

## iMGI400 Series

### GIGABIT FTTH MULTISERVICE GATEWAYS

The iMGI400 Series intelligent Multiservice Gateways, part of the Allied Telesis iMG family, provide IPTV and broadband services with optional voice and fiber to RF transceivers.

Allied Telesis iMGI400 Series intelligent Multiservice Gateways are flexible customer premise offerings that deliver IP-based services including carrier-class telephony, high-speed Internet, IP television, and interactive two-way video-based services over a Gigabit active optical distribution network. Advanced services such as Gigabit Internet, VoIP, IPTV and Video on Demand can be quickly delivered in a scalable way with complete remote management. A single device interconnects all peripherals, computers, analog and VoIP telephones to a single broadband uplink. In addition, service providers can offer CATV over a separate fiber with iMGI400 RF models.

#### Voice over IP

AT-iMGI425 models offer two FXS ports, supporting analog POTS, FAX and dial-up modem services. They leverage the existing Allied Telesis SIP and/or MGCP protocols and established interoperability with major softswitch vendors to support analog-based voice, FAX and modem services for residential and SoHo environments. VoIP Quality of Service (QoS) is maintained through Type of Service (ToS) bits and IEEE 802.1p priority tagging. In addition, silence suppression and local generation of comfort noise results in excellent voice quality.

#### CATV and IPTV

iMGI400 RF models support both CATV RF video delivery and IP TV video simultaneously over two separate fibers.

### Key Features

- » 1 x SFP optical WAN port
- » 3 x 10/100/1000T LAN ports
- » 2 x 10/100TX LAN ports
- » 1 x Coax TV-out (RF option)
- » IEEE 802.11bgn
- » Two FXS ports (AT-iMGI425 models)
- » USB host (future)
- » USB slave for console
- » 100M / Gigabit auto sense WAN
- » 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

The fiber to RF video receiver can be activated and deactivated through remote CLI commands or via the AlliedView™ NMS, allowing graceful migration from CATV RF video to IP video without a truck roll.

The iMGI400 Series supports IP TV multicasting along with IGMP snooping, proxy, and fast leaves and join, enabling multiple high-quality, high bit-rate video streams without impacting data traffic or IP telephony. Combined, this delivers the fast channel change that users expect from video services.

#### Wireless

The iMGI400 Series supports IEEE 802.11bgn wireless transmission frequencies, supporting wireless transmission within the premise and support services without additional wiring.

#### Data Delivery and Security

The iMGI400 Series supports industry-leading QoS through ISO Layer 2 and 3 prioritization techniques including priority tagging with IEEE 802.1p, ToS and DSCP

fields. Extensive support for per-port rate-limiting in the iMGI400 Series enables service providers to deliver tiered data services for any end customer profile, and provides maximum flexibility in service differentiation. Further, the hardware fully supports Q-in-Q. Security is assured by an integral Stateful Inspection Firewall with NAT to protect end-user networks.

#### Management and Deployment

The iMGI400 Series is designed to be easy to deploy and manage. With the AlliedView NMS software platform, these iMGs can be remotely provisioned and managed. The iMGI400 Series supports TR-069 and can be managed via an Auto Configuration Server (ACS).

#### Optical WAN Interfaces

The iMGI400 Series can accept up to two single-strand optical fiber links for FTTH applications — one for CATV RF video and the other to provide IP-based voice, video and data. The iMG may be operated without a fiber interface and perform as an Ethernet-only gateway.



## Specifications

### Hardware

3 x 10/100/1000T (RJ-45)  
 2 x 10/100TX (RJ-45)  
 1 x CATV (female 75-ohm F-type) (iMG1400 RF models)  
 2 x VoIP FXS ports (RJ-11) (AT-iMG1425 models)  
 1 x 100M/1000M SFP WAN  
 1 x USB slave for console  
 1 x USB host (future)  
 IEEE 802.11bgn (wireless models)

### Ethernet

IEEE 802.3ah - Physical Link Layer  
 Layer 3 routing performance: 960Mbps  
 Layer 2 wire-speed packet switching  
 Tag-based IEEE 802.1Q VLANs (max 32)  
 IEEE 802.1Q tag insertion and stripping  
 Port mirroring of ingress/egress traffic  
 Jumbo frame support  
 Q-in-Q support  
 Multi dwelling support (protected switching)  
 DHCP client and server  
 4K MAC address FDB

### CATV Fiber to RF Subsystem

AT-iMG1400 RF models only  
 Center wavelength 1550 nm  
 Max input power 0 dBm  
 Frequency range 47Mhz-1GHz  
 Gain flatness -1.5 to +1.5 dBm  
 CNR 46 dB with -7 dB input power  
 CTB/CSO 60 dBc  
 Output level 78 dBuV at 0 dBm optical  
 input and OMI=5%/channel  
 RF output impedance 75 Ohm typical  
 AGC  
 Remote control on/off  
 Incoming signal detection

### WAN Protocols

PPPoE  
 Global IP address pool  
 DNS proxy  
 Static and dynamic IP address assignment

### Routing and Multicast

PPP and IP routing  
 IGMP V1, V2, V3  
 IGMP snooping  
 IGMP proxy  
 IGMP fast leaves  
 IGMP joins  
 IPv6 transparency  
 IPv6 dual stack

### Security

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

### 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 (AT-iMG1425 Models)

G.711 a-law and  $\mu$ -law 64kbps  
 G.729 8kbps  
 G.726 32kbps  
 G.168 ECAN  
 T.38 fax relay  
 RTP voice packet encapsulation  
 Automatic fax/modem detection  
 Voice Activity Detection (VAD)  
 Comfort Noise Generation (CNG)  
 Error mitigation / bad frame interpolation  
 Adaptive jitter buffer  
 5 REN  
 Caller ID / call waiting with caller ID  
 Call transfer  
 Call forwarding (unconditional, on busy, on no answer)  
 Call waiting  
 Call hold  
 Message waiting  
 3-way call  
 DTMF relay  
 RFC 2833

### Management

AlliedView NMS (14.1 or higher)  
 Whole home networking  
 Telnet  
 Remote software upgrade  
 Web GUI  
 CLI  
 SNMP v1, v2  
 TR-069

### Status LEDs

SYST	Power/System
WAN	Link/Activity
VoIP	Use/Activity
WLAN	Link/Activity
LAN	Link/Activity

### Power Characteristics

Typical power consumption	10 to 16.6 watts (depending on model)
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)
Operating humidity	5 to 95% 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)	26 cm x 15 cm x 4.5 cm (10.2 in x 5.9 in x 1.8 in)
Weight	450 g / 16.1 oz

### Approvals

CE and UL marking	
Safety	IEC/EN60950-1 UL 60950-1 EN60825-1

Emission	CAN/CSA-C22.2 GR1089 Intra-building FCC Part 15 Class B EMC Directive 2004/108/EC EN 55022 Class B EN 55024
Immunity	

## Ordering Information

### AT-iMG1405-xx

FTTH multiservice gateway  
 1 x SFP WAN socket, 3 x 10/100/1000T,  
 2 x 10/100TX, 1 x USB host, 1 x USB slave

### AT-iMG1405W-xx

FTTH multiservice gateway with wireless  
 1GE SFP WAN; 3 x 10/100/1000 LAN; 2 x 10/100 LAN;  
 IEEE 802.11bgn wireless, AC adapter

### AT-iMG1425-xx

FTTH multiservice gateway with POTS  
 1 x SFP WAN socket, 3 x 10/100/1000T, 2 x 10/100TX,  
 2 x FXS, 1 x USB host, 1 x USB slave

### AT-iMG1425RF-xx

FTTH multiservice gateway with POTS and RF  
 1 x SFP WAN socket, 3 x 10/100/1000T, 2 x 10/100TX,  
 2 x FXS, 1 x CATV, 1 x USB host, 1 x USB slave

### AT-iMG1425W-xx

FTTH multiservice gateway with POTS and wireless  
 1GE SFP WAN; 3 x 10/100/1000 LAN; 2 x 10/100 LAN;  
 2 x FXS POTS, IEEE 802.11bgn wireless, AC adapter

Note: SFP optic not included in above models.

### Bundles

The following bundles are available in -10 and -50 AC power adapter models only

### AT-iMG1405W-B01-xx

Bundle includes AT-iMG1405W and SFP P015, AC adapter

### AT-iMG1405-B01-xx

Bundle includes AT-iMG1405, SFP P015, and AC adapter

### AT-iMG1425W-B01-xx

Bundle includes AT-iMG1425W, SFP P015, and U.S. AC adapter

### AT-iMG1425-B01-xx

Bundle includes AT-iMG1425, SFP P015, and U.S. AC adapter

### Related Products

**AT-iMG008-xx**  
 Battery backup

### AT-iMG016

Battery backup cable

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



the solution : the network

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