iMG1500 Series

FTTH Multiservice Gateways

The Allied Telesis iMG1500 Series intelligent Multiservice Gateways are the ideal FTTH customer premise devices for the delivery of communications and entertainment services, including carrier-class telephony, high-speed Internet access, IP television, and interactive, two-way video-based services.

Overview

The AT-iMG1525 and AT-iMG1505 multiservice gateways, new members of the Allied Telesis iMG family, provide enhanced performance for routing and NAT traffic management. All of these services are provided over an active optical distribution network via a single optical fiber to the home. The combined delivery of IP Triple Play services — voice, video and data — benefits both service providers and their customers. Service providers can quickly deliver advanced services such as fast Internet, VoIP, IPTV and Video on Demand in a scalable way with complete remote management. End-users benefit by having a single device interconnecting all peripherals, computers, analog and VoIP telephones to a single broadband uplink. The AT-iMG1525RF provides a fiber-to-RF CATV transceiver with analog VoIP and enhanced broadband services.

Voice over IP

The iMG1500 Series offers two FXS ports, leveraging Allied Telesis existing SIP and MGCP Voice over IP (VoIP) protocol implementation and established interoperability with major softswitch vendors. The iMG1500 Series supports the connection of modems and faxes to voice interfaces for business applications in SoHo environments. VoIP QoS is assured through Type of Service (ToS) bits and IEEE 802.1p priority tagging. The addition of silence suppression and local generation of comfort noise results in excellent voice quality.

IP Television

The iMG1500 Series is optimized for IP video streaming. The iMG snoops IGMP packets in-transit allowing simultaneous delivery of multiple multicast transmissions such as movie or TV channels. This enables multiple high-quality, high bit-rate video streams without impacting data traffic or IP telephony while delivering the fast channel change that users expect from video services. MPEG video service management and diagnosis is possible through dedicated commands.

Data Delivery and Security

The iMG1500 Series supports industry leading Quality of Service (QoS) through ISO Layer 2 and 3 prioritization techniques including priority tagging with IEEE 802.1p, Type of Service and DSCP fields. Extensive support for per port and per VLAN rate-limiting in the iMG1500 Series enables service providers to deliver tiered data services for the wide spectrum of end customer profiles, providing maximum flexibility in service differentiation. The hardware is Q-in-Q capable. Security is assured by an integral Stateful Inspection Firewall with NAT to protect end-user networks.

Management and Deployment

The iMG1500 Series is designed to be easy to deploy and manage. With the AlliedView™ NMS software platform, the iMG1500 Series can be remotely provisioned and managed. The iMG1500 Series supports TR-069 and can be managed via an Auto Configuration Server (ACS).

Optical WAN Interfaces

The iMG1500 Series offers single-strand (bi-directional) optical fiber links for FTTH application. The independent passive unit (AT-iMG001), where the optical cable is terminated, allows easy installation, maintenance and replacement thanks to a plug-and-play optical connection. It also provides a locking mechanism to secure the active unit.

Key Features

- 1 x 100/1000BX WAN port
- 5 x 10/100/1000T LAN ports
- Two FXS ports (AT-iMG1525 model only)
- USB host and USB slave for console
- Bi-directional fiber WAN interface
- Plug-and-play fiber outlet
- SIP and MGCP VoIP protocol support
- Major softswitch manufacturer compatibility
- Class 5 services
- Support for analog and VoIP phones
- IP Triple Play ready
- Stateful Inspection Firewall / NAT
- DMZ support
- Access Control List
- AlliedView NMS support
- TR-069
- RoHS compliant
- 1 x Cpat TV-out (AT-1525RF)

Specifications

Hardware
5 x 10/100/1000T (RJ-45)
2 x VoIP FXS ports (RJ-11)
1 x CATV (femaile 75-ohm F-type) AT-iMG1525RF only
1 x 100/1000BX single-strand single-mode
1 x USB slave for console
1 x USB host

Optical Interfaces
IEEE 802.3ah 100/1000BX-U single-strand single-mode (SC) (20 km): TX 1310 nm; RX 1480-1600 nm

Max sensitivity	-23 dBm
Max input power	-3 dBm
Max output power	-2 dBm

Ethernet
Layer 2 wirespeed packet switching
Tag-based IEEE 802.1Q VLANs (max 32)
IEEE 802.1Q tag insertion and stripping
Port mirroring of ingress/egress traffic
DHCP client, server and relay
4K MAC address FDB

CATV Fiber to RF Subsystem (AT-iMG1525RF)

Center wavelength	1550 nm
Max input power	0 dBm
Frequency range	47-870 MHz
Gain flatness	-1.5 to +1.5 dBm
CNR	46 dB with -7 dB input power
CTB/CSO	60 dBc
Output level	91 dBuV at 0 dBm optical input and OMI=5%channel
RF output impedance	75 Ohm typical

WAN Protocols
PPPoE (future)
Global IP address pool
DNS proxy
Static and dynamic IP address assignment

Routing and Multicast
PPP and IP routing
RIPv1 and v2 (future)
IGMPv2, v3
IGMP snooping
IGMP proxy

Security
NAT
Stateful Inspection Firewall
Dynamic port opening
Access Control List
IPSec/VPN pass through
PAP/CHAP authentication (future)

QoS
IEEE 802.1p prioritization
Programmable ingress/egress rate limiting
Four QoS queues per port
DSCP/ToS

VoIP Protocols
SIP 2.0
MGCP/NCS 1.0

VoIP Features
G.711 a-law and μ-law 64kbps
G.729 8kbps
G.726 16/24/32/40kbps
G.168 ECAN 8-32 msec
T.38 fax relay
RTP voice packet encapsulation
Automatic fax/modem detection
Voice Activity Detection (VAD)
Comfort Noise Generation (CNG)
Packet loss concealment
Adaptive jitter buffer
5 REN
Caller ID
Call transfer
Call forwarding (unconditional, on busy, on no answer)
Call waiting
Call hold
Message waiting
3-way call (local RTP MUX future)
DTMF relay
RFC 2833

Management
AlliedView NMS
Telnet
Remote software upgrade
Web GUI
CLI
SNMP v1, v2
TR-069

Status LEDs

Power	
WLAN	Link/Activity
Link	Link/Activity
VoIP	Use/Activity
LAN	Link/Activity

Power Characteristics
Typical power consumption: 18W
Typical power consumption: 12W (AT-iMG1525RF)
Max power consumption: 18W (AT-iMG1525RF)
External power supply
Input: 100-240V AC, 50-60 Hz
Output: 12vDC, 1.5A

Environmental Specifications

Operating temperature	0°C to 40°C (32°F to 104°F)
Max operating humidity	80% relative humidity (non-condensing)
Storage temperature	-20°C to 70°C (-4°F to 158°F)
Max storage humidity	95% relative humidity (non-condensing)

Physical Characteristics

Dimensions (W x D x H)	24 cm x 15 cm x 4.5 cm (9.5 in x 5.9 in x 1.8 in)
Weight	400 g / 14 oz

Approvals
CE and UL marking

Safety	IEC/EN60950-1
	UL 60950-1
	EN60825-1
	CAN/CSA-C22.2 No 60950-1-03
Emission	FCC Part 15 Class B
	EMC Directive 2004/108/EC
	EN 55022 Class B
	EN 300 386
Immunity	EN 55024

Ordering Information

AT-iMG1505-xx
FTTH multiservice gateway

AT-iMG1525-xx
FTTH multiservice gateway with POTS
1 x 100/1000BX, 5 x 10/100/1000T, 2 x FXS,
1 x USB host, 1 x USB slave (includes AT-iMG001 fiber outlet with locking mechanism)

AT-iMG1525RF-xx
FTTH multiservice gateway with POTS
1 x 100/1000BX, 5 x 10/100/1000T, 2 x FXS,
1 x CATV, 1 x USB host, 1 x USB slave (includes a single AT-iMG001 mounting plate and fiber outlet with locking mechanism)

Related Products
AT-iMG001
Fiber outlet with locking mechanism (10 pieces)

AT-iMG008-xx
Battery backup

AT-iMG016
Battery backup cable

Where xx = 10 for U.S. power supply
20 for U.K. power supply
40 for Australian power supply
50 for European power supply

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