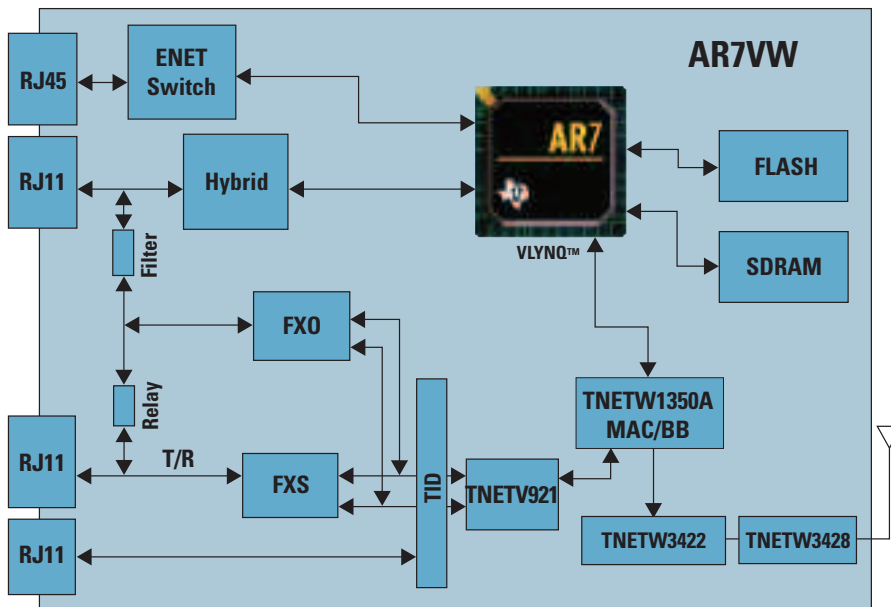


## Product Bulletin

# AR7VW Wireless ADSL Voice Gateway



Extending Texas Instruments (TIs) established and market-proven AR7 family of digital subscriber line (DSL) router devices, the AR7VW is a complete reference design for a residential and small office gateway with ADSL, high-performance 802.11 wireless local area networking (WLAN) and voice over Internet protocol (VoIP). With TI's Tely Software® and a complete suite of capabilities, an AR7VW-based gateway delivers both high-quality voice along with robust communications features. In addition, configuration flexibility and scalable options give manufacturers and service providers the ability to easily customize and differentiate product capabilities or service offerings.

### Market-Ready VoIP Capabilities

The AR7VW reference design has been equipped with all of the capabilities needed for VoIP applications. Two RJ11 connectors for either two phone lines or a phone line and a fax line give an AR7VW-based design added flexibility. Board space is available for a second FXO line should the manufacturer decide to implement another voice or fax line. The FXO and FXS devices support drivers for SLIC/SLAC chipsets from Legerity and Silicon Laboratories. And for greater configuration flexibility, a TID socket supports a wide range of telephony interfaces. The TID socket and TI's array of proven codecs give manufacturers a wide range of easy-to-implement

### Key Features

- Complete solution for integrated ADSL/802.11b/g WLAN gateway with VoIP
- Cost-effective extension from AR7 ADSL modem designs to full-featured ADSL/WLAN/VoIP gateways
- Comprehensive Network Support Package (NSP) includes QoS, security and system management with TR-069 remote management capabilities
- High quality voice from 32-ms echo cancellation codecs
- Field proven codecs from TI's extensive library
- FXO and FXS driver support for Legerity and SiLabs, SLIC/SLAC
- T.38 FAX relay (V.21, V.27ter, V.29, V.17)
- Scalable with optional second FXS line and RJ11 connector
- Telephony interface daughter card (TID) socket for plug-in modules

configuration options, eliminating the risk of original design work.

### Network Support Package

The AR7VW's Linux®-based NSP is a comprehensive set of software capabilities that enhance VoIP, broadband ADSL and WLAN operations. A small memory footprint of only four megabytes (MB) of flash and 16 MB of SDRAM (SIP implementation) ensures cost-effective implementations. The NSP includes Quality of Service (QoS), security and TR-069 remote management capabilities.

Several hardware and software QoS features dynamically allocate limited upstream bandwidth for time-critical, real-time applications like VoIP, streaming media and others. Priority memory queues, for example, ensure bandwidth is available when and where it is needed. The AR7VW's security measures such as integrated firewall policies provide a high

level of protection without interfering with the system's operations.

The variety of system management features in the AR7VW's NSP gives service providers and users a wide selection of tools to choose from. SNMP v1, v2 and v2c, and four groups of MIB II as well as a command line can control ADSL, WLAN and VoIP functions. TR-069 is also supported for remote management.

### **Best-in-Class ADSL Performance**

The unmatched ADSL/ADSL2+ performance of AR7VW-based gateways has made the platform a world leader in residential gateways. Innovative features help the platform achieve optimal data throughput speeds in both the upstream and downstream directions. Dynamic adaptive equalization, for example, monitors line distortions and adapts filtering for increased throughput. The AR7 has been subjected to extensive TR-067 testing, accelerating rollout for new products and service offerings.

### **High-Performance WLAN Functionality**

The TNETW1350A is a single-chip media access controller (MAC) baseband (BB) processor. When used with TI's industry-leading TNETW3422 transceiver and TNETW3428 power amplifier, the TNETW1350A provides best-in-class performance. TI's WLAN

<b>AR7VWVoIP Features</b>	
<b>Channels</b>	2 LBRC/2PCM
<b>Codecs Flexibility</b>	An extensive library of field proven codecs (G.711, Annex1,2; G.729AB; G.723.1A etc.)
<b>Call Agent</b>	SIP or user-specified call agent
<b>CID Generation</b>	Bellcore, China, ETSI, UK
<b>Fax Relay</b>	V.21, V.27ter, V.29, V.17
<b>Fax Protocol</b>	T.38
<b>Conferencing Support</b>	Included
<b>Up to 32-ms Echo Cancellation</b>	G.168-2000 NLP Double Talk Detection
<b>Voice Activity Detector</b>	Noise level matching, adaptive level, SID support, Pink CNG
<b>Tone Generator/Detector</b>	DTMF, MF R1, MF R2 forward signaling, MF R2 backward signaling, V.21 fax, V.25 modems/fax via network, call progress detection, V.18A, SS7 continuity checktone at 2010 Hz, CNG FAX calling tone 1100 Hz
<b>Gain Control</b>	DTMF relay, DTMF RTP relay

solution features G++™ technology which enables whole house coverage and faster than ever throughput. G++ technology offers TX output power up to 23 dBm and industry-leading RX sensitivity which provides 2x extended range. Network robustness is improved using techniques to minimize interference. The software also features an enhanced 125 Mbps mode, enabling TCP/IP throughput of 36 Mbps in real world environments.

### **TI Support**

ITI has earned a reputation for comprehensive customer support that, in many cases, gives manufacturers a competitive advantage

in the marketplace by shortening the typical time-to-market for new product introductions. Training, a complete eServices support system, design support, assistance with interoperability testing and performance tuning, and technical documentation are among the many facets of TI's extensive support programs.

### **For More Information**

To learn more about the AR7VW residential gateway solution and TI's other ADSL and 802.11 WLAN products, contact your local TI field sales office or visit [www.ti.com/AR7VW](http://www.ti.com/AR7VW)

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