

## **X5669 Broadband Wireless IAD**

# *High speed modem with VoIP and wireless*

The X5669 is a ADSL2+ based IAD with built in router and bridge functions. X5669 features one ADSL2+ WAN, four LAN ports, two FXS POTS ports and optional Wireless 802.11g. Two lines of telephony service are provided using VoIP technology with SIP signaling protocol.



### **Features**

- Supports up to ADSL2+ (G.992.5) with 28 Mbps downstream and 2\* Mbps upstream rates (\* under Annex M mode, actual performance may vary depending on the network configuration and conditions).
- Integrated four-port Ethernet switch with automatic speed-sensing and crossover correction
- 802.11b/g WLAN supports up to 54 Mbps transmission rate (optional)
- Secure transmitting encryption by either 802.1x; WEP; WEP2; WPA; WPA2; TKIP; AES; 802.11i
- Two FXS ports for VoIP using POTS phone set, optional one FXO port for failsafe lifeline.
- Supports voice CODECs like G.711, G.726, G.729AB, BV16, ILBC, T.38 etc.; programmable G.168 echo cancellation, adaptive jitter buffer and packet loss concealment
- Voice activity detection (VAD), comfort noise generation (CNG) and caller ID
- DTMF tone detection and generation; Fax / Modem detection and pass-through
- Supports SIP signaling protocol and bonus services like call forwarding, call waiting, call transfer, call busy, call return, enquiry service, CLIP/CLIR and three way conference
- Supports Networking protocols such as PPP, NAT, Routing, DHCP server / relay / client
- Configuration and management by Web-browser through the Ethernet interface and remotely through ADSL interface
- Firmware upgradeable through HTTP / TFTP / TR-069
- Supports TR-069 and TR-104 management



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## Specifications, hardware

### LAN Interfaces

- Four 10/100 Base-T Ethernet ports in RJ-45 connector, comply with IEEE 802.3u
- Integrated 802.11g WLAN Access Point with external antenna, backward compatible with 802.11b

### WAN Interface

- 2-wire loop with 100 ohms line impedance in RJ-11 connector
- G.994 compliant
- G.992.1 (G.dmt) – Annex A, B, and C compliant
- G.992.2 (G.lite) – Annex A and C compliant
- ANSI T1.413 compliant

- G.992.3 (ADSL2) compliant, supporting Annex A, B, C, L and M
- G.992.5 (ADSL2+) compliant, supporting Annex A, B, C and M
- I.432 ATM physical layer compliant

### Analog Voice Interface

- 2 \* FXS ports with RJ-11 connectors for analog phone set connection
- Optional 1 \* FXO port with RJ-11 connector for PSTN connection

### OAM&P

- Through Web browser, remotely or locally
- One hidden console port (RS-232) for maintenance

### Environment

- Operation Temperature: 0°C ~ 45°C
- Operation Humidity: 5% ~ 95% (non-condensing)
- Storage Temperature: -20°C ~ +85°C
- Storage Humidity: 5% ~ 95% (non-condensing)

### Power

- AC adapter :Input 120 VAC/60Hz or 230VAC/50Hz; Output 15VDC 1A
- Power consumption: Less than 15 watts

### Physical Dimensions

- 220 mm × 169 mm × 42 mm (W × D × H)

## Specifications, software

### ATM

- AAL0, AAL5, OAM, RM and Transparent cell types
- Traffic shaper/scheduler: priority scheduling; per-VCC queuing; UBR/CBR/VBR shaping based on Peak Cell Rate(PCR), Sustained Cell Rate (SCR), and Maximum Burst Tolerance; Minimum Cell Rate Shaping; Multi-priority AAL Queueing
- Full 24-bit Virtual Port Identifier (VPI)/ Virtual Circuit Identifier (VCI) support
- 16 Virtual Channel Connections (VCCs)
- Payload Encapsulation:
  - RFC2684 / RFC1483, Multiprotocol Encapsulation over ATM Adaptation Layer 5
  - RFC2225 / RFC1577, Classical IP and ARP over ATM (IPoA)
  - RFC2364, PPP over AAL5 (PPPoA)

### Bridging

- RFC2684 / RFC1483 bridged PDU encapsulation
- Transparent bridging (IEEE 802.1D) with at least 32 MAC addresses
- Bridge filtering with per-port extensions

### Routing

- RFC2684 / RFC1483 bridged and routed PDU encapsulations
- MAC Encapsulated Routing (MER)
- Supports Point-to-Point Protocol (including PPPoA and PPPoE) and user authentication via PAP, CHAP or MS-CHAP
- Routing Information Protocol (RIP) v1 and v2, static route
- DHCP client, server and relay agent
- NAT / PAT – RFC1631 with support for extensive ALGs
- DNS relay

### Firewall

- NAT: 16 sessions, DMZ and ALGs
- Stateful Packet Inspection (SPI) with DOS protection - Ping of Death, SYN Flood LAND
- Protection against IP and MAC address spoofing
- UPnP NAT traversal and VPN / IPSec pass-through

### Wireless

- Supports 802.1x; WEP; WEP2; WPA; WPA2; TKIP; AES; 802.11i
- Hidden SSID
- WMM for advanced Quality of Service
- AES in hardware
- 125 High Speed Mode: Standards-plus performance enhancement delivers best real-world performance as the client card use the same 125 High Speed Mode

### Voice

- FXO for failsafe lifeline
- Supports voice CODECs like G.711, G.726, G.729AB, BV16, ILBC, T.38 etc
- G.168 line echo cancellation with programmable tail
- Adaptive jitter buffer, packet loss concealment (PLC), voice activity detection (VAD), comfort noise generation (CNG) and Caller ID
- DTMF tone detection and generation; Fax / Modem detection and pass-through

### VoIP and Telephony Bonus Services

- Supports SIP (RFC3261), SDP (RFC2327, RFC3264) as well as both TCP and UDP transport
- Supports User Agent Client (UAC) - User Agent Server (UAS) call, or proxy call routing

- Supports SIP and telephone URL addressing
  - Supports in-band DTMF tone sending / receiving and out-band DTMF signaling with RTP, as per RFC2833
  - Bonus services include:
    - Call Forwarding: Unconditional, No Response, On Busy
    - Call Waiting: Force Busy, Pickup and Release Old, Pickup and Put Old on Hold, Switch between two calls
    - Call Transfer, Call Back busy subscriber, Call Back last number called (call return)
    - Enquiry service
    - Three way conference
  - Provisioning through TFTP client with configuration profile
- ### Configuration and Network Management
- SNMP GETs, SETs and TRAPs for four groups in MIB-II
  - Embedded syslog; SNMP with DHCP options
  - UPnP Internet Gateway Device (IGD) compliance
  - Management and configuration via Web / HTTP
  - Firmware upgrade using HTTP / TFTP / TR-069
  - Supports TR-069 and TR-104 management and provisioning

**Note:** Not every listed feature will be included in the shipping product.

We reserve the right to make changes of technical specifications, housing or design without prior notice.



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