The Motorola Netopia® 2247-42 ADSL2+ Voice Integrated Access Device Gateway

Triple Play Four-Port Wired and Wireless Gateways Designed for Broadband ADSL2+ Networks

WI-FI PROTECTED SETUP™

The 2247-42 gateways are equipped with Wi-Fi Protected Setup pairing technology. Wi-Fi Protected Setup is a certification program from the Wi-Fi Alliance that is designed to ease the task of setting up and configuring security on wireless local area networks. Introduced by the Wi-Fi Alliance in early 2007, the program provides an industry-wide set of network setup solutions for homes and small office (SOHO) environments. Wi-Fi Protected Setup enables typical users who possess little understanding of traditional Wi-Fi configuration and security settings to automatically configure new wireless networks, add new devices, and enable security.

The Motorola Netopia 2247-42 ADSL2+ Voice Integrated Access Device (IAD) Gateways are designed specifically for the delivery of triple play services over broadband networks. They are equipped with advanced QoS, LAN distribution, Wi-Fi, and management features

The 2247-42 Voice IAD Gateways provide service operators with a cost-effective way of delivering high-speed data and dual voice access over a single copper pair. High-speed data access is enabled through four 10/100 Base-T Ethernet (RJ-45) ports as well as an 802.11 b/g wireless access point, providing consumers with convenience and mobility.

The integrated 2247-42 Voice IAD Gateways provide service providers with a new way of generating revenue as well as reducing churn. The gateways power up to two lines of primary line VoIP telephone service (terminated in RJ-11 connectors) and are equipped with a PSTN fail-over port, in case of signal loss or power failure, as well support for user-selection of either PSTN or VoIP call. Service providers can also define dial plans to automatically route calls over either PSTN or VoIP to allow optimization of end-user billing.

The 2247-42 Voice IAD Gateways are an intelligent way to communicate converging voice and data on one network. They enable:

- One infrastructure for communication services

- One bill for voice and data services

- Simultaneous use of phone lines and high-speed data services

- Support for a variety of CLASS features provided today by the phone company (i.e. caller ID, call waiting, call forwarding, etc.)

- Advanced routing features allowing a consumer to connect multiple PC devices, set-tops, and telephone lines, without the need for a stand-alone hub or router.

- An integrated firewall to help provide Internet security extending the feature for triple-play services

As part of Motorola's broadband family of telephony products, the Motorola 2247-42 Voice IAD Gateways combine voice, data, and networking functionality, in one product, on one network. By combining multiple services in one unit, consumers can enjoy an efficient solution that offers many advantages over competing technologies.

The 2247-42 Voice IAD Gateways are built to handle demanding services such as IPTV, VoIP, standard TV, and high-definition TV (HDTV). The gateways deliver a range of innovative LAN networking solutions. Leveraging the existing phone, power, and coax wiring in the average household, the gateways can enable self-install solutions and lower deployment costs for service providers. With QoS-aware networking and whole-home distribution, IP set-tops, VoIP phones, and home computers can be networked and enjoyed throughout the entire household.

The 2247-42 Voice IAD Gateways integrate a high-performance network processor and DMT-based ADSL2+ modem. All 2247-42 gateways offer comprehensive remote manageability, including centralized remote provisioning, troubleshooting, and management, as well as the ability to manage devices connected to the gateway through support for the DSL Forum TR-069, TR-104 and TR-111 specifications.

HIGHLIGHTS

- Telephony Support:
  - » Advanced voice solution ready for feature-rich telephone services deployment
  - » Carrier Class voice quality. Voice-over-data prioritization allows users to talk on the phone while using the Internet without a reduction in voice quality.
  - » Supports two standard telephone jacks to connect existing phone or fax machines.
  - » Compatibility support for all common telephone features: Caller ID, Call Waiting, Call forwarding, 3-way conferencing, etc.
- Remote Management: TR-069 and TR-104 compliance provides robust manageability and enhanced management capabilities, which help lower support costs and ease of deployment of triple play services.
- Range and Performance: 3-D Reach® Express Wi-Fi® technology provides superior wireless range, performance, and coverage for 802.11 b/g wireless applications.
- Secure: Advanced WAN and LAN routing and security capabilities increase security.
- Quality: VGx Virtual Gateway technology ensures delivery of delay-sensitive voice and video services using advanced Quality of Service (QoS) algorithms and packet prioritization.
- Ease of Use: Fully customizable Integrated Self-Install wizard for faster and easier triple play deployments and support for Home Networking scenarios..
- Single Unit Convenience:
  - » Can eliminate the cost and clutter of stand-alone routers, hubs, and wireless access points
  - » Enables high-speed data access through four 10/100 Base-T Ethernet (RJ-45) ports and a 802.11 b/g wireless access point
  - » Single button pairing via Wi-Fi Protected Setup

VoIP

- Enables the delivery of up to 2 lines (RJ-11) of full-featured telephone service.
- Once the 2247-42 Voice IAD Gateways are registered with VoIP service, calls can be transparently routed over the Internet.
- Supports a wide range of CLASS 5 telephony services, including caller ID, CLIR, call waiting, call forwarding, call transfer, and 3-way conference calling.
- Supports PSTN fail-over protection in the event of signal loss or power outage to ensure continuity of service when VoIP service is not available. Service providers can also define dial plans to automatically route calls over either PSTN or VoIP to allow optimization of end-user billing.
- Extensive standard RFC industry compliance provides support for advance voice deployment models by the Operator.
- Each phone interface (FXS RJ11) can support different phone numbers or same account.

SECURITY

- The 2247-42 Voice IAD Gateways deliver advanced security using an SPI (Stateful Packet Inspection) firewall combined with an advanced NAT engine.
- An integrated Denial of Service (DoS) engine protects against a wide range of attack patterns, and logs potential security breaches. A multi-level password allows configuration of different access policies for administrators and end-users.
- Powerful Wi-Fi security is achieved through Wi-Fi certified WPA and WPA2 encryption and authentication, together with a MAC access control list.
- VPN pass-through is supported for secure remote access via IPSEC/PPTP/L2TP NAT tunneling.
- SIP Voice ALG Filters

MANAGEMENT

- The 2247-42 Voice IAD Gateways support a comprehensive TR-069 data model, allowing zero touch provisioning and remote configuration of the gateway, including VoIP service, from the Motorola NBBS device management platform (or any TR-069-compliant ACS).
- Advance L2 OAM feature capabilities which include support for 802.1ag and 802.3ah.

Specifications

WAN INTERFACE
ADSL2+, RJ-11

FXO integrated with built-in ADSL microfilter

LAN INTERFACES
Four-port 10/100 Ethernet switch, RJ-45, half- or full-duplex/ auto-sensing MDI/MDI-X

Two FXS voice ports, RJ-11

Maximum ringer load of 5 RENs

IEEE 802.11b/g Wi-Fi with Wireless Protected Setup (WPS) button

LEDs
Power, Link, Status and Activity indicators

ENCODING AND LINE SPEED
ITU G.992.1 Annex A and Annex B Support

ITU G.992.3 (ADSL2) and ITU G.992.5 (ADSL2+)

ITU G.992.3 Amendment 1 and 2 and G.992.5 Amendment 2 support

ITU G.992.3 and G.992.5 Annex L (RE-ADSL2/2+) support

ITU G.992.3 Annex M support (24 Mbit/s downstream, 3.5 Mbit/s upstream)

ITU G.992.3 Amendment 1 Annex N PTM Support

ANSI T1.413 Issue 2

PROTOCOL SUPPORT
ATM Adaptation Layer 5 (AAL5) with UBR, CBR, VBR-nrt and VBR-rt; Up to eight Permanent Virtual Circuits (PVCs)

RFC 2516 PPP over Ethernet (PPPoE), VC muxed or LLC-SNAP

RFC 2364 PPP over ATM (PPPoA), VC muxed or LLC-SNAP

RFC 1483/2684 Bridged Ethernet, VC muxed or LLC-SNAP

RFC 1483/2684 Routed Ethernet, VC muxed or LLC-SNAP

BRIDGING/ROUTING FUNCTIONS
Network Address Port Translation (NAPT), IP Maps, Pinholes and STUN support; VPN Pass thru for PPTP, L2TP and IPSec

IP Multicast Outbound Support Through NAT

DHCP Client, Server, and Relay

DNS proxy

RIP1 & RIP2 on LAN/WAN

Static routes

TR-068 support

QOS AND TRAFFIC MANAGEMENT
10 queues (Basic Queues, Priority Queues, Weighted Fair Queues and Funnel Queues)

IETF RFC 2474 DiffServ (Best Effort, Assured and Expedited Forwarding, Network Control)

IEEE 802.1q - VLAN Tagging

IEEE 802.1p - Priority Bits

RFC 2236 IGMPv2 and RFC 3376 IGMPv3 Multicast Support; Proxy or Snooping with Fast Leave

TR-101 support

SECURITY
IEEE 802.1x Supplicant Broadband Network Authentication

Stateful Packet Inspection (SPI) Firewall

Virtual DMZ/IP Pass-thru

Denial of Service Protection

IPSec VPN Gateway
    DES, 3DES, and IKE
        Hash Algorithm Support: MD5 and SHA1

SSL/TLS

3-D REACH EXPRESS WI-FI

Wireless Features	Integrated omni-directional antennas with diversity support; 100mW transmit power; Channel Set: North America, 1–11; Europe, 1–13
Wireless Security	WEP 64-, 128-, 256-bit encryption; 802.1x, WPA, WPA-PSK, 802.11i/ WPA2; Block Wireless Bridging; MAC Address Filtering; WMM (Wi-Fi Multimedia) Support; Multiple SSID support; Transmit Power Control

VOIP

Signaling	SIP v2 (RFC 3261, 3262, 3263, 3264, 3265, 3428, 3515, 3581, 3665, 3680, 3856, 3857, 3858, 3891, 2976); SIP proxy redundancy, DNS SRV; Multiple SIP account support
Transport	RTP (RFC 1889, 3550, 3555) and RTCP (RFC 1890 and 3605); RFC2833 RTP DTMF payload support, SIP INFO and InBand
Codecs	G.711 (a-law and u-law), G.729a, and G.726 (16, 24, 32, 40 packets); Echo Cancellation: G.165/G.168; Voice activity detection (VAD) with silence suppression and Comfort noise generation; T.38 FAX Relay Support
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; Message Waiting Indication (MWI) support
Lifeline PSTN	PSTN relay when SIP service or power is down; Emergency Dial Plan support; Emergency calls from FXS ports (i.e.. 911) routed to the FXO PSTN interface; manually selectable outgoing PSTN or IP call by prefix number

Specifications, Cont.

VoIP, CONT.

Voice QoS	Carrier Class voice quality; configurable Voice Codec Priority; configurable packetization periods; Dynamic Jitter buffer with packet delay and loss concealment
Voice Security	Supports DIGEST authentication (MD5); SIP Outbound proxy security for peer-to-peer protection; support for SIP Referred-By Mechanism; RFC 3323 SIP Privacy mechanisms; RFC 3325 Asserted identity trusted networks; RFC 3455 Private Header (P-header) support
Flexible Dial Plan support with operator configurable digit maps	RFC 3435 — digit map support; RFC 2897 — digit map timer; RFC 2885 — long and short timer

DEVICE MANAGEMENT

TR-069 Remote Management	TR-104 VoIP Provisioning Parameters; SSL Root Certificate Support (Verisyn, Thawte, Equifax, 2Wire)
TR-064 and UPnP LAN Management	
IEEE 802.1ag and 802.3ah OAM	
Remote and local management options via Web UI (HTTP) and CLI (Telnet)	
Two level password protected access	
Statistic and log reporting, Remote Syslog support	
7-Layer Diagnostics	
SNMP v1 and v2	
Utilities	Ping, Traceroute, Reverse DNS

REGULATORY

United States	Telecom: FCC Part 68, Emissions: FCC Part 15 Class B, Safety: UL60950
Canada	Telecom: IC-CS03, Emissions: ICES-003, Safety: CAN/CSA 60950
Europe	CE Mark, R&TTE, RoHS compliant; Emissions: EN 300 328, EN 301 489, K.21, Safety: EN60950

ENVIRONMENTAL

Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)
Storage Temperature	0 °C to 70 °C (–13 °F to 158 °F)
Relative Humidity	20% to 80%, non-condensing

WEIGHT AND DIMENSIONS

Wired Models		
Weight	2 lbs (907 g) (unit carton)	
Dimensions	2 in H x 5.5 in L x 5.2 in W (5.0 cm x 13.9 cm x 13.2 cm)	
Wireless Models		
Weight	2.5 lbs (1134 g) (unit carton)	
Dimensions	2 in H x 8.3 in L x 6.8 in W (5.0 cm x 21 cm x 17.2 cm)	

COMPATIBILITY

PC	Windows® 98, 98SE, ME®, 2000, XP™ SP2, and Vista™
Macintosh®	Ethernet connection

All features, functionality, and product specifications are subject to change without notice or obligation.