

# VRG5-31412SFP-CW-AC-DR Series

## Triple Play Gateway



### Features

- Dual Rate with Auto-Sensing Function**  
 Dual Rate CPE Switch with auto-sensing function can automatically adjust to the speed of the slide-in fiber transceiver. This can save the cost when upgrading the device from 100Mbps to 1000Mbps.
- Flexible Auto Provision Schemes**  
 Provide both DHCP auto provision and TR-069 to fulfill the choice of deployment scale and reduce the OPEX of device maintenance for service providers.
- IGMP snooping v1/v2**  
 Support IGMP snooping v1/v2 to facilitate the IPTV service deployment.
- Combo WAN Port Technology**  
 Support both SFP slot and TP WAN port for various kinds of deployment and saving manual setting efforts.
- Smart Lighting Control**  
 LED Indicators for link activities and status can be quickly switched ON/OFF by pressing a control button. This Smart Lighting Control can turn off LED blinking indicators especially at night for household users to prevent light pollution.
- Optional Cable Tray**  
 This is a flexible option for FTTH installation. Users can keep excessive fiber inside the cable tray to have extra protection for the sensitive fiber.
- CLI Management**  
 It supports Command Line Interface (CLI) which requires fewer resources and is easier to configure multiple devices at a time. For experts, it would be more concise and powerful to manage the gateway.

4 Ports 10/100/1000Mbps RJ-45 + 2 Ports VoIP FXS and 1 Combo Uplink Port ( 10/100/1000Mbps RJ-45 and 100/1000 Mbps SFP slot ) VoIP Residential Gateway with Dual Band IEEE 802.11b/g/n/ac Wi-Fi

### Description

Connection Technology Systems (CTS) VRG5-31412SFP-CW-AC-DR series triple play solution is a Web & SNMP managed fiber optical residential gateway which is designed to meet the FTTH deployment requirements for delivering high speed internet access, VoIP and IPTV services. VRG5-31412SFP-CW-AC-DR provides one (SFP slot / TP) combo WAN port for broadband internet connections, four 10/100/1000base-T RJ-45 ports for LAN application and two FXS ports for VoIP telephony service as well as IEEE 802.11b/g/n/ac Wi-Fi module for wireless access application.

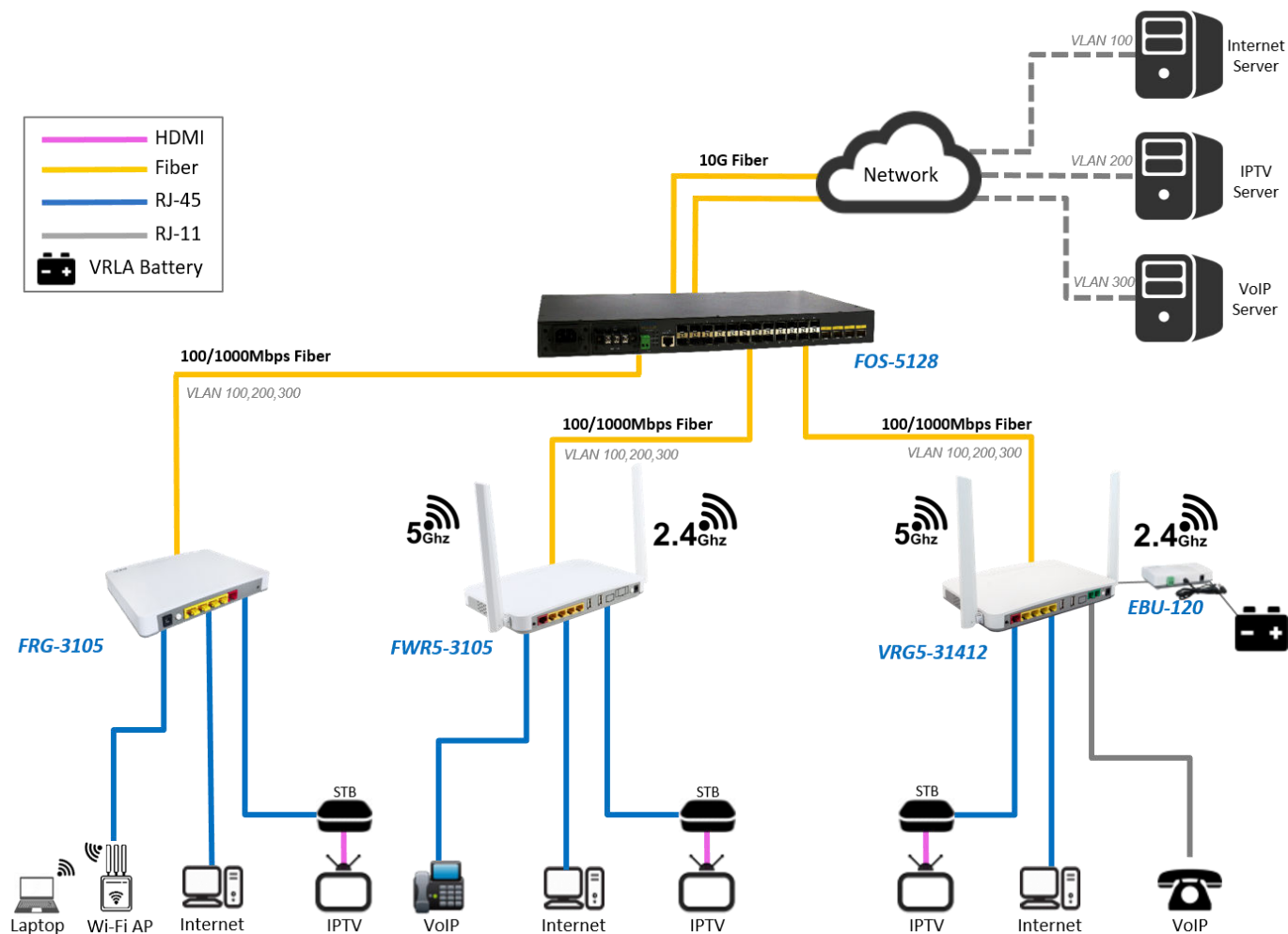
Aimed at the operators or service providers who deliver the multiple services for residential users, the VRG5-31412SFP-CW-AC-DR allows the triple play services in a Fiber-to-the-home deployed infrastructure in a single device. The four 10/100/1000Base-T RJ-45 ports and IEEE 802.11b/g/n/ac Wi-Fi connection enable users to connect PC or laptop for internet applications such as web surfing, email, file upload/download and online gaming as well as connect a set top box for provisioned video applications like IPTV, VoD, E-learning etc.. The built-in two FXS ports support SIP to enable the service of VoIP telephony with toll quality and can significantly reduce costs for voice communication.

The combo WAN port of VRG5-31412SFP-CW-AC-DR can support both short & long-distance connections for the deployments to the household, apartment or campus. The device management is based on CLI, Web and SNMP interfaces. To fulfill the requirement of mass deployments, the device also supports auto provisioning mechanism to allow the operators or service providers to manage the device configuration automatically and dynamically. Consequently, it can help saving the OPEX (operational cost) for the operators or service providers.

### Target Applications

- Managed triple play CPE with built-in IEEE 802.11b/g/n/ac Wi-Fi for FTTH deployment applications to deliver high speed internet, VoIP and IPTV triple play services.**

## Application Diagram



## Specification

### ■ Interface

- LAN: 4 x 10/100/1000Base-T RJ-45
- Combo WAN: 1 x 100/1000Base-X SFP and 10/100/1000Base-T RJ-45
- 2 x VoIP FXS (RJ-11)
- 2 x USB 2.0 (Type A)
- IEEE 802.11b/g/n/ac Wi-Fi

### ■ Standards

- IEEE 802.3 10Base-T
- IEEE 802.3u 100Base-TX/FX
- IEEE 802.3ab 1000Base-T
- IEEE 802.3z 1000Base-X
- IEEE 802.1p Priority
- IEEE 802.1q Tag VLAN
- IEEE 802.11b/g/n/ac

### ■ H/W Specification

- Store and Forward Switching Mechanism
- Auto Crossover for MDI/MDI-X in TP Port
- Auto Negotiation in TP Port
- Half/Full Duplex Mode Operation
- Jumbo Frame up to: 9K
- MAC Address Table: 1K

### ■ LED

- Power ,Status, WAN, LAN1-4
- Wi-Fi
- WPS
- TEL 1, 2
- LED ON/OFF Control Button

### ■ Forward / Filter Rate

- 10M : 14,880/14,880pps
- 100M: 148,800/148,800pps
- 1000M:1,488,000/1,488,000pps

### ■ Layer 2 Switch Features

- IEEE802.1p Priority / 802.1Q Tag VLAN
- QoS
- Priority Queues: 4 Queues
- CoS, 802.1p, DSCP
- Weighted Round-Robin (WRR) / Strict-Priority Queueing (SPQ) Scheduling Algorithm
- Policy and Shaping Rate Limit
- IGMP Snooping v1 & v2
- IGMP Fast Leave

### ■ Layer 3 Routing

- PPPoE Client
- NAT/Bridge Hybrid Mode
- Static Route
- DHCP Client & Server
- DNS Client & DDNS
- IGMP Proxy
- DMZ Host

### ■ Security

- Firewall
- Packet / URL Filter
- VPN Pass Through (IPSec., PPTP, L2TP)
- DDoS Attack Detection & Blocking
- UPnP

### ■ VoIP Function

- SIP Protocol (RFC3261)
- VAD & CNG
- Echo Cancellation (G.165/G.168)
- DTMF Tone Generation
- T.38 Fax/Modem Relay
- T.38/G.711 Fax Pass Through
- G.711 a/u, G.723, G.726, G.729 a/b Codec
- Adaptive Jitter Buffer
- Dialing Plan
- Caller ID Display
- Call Forward(Unconditional/Busy/No Answer)
- Call Hold
- Call Transfer
- 3-way Conference

### ■ Wi-Fi

- Wireless AP Mode
- NAT/Bridge Mode by SSID
- IEEE 802.11b/g/n/ac
- Wi-Fi Protected Setup (WPS)
- 64/128-bit WEP, WPA, WPA2 Data Encryption
- MAC Access Control for Wi-Fi Link
- 8 SSID (5GHz x 4 / 2.4GHz x 4)
- 2.4GHz/5GHz Dual Band

### ■ Management

- IPv4/IPv6 Dual Stack
- Web/Telnet/SSHv2 Management
- SNMP v1/v2c
- HTTP/FTP/TFTP Firmware Upgrade
- DHCP Auto Provision
- TR-069\*\*
- Event Log
- Power Down Trap

### ■ Power Requirement

- External Power Adaptor
- AC Input: 100 ~ 240VAC, 50/60Hz
- DC Output: 12VDC
- Power Consumption (Max.):
- AC Side: 23.25W
- DC Side: 20W

### ■ Environmental Condition

- Operation: 0°C ~ 50°C
- Storage Temperature: -20°C ~ 60°C
- Humidity: 5% ~ 90%, Non-condensing

### ■ Dimension & Weight

- Size: 229 x 149 x 30.8 mm
- (W x D x H/ Not include antenna)
- Weight: 0.46 Kg

### ■ EMC/Safety

- FCC Class B, CE

“\*\*\*” Customizations may be required for the interoperability between the ACS server and the device.

## Order Information

### VRG5-31412

Model	Fiber Ports			TP Ports		WLAN	VoIP
	Speed (Mbps)	Type	Ports	Speed (Mbps)	Ports	Type	FXS Port
VRG5-31412SFP-CW-AC-DR	100/1000	SFP	1	10/100/1000	5	802.11 b/g/n/ac	2
VRG5-31412TP-AC	-	-	-	10/100/1000	5	802.11 b/g/n/ac	2

Accessory

SFP-31-DR

Model	Fiber Port					
	Speed (Mbps)	Type	Connector	Distance	Wavelength	Temperature
SFP-31FC-DR	100/1000	MM	LC	550M/2KM	1310nm	0 ~ 70°C
SFP-31FC(SM-10)-DR	100/1000	SM	LC	10KM	1310nm	0 ~ 70°C
SFP-31W2A(SM-10/20)-DR	100/1000	WDM	LC	10/20KM	TX: 1310nm RX:1550nm	0 ~ 70°C
SFP-31W2B(SM-10/20)-DR	100/1000	WDM	LC	10/20KM	TX: 1550nm RX:1310nm	0 ~ 70°C

SFP-31

Model	Fiber Port					
	Speed (Mbps)	Type	Connector	Distance	Wavelength	Temperature
SFP-31FC	1000	MM	LC	550M	850nm	0 ~ 70°C
SFP-31FC(SM-10/20)	1000	SM	LC	10/20KM	1310/1310nm	0 ~ 70°C
SFP-31W2A(SM-10/20)	1000	WDM	LC	10/20KM	TX: 1310/1310nm	0 ~ 70°C
					RX: 1550/1550nm	
SFP-31W2B(SM-10/20)	1000	WDM	LC	10/20KM	TX: 1550/1550nm	0 ~ 70°C
					RX: 1310/1310nm	