

Product Specifications

Industrial 5G NR Cellular Gateway with 5-Port 10/100/1000T
ICG-2515-NR

Version 1.0

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Change History:

Revision	Date	Author	Change List
Version 1.0	2021/8/16	Ricebean	Initial release

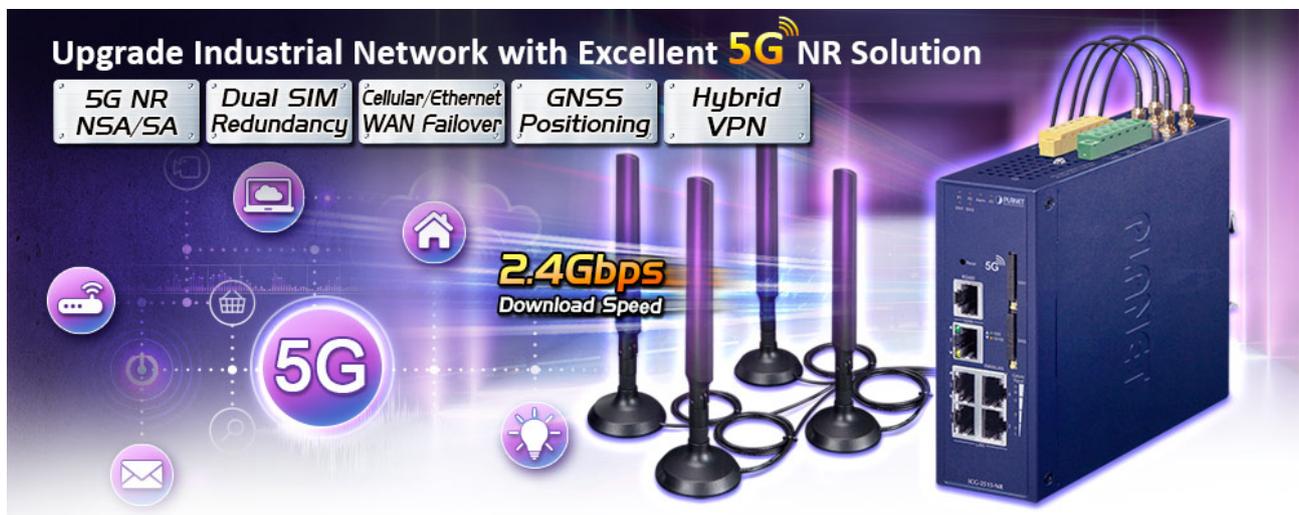
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Reviewed by:	Kent	Approved by:	Kent

1. PRODUCT DESCRIPTION



Upgrade Industrial Network with 5G NR Cellular Gateway

PLANET ICG-2515-NR is an industrial-grade cellular gateway for demanding mobile applications, M2M (machine-to-machine) and IoT deployments. Upgraded to the latest cellular technology of 5G NR (new radio), the ICG-2515-NR is able to provide ultra-fast broadband access with 5G cellular network. The ICG-2515-NR also features five Ethernet ports (4 LANs and 1 WAN), serial port (RS-485), 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. The ICG-2515-NR is particularly ideal for industrial automation, digital factory and other industrial applications.



Automatic Failover between 5G NR and Gigabit WAN

Designed with 5G NR and Gigabit Ethernet WAN interfaces, the ICG-2515-NR ensures Internet connectivity by featuring failover functionality between 5G NR and GbE WAN. The ICG-2515-NR provides flexibility to set priority for 5G NR or GbE WAN connection. When the main WAN interface fails, the secondary WAN interface will automatically back up the connection to ensure always-on connectivity.

High-performance 5G NR

The ICG-2515-NR supports 5G NR DL speeds higher than 4 Gbps and 4G LTE DL speeds of up to 2 Gbps. The wide spectrum bandwidth accelerates internet speeds and reduces network latency for premium and time-sensitive connectivity services. The ICG-2515-NR 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-2515-NR is equipped with dual SIM slots that support failover and roaming over to ensure uninterrupted connectivity for mission-critical cellular communications. Besides, the ICG-2515-NR 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 5G-NR in public places like transportations, outdoor events, etc.

GPS Included

The ICG-2515-NR is equipped with (global positioning system) feature. It adapts 5G-NR technology to incorporate multiple global navigation systems(GPS /GLONASS/BeiDou/Galileo/QZSS). It helps to position location of cellular gateway 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.

Ideal High-Availability VPN Security Router Solution for Industrial Environment

The ICG-2515-NR provides complete data security and privacy for accessing and exchanging the most sensitive data, built-in IPsec VPN function with DES/3DES/AES encryption and MD5/SHA-1/SHA-256/SHA-384/SHA-512 authentication, and GRE, SSL, PPTP and L2TP server mechanism. The full VPN capability in the VR-300PW5 makes the connection secure, more flexible, and more capable.

Wi-Fi Deployments and Authentication with Simplified Management

The ICG-2515-NR also provides a built-in AP Controller, Captive Portal, RADIUS and a DHCP server to facilitate small and medium businesses to deploy secure employee and guest access services without any additional server. The ICG-2515-NR can offer a secure Wi-Fi network with easy installation for your business.

Captive Portal



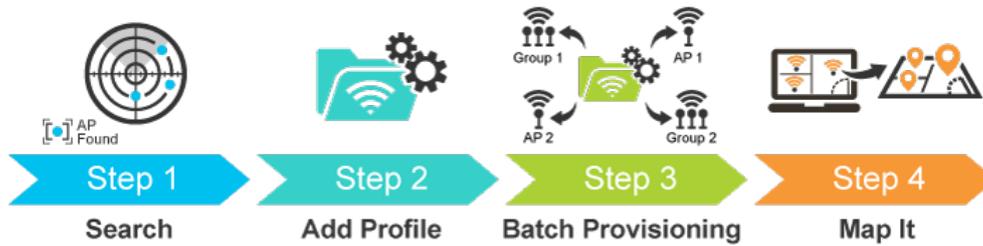
Centralized Remote Control of Managed APs*

The ICG-2515-NR provides centralized management of PLANET Smart AP series via a user-friendly Web GUI. It's easy to configure AP for the wireless SSID, radio band and security settings. With a four-step configuration process, wireless profiles for different purposes can be simultaneously delivered to multiple APs or AP groups to minimize deployment time, effort and cost.



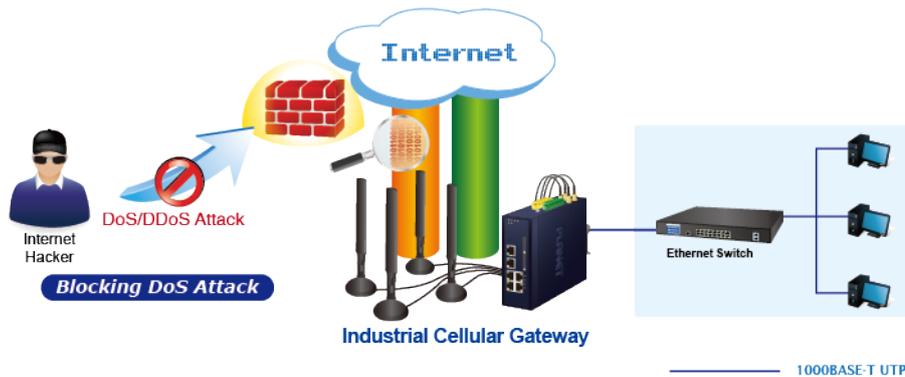
For example, to configure multiple Smart APs of the same model, the VR-300W5 allow clustering them to a managed group for unified management. According to requirements, wireless APs can be flexibly expanded or removed from a wireless AP group at any time. The AP cluster benefits bulk provision and bulk firmware upgrade through single entry point instead of having to configure settings in each of them separately.

Simplified Cluster Management with 4 Steps



Excellent Ability in Threat Defense

The ICG-2515-NR 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.



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 ICG-2515-NR is equipped with HTTPS web and SNMP management interfaces. With the built-in web-based management interface, the ICG-2515-NR offers an easy-to-use, platform independent management and configuration facility. The ICG-2515-NR supports SNMP and it can be managed via any management software based on the standard SNMP protocol.

2. PRODUCT FEATURES

Highlights

- Global 5G NR(NSA/SA)/4G LTE network with dual SIM design for cellular network redundancy
- Automatic failover between 5G NR and Gigabit WAN
- 2 x DI/DO and 1 serial port (RS485) for Modbus applications
- 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
- High Availability, AP Controller, Captive Portal and RADIUS
- 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
- 4 x 5G NR antennas
- 2 x SIM card slots
- 1 x serial console port (RS485)
- 1 x reset button

Cellular Interface

- Supports multi-band connectivity with 5G NR (NSA/SA), LTE-FDD, LTE-TDD, and WCDMA
- Built-in SIM and broadband backup for network redundancy
- Four detachable antennas for 5G NR connection
- LED indicators for signal strength and connection status

IP Routing Feature

- Static Route
- Dynamic Route
- OSPF

Firewall Security

- 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

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
- High Availability
- Captive Portal
- RADIUS Server/Client
- 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

3. PRODUCT SPECIFICATIONS

3.1 Main Components

Main Chip:	MT7622A
CPU	Dual-core ARM® Cortex-A53 (1350 MHz)
Cellular Module	SIMCOM SIM8202G-M2
RAM	512MB
Flash	16MB + 32G eMMC

3.2 Functional Specifications

Product	ICG-2515-NR
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	DB9 to RJ45 serial port
SIM Interface	2 SIM card slots with mini SIM card tray
Cellular Antenna	5 dBi external antennas with SMA connectors for 5G-NR
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)

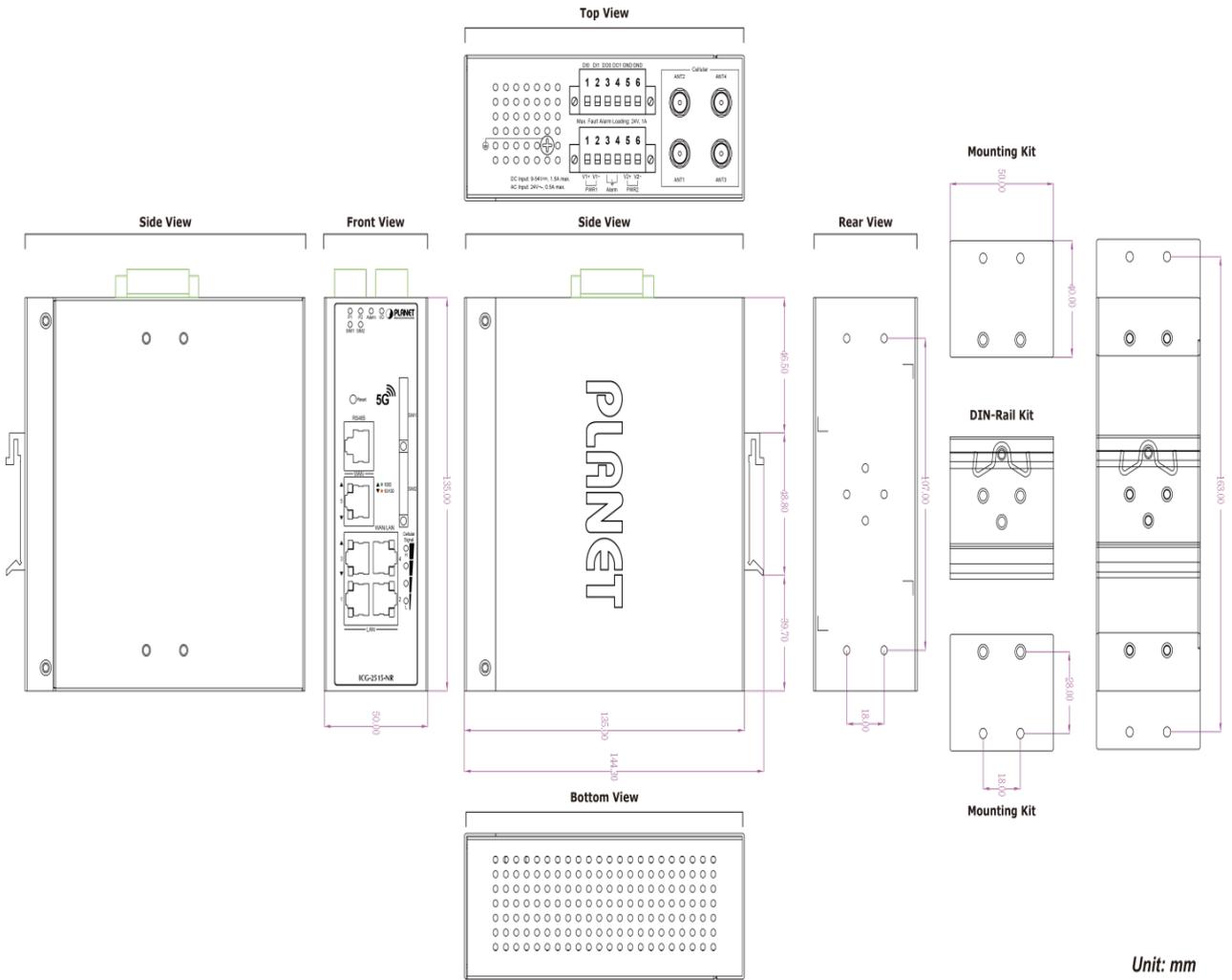
	<p>Ethernet Interfaces (Port1-4 and WAN Port):</p> <p>1000 LNK/ACT (Green)</p> <p>10/100 LNK/ACT (Amber)</p> <p>LTE SIM and Signal :</p> <p>SIM1 and SIM2 (Green)</p> <p>LTE signal: 4 levels (Green)</p>
Dimensions (W x D x H)	50x135x135 mm
Weight	0.8 kg
Power Requirements DC	9~54V DC, 0.5A
Power Consumption (Max.)	6.16 watts/ 21.02 BTU
Multi Band Supports	
5G NR	n1/n2/n3/n5/n7/n8/n12/n20/n25/n28/n38/n40/n41/n48/n66/n71/n77/n78/n79
LTE-FDD	B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B32/B46/B66/B71
LTE Data Rate	B34/B38/B39/B40/B41/B42/B43/B48
WCDMA	B1/B2/B3/B4/B5/B8
GNSS	GPS L1+L5 dual bands/GLONASS/BeiDou/Galileo/QZSS
Data Transmission Throughput	4Gbps (DL)/500Mbps(UL) for NR 2Gbps (DL)/200Mbps (UL) for LTE 42Mbps(DL)/5.76Mbps(UL) for HSPA+
Advanced Functions	
VPN	<ul style="list-style-type: none"> ■ IPsec/Remote Server (Net-to-Net, Host-to-Net) ■ GRE ■ PPTP Server ■ L2TP Server ■ SSL Server/Client (Open VPN)
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	Web browser SNMP v1, v2c PLANET Smart Discovery utility/UNI-NMS supported

Secure Management Interfaces	SSHv2, TLSv1.2, SNMP v3
System Log	System Event Log
Others	Setup wizard Dashboard System status/service Statistics Connection status Auto reboot Diagnostics
Standards Conformance	
Regulatory Compliance	CE, FCC
Environment	
Operating	Temperature: -40 ~ 75 degrees C Relative humidity: 5 ~ 90% (non-condensing)
Storage	Temperature: -40 ~ 85 degrees C Relative humidity: 5 ~ 90% (non-condensing)

3.3 Physical Specifications

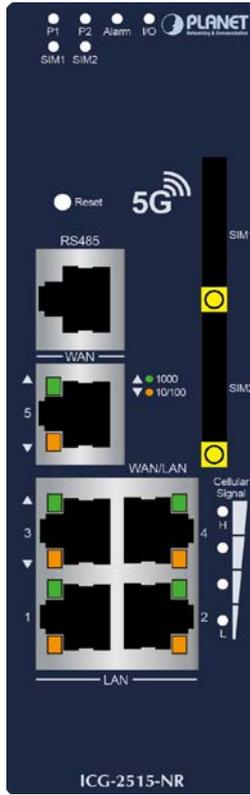
Dimensions (W x D x H)	50 x 135 x 135 mm
Net Weight	0.8 kg

Dimension:



Unit: mm

Front View



LED Definition:

■ **System**

LED	Color	Function
P1	Green	Lights to indicate DC power input 1 has power.
P2	Green	Lights to indicate DC power input 2 has power.
Alarm	Red	Lights to indicate that power or port has failed.
I/O	Red	Lights to indicate that power or port has failed or DI has event.
SIM1	Green	Lights to indicate SIM1 is connecting successfully.
SIM2	Green	Lights to indicate SIM2 is connecting successfully.

■ **LAN Per 10/100/1000Mbps Port (Port-1 to Port-4)**

LED	Color	Function	
1000 LNK/ACT	Green	Lights:	To indicate that the port is operating at 1000Mbps.
		Blinks:	To indicate that the switch is actively sending or receiving data over that port.

10/100 LNK/ACT	Amber	Lights:	To indicate that the port is operating at 10/100Mbps.
		Blinks:	To indicate that the switch is actively sending or receiving data over that port.

■ **WAN Per 10/100/1000Mbps Port (Port-5)**

LED	Color	Function	
1000 LNK/ACT	Green	Lights:	To indicate that the port is operating at 1000Mbps.
		Blinks:	To indicate that the switch is actively sending or receiving data over that port.
10/100 LNK/ACT	Amber	Lights:	To indicate that the port is operating at 10/100Mbps.
		Blinks:	To indicate that the switch is actively sending or receiving data over that port.

Upper View

3.4 ENVIRONMENTAL SPECIFICATIONS

Operating:

Temperature: -40°C ~ 75°C

Relative Humidity: 5% ~ 90% (non-condensing)

Storage:

Temperature: -40°C ~ 85°C

Relative Humidity: 5% ~ 90% (non-condensing)

3.5 ELECTRICAL SPECIFICATIONS

Power Input Range: DC 9~54V

Power Consumption:

Power Loading Status	Input Power	Power Consumption
Power on without any connection	DC 9V	3.87 watts/13.2 BTU
	DC 54V	5.04 watts/17.2 BTU
	AC 24V	4.7 watts/ 16.04 BTU
Full Loading	DC 9V	5.4 watts/ 18.43 BTU
	DC 54V	6.16 watts/ 21.02 BTU
	AC 24V	5.94 watts/ 20.27 BTU

3.6 Regulatory Compliance

FCC, CE

3.7 Reliability

MTBF > 100,000 hrs @ 25 degrees C

3.8 Basic Packaging

- ICG-2515-NR x 1
- Quick installation guide x 1
- PLANET CloudViewer QIG x1
- Wall-mount plate w/screw x 1 set
- RJ45 dust cap x 6
- 5G NR antenna x 4
- 5G NR antenna extension with magnetic base x 4
- Antenna dust cap x 4

3.9 Packaging Information

Dimensions (W x D x H)	290 x 243 x 76 mm
Weight	TBD kg (gross weight)
Carton Dimensions (W x D x H)	424 x 324 x 296 mm
Carton Weight	TBD kg
Carton Unit	5pcs in one carton