



## AT-iMG646BD

### Ethernet intelligent Multiservice Gateway

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6 x 10/100TX LAN ports, 4 x FXS ports,  
1 x 100BX, SC/UPC fiber WAN port

#### Efficient Delivery of IP Triple Play Services is Possible with the High Capacity VoIP, Video and Data Platform for Single Fiber FTTx Deployments

Allied Telesis' AT-iMG646BD intelligent Multiservice Gateway is the ideal CPE element of a CPE solution for the delivery of new revenue-generating IP Triple Play services over bi-directional FTTx presenting the greatest number of user connectivity ports of our range.

#### Applications

##### Capitalizing on Existing Infrastructure

The AT-iMG646BD offers a bi-directional optical interface over a single fiber allowing efficient use of fiber for new infrastructures and doubling of capacity for existing dual-fiber installations. The increase in density of fibers at aggregation points delivers economies of scale in cabinet space and cost of deployment. The simple termination of a single fiber at the customer premise with the AT-RG002 faceplate and associated splicing kit saves time in deployment of new fiber estates and upgrading existing ones to accept the feature benefits of the AT-iMG646BD.

##### Software Real-time Applications Optimization

##### Quality of Service

This is provided within the AT-iMG646BD through ISO Layer 2 and 3 prioritization techniques including priority tagging with IEEE 802.1p as well as Type of Service (ToS).

#### Optimization for IP Video Streaming

The AT-iMG646BD 'snoops' IGMP packets in-transit allowing simultaneous delivery of different multicast transmissions such as different movies or TV channels. This results in high quality, high-bandwidth multiple video streaming without impacting Internet browsing or IP telephony while delivering the fast channel change that users expect from video services. MPEG video service management and diagnosis is possible using troubleshooting techniques. Furthermore, video quality can be monitored using the unique MPEG stream monitoring tool.

#### IP Telephony

The AT-iMG646BD offers 4 FXS interfaces leveraging the Voice over IP (VoIP) protocols such as: H.323, SIP and MGCP and offering the greatest number of FXS ports of Allied Telesis' entire iMG range to date. VoIP interoperability has been established with major softswitch vendors. The AT-iMG646BD allows the connection of modems and faxes to voice interfaces for other business applications in SoHo environments.

#### Data Delivery and Security Differentiated Bandwidth Internet Services

The AT-iMG646BD provides extensive support for per-port rate-limiting that enables service providers to deliver tiered data services catering for the wide spectrum of end-customer profiles.

#### Firewall Capability

The AT-iMG646BD has an integral Stateful Inspection Firewall with NAT, Denial of Service (DoS) and an Intrusion Detection System (IDS) with blocking for protecting end-customer networks.

#### Key Features

- Up to 100Mbps bandwidth delivery
- Small footprint at customer site
- Innovative two-part case - easy to deploy
- IP Triple Play ready
- Stateful Inspection Firewall / NAT for security of customer and provider
- Single bi-directional fiber presentation drives resource efficiencies and reduces deployment cost (CAPEX and OPEX savings)
- Zero Touch Configurator software removes need for truck-roll deployment
- Major Softswitch manufacturer compatibility established
- Service specific management and monitoring - ensures Quality of Service to customers



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## Management

### Easy to Deploy and Manage

Fiber-To-The-Home (FTTH) with the AT-iMG646BD has never been easier. For installers and builders, a complete fiber splicing kit with a passive faceplate for hiding the fiber termination is available to allow for easy installation, maintenance and replacement using Plug & Play optical connections. User intervention is limited to simply sliding-in the gateway in the already installed slot containing the terminated fiber.

### Zero Touch Configuration with the ZTC

The AT-iMG646BD is designed to be easy to deploy and manage. With the Zero Touch Configurator (ZTC) software platform, the AT-iMG646BD can be provisioned and managed remotely. The Zero Touch Configurator is a distributed configuration system based on the industry's standard Lightweight Directory Access Protocol (LDAP) database architecture. This provides secure authentication and registration plus intelligent, automatic configuration of remote iMG units. Its XML-based structure enables seamless integration with service providers' existing OSS platforms.

## Specifications

### User's Ports

6 x 10/100TX (RJ45)  
4 x VoIP FXS ports (RJ-11)

### WAN Ports

100FX single-fiber (BX, SC/UPC)  
TX 1310 nm, RX 1550 nm  
Range 15 Km  
Power budget 17 dB

### VoIP Ports

G.711 a-law and  $\mu$ -law 64kbps  
G.723 (optional)  
G.726 16/24/32/40kbps  
G.729 8kbps  
G.168 LEC 8-32m/sec  
T.38 fax relay  
Automatic fax/modem detection  
Voice Activity Detection (VAD)  
Comfort Noise Generation (CNG)  
Error mitigation/bad frame interpolation  
Adaptive jitter buffer  
REN: 5 per FXS port  
RTP voice packet encapsulation

### VoIP Protocols

H.323 3.0  
SIP 2.0  
MGCP/NCS 1.0

## Layer 2 Operation

Layer 2 wirespeed packet switching  
IGMP v1/v2 multicast support  
Tag-based IEEE 802.1Q VLANs (16 max.)  
IEEE 802.1p prioritization  
IEEE 802.1Q tag insertion and stripping  
Programmable rate limiting ingress/egress (32,000 steps)  
Port mirroring ingress/egress traffic  
Double QoS queue on each port  
Port speed selection 10, 100 or 10/100  
1,000 MAC addresses

## Layer 3 Operation

NAT  
PPPoE  
Stateful Inspection Firewall  
Intrusion detection and blocking system  
IPSec/VPN passthrough  
Virtual server  
Global IP address pool  
Dynamic port opening  
DHCP client, server and relay  
DNS proxy  
PAP/CHAP authentication  
Static and dynamic IP address assignment  
RIPv1/v2

## Class 5 Services

Call transfer  
Call waiting  
Call hold  
Message waiting  
Caller ID

## Network Management

Zero Touch Configurator  
Local console port  
Telnet  
Remote software upgrade  
DHCP  
Web GUI (optional)

## LED Status Indicators

Power  
System  
POTS Use/Ready/Ringing  
WAN Link/Activity  
LAN Link/Activity

## Technical Specifications

### Power Characteristics

External power supply  
Input 12VDC, 1.5A  
Power consumption 10W (typical), 18W (max)

### Environmental Specifications

Operating temperature 0°C to 40°C  
Storage temperature -20°C to 40°C  
Operating humidity 5% to 80% RH

## Physical Characteristics

Dimensions 24cm x 15cm x 6cm  
(W x D x H) (9.4" x 5.7" x 2.4")  
Weight (Gateway only) 0.91lb (0.4kg)  
Weight (Gateway & Base) 1.41lbs (0.64kg)

## Protocols and Standards

IPv4 RFC 791  
TCP, UDP RFC 1144  
IGMP (v1/v2) RFC 1112, 2236  
PPPoE RFC 2516  
PAP RFC 1334  
CHAP RFC 1994  
NAT RFC 1631  
DHCP RFC 2131  
VLAN IEEE 802.1p/Q, IEEE 802.1d,  
IEEE 802.2, IEEE 802.3x  
v1,v2,v3  
SNMP  
RTP/RTCP  
TFTP RFC 1350  
Telnet RFC 318  
ARP RFC 826  
H.323 4.0  
SIP 2.0 RFC 3261  
MGCP/NCS 1.0  
Codecs G.711, G.726, G.729

## Approvals

CE Marking  
Safety UL60950-1,  
CAN/CSA-C22.2 No. 60950-1-03,  
EN60950-1, EN60825-1  
Emission  
Immunity FCC Part 15 Class B, EN 55022 Class B  
EN 55024

## Warranty

Two years

## Ordering Information

AT-iMG646BD-xx (990-001152-xx)  
6 x 10/100TX LAN ports, 4 x FXS, 1 x 100BX,  
SC/UPC fiber WAN port, 1 x Console port  
Include fiber outlet with locking mechanism

Where xx = 00 for no power cord  
10 for U.S. power cord  
30 for U.K. power cord  
50 for European power cord

## Options

AT-iMG006G-xx (990-002154-xx)  
Battery backup

AT-RG008-00 (990-000396-00)  
Battery backup cable

AT-RGCONSOLECABLE (990-011748-00)  
Console cable

USA Headquarters | 19800 North Creek Parkway | Suite 200 | Bothell | WA 98011 | USA | T: +1 800 424 4284 | F: +1 425 481 3895

European Headquarters | Via Motta 24 | 6830 Chiasso | Switzerland | T: +41 91 69769.00 | F: +41 91 69769.11

Asia-Pacific Headquarters | 11 Tai Seng Link | Singapore | 534182 | T: +65 6383 3832 | F: +65 6383 3830

[www.alliedtelesis.com](http://www.alliedtelesis.com)

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