NVG34x
Dual/Triple Play Residential Gateways

PRODUCT OVERVIEW:
The ARRIS NVG34x-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 NVG34x-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 NVG34x-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 NVG34x-Series Gateways enables users to maximize the high-bandwidth potential of their home or business network.
NVG34x
Dual/Triple Play Residential Gateways

Service Assurance
The advanced features of the NVG34x-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 DLNA. And, because ARRIS designs its Gateways to be remotely manageable via industry standard TR-069/TR-098, the NVG34x-Series Gateways are interoperable with any ACS solution that follows the Broadband Forum’s TR-069/TR-098 specification.

Platform Optimization
The NVG34x-Series Gateways are available in four models, cost optimized to meet the needs of the Service Provider:

- NVG341: VDSL2/ADSL2+ Gateway with 2.4GHz 802.11b/g/n
- NVG343: VDSL2/ADSL2+ Gateway with 2.4GHz 802.11b/g/n and 5GHz 802.11ac
- NVG346: VDSL2/ADSL2+ Gateway with 2.4GHz 802.11b/g/n and VoIP
- NVG348: VDSL2/ADSL2+ Gateway with 2.4GHz 802.11b/g/n, 5GHz 802.11ac and VoIP

The features and specifications of the NVG34x-Series Gateways are further described below.

### GENERAL SPECIFICATIONS

#### Interfaces

<table>
<thead>
<tr>
<th>WAN</th>
<th>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</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAN</td>
<td>Concurrent Wi-Fi support for 802.11b/g/n and (optional) 802.11ac Four-port 10/100/1000 Ethernet switch, RJ-45 US82.0 network interface (Optional) Single-port, dual line voice FXS, RJ-14</td>
</tr>
</tbody>
</table>

#### Embedded Firmware, Encoding and Access Protocols

<table>
<thead>
<tr>
<th>VDSL2 Support</th>
<th>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)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADSL2+ Support</td>
<td>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</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Embedded Firmware, Encoding and Access Protocols (continued)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADSL Support</td>
</tr>
<tr>
<td>ATM Adaptation Layer 5 (AAL5)</td>
</tr>
<tr>
<td>IP Addressing and Routing</td>
</tr>
<tr>
<td>Traffic Management and QoS (Quality of Service)</td>
</tr>
<tr>
<td>Security</td>
</tr>
<tr>
<td>Device Management</td>
</tr>
<tr>
<td>Remote Management</td>
</tr>
</tbody>
</table>

©ARRIS Enterprises, Inc. 2014 All rights reserved. No part of this publication may be reproduced in any form or by any means or used to make any derivative work (such as translation, transformation, or adaptation) without written permission from ARRIS Enterprises, Inc. (“ARRIS”). ARRIS reserves the right to revise this publication and to make changes in content from time to time without obligation on the part of ARRIS to provide notification of such revision or change. ARRIS and the ARRIS logo are all trademarks of ARRIS Enterprises, Inc. Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks and the names of their products. ARRIS disclaims proprietary interest in the marks and names of others.
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 and (optional) 802.11ac

Wi-Fi Characteristics
2.4 GHz support, 2x2 integrated omni-directional antenna with diversity
(Optional) 5 GHz support, 3x3 or (optional) 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 Codes
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

Regulatory Compliance
General
K.21 Basic (optional K.21 Enhanced)

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)
EN50022 (Emissions)
EN50024 (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)
0.55 kg
1.21 lbs

©ARRIS Enterprises, Inc. 2014 All rights reserved. No part of this publication may be reproduced in any form or by any means or used to make any derivative work (such as translation, transformation, or adaptation) without written permission from ARRIS Enterprises, Inc. (“ARRIS”). ARRIS reserves the right to revise this publication and to make changes in content from time to time without obligation on the part of ARRIS to provide notification of such revision or change. ARRIS and the ARRIS logo are all trademarks of ARRIS Enterprises, Inc. Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks and the names of their products. ARRIS disclaims proprietary interest in the marks and names of others.