



APM CO., LTD.

AVG-3512-A

Wireless N VoIP Router

SPECIFICATIONS

Voice Features

- G.722, G.711 a/μ-law, G.729A/B, G.726, G.723.1 GSM 6.10 Full Rate, iLBC 13.3 kbps
- DTMF Detection and Generation
- Silence Suppression & Detection
- Comfort Noise Generation (CNG)
- Voice Activity Detection (VAD)
- Echo Cancellation (G.165/G.168)
- Adaptive (Dynamic) Jitter Buffer
- Call progress tone generation (FXS)
- Auto or Programmable Gain Control
- Inbuilt Local Mixer
- ITU-T V.152 Voice-band Data over IP Networks

SIP Method Support

ACK, BYE, CANCEL, INFO, INVITE, MESSAGE, NOTIFY, OPTIONS, PING, PRACK, PUBLISH, REFER, REGISTER, SUBSCRIBE, UPDATE

SIP Call Features

- Peer to Peer Call
- Call Hold / Retrieve
- Call Waiting
- Call Pick Up
- Call Park / Retrieve (SIP Server Required)
- Call Forward - unconditional, busy, no answer
- Call Transfer - attended, unattended
- Do Not Disturb
- Speed Dialing
- Repeat Dialing
- Three-way Calling
- MWI
- Hot Line and Warm Line





IPTV Application

- IGMP Snooping
- Virtual LAN (VLAN)
- Quality of Service (QoS)

Telephony Specifications

- In-Band DTMF, Out-of-Band DTMF Relay(RFC2833 or SIP INFO)
- DTMF / PULSE Dial Support
- Caller ID Generation / Detection:

DTMF

FSK-Bellcore Type 1 & 2

FSK-ETSI Type 1 & 2

FSK-NTT

FSK: Calling Name, Number, Date and Time, vMWI

- FXS metering pulse:

Polarity Reversal

12kHz calling tone

16kHz calling tone

- Polarity Reversal
- T.30 FAX Bypass to G.711, T.38 Real Time FAX Relay
- FXS Line test and diagnostics with visual alarm indication

※Inward self test:

Loopback - codec

Loopback - analogue

SLIC DC power voltage

Tip / Ring DC feed

Ringer

※Outward Test (GR909 Standard):

REN

Phone Line disconnected

H.F. DC Voltage (Hazardous and foreign DC Voltage)

H.F. AC Voltage (Hazardous and foreign AC Voltage)

Tip / Ring Short

- ROH Tone (Receiver Off-Hook Tone @ 480 Hz)
- Loop Current Suppression



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SIP Account Management

- By port registration
- By device registration (share account)
- Mixed mode (Hunt number for inbound, by port number for outbound)
- Invite with Challenge
- Register by SIP Server IP Address or Domain Name
- Support RFC3986 SIP URI format

SIP Call Management

- Support Outbound Proxy
- SIP Registration Failover Mechanism
- Group Hunting
- Privacy Mechanism / Private Extensions to SIP
- Session Timers (Update / Re-invite)
- DNS SRV Support
- Call Types: Voice / Modem / FAX
- User Programmable Dial Plan Support
- Automatic Calling Number Manipulation
- CDR Client
- Manual Peer Table (for P2P calls)
- E.164 Numbering, ENUM support

Wireless

- Compliant with IEEE 802.11b/g/n standards
- 2.4 GHz - 2.484 GHz frequency range
- Up to 300 Mbps wireless operation rate
- AP and client mode
- Auto rate adaptive
- Multi-SSID
- Broadcast SSID control
- 64 / 128 bits WEP supported for encryption
- Wireless Security with WPA-PSK / WPA2-PSK
- WDS repeater function
- Universal repeater mode
- Wi-Fi Multi-Media (WMM) for AP mode
- WPS (Wi-Fi Protected Setup) for easy setup



Physical interface

- Combo WAN : Gigabit Ethernet copper and fiber (SFP)
- LAN : 4-port RJ-45 10/100/1000 Ethernet
- Antenna : 2T2R, 2 x 2dbi external antenna
- Telephone:2-port FXS, 1port Lifeline
- Factory default reset button, WPS push button, Power jack, Power switch
- USB 2.0 Host interface

LED Indicators

- Power, Provision/Alarm, Register, WAN, WLAN, LAN1~LAN4, USB, Phone off-hook 1~2 / Phone Ch Alarm 1~2, Line, WPS

NETWORK FEATURES AND MANAGEMENT

IP Network Specifications

- WAN: Static IP, PPPoE, DHCP
- Network Protocol Support:
IP, TCP, UDP, TFTP, FTP, RTP, RTCP, RTCP-XR, ARP, RARP, ICMP, NTP, SNTP, HTTP, HTTPS, DNS, DNS SRV, Telnet, DHCP Server, STUN Client, UPnP, IGMP, DHCP Client, IGMP snooping, IGMP proxy, RTSP ALG, SIP ALG
- NAT Functions
Support up to 255 Clients
Port Forwarding (Virtual Servers)
DMZ
Port Triggering
- Support IPv4, IPv6 future upgradeable
- QoS Support:
WAN: DiffServ, IP Precedence
Priority Queue
Rate Control
802.1Q (VLAN Tagging), 802.1p (Priority Tag)
LAN: Rate Limit
- DDNS Support
DynDNS.org (Dynamic and Custom)

Network Security Specifications

- PPTP Client
- DIGEST Authentication
- MD5 Encryption
- DoS Protection



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Router Management

- Web Based Configuration
- Auto-provisioning (HTTP / HTTPS)
- Telnet
- IVR
- FTP / TFTP / HTTP Software Upgrade
- Configuration Backup and Restore
- Reset to Default Button
- TR-069/104
- SNMP V3/ V2c/ V1

STANDARD COMPLIANCE

SIP, Voice and FAX Related Standard

- RFC1889 RTP: A Transport Protocol for Real-Time Applications.
- RFC2543 SIP: Session Initiation Protocol
- RFC2833 RTP Payload for DTMF Digits, Telephony Tones and Telephony Signals
- RFC2880 Internet Fax T.30 Feature Mapping
- RFC2976 The SIP INFO Method
- RFC3261 SIP: Session Initiation Protocol
- RFC3262 Reliability of Provisional Responses in Session Initiation Protocol (SIP)
- RFC3263 Session Initiation Protocol (SIP): Locating SIP Servers
- RFC3264 An Offer/Answer Model with Session Description Protocol (SDP)
- RFC3265 Session Initiation Protocol (SIP) - Specific Event Notification
- RFC3311 The Session Initiation Protocol (SIP) UPDATE Method
- RFC3323 A Privacy Mechanism for the Session Initiation Protocol (SIP)
- RFC3325 Private Extensions to the Session Initiation Protocol (SIP) for Asserted Identity within Trusted Networks
- RFC3362 Real-time Facsimile (T.38) - image/t38 MIME Sub-type Registration
- RFC3515 The Session Initiation Protocol (SIP) Refer Method
- RFC3665 Session Initiation Protocol (SIP) Basic Call Flow Examples
- RFC3824 Using E.164 numbers with the Session Initiation Protocol (SIP)
- RFC3841 Caller Preferences for the Session Initiation Protocol (SIP)
- RFC3842 A Message Summary and Message Waiting Indication Event Package for the Session Initiation Protocol (SIP)
- RFC3891 The Session Initiation Protocol (SIP) "Replaces" Header
- RFC3892 The Session Initiation Protocol (SIP) Referred-By Mechanism
- RFC3960 Early Media and Ringing Tone Generation in the Session Initiation Protocol (SIP)
- RFC3986 Uniform Resource Identifier (URI): Generic Syntax



- RFC4028 Session Timers in the Session Initiation Protocol (SIP)
- Draft-ietf-sipping-service-examples-08 for call features

Network Related Standard

- RFC318 Telnet Protocols
- RFC791 Internet Protocol
- RFC792 Internet Control Message Protocol
- RFC793 Transmission Control Protocol
- RFC768 User Datagram Protocol
- RFC826 Ethernet Address Resolution Protocol
- RFC959 File Transfer Protocol
- RFC1034 Domain Names - concepts and facilities
- RFC1035 Domain Names - implementation and specification
- RFC1058 Routing Information Protocol
- RFC1157 Simple Network Management Protocol (SNMP)
- RFC1305 Network Time Protocol (NTP)
- RFC1321 The MD5 Message-Digest Algorithm
- RFC1349 Type of Service in the Internet Protocol Suite
- RFC1350 The TFTP Protocol (Revision 2)
- RFC1661 The Point-to-Point Protocol (PPP)
- RFC1738 Uniform Resource Locators (URL)
- RFC2854 The 'text/html' Media Type
- RFC2131 Dynamic Host Configuration Protocol
- RFC2136 Dynamic Updates in the Domain Name System (DNS UPDATE)
- RFC2327 SDP: Session Description Protocol
- RFC2474 Definition of the Differentiated Services Field (DS Field)
- RFC2516 A Method for Transmitting PPP Over Ethernet
- RFC2616 Hypertext Transfer Protocol - HTTP/1.1
- RFC2617 HTTP Authentication: Basic and Digest Access Authentication
- RFC2637 Point-to-Point Tunneling Protocol
- RFC2766 Network Address Translation - Protocol Translation (NAT-PT)
- RFC2782 A DNS RR for Specifying the location of Services (DNS SRV)
- RFC2818 HTTP Over TLS (HTTPS)
- RFC2916 E.164 Number and DNS
- RFC3022 Traditional IP Network Address Translator
- RFC3489 STUN - Simple Traversal of User Datagram Protocol (UDP) Through Network Address Translators (NATs)