

Product Specifications
802.11n Wireless VDSL2 Bridge Router
VDR-301N

Version 1.0

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Change History:

Revision	Date	Author	Change List
Version 1.0	2017/02/02	Solo Hsu	Initial release

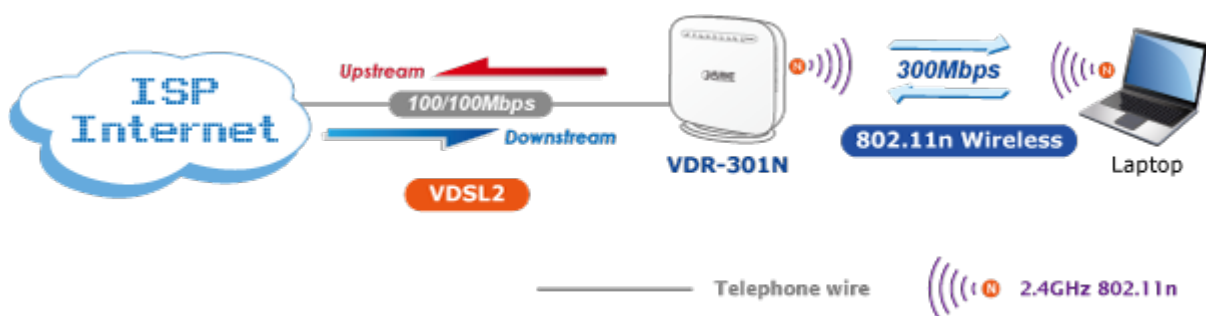
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1. PRODUCT DESCRIPTION



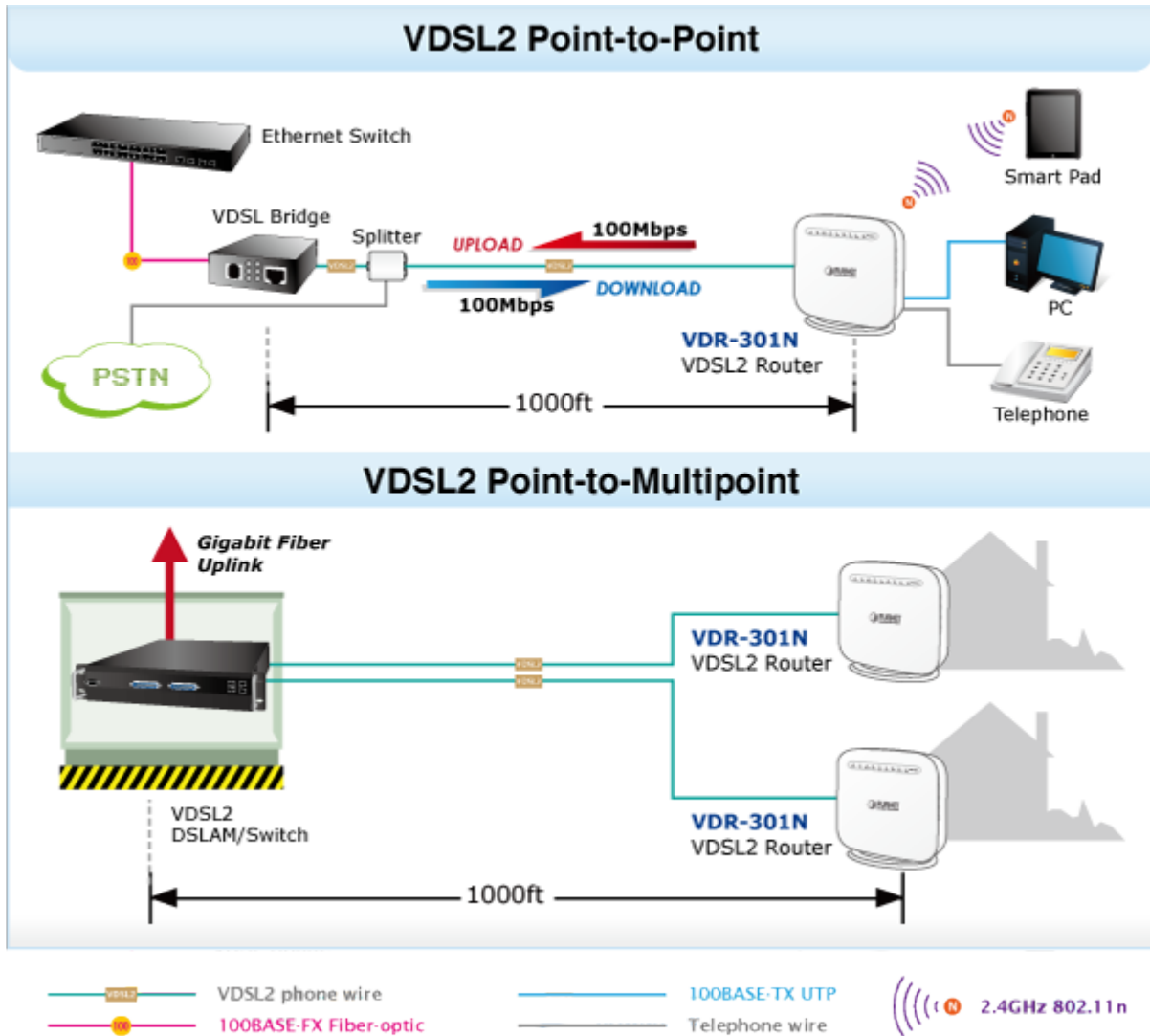
Multiple Functions for Broadband Communications

PLANET VDR-301N integrates **VDSL2**, **ADSL2+** and **wireless LAN** services into one unit. It is designed to provide a simple and cost-effective xDSL Internet connection for a private Ethernet and 802.11b/g/n wireless network. The Router combines high-speed xDSL Internet connection and IP routing for the LAN and wireless connectivity in one package. It is usually preferred to provide high access performance applications for the individual users, SOHOs and small enterprises.



High-performance Ethernet over VDSL2

Via the latest VDSL2 technology with **30a profile** supported, PLANET VDR-301N offers very high-performance access to Internet, up to **100Mbps** for both **downstream** and **upstream** data transmission. VDSL2 absolutely offers the fastest data transmission speed over the existing copper telephone lines without the need for rewiring. With integrated support for the ITU-T's new **G.993.5 Vectoring** technology, the VDR-301N works in conjunction with vectoring-enabled DSLAMs to remove crosstalk interference and improve maximum line bandwidth across the existing copper infrastructure.



Delivering High-demanding Service Connectivity for ISP / Triple Play Devices

The VDR-301N provides excellent bandwidth to meet the demand of the triple play devices for home entertainment and communication. With the capability of 100/100Mbps symmetric data transmission, the VDR-301N enables many multi-media services to work on local Internet, such as **VOD (Video on Demand)**, Voice over IP, **Video phone**, **IPTV**, Internet caching server, **distance education**, and so on.

ADSL2+ Fallback

For those ISPs that still provide ADSL broadband service, the VDR-301N can support transmission rates up to 24Mbps downstream and 3.5Mbps upstream with ADSL2+ technology. The VDR-301N supports PPPoA (RFC 2364 - PPP over ATM Adaptation Layer 5), RFC 2684 encapsulation over ATM (bridged or routed), PPP over Ethernet (RFC 2516), and IP over ATM (IPoA, RFC 1483) to establish a connection with ISP and it can be also directly switched over to VDSL2 after the ISP network upgrade.

High-speed 802.11n Wireless Connectivity

The VDR-301N applies 2T2R MIMO antenna technology and provides two modes for network applications -- **Router** and **Bridge**. With built-in 2.4GHz IEEE 802.11b/g/n wireless network capability, the VDR-301N allows any computer and wireless-enabled network device to connect to it without additional cabling. 802.11n wireless capability brings users the data transmission rate as high as **300Mbps**. The radio coverage is also doubled to offer high-speed wireless connection even in spacious offices or houses.

IPv6/IPv4 Dual Stack Capability

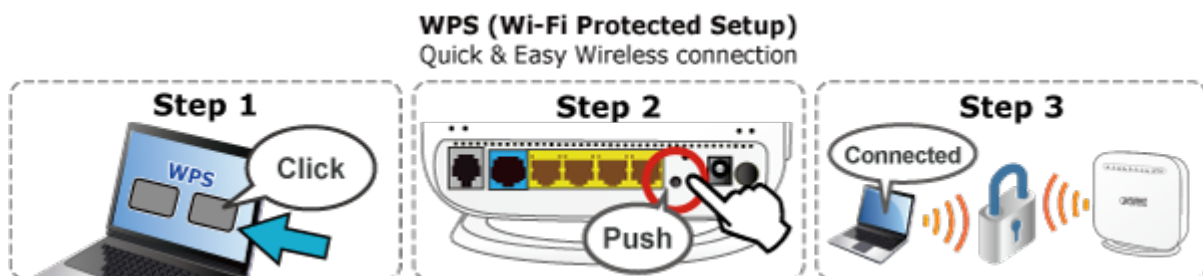
With fully supporting both IPv4 and IPv6 protocols, the VDR-301N can work with original IPv4 network structure and also support the new IPv6 network structure now and in the future. As more network devices are growing and the need for larger addressing and higher security becomes critical, the VDR-301N is the best choice for ISPs to build the IPv6 FTTx edge service and for SMBs to connect with the IPv6 network.

Robust TR-069 Remote Management

To reduce the service provider’s manpower needed for on-site maintenance, the VDR-301N supports TR069 (WAN Management Protocol) standard that allows an Auto-Configuration Server (ACS) to perform auto-configuration, provision, collection, and diagnostics to this device remotely.

Secure Wireless Access Control

To secure wireless communication, the VDR-301N supports up-to-date encryptions including WEP, WPA-PSK and WPA2-PSK. Moreover, the VDR-301N supports WPS configuration with PBC/PIN type for users to easily connect to a secure wireless network.



Superior Management Functions

The VDR-301N provides user-friendly management interface that can be managed easily through standard web browsers. For networking management features, the VDR-301N not only provides basic router functions such as DHCP server, virtual server, DMZ, QoS, and UPnP, but also full firewall functions including Network Address Translation (NAT), IP/Port/MAC Filtering and Content Filtering. Furthermore, the VDR-301N serves as an Internet firewall to protect your network from being accessed by unauthorized users.

2. PRODUCT FEATURES

> **Internet Access Features**

- **Shared Internet Access:** All users on the LAN can access the Internet through the VDR-301N using only one single external IP address. The local (invalid) IP addresses are hidden from external sources. This process is called NAT (Network Address Translation).
- **Built-in VDSL2 Modem:** The VDR-301N provides VDSL2 modem and supports all common VDSL2 connections.
- **G. Vectoring:** G.993.5 (G. Vector) support for significant reduction of crosstalk levels and improvement of VDSL2 line performance
- **Multiple WAN Connections:** Upon the Internet (WAN port) connection, the VDR-301N supports ADSL2+ and VDSL2.

> **Advanced Internet Functions**

- **Virtual Servers:** This feature allows Internet users to access Internet servers on your LAN. The setup is also quick and easy.
- **Firewall:** The VDR-301N supports simple firewall with NAT technology.
- **Universal Plug and Play (UPnP):** UPnP allows automatic discovery and configuration of the Broadband Router. UPnP is supported by Windows XP, 7 or later.
- **DMZ Support:** The VDR-301N can translate public IP addresses into private IP address to allow unlimited 2-way communication with the servers or individual users on the Internet. It provides the most flexible way to run programs smoothly for programs that might be restricted in NAT environment.
- **RIPv1/v2 Routing:** It supports RIPv1/v2 routing protocol for routing capability.

> **LAN Features**

- **4-port Switch:** The VDR-301N incorporates a 4-port 10/100BASE-TX switching hub, making it easy to create or extend your LAN.
- **DHCP Server Support:** Dynamic Host Configuration Protocol provides a dynamic IP address to PCs and other devices upon request. *The VDR-301N can act as a DHCP Server for devices on your local LAN.*

> **Wireless Features**

- **IEEE 802.11b/g/n Wireless Stations:** The VDR-301N supports 802.11n standard which provides backward compatibility with the 802.11b and 802.11g standard, so 802.11b, 802.11g, and 802.11n can be used simultaneously. IEEE 802.11n wireless technology is capable of having a data rate of up to 300Mbps.
- **WPS Push Button Control:** The VDR-301N supports WPS (Wi-Fi Protected Setup) for users to easily connect to wireless network without configuring the security.
- **Advanced Security:** Supports 64/128-bit WEP, WPA / WPA2 and WPA-PSK / WPA2-PSK (TKIP/AES encryption), and 802.1x.

- **Wireless MAC Access Control:** The Wireless Access Control feature can check the MAC address (hardware address) of wireless stations to ensure that only trusted wireless stations can access your LAN.
- **Multiple SSIDs:** It allows users to access different networks through a single AP.

➤ **Management Features**

- **TR069 compliant:** Support for centralized management node of multiple VDSL2 CPEs

3. PRODUCT SPECIFICATIONS

3.1 MAIN COMPONENTS

Main chipset	RTL8685S-VA3-CG
RAM	32MB
Flash	8MB

3.2 Functional Specifications

Model	VDR-301N	
Product Description	300Mbps Wireless VDSL2 Bridge Router	
Hardware Specifications		
Interfaces	LAN	4 x 10/100BASE-TX, auto-negotiation, auto MDI/MDI-X RJ45 port
	WAN	1 x RJ11, 1 x 1000BASE-T RJ45
Antenna	2.4GHz: 2 x 4dBi internal antennas	
Button	1 x Power button 1 x Reset button 1 x WPS button 1 x WLAN button	
LED Indicators	PWR, DSL, LAN1-4, WLAN, WPS	
Dimensions (W x D x H)	155 x 60 x 152 mm	
Weight	238g	
Power	12V DC, 0.5A	
Power Consumption	6W	
Software Features		
Internet Connection Type	<ul style="list-style-type: none"> ● Bridge ● Dynamic IP ● Static IP ● PPPoE ● PPPoA ● 1483 Routed 	

VDSL Features	<ul style="list-style-type: none"> ● ITU-T G.993.2 VDSL2 ● Supports 8a,8b,12a,12b,17a,30a profile ● Supports G. vectoring ● Supports ATM and PTM ● Supports Annex A
ADSL Features	<ul style="list-style-type: none"> ● Full-rate ANSI T1.413 Issue 2 ● ITU-T G.992.1(G.DMT) ● ITU-T G.994.1 (G.hs) ● ITU-T G.995.1 ● ITU-T G.992.3 (G.dmt.bis) ● ITU-T G.992.5 (Annex M ADSL2+ 24Mbps downstream and 3.5Mbps upstream)
Protocol Features	<ul style="list-style-type: none"> ● ATM Adaptation Layer Type 5 (AAL5) ● Multiple Protocol over AAL5 (RFC 2684, formerly RFC 148) ● ATM Forum UNI3.1/4.0 ● PPP over ATM (RFC 2364) ● PPP over Ethernet (RFC 2516) ● IPoA (RFC 1577/2225) ● Bridged or routed Ethernet encapsulation ● VC and LLC based multiplexing ● OAM F4/F5 ● ATM QoS: UBR, CBR, VBR-rt, VBR-nrt ● Dynamic and static IP ● IP unnumbered
Advanced Features	<ul style="list-style-type: none"> ● Parent Control ● Traffic Shaping(ATM QoS) UBR, CBR, VBR-rt, VBR-nrt ● Dynamic Host Configuration Protocol (DHCP), DHCP relay ● Network Address Translation (NAT) ● PVC/Ethernet Port Grouping ● Static Routing, RIP v1/v2 (optional) ● DNS relay, DDNS ● G. vectoring ● IGMP proxy, MLD proxy ● PPTP, L2TP, IPsec VPN passthrough ● Virtual server, port triggering, UPnP, DMZ ● WMM, bandwidth control (IP QoS)
Security	<ul style="list-style-type: none"> ● NAT firewall ● SPI firewall ● MAC / IP / URL filtering
Management	<ul style="list-style-type: none"> ● Device configuration, management and update ● Web-based GUI ● Command line interface via telnet ● SSL for TR069
Wireless Interface Specifications	
Wireless Standard	IEEE 802.11b/g/n
Frequency Band	2.4GHz: 2.412~2.484GHz
Modulation Schemes	<ul style="list-style-type: none"> ● 802.11g: 64QAM, 16QAM, QPSK, BPSK, DSSS ● 802.11b: CCK, DQPSK, DBPSK ● HT20 and HT40: 64 QAM, 16QAM, QPSK, BPSK
Data Transmission Rates	802.11n(40MHz): up to 300 Mbps
	802.11n(20MHz): up to 144.4 Mbps

	802.11g: 54, 48, 36, 24, 18, 12, 9, 6Mbps per channel, auto fallback for extended range
	802.11b: 1, 5.5, 2, 1 Mbps per channel, auto fallback for extended range
Transmit Power	<20dBm(EIRP)
Wireless Data Encryption	64/128-bit WEP, WPA-PSK, WPA2-PSK, 802.1x encryption, and WPS PBC
Environment Specifications	
Temperature / Humidity	Operating: 0~40 degrees C, 10~ 90% (non-condensing) Storage: -20~70 degrees C, 5~90% (non-condensing)
Certification	CE

3.3 Physical Specifications

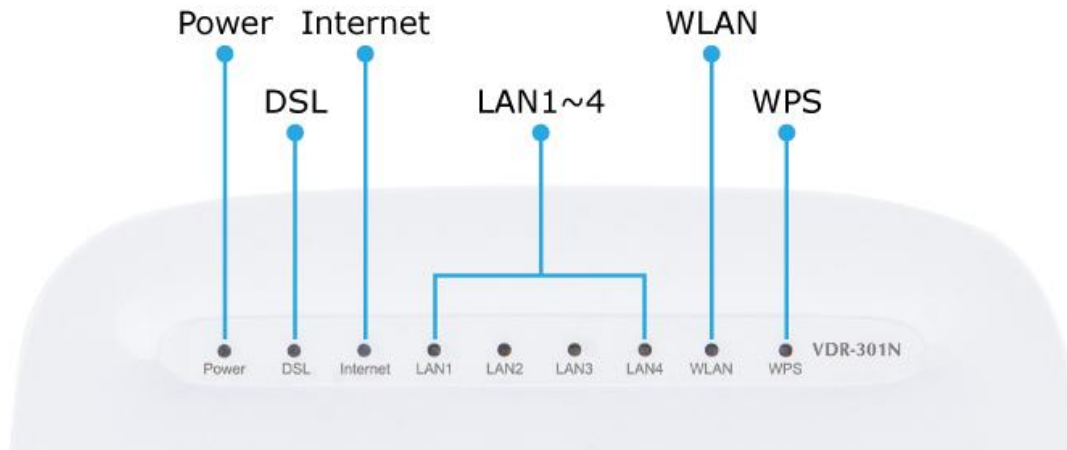
Dimensions

155 x 60 x 152 mm (W x D x H)

Weight

238g

Front Panel

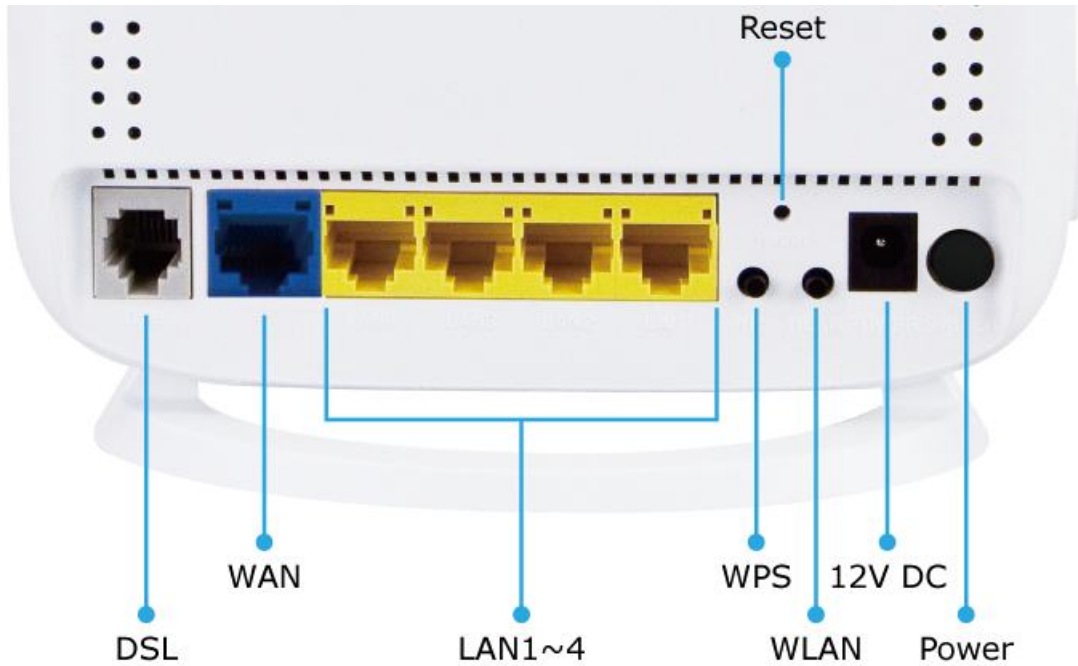


Front Panel LED definition

LED	Color	State	Description
Power	Green	ON	When the router is powered on, and in ready state.
		OFF	The device is powered off.
DSL	Green	ON	The WAN is connected successfully.
		Flashing	Router is trying to establish a WAN connection to VDSL2 device or telecom's network.
		OFF	The device is powered off.
Internet	Green	ON	Internet is synchronized successfully in the route mode.
		Flashing	Internet data is being transmitted.
		OFF	Ethernet interface is disconnected.
LAN1-4	Green	ON	The Ethernet interface is connected.
		Flashing	Data is being transmitted or received via the corresponding LAN port.
		OFF	The Ethernet interface is disconnected.
WLAN	Green	ON	WLAN is enabled.
		Flashing	Data is being transmitted through the wireless interface.
		OFF	WLAN is disabled.

WPS	Green	ON	Connection succeeds under Wi-Fi Protected Setup.
		Flashing	Negotiation is in progress under Wi-Fi Protected Setup.
		OFF	Wi-Fi Protected Setup is disabled.

Rear Panel



Rear Panel Port and Button Definition

Connector	Description
POWER	Power on/off button
12V DC	Power connector with 12V DC, 0.5 A
WLAN	WLAN switch. Press over 3 seconds to enable or disable the WLAN function.
WPS	This button is used for enabling WPS PBC mode. If WPS is enabled, press this button over 3 seconds and then the router starts to accept the negotiation of PBC mode.
RESET	Press more than 3 seconds for reset to factory default setting.
LAN (1-4)	Router is successfully connected to a device through the corresponding port (1, 2, 3, or 4). If the LED light is flashing, the router is actively sending or receiving data over that port.
WAN	The RJ45 WAN port allows data communication between the router and the network through a UTP cable
DSL	The RJ11 connector allows data communication between the router and the DSL network through a twisted-pair phone wire

3.4 Environmental Specifications

Operating

Temperature: 0~40 degrees C

Relative Humidity: 10~90 % (non-condensing)

Storage

Temperature: -20~70 degrees C

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

Electrical Specification

Input Voltage: DC 12V, 0.5A.

Regulatory Compliance

CE

3.5 BASIC PACKAGING

- VDR-301N Unit x 1
- Power Adapter x 1
- Quick Installation Guide x 1
- RJ45 Cable x 1
- RJ11 Cable x 1
- VDSL Splitter x 1

APPENDIX A: Default Setting

Default IP Address	192.168.1.1
Default Login User Name	admin
Default Login Password	admin
Default WLAN Mode	2.4GHz (B+G+N)
Default SSID	PLANET_XXXX ("X" means the last 4 digits of the MAC Address)
Default Multiple SSIDs	PLANET_XXXX ("X" means the last 4 digits of the MAC Address)
Default Wireless Security	None
Default Country Code	FCC (1-11)
Default Channel Width	40MHz
Default Channel Number	Auto
Default DHCP Server	Enable
Default DHCP Range	192.168.1.2~192.168.1.254