NVG578 10G GPON Gateways

GPON, XG-PON & XGS-PON with 802.11ac/ax Wi-Fi options

FEATURES

- Smooth migration from today’s GPON deployments to next generation 10G Symmetric and Asymmetric PON solutions
- Flexible architecture supports dual-band or tri-band 802.11ac and 802.11ax Wi-Fi options
- ARRIS HomeAssure™ Enabled for smart Whole-home Wi-Fi
- Optional IoT service capability
- Docker container support for simplified application deployment
- Optimized for IPTV video triple-play deployments

PRODUCT OVERVIEW

The ARRIS NVG578 series residential gateways are designed to deliver the highest WAN and LAN performance with advanced Wide Area Networking technology and high-performance Wi-Fi. These multiservice gateways support ARRIS HomeAssure for optimal in-home Wi-Fi performance as well as managed voice, video, data and IoT services with up to 10G symmetrical broadband data speeds.

These devices enable a cost-effective way for Service Providers to move consumers to higher service tiers as the network evolves without the cost and inconvenience of replacing the gateway. The gateways deliver high speed broadband services via GPON (up to 2.5/1.25Gbps) using on-board technology and then may be upgraded to XGS-PON (up to 10/10Gbps) or XG-PON (up to 10/2.5Gbps) using a SFP+ (Small Form-Factor Pluggable) modules inserted in an embedded SFP+ cage. All supported via a 10 Gb/s non-blocking core routing capability powered by ARRIS 9.x Firmware.

This connectivity is complemented by an equally high-specification local networking: 10G Ethernet and Wi-Fi, with the option of dual-band or tri-band concurrent Wi-Fi with either 4x4 802.11ac or 4x4 802.11ax.

ARRIS 9.x Firmware includes advanced Quality of Service (QoS) features, security firewall, extensive remote management features and Docker support for 3rd party applications, the NVG57x-Series Gateways enable reliable, single-platform delivery of voice-over-IP (VoIP), data, and streaming broadcast-quality video.
ARRIS HomeAssure Enabled

The HomeAssure solution delivers high-performance Wi-Fi to every corner of the home via additional Wi-Fi extenders while offering ease of use for the consumer and reduced OPEX costs for the service provider. The NVG578 gateways provides automated network optimization, interworking with the self-configuring extenders, a consumer App and the ARRIS ECO cloud-management platform for remote management, analytics and helpdesk tools.

Service Assurance

The ARRIS 9x gateway software is a widely deployed, mature, secure platform for advanced services. ARRIS designs its gateways to be remotely manageable for reduce support costs, the NVG578 Gateway is interoperable with any ACS solution that follows the Broadband Forum’s TR-069/TR-098 specification.

A platform for advanced services

The 9x software supports Docker® containerization for accelerated application development and deployment. Hardware and software options are available to support IoT services including ZigBee®, Z-Wave®, Bluetooth® LE radios and DECT ULE.

Product Variants

The following variants are differentiated by their ability to support an upgrade to the higher spec service:

- NVG578S: XGS-PON Symmetrical 10/10 – Tri-band Wi-Fi or Dual-band
- NVG578: XG-PON Asymmetrical 10/2.5 – Tri-band Wi-Fi or Dual-band

GENERAL SPECIFICATIONS

| Interfaces | GPON 2.5 SFF, SFP+ cage for 10GPON  
| GPON 2.5 SFF, SFP+ cage for 10GPON  
| 10G Ethernet RJ-45 (can be used as LAN)  
| AP-TLS, EAP-TTLS, EAP-SIM and (optional) 802.1x  
| Concurrent 2.4GHz and 5GHz Wi-Fi support for  
| 802.11ac or 802.11ax  
| Four-port 10/100/1000 Ethernet switch, RJ-45  
| Two USB3.0 network interface  
| Single-port, dual-line voice FXS, RJ-14 port  
| Optional IoT radios: ZigBee®, Z-Wave®, Bluetooth® LE  

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/RTP

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

Local Management

TR-064, UPnP, WebUI, CLI (Telnet), captive portal

Utilities

Ping, traceroute, reverse DNS, NTP, diagnostics.

Docker container support

© 2018 ARRIS Enterprises, LLC. All rights reserved.
## Wi-Fi Features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concurrent Wi-Fi</td>
<td>802.11 b/g/n/ac or 802.11ax (OFDMA)</td>
</tr>
<tr>
<td>Wi-Fi Characteristics</td>
<td>2.4 GHz 4x4, 5 GHz 4x4 High-power design for multi-radio co-location 5 GHz UNII bands (5.15-5.35 GHz, 5.470-5.725 GHz and 5.725 – 5.850 GHz bands) 20MHZ, 40MHZ, 80MHZ, 160MHZ (802.11ax only)</td>
</tr>
<tr>
<td>Wi-Fi Features</td>
<td>Multiple BSSID (unique authentication per SSID) Wi-Fi Protected Setup (WPS) Wi-Fi Multimedia (WMM), WMM-PS (power save) Transmit power control HomeAssure Ready</td>
</tr>
<tr>
<td>Wi-Fi Security</td>
<td>WEP (64-bit, 128-bit, 256-bit) encryption WPA, WPA-PSK, 802.11i/WPA2, WPA2-PSK, EAP-TTLS MAC address filtering</td>
</tr>
</tbody>
</table>

## Voice Features (optional)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Voice Features</td>
<td>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</td>
</tr>
<tr>
<td>Voice Audio Codecs</td>
<td>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</td>
</tr>
</tbody>
</table>

## Voice Features (continued)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAX Relay Protocols Compliance</td>
<td>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</td>
</tr>
<tr>
<td>CLASS Calling Features</td>
<td>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</td>
</tr>
</tbody>
</table>

## Regulatory Compliance

<table>
<thead>
<tr>
<th>Region</th>
<th>Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>2014/35/EU (Low Voltage Directive) 2014/30/EU (EMC Directive) 2014/53/EU (RED Directive) EN62368-1 (Safety) • EN 62368-1 (LVD - Safety) • EN55032 (EMC, Emissions) • EN55024 (EMC, Immunity) • EN 300 386 (EMC) • EN 301 489-1 (EMC, Part 1) • EN 300 328 (RED, 2.4 GHz) • EN 301 893 (RED, 5 GHz) • EN 301 489-17 (RED, pending)</td>
</tr>
<tr>
<td>North America</td>
<td>UL/ULC 62368 FCC Part 15 Class B Subparts B, C, and E ISED RSS-GEN / RSS-247, ICES-003</td>
</tr>
<tr>
<td>Conformance</td>
<td>ITU-T K.21 Basic (optional K.21 Enhanced)</td>
</tr>
</tbody>
</table>

## Environmental Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>0°C to 40°C (32°F to 104°F)</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>−40°C to 60°C (−40°F to 140°F)</td>
</tr>
</tbody>
</table>

---

**CUSTOMER CARE**

Contact Customer Care for product information and sales:
- United States: 866-36-ARRIS
- International: +1-678-473-5656

---

**Note:** Specifications are subject to change without notice. **Copyright Statement:** © 2017 ARRIS Enterprises, LLC. 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, LLC (“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 registered trademarks of ARRIS Enterprises, LLC. All rights reserved. Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks or the names of their products. ARRIS disclaims proprietary interest in the marks and names of others.

www.arris.com