



# **VRG5-31412 Series Residential Gateway**

**User's Guide**

**Version 0.90**

## Revision History

Version	Date	Description
0.90	20170123	First Release

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# **1. INTRODUCTION**

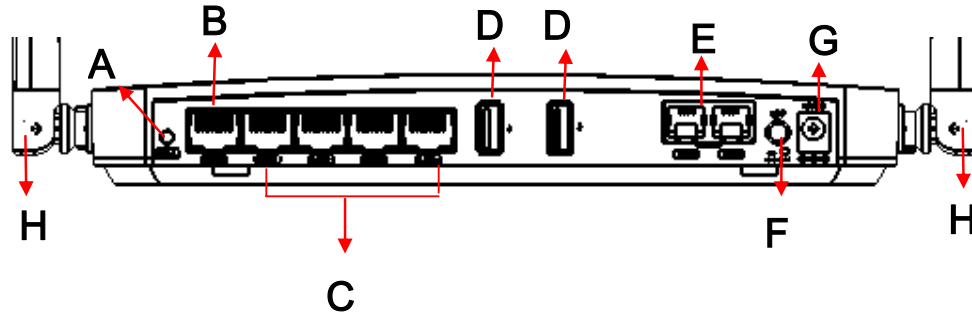
Thank you for choosing this WLAN Residential Gateway. The WLAN Residential Gateway can provide the best performance and price ratio when multiple copper ports need to be deployed in networking environment.

## **1.1 The Managed Residential Gateway**

With 5 10/100/1000Mbps RJ-45 ports on the front panel and 1 combo ports, this compact WLAN Residential Gateway provides high performance store-and-forward switching capability plus other advanced features such as VLAN etc.. Clear, at-a-glance per-port LED indicators make it easier for users to control and manage network status. The built-in management module also allows users to configure, control and monitor the system via SNMP based management system.

## 1.2 Appearance

### Front Panel



5 Ports 10/100/1000Mbps RJ-45, 2 USB Ports and 1 100/1000Mbps SFP slot;  
built-in IEEE802.11n WiFi and 1 combo ports uplink Residential VoIP gateway

**A. WPS Button**

**B. WAN Combo Port**

(10/100/1000Mbps RJ-45 WAN port + 100/1000Mbps SFP slot)

**C. LAN 1~4 Port (10/100/1000Mbps RJ-45 port)**

**D. USB Port**

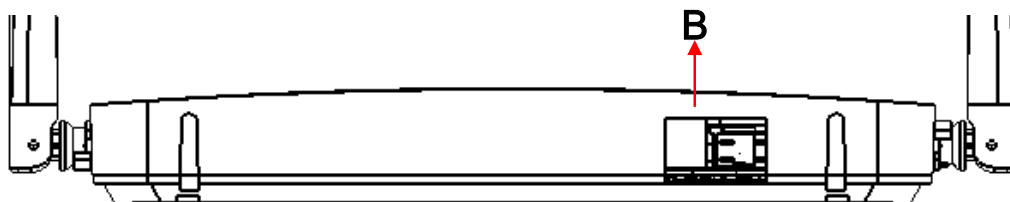
**E. RJ-11 Port**

**F. LED Button**

**G. Power Input**

**H. Antenna**

### Rear Panel



5 Ports 10/100/1000Mbps RJ-45 and 2 USB Ports; built-in IEEE802.11n WiFi  
and 1 combo ports uplink Residential VoIP gateway

## B. Combo Slot

(10/100/1000Mbps RJ-45 WAN port + 100/1000Mbps SFP slot)

### Left and Right Panel

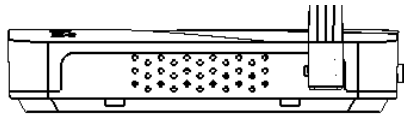


Figure 1. Left Panel

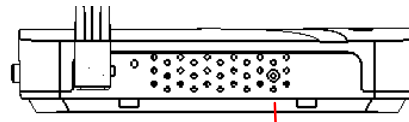


Figure 2. Right Panel

### I. Reset Button:

- Insert a pin or paper clip to press the Reset Button for 5 seconds to restart the system
- Insert a pin or paper clip to press the Reset Button for 10 seconds to reset the device back to factory defaults.

### Top Panel

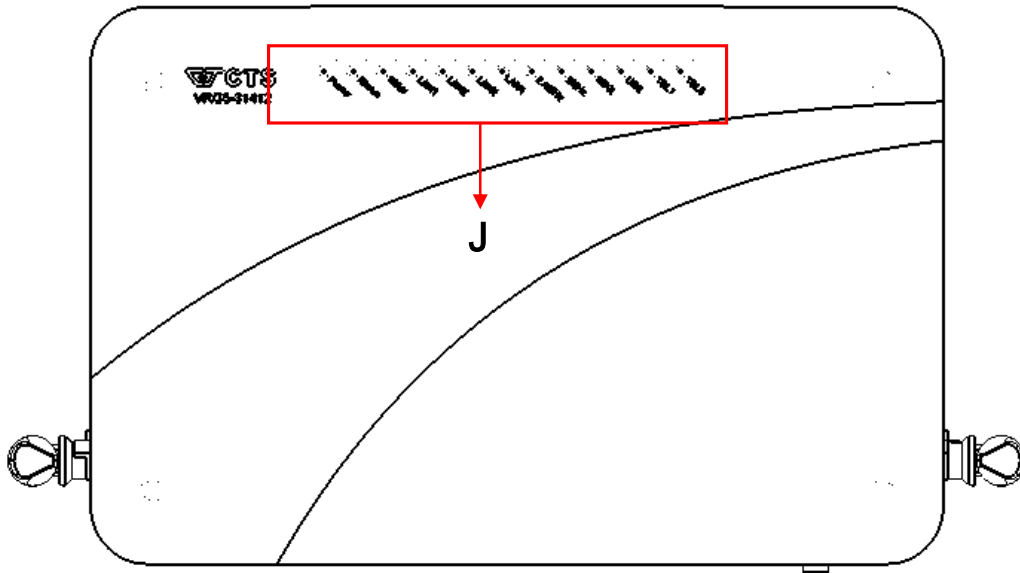
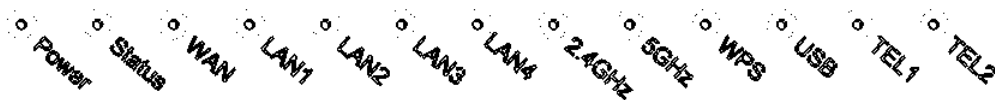


Figure 3. Top Panel

**J. LED:** For detail definitions, please refer to chapter [1.3 LED Definitions](#).  
The enlarged LED panel should be shown as below:



## 1.3 LED Definitions

The WLAN Residential Gateway is Plug & Play compliant. Real-time operational status can be monitored through a set of LED indicators located on the top panel. A built-in management module provides users with flexible interfaces to configure, control and monitor the complete system remotely.

LED	Color	Operation
Power	Off	Power is off.
	Green	Power is functioning normally.
STATUS	Green	System is ready.
	Orange	System is booting up.
	Orange blinking	Insert a pin or paper clip to press the Reset button for 5 seconds to restart the device. The STATUS LED will blink in orange once. Insert a pin or paper clip to press the Reset button for 10 seconds to reset the device to factory defaults. The STATUS LED will blink in orange three times.
WAN	Off	The port link is off.
	Green	The link is up and works at 10/100Mbps.
	Orange	The link is up and works at 1000Mbps.
	Blinking	The traffic is present.
LAN 1	Off	The port link is off.
	Green	The link is up and works at 10/100Mbps.
	Orange	The link is up and works at 1000Mbps.
	Blinking	The traffic is present.
LAN 2	Off	The port link is off.
	Green	The link is up and works at 10/100Mbps.
	Orange	The link is up and works at 1000Mbps.
	Blinking	The traffic is present.
LAN 3	Off	The port link is off.
	Green	The link is up and works at 10/100Mbps.
	Orange	The link is up and works at 1000Mbps.
	Blinking	The traffic is present.
LAN 4	Off	The port link is off.
	Green	The link is up and works at 10/100Mbps.
	Orange	The link is up and works at 1000Mbps.
	Blinking	The traffic is present.
2.4GHz	Off	WLAN link is off.
	Slow Green Blinking	The WLAN is ready and waits for connection.
	Fast Green Blinking	The traffic is present.
5GHz	Off	WLAN link is off.
	Slow Green Blinking	The WLAN is ready and waits for connection.



	Fast Green Blinking	The traffic is present.
WPS	Off	WLAN link is off.
	Green	The device is connected.
	Green Blinking	WPS is searching for the WPS client.
	Orange Blinking	The device is disconnected.
USB	Off	The USB port is disconnected.
	Green	The USB port is connected with device.
TEL1	Off	Telephony Port 1 link is off.
	Green	The telephone of Telephony Port 1 is off the hook.
	Green Blinking	The telephone of Telephony Port 1 rings.
TEL2	Off	Telephony Port 2 link is off.
	Green	The telephone of Telephony Port 2 is off the hook.
	Green Blinking	The telephone of Telephony Port 2 rings.

## Cable Specifications

The following table contains various cable specifications for the WLAN Residential Gateway. Please make sure that you use the proper cable when connecting the WLAN Residential Gateway.

Cable Type	Description
10BASE-T	UTP Category 3, 4, 5 (100 meters max.) EIA/TIA- 568 150-ohm STP (100 meters max.)
100BASE-TX	UTP Cat. 5 (100 meters max.) EIA/TIA-568 150-ohm STP (100 meters max.)
1000BASE-T	UTP Cat. 5e (100 meters max.) UTP Cat. 5 (100 meters max.) EIA/TIA-568B 150-ohm STP (100 meters max.)
100BASE-FX	Multi-mode fiber module(2km) / Single-mode fiber module
1000BASE-SX	Multi-mode fiber module (550m)
1000BASE-LX	Single-mode fiber module (10km)
1000BASE-LH	Single-mode fiber module (30km/50km)
1000BASE-ZX	Single-mode fiber module (80km)
Mini-GBIC	SFP Transceiver for 1000BASE-SX Multi-mode fiber module (550m) SFP Transceiver for 1000BASE-LX Single-mode fiber module (10km) SFP Transceiver for 1000BASE-LH Single-mode fiber module (30km/50km) SFP Transceiver for 1000BASE-ZX Single-mode fiber module (80km)

## 2. INSTALLATION

To properly install the WLAN Residential Gateway, please follow the procedures listed below. Procedures covered in this chapter are described below in separate sections.

- Installation Requirements
- Unpacking the WLAN Residential Gateway
- Installing the WLAN Residential Gateway
- Powering on the WLAN Residential Gateway
- Connecting the WLAN Residential Gateway to the Network

### 2.1 Installation Requirements

Basic requirements for installation are as follows:

- Environmental conditions
  - One power outlet
  - Proper ventilation
  - Proper isolation to electrical noise, radio, etc..
  - UTP cables should not run in the same duct with power and phone line cords
- Required SFP Transceivers, fiber cables, UTP cables or phone line cords

### 2.2 Checking the Package Contents

Unpack the package carefully and check the package contents. The package should contain the following items:

- Items included in standard package:
  - 1 WLAN Residential Gateway
  - 1 Documentation CD
  - 1 Power Adaptor
  - 1 Mac ID Label

If any of the above items is found missing or damaged, please contact your local sales representative for support or replacement.

## 2.3 Installing the WLAN Residential Gateway

### CAUTION

To prevent any damage or failure of the WLAN Residential Gateway, please **DO NOT** block the ventilation FAN holes.

Use the following guidelines when choosing a place to install the Residential Gateway:

- Firm and steady flat surface.
- The location of power outlet should not be far away from the device.
- Make sure that there is proper heat dissipation from and adequate ventilation around the switch. Do not place heavy objects on the WLAN Residential Gateway.
- Make sure water and moisture cannot enter the case.
- Keep the cabling away from electrical noise.

## 2.4 Powering ON

The WLAN Residential Gateway can be used with AC power adapter 100-240 VAC Input and 12VDC output. The input connector is located on the front panel of the WLAN Residential Gateway. Before turning on the WLAN Residential Gateway, please make sure that network cables, and power cables are securely connected.

### Procedures:

1. Plug one end of the power adaptor into the power jack on the front panel.
2. Plug the other end of the power adaptor into the power outlet. After the power is on, the Power LED indicator should light in green.

### Power Failure

In the event of power failure, unplug the power that is plugged into the Residential Gateway at the front of the device. When power is resumed, plug the power back to the Residential Gateway. Please note that the WLAN Residential Gateway has no Power ON/OFF Button. Therefore, the only way to power on or power off the Residential Gateway is to connect or disconnect the power adaptor.

## **2.5 Connecting the Gateway to Network**

### **Connect to Network**

This WLAN Residential Gateway has 5 10/100/1000Mbps RJ-45 ports on the front panel. These ports can be inserted by 10/100/1000Base-T cables, connecting to the end devices. The connection of the fiber port on the rear panel must be matched, i.e. Transmitter to Receiver and vice versa.

## 3. MAINTENANCE

It is easy to use and maintain this WLAN Residential Gateway. The procedures are suggested when you want to identify faults, perform hardware replacement and firmware upgrading.

### 3.1 Trouble Shooting

Identifying faults can greatly reduce the time required to find the problem and solution. Users may perform local or remote checks to find the problems.

#### Hardware Check

Users can perform local checks by observing LED indicators status.

- When the whole system fails to function,
  - Check Power LED status. That power LED goes off indicates the gateway does not any power.
  - Check Power connection. Make sure that the power adaptor is connected properly firmly.
  - Reset power. Unplug and re-plug the power adaptor to restart the whole system.
  
- When certain network link fails to function,
  - Locate the port of the switch
  - Check Port Link Status LED. That WAN/LAN LED goes off indicates the gateway is link down.
  - Check cable connection between the port and the connected device. Make sure that the cable is connected properly and firmly.
  - Reset power. Unplug and re-plug the power adaptor to restart the whole system.

#### Software Check

Users may check the WLAN Residential Gateway through CLI/Web/SNMP management if fail problem remains after finishing hardware check. For detailed procedures, please refer to the Network Management User's Manual.

## **3.2 Hardware Replacement Procedures**

### **WARNING!**

The WLAN Residential Gateway contains no user-serviceable parts. **DO NOT, UNDER ANY CIRCUMSTANCES, open and attempt to repair it.**

**Failure to observe this warning could result in personal injury or death from electrical shock.**

**Failure to observe the above warning will immediately void any Warranty.**

## **3.3 Firmware Upgrade**

This WLAN Residential Gateway may perform firmware upgrading when required. New firmware can be obtained from your sales representative. For detailed upgrading procedures, please refer to the Network Management User's Manual.

## **Federal Communication Commission Interference Statement**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

For operation within 5.15 ~ 5.25GHz frequency range, it is restricted to indoor environment. This device meets all the other requirements specified in Part 15E, Section 15.407 of the FCC Rules.

**Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Note: The country code selection is for non-US model only and is not available to all US model. Per FCC regulation, all WiFi product marketed in US must fixed to US operation channels only.