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Product Specifications

Vehicle 4G LTE Cellular Wireless Gateway with 5-Port 10/100TX

VCG-1500WG-LTE-EU/US

Version 1.0

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Change History:

Revision	Date	Author	Change List
1.0	2018/7/3	Simon Yeh	Initial release

Author	Simon Yeh	Editor:	Simon Yeh
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1. PRODUCT DESCRIPTION

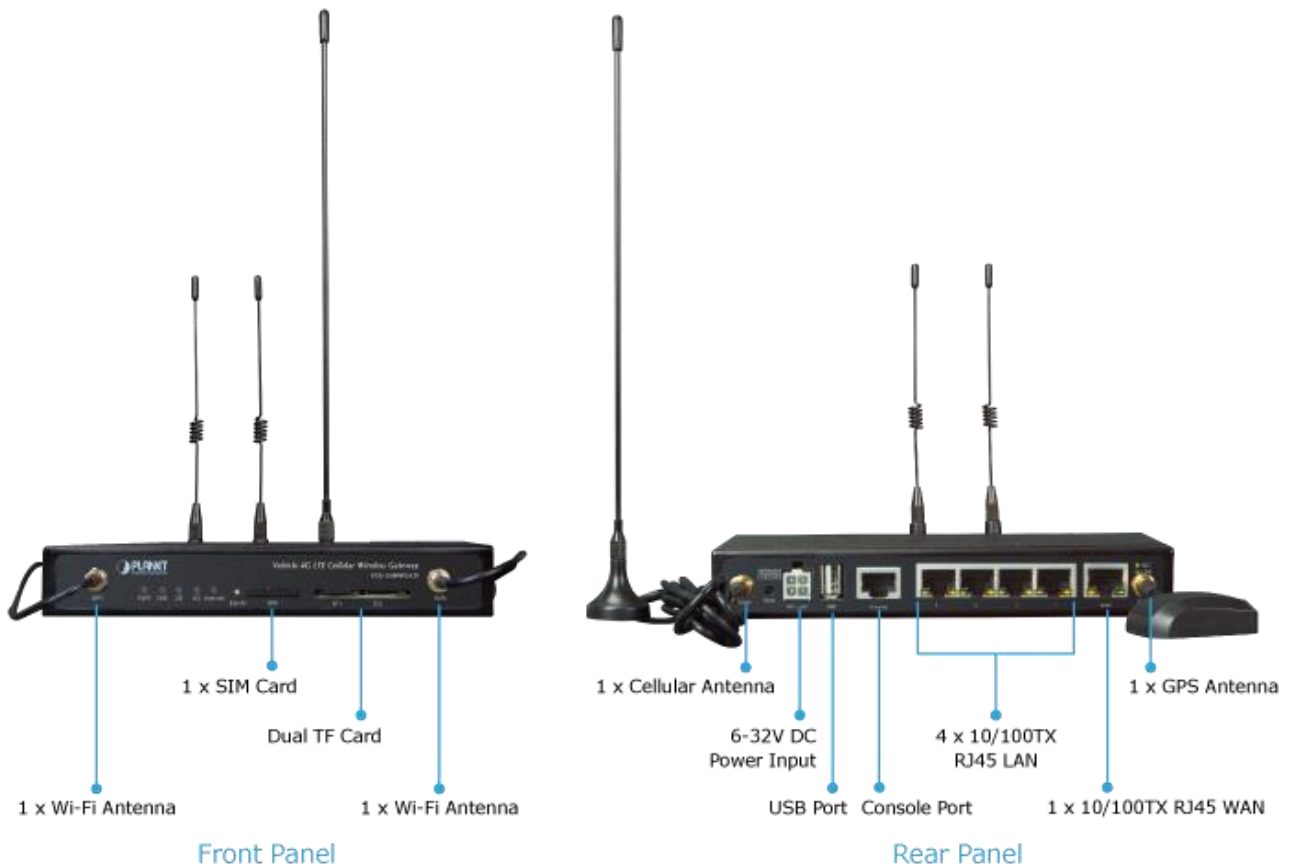


Internet of Vehicles via 4G LTE Cellular Gateway

PLANET VCG-1500WG-LTE is a reliable, secure and high-bandwidth communications vehicle cellular gateway for demanding mobile applications and **IoV** deployments. It features **4G LTE** (Long Term Evolution), **wireless AP**, **five Ethernet** ports (4 LAN and 1 WAN), **GPS**, **VPN** technology and **bandwidth management** bundled in a mountable metal case to establish a public network connection and allows passengers to access Internet.



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High-performance 4G LTE

The VCG-1500WG-LTE is able to reach a download (DL) speed of up to **100Mbps** and an upload (UL) speed of **50Mbps**. The Cellular Gateway also supports multi-band connectivity including LTE FDD, TDD, HSDPA, WCDMA and GSM for a wide range of applications.

Wireless Access Point

With an integrated 802.11n Wireless Access Point, the gateway supports data rate up to 300Mbps and is also compatible with **2.4GHz 802.11b/g/n** equipment. The Wireless Protected Access (WPA-PSK/WPA2-PSK) and Wireless Encryption Protocol (WEP) features enhance the level of transmission security and access control over Wireless LAN.

GPS Included

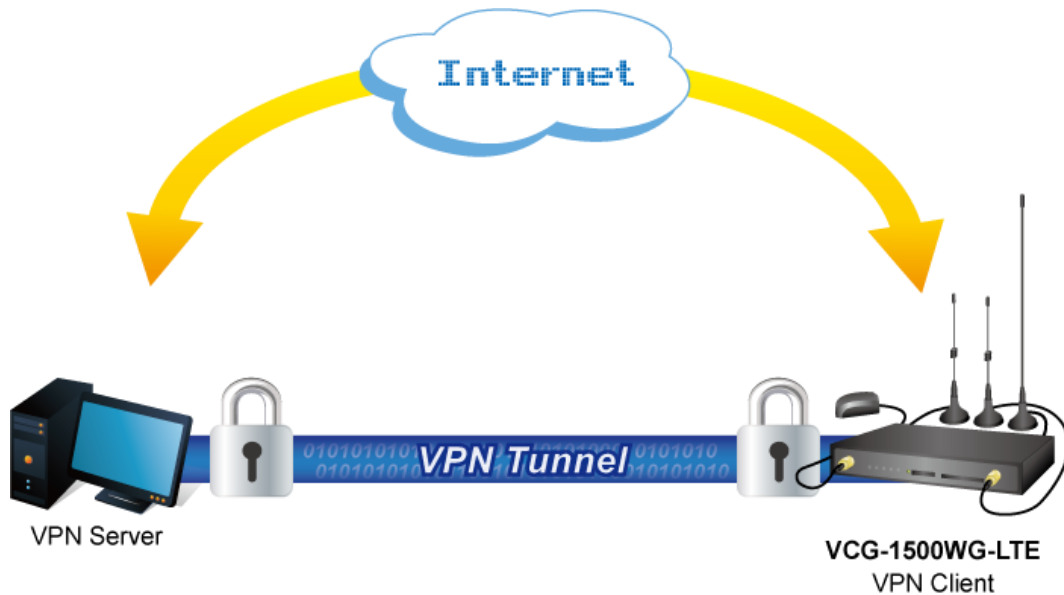
The VCG-1500WG-LTE is equipped with one convenient feature and that is GPS (Global Positioning System). It is a positioning system based on a network of satellites that continuously transmit necessary data. More signals transmitted from more satellites can triangulate its location on the ground, meaning any location can be easily tracked anytime.

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Cost-effective VPN Solution

The VCG-1500WG-LTE provides a complete data security and privacy feature for access and exchange of sensitive data. The full VPN capability of the VCG-1500WG-LTE including built-in **PPTP**, **LT2P**, and **IPSec** VPN client functions with DES/3DES/AES encryption and MD5/SHA-1 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.



**VPN Encryption for
Network Security and Data Protection**

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Dual TF Cards for Wi-fi Advertising Contents

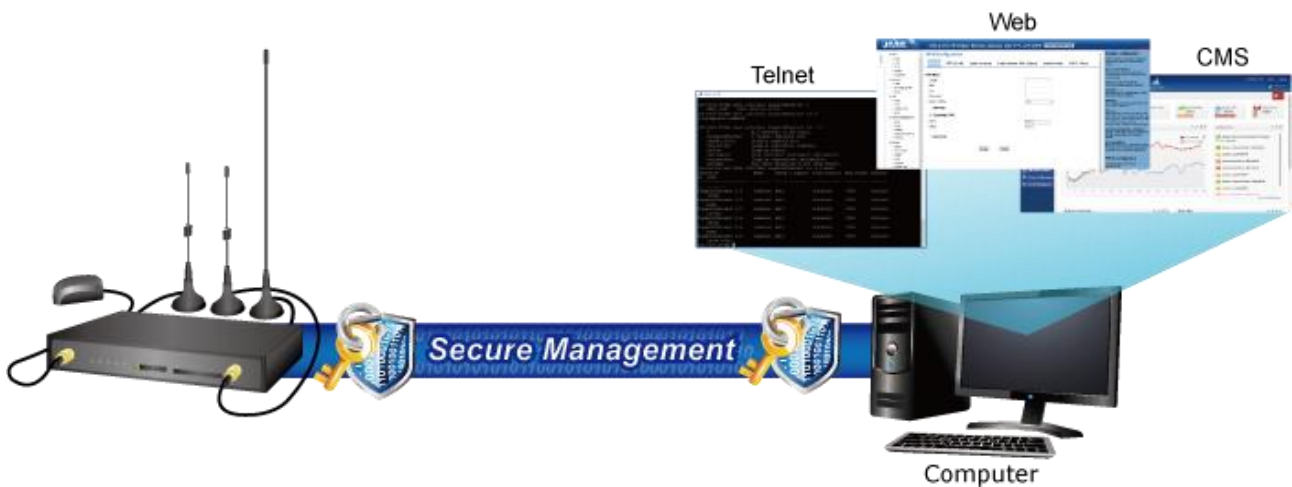
The VCG-1500WG-LTE provides dual TF cards and the capacity of each card is up to 128GB. The TF cards can store thousands of advertising data and movie files. The administrator is able to upload these files to TF cards via FTP locally. Besides, through CMS (Central Management System), administrator is able to upload and maintain these files remotely. The device will display advertising contents when users access to the Wi-Fi after authentication.

Superior Management Functions

For networking management features, the VCG-1500WG-LTE provides such functions as DMZ, QoS and Wifidog, as well as full secure functions including Network Address Translation (NAT), IP/URL/MAC filtering. The VCG-1500WG-LTE 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 VCG-1500WG-LTE is equipped with console, web and wifidog management interfaces. With the built-in web-based management interface, the VCG-1500WG-LTE offers an easy-to-use, platform independent management and configuration facility. The VCG-1500WG-LTE supports wifidog and it can be managed via CMS (Central Management System) for remote management and Wi-Fi advertising.



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2. PRODUCT FEATURES

➤ **Physical Port**

- 4 **10/100BASE-TX** RJ45 LAN ports, auto-negotiation, auto MDI/MDI-X
- 1 **10/100BASE-TX** RJ45 WAN port, auto-negotiation, auto MDI/MDI-X
- 1 4G LTE 2.3 dBi antenna
- 2 2.4G WiFi 2dBi antennas
- 1 GPS antenna
- 1 SIM card slot
- 1 console port
- 2 TF card slots to save files for Wi-Fi advertising

➤ **Cellular Interfaces**

- Supports multi-band connectivity with FDD LTE/ TDD LTE/ WCDMA/ GSM/ LTE Cat4
- Built-in SIM and broadband backup for network redundancy
- One detachable antenna for 4G LTE connection
- LED indicators for connection status (3G/4G)

➤ **Wi-Fi Interfaces**

- Complies with IEEE 802.11b/g/n 2.4GHz
- Two detachable antennas for wireless connection
- 64-/128-bit WEP, WPA/WPA2 and WPA-PSK/WPA2-PSK (TKIP/AES encryption),
- LED indicators for status

➤ **Case and Installation**

- IP30 metal case
- Mounting brackets for vehicles
- Power requirement: 6~32V DC
- Supports 15KV DC Ethernet ESD protection
- -25 to 65 degrees C operating temperature

➤ **Advanced Features**

- Supports demilitarized zone (DMZ).
- Supports VPN client, including GRE, PPTP, IPSec, L2TP
- Supports NAT port mapping function, such as SNAT, DNAT
- Supports Static Routing to display current routing information of the gateway
- Supports QoS for bandwidth management
- Supports Dynamic DNS and PLANETDDNS
- Supports WAN connection types: DHCP client, static IP and PPPoE client

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- Secures network connection
 - IP filter
 - URL filter
 - MAC filter

➤ **Management**

- Gateway management interfaces
 - Console/Telnet Command Line interface
 - Web management
- Gateway Maintenance
 - Firmware upload via HTTP, TFTP
 - Restore or reset button to factory default
 - Dual images
- SNTP (Simple Network Time Protocol)
- System log
- System tool, such as ping and trace
- Configuration backup and restore
- Supports CMS (Central Management System) and wifidog for remote management and Wi-Fi advertising

3. PRODUCT SPECIFICATIONS

3.1 MAIN COMPONENTS

CPU:	Qualcomm Atheros AR9344	x 1
Flash:	Winbond W25Q128FV (128Mbyte)	x 1
DDR RAM:	Winbond W9751G6KB-251 (512Mbyte)	x 2
Cellular Module	VCG-1500WG-LTE-US: Sierra MC7354 VCG-1500WG-LTE-EU: Quectel EC25-E	x 1
WiFi Module	Built-in Qualcomm Atheros AR9344	x 1
GPS Module	Icofchina ATGM332D	x 1

3.2 FUNCTION SPECIFICATIONS

Product	VCG-1500WG-LTE
Hardware Specifications	
Copper Ports	4 LAN 10/100BASE-TX RJ45 auto-MDI/MDI-X ports 1 WAN 10/100BASE-TX RJ45 auto-MDI/MDI-X port
Console	1 x RS232-to-RJ45 serial port (115200, 8, N, 1)
SIM Interface	1 x SIM card slot with mini SIM card tray
Cellular Antenna	1 x 2dBi external antenna with SMA connector for LTE
Wi-Fi Antenna	2 x 2dBi external antennas with SMA connectors for 2.4GHz
GPS Antenna	1 x 28dB gain external antenna with SMA connectors for GPS - 3m
USB Interface	1 x USB 2.0 for external storage
TF Card Interface	2 x TF cards for storing thousands of advertising data, max. capacity up to 128G for each
Connector	Standard 4-pin vehicle power jack for power input
Reset Button	> 5 sec: Factory default
ESD Protection	15KV DC
Enclosure	IP30 metal case
Installation	Mounting brackets for vehicles
LED	System: PWR (Red) Ethernet Interfaces (Port1-4 and WAN Port): LNK (Green) ACT (Orange) LTE SIM and Signal : 3G/4G (Blue) Wi-Fi (Blue) Internet (Blue)
Dimensions (W x D x H)	168 x 104 x 25 mm (not including antenna and connector)
Weight	537g (not including antenna)
Power Requirements – DC	6~32V DC, 1.5A
Power Consumption	3 watts/10.23 BTU
Multi Band Supports	
EU Model	■ FDD LTE B1/B3/B5/B7/B8/B20 (2100/1800/850/2600/900/800) ■ TDD LTE B38/B40/B41 (2600/2300/2500)

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	<ul style="list-style-type: none"> ■ 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/B5/B13/B17/B25 (1900/AWS/850/700) ■ WCDMA B1/B2/B4/B5/B8 (2100/1900/AWS/850/900) ■ EVDO BC10/BC0/BC1 (1700/800/1900) ■ GSM/GPRS/EDGE (850/900/1800/1900)
LTE Data Rate	20MHz bandwidth: 100Mbps (DL), 50Mbps (UL)
Wireless Specifications	
Standard	IEEE 802.11 b/g/n 2.4GHz
Wireless Mode	Access Point
Operating Channels	FCC: 1~11, ETSI: 1~13
Encryption Security	64-/128-bit WEP, WPA, WPA-PSK, WPA2, WPA2-PSK
Data Rate	Up to 300Mbps
Transmission Distance	Up to 150 meters *The estimated transmission distance is based on the theory. The actual distance will vary in different environments.
Advanced Functions	
VPN	GRE, PPTP, IPSec, L2TP
QoS	Bandwidth management
WAN Connection Type	PPPoE, Static, DHCP client
Wifidog	Wi-Fi authentication and advertising
Secure Network	IP filter URL filter MAC filter
Other	Supports demilitarized zone (DMZ) Supports NAT port mapping function, UPnP Supports Dynamic DNS
Management	
Basic Management Interfaces	Console; Telnet; Web browser
Standards Conformance	
Regulatory Compliance	CE, FCC
Standards and Protocols Compliance	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3x flow control and back pressure RFC 768 UDP RFC 791 IP RFC 792 ICMP RFC 5321 SMTP RFC 2068 HTTP RFC 1939 POP3 RFC 854 TELNET RFC 959 FTP
Environment	
Operating	Temperature: -25 ~ 65 degrees C Relative Humidity: 95% (non-condensing)
Storage	Temperature: -40 ~ 85 degrees C Relative Humidity: 95% (non-condensing)

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3.3 PHYSICAL SPECIFICATIONS:

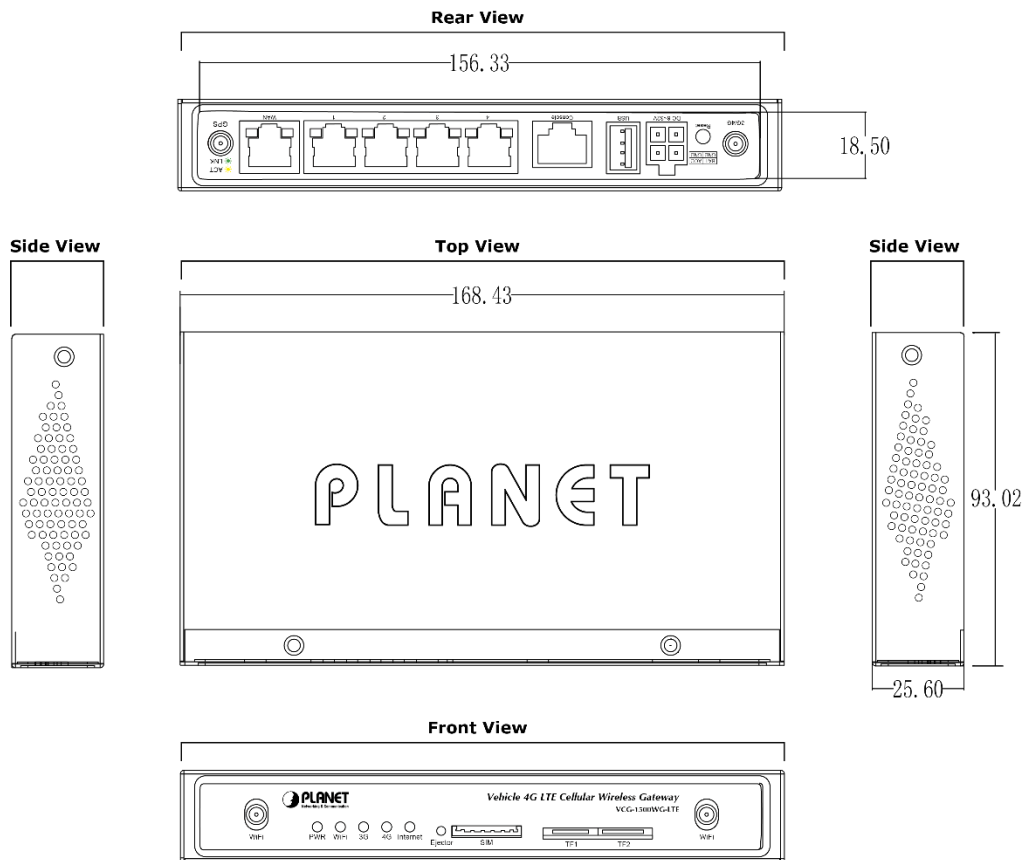
➤ **Dimensions:**

168 x 104 x 25 mm (W x D x H)

➤ **Weight:**

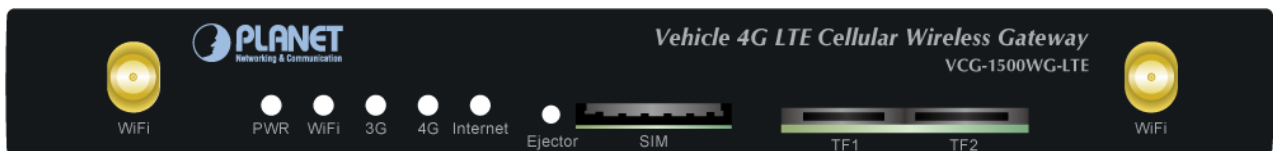
537g

➤ **Three Views**



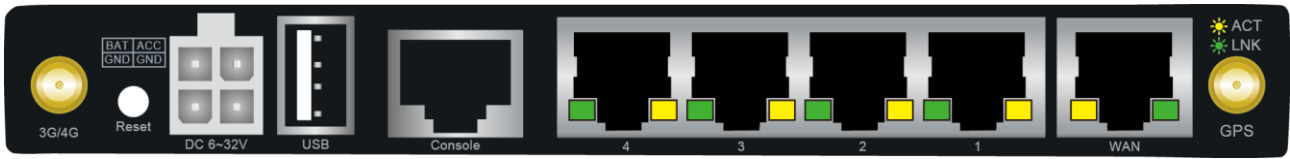
Dimensions (unit = mm)

➤ **Front View**



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➤ **Rear View**



➤ **LED Definition**

■ **System**

LED	Color	Function	
PWR	Red	Lights	Indicates that the system is working properly.
Wi-Fi	Blue	Lights	Indicates that the Wi-Fi is working. The Wi-Fi is enabled by default.
3G	Blue	Lights	Indicates that the SIM card is detected via 3G.
4G	Blue	Lights	Indicates that the SIM card is detected via 4G.
Internet	Blue	Lights	Indicates that the gateway is connecting to the Internet.

■ **10/100BASE-TX Port Interfaces (Port-1 to Port-4, WAN Port)**

LED	Color	Function	
Ethernet	Green	Blinking	LNK, indicates that the link is successfully established.
	Orange	Blinking	ACT, indicates that the port is operating at 100Mbps.

■ **Button**

Button	Function
Ejector	This button is used to eject the SIM card adapter.
Reset	This button is used to restore all the factory default settings. Please hold the reset button for about 5 seconds to load default.

■ **Interface**

Interface	Description
Power Jack	The standard 4-pin vehicle power jack comes with the input power of 6-32V DC. Use the power adapter included in the package or connect to vehicle battery directly.
SIM Slot	Insert the SIM card adapter with SIM card.
TF1/TF2 Slot	Store broadcast advertisements for Wi-Fi authentication.
USB Port	Connect with external storage.
Console Port	The port is for testing or debugging.

3.4 ENVIRONMENTAL SPECIFICATIONS

➤ **Operating:**

Temperature:	25 ~ 65 degrees C
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Relative Humidity:	95% (non condensing)
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➤ **Storage:**

Temperature:	40 ~85 degrees C
Relative Humidity:	95% (non condensing)

3.5 ELECTRICAL SPECIFICATIONS

Full Loading: 3 watts

3.6 REGULATORY COMPLIANCE

FCC Part 15 Class A, CE

3.7 RELIABILITY

MTBF > 100,000hrs @ 25 degrees C

3.8 BASIC PACKAGING

The VCG-1500WG-LTE-EU/US Cellular Gateway	x 1
Quick Installation Guide	x 1
4G LTE Antenna	x 1
Wi-Fi Antenna	X 2
GPS Antenna	x 1
Ethernet Cable	x 1
Console Cable	X 1
Mounting Kit	x 1
Power Kit	x 1
Antenna Dust Caps	x 4
Copper Dust Caps	x 6

3.9 PACKING INFORMATION

Box Dimensions (W x D x H):	323.85 x 240.11 x 75.14 mm
Box Weight:	1240 g
Carton Dimensions (W x D x H):	409.57 x 345.02 x 508.53 mm
Carton Weight:	13 kg
Quantity:	10pcs in one carton