

NVG44x

Dual/Triple Play Residential Gateways

PRODUCT OVERVIEW:

The ARRIS NVG44x-Series Triple Play (Voice, Video and Data) and Dual-Play (Video and Data) Residential Gateways are designed to deliver robust video, high-speed data and (optionally) primary line telephony, all delivered over the VDSL/VDSL2/ADSL2+ broadband network. This full-featured, high-performance Gateway provides a cost-effective way for Service Providers to migrate seamlessly from legacy ADSL networks to VDSL/VDSL2 networks via a converged services platform, made possible with the ARRIS 9x CPE Software.

Ideal for both xDSL and FTTH applications and including advanced Quality of Service (QoS) features, security firewall, and extensive remote management features, the NVG44x-Series Gateways enable reliable, single-platform delivery of voice-over-IP (VoIP), data, and streaming broadcast-quality video over the VDSL/VDSL2/ADSL2 broadband network. Users can take advantage of:

- Simultaneous use of phone, video, and high-speed data over a bonded or single copper pair
- IPTV video
- Four Gigabit Ethernet ports for high-speed home networking
- Concurrent Wi-Fi support for 802.11 b/g/n on 2.4 GHz, and 802.11ac on 5 GHz
- Primary line VoIP telephone service

The NVG44x-Series Gateways use Multiple-Input and Multiple-Output (MIMO) technology, eliminating the need for wired connections and enabling users to easily network all of their wireless 802.11b/g/n/ac-equipped devices. Its four 10/100/1000 Ethernet ports give subscribers the option of setting up a home network to share a printer and data, music, and video files. Thus, the NVG44x-Series Gateways enables users to maximize the high-bandwidth potential of their home or business network.





Service Assurance

The advanced features of the NVG44x-Series Gateways help Service Providers improve efficiency and reduce costs. Support for 802.1x WAN supplicant simplifies CPE authentication to the Service Provider network and eliminates the subscriber need to manually enter their PPP credentials. The ARRIS 9x CPE Software is scalable and forward looking, with the ability to support an upgrade path to more advanced features such as OSGi and DPI. And, because ARRIS designs its Gateways to be remotely manageable via industry standard TR-069/TR-098, the NVG44x-Series Gateways are interoperable with any ACS solution that follows the Broadband Forum's TR-069/TR-098 specification.

Platform Optimization

The NVG44x-Series Gateways are available in two models, cost optimized to meet the needs of the Service Provider:

- NVG443: VDSL2/ADSL2+ Gateway with 2.4GHz 802.11b/g/n and 5GHz 802.11ac
- NVG448: VDSL2/ADSL2+ Gateway with 2.4GHz 802.11b/g/n, 5GHz 802.11ac and VoIP

The features and specifications of the NVG44x-Series Gateways are further described below.

GENERAL SPECIFICATIONS

Interfaces

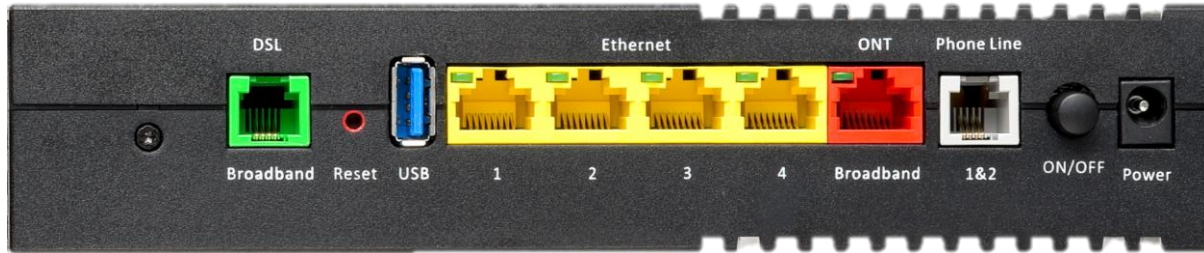
WAN	Single line or bonded VDSL2, single line or bonded ADSL2+, RJ-14 One-port 10/100/1000 Ethernet (RJ-45) AP-TLS, EAP-TTLS, EAP-SIM and (optional) 802.1x
LAN	Concurrent Wi-Fi support for 802.11b/g/n/ac Four-port 10/100/1000 Ethernet switch, RJ-45 USB3.0 network interface (Optional) Single-port, dual line voice FXS, RJ-14

Embedded Firmware, Encoding and Access Protocols

VDSL2 Support (Single Line or optional Bonded)	ITU-T G.993.2 VDSL2 Annex A and B Support for profiles 8a, 8b, 8c, 8d, 12a, 12b, 17a, 30a U0 Band (25 kHz to 276 kHz) G.993.2 Annex K.3 (Packet Transfer Mode - PTM) G.993.5 (vectoring) G.997.1 (2012) VDSL2 physical layer OAM G.998.4 (G.INP)
ADSL2+ Support (Single Line or optional Bonded)	ITU G.992.5 with Amendment 2 ITU G.992.3 with Amendments 1 and 2 (INP up to 16) K.3 Packet Transfer Mode support Annex L (RE-ADSL2) and Annex M support TR-100

Embedded Firmware, Encoding and Access Protocols (continued)

ADSL Support	ITU G.992.1 and ANSI T1.413 Issue2 Annex A support TR-067
ATM Adaptation Layer 5 (AAL5)	Eight permanent virtual circuits (PVCs); UBR, CBR, VBRnrt, VBRrt ITU-T 1.610 (F4/F5) OAM DHCP Client, PPP, or 802.1x Supplicant Authentication
IP Addressing and Routing	IPv4, IPv6 / 6rd DHCP server DNS proxy, dynamic DNS support Multiple subnet support
Traffic Management and QoS (Quality of Service)	Network Address Port Translation (NAPT) Application Level Gateway (ALG) support IP maps (pinholes) Diffserv QoS with Weighted Fair Queuing IGMPv2, IGMPv3 with Fast Leave IEEE 802.1P/Q VLANs DSCP setting for SIP/RTTP Speed Test Deep Packet Inspection (DPI)
Security	Stateful packet inspection firewall Virtual DMZ/IP pass-through Denial of service (DoS) protection VPN pass-through (PPTP, L2TP, IPsec)
Device Management	Password protected access, statistics, and log reporting
Remote Management	TR-069/TR-098, TR-104, TR-111, WebUI, CLI (Telnet), SSH



GENERAL SPECIFICATIONS (continued)

Local Management	TR-064, UPnP, WebUI, CLI (Telnet), captive portal
Utilities	Ping, traceroute, reverse DNS, NTP, diagnostics

Wi-Fi Features

Concurrent Wi-Fi	802.11 b/g/n/ac
Wi-Fi Characteristics	2.4 GHz support, 2x2 or 3x3 integrated omni-directional antenna with diversity 5 GHz support, 3x3 or 4x4 5 GHz UNII bands (5.15-5.35 GHz, 5.470-5.725 GHz and 5.725 – 5.850 GHz bands) 20MHz, 40MHz, 80MHz supported
Wi-Fi Features	Multiple BSSID (unique authentication per SSID) Wi-Fi Protected Setup (WPS) Wi-Fi Multimedia (WMM), WMM-PS (power save) Transmit power control
Wi-Fi Security	WEP (64-bit, 128-bit, 256-bit) encryption WPA, WPA-PSK, 802.11i/WPA2, WPA2-PSK, EAP-TTLS MAC address filtering

Voice Features (optional)

General Voice Features	SIP v2 call, SIPv2 call control DNS SRV, A records re-registration with primary SIP proxy server Geo-Redundancy—DNS SRV, A records Flexible dial plan support Hook flash event signaling RTP audio transport RFC2833 RTP payload, SIP INFO and InBand DTMF mode
Voice Audio Codecs	G.711 (a-law and u-law), G.729a and G.726 (16, 24, 32, 40 kbps) AMR (narrowband) Adaptive jitter buffer PLC—(G.711 Appendix I and Frame repeat) VAD (voice activity detection) with silence suppression and comfort noise generation G.168 network echo cancellation G.167 acoustic echo cancellation
FAX Relay Protocols Compliance	T.38 pass-through and over IP Fax/modem detection control, T.38 (IP) compliant Group 3 and SG3 fallback to Transport T.30, V.34 fax and modem bypass (automatic fallback to G.711) support

Voice Features (continued)

CLASS Calling Features	Call Waiting; Call Hold; Call Resume; Call Forward Unconditional; Call Forward on Busy; Caller ID; 3-Way Conference; Call Consultant; Call Transfer and network-initiated class services—MWI messaging, VMWI via FSK
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Regulatory Compliance

General	K.21 Basic
Europe	93/68/EEC (CE Marking Directive) 2006/95/EC (Low Voltage Directive) 2004/108/EC (EMC Directive) 1999/5/EC (R & PTE Directive) EN60950-1 (Safety) EN55022 (Emissions) EN55024 (Immunity) EN300328 (Electromagnetic compatibility and Radio spectrum Matters, 2.4 GHz) EN300386 (Electromagnetic compatibility and Radio spectrum Matters, Telecommunication Network Equipment, EMC) EN301489-1 (Electromagnetic compatibility and Radio spectrum Matters, EMC, Part 1) EN301489-17 (Electromagnetic compatibility and Radio spectrum Matters, EMC, Part 17) EN301893 (Broadband Radio Access Networks, 5 GHz)
North America	UL 60950, CUL, CSA FCC Part 15 Class B Subparts B, C and E, ICES-003 FCC Part 68, CS-03 CEC compliant

Environmental Specifications

Operating Temperature	0°C to 40°C (32°F to 104°F)
Storage Temperature	-40°C to 60°C (-40°F to 140°F)

Physical Specifications

Unit Dimensions	206mm High x 173mm Deep x 40mm Wide 8.1in. High x 6.8in. Deep x 1.6in. Wide
Unit Weight (with all options)	0.63 kg 1.39 lbs