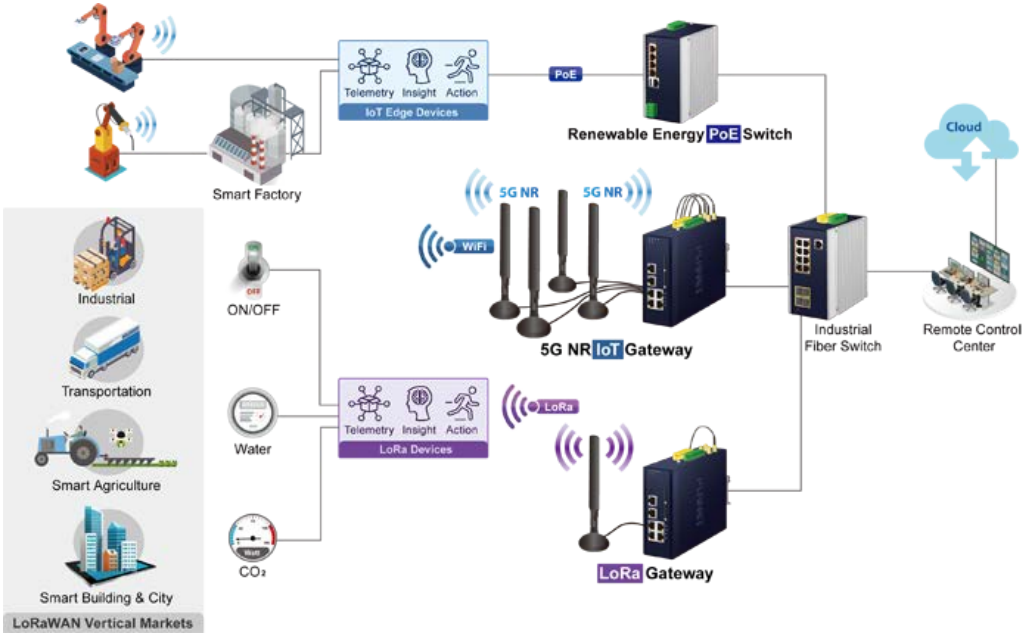
Hardware

- 4 10/100/1000BASE-T RJ45 LAN ports
- 1 10/100/1000BASE-T RJ45 WAN port
- 2T2R 802.11ax wireless capability (LCG-300W only)
- LCG-300(W)-EU: 863~870MHz (IN865, EU868, RU864)
- LCG-300(W)-US: 902~928MHz (US915, AU915, KR920, AS923)
- 1 serial interface (RS485) for modbus application
- 1 reset button
- 2 digital inputs (DI) and 2 digital outputs (DO)
- 9~54V DC power input
- -40 to 75 degrees operating temperature; IP30 metal case
- DIN-rail or wall-mount design

Applications

Applications

- The LCG-300 is suitable for AIoT applications in harsh environments, such as Intelligent Factory and Smart Transportation.



Appendix

Sales Target

- Target Markets
  - AIoT/M2M
  - Smart City
  - Intelligent Factory
- Recommended Solutions
  - LoRaWAN Gateway
  - LoRa Node





Appendix

LoRa Node Devices

Models	Photo	Description
LN501		**Outdoor IP67 LoRa Node (RS232, RS485, GPIO, and Analog Input)**
LN1152		**Indoor IP30 LoRa Node (RS232, RS485, DI, Relay, and Analog Input)**

Appendix

Available DIN-rail Power Supplies:

PWR-40-24	**40W** 24V DC Industrial DIN-rail Power Supply (Voltage Adj. Range: 24~30V)
PWR-60-24	**60W** 24V DC Industrial DIN-rail Power Supply (Voltage Adj. Range: 24~30V)
PWR-75-24	**75W** 24V DC Industrial DIN-rail Power Supply (Voltage Adj. Range: 24~30V)





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THANK YOU