AT-iMG646MOD

Modular, Ethernet intelligent Multiservice Gateway for Outdoor Deployment

AT-iMG646MOD

The AT-iMG646MOD ia a modular gateway product that consists of a base module with: 6 x 10/100TX LAN ports, 4 x VoIP FXS ports and pluggable
1 x LAN module, 1 x WAN module

Modular, Ethernet intelligent Multiservice Gateway for IP Triple Play Services

A member of Allied Telesis' family of residential and intelligent Multiservice Gateways, the outdoor hardened AT-iMG646MOD combines powerful Layer 2 and 3 networking functionality together with Voice-over-IP (VoIP) telephony support. to provide versatility, value, and validation for any network. The environmentally sealed enclosure mounts outside the customer premise for optimal service provider accessibility.

Applications

Capitalizing on Existing Infrastructure

The AT-iMG646MOD offers tremendous versatility by offering both a modular Wide Area Network (WAN) interface, as well as a modular Local Area Network (LAN) interface. Combined with the built-in Ethernet LAN and Plain Old Telephony Service (POTS) ports, the MOD offers unlimited adaptability for field deployments. The AT-EN646MOD enclosure provides integrated fiber-optic drop cable management, where needed, with the ability to secure and ground the drop cable, as well as protect a fusion splice. Enclosures may be deployed at the time of fiber installation, allowing a single fiber crew to complete all fiber-splicing needs during a single truck roll.

Software Real-time Applications Optimization

Quality of Service

The AT-iMG646MOD ensures Quality of Service through OSI Layer 2 and 3 prioritization techniques that include priority tagging with IEEE 802.1p and IP DiffServ Code Points (DSCP) Type of Service (ToS).

Optimization for IP Video Streaming

The AT-iMG646MOD 'snoops' IGMP multicast packets in-transit allowing the simultaneous delivery of multiple movies or TV channels to the subscriber using the minimum bandwith. This results in high-quality video streaming without impacting other services like Internet browsing or IP telephony and delivering the fast channel changes users expect from video services. The iMG aids in the management and diagnosis of the MPEG video service. The video quality can be monitored using the unique MPEG stream monitoring tool.

IP Telephony

The AT-iMG646MOD offers 4 FXS interfaces that leverage the H.323, SIP and MGCP Voice over IP (VoIP) protocols, with interoperability established with major softswitch vendors. The AT-iMG646MOD supports the connection of dial-up modems and fax machines with voice PSTN interfaces and transports the data streams to support existing SoHo business applications.

Data Delivery and Security

Differentiated Bandwidth Services

The AT-iMG646MOD provides extensive support for per-port rate-limiting enabling the service providers to deliver tiered data services catering for the wide spectrum of end-customer profiles.

Key Features

- High-speed up to 100Mbps delivery
- IP Triple Play ready
- Stateful Inspection Firewall / NAT for customer and service security
- Modular WAN and LAN modules reduces deployment cost (CAPEX and OPEX savings)
- Allied*View*™ NMS integration removes need for truck-roll during deployment
- Major softswitch manufacturer interoperability established
- Service specific management and monitoring – ensures Quality of Experience to customers
- Environmentally hardened unit for outdoor deployments
- Installation flexibility through two part enclosure and electronics design
- Internal fiber management for fiber-optic drop cable termination
- Eight hour battery back-up option for lifeline POTS support

2002/95/EC RoHS COMPLIANT

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Firewall Capability

The AT-iMG646MOD has an integral Stateful Inspection Firewall with Network Addess Translation (NAT), Denial of Service (DoS) and an Intrusion Detection System (IDS) with blocking to protect end-customer networks.

Reducing Operational Cost

Value, Versatility, and Validation

The AT-iMG646MOD will support many different types of deployments senarios. Using the Allied*View* NMS, the iMG can be auto-configured during its initial power on sequence, further reducing the need to 'touch' the device during service provisioning and therefore reducing the service provider's operational expenditure (Opex).

With a modular HPNA LAN interface, the iMG can provide connectivity via existing customer premises (inside) wiring, reducing the costly and time consuming rewiring jobs.

A modular WAN interface, enables the service provider to use the same system and configure it for different access networks. Further extending its value and reducing the service provider's opex, the AT-iMG646MOD offers testing and fault-isolation on the Ethernet, HPNA and POTS ports, that assist the service technician to quickly pinpoint the solution when troubleshooting a problem.

Management

Easy to Deploy and Manage

With the AT-iMG646MOD customer premises deployment has never been easier. The AT-EN646MOD Outside Plant Enclosure may be pre-installed. It accommodates fiber termination and grounding for the iMG. When services are ordered, the AT-iMG646MOD electronics chassis mounts easily into the enclosure, and terminates in-home wiring and power connection.

Allied*View* NMS

The AT-iMG646-MOD is designed to be easy to deploy and manage. With the Allied*View* NMS software platform, the AT-iMG646MOD can be automatically provisioned and managed remotely. The NMS provide secure authentication and registration with intelligent, automatic configuration of remote iMG units, and seamless integration via XML/SOAP with service providers' existing OSS platforms.

Specifications

User's Ports

6 x 10/100TX (RJ-45)
4 x VoIP FXS ports (RJ-11)
HPNA LAN (F-connector) requires HPNA end-point

WAN Ports

100BX single-fiber (BX, SC/UPC)
TX 1310 nm, RX 1550 nm
Range 15km
Power budget 17 dB
GEPON (available 2H07)

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
Input /egress 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

VoIP Protocols

H.323	3.0
SIP	2.0
MGCP/NCS	1.0

VoIP Ports

G.711 a-law and µ-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

Class 5 Services

Call transfer
Call waiting
Call hold
Message waiting
Caller ID

LED Status Indicators

Power	
System	
POTS	Use/ready/ringing
WAN	Link/activity
LAN	Link/activity

Network Management

AlliedView NMS
Local console port
Telnet
Remote software upgrade
DHCP

Technical Specifications

Power Characteristics

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

Environmental Specifications

Operating temperature	-40°C to +60°C
Storage temperature	-40°C to +80°C
Operating humidity	5% to 95% RH

Physical Characteristics

AT-EN646MOD Enclosure

Dimensions (H x W x D)	41.75cm x 29.25cm x 11.75cm 16.7" x 11.7" x 4.7"
Weight	3.6 lbs

AT-iMG646MOD

Dimensions (H x W x D)	30cm x 21.75cm x 3cm 12" x 8.7" x 1.2"
Weight	2.65 lbs

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
SNMP	v1,v2,v3
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	
Saftey	EN60950-1 (TUV), EN60825-1, UL 60950-1 (cULus), CSA C22.2 No. 60950-1
Emission	FCC Part 15 Class B EN 55022 Class B
Immunity	EN 55024

Softswitch Interoperability

Cirpack, Net Centrex, Sonus Networks, Marconi, Siemens, Alcatel, Audiocodes, Mediatrix, Arelnet, HotSIP, Iptel, Italtel, Lucent, Netmeeting, Nuera, OKI, Open H.323

Warranty

Two years

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Ordering Information

iMG646MOD

Model	Description	Part #
iMG646MOD-PKG1	Outdoor intelligent Multiservice Gateway with single-mode BiDi WAN, 6 x 10/100TX LAN, 4 x FXS. Requires enclosure AT-EN646MOD, power supply AT-iMG006G and AT-iMG646MOD-C01 cable for battery back-up.	AT-iMG646MOD-PKG1
The enclosure may be ordered in advance of the electronics, for pre-installation.		
EN646MOD	Outdoor Enclosure for AT-iMG646MOD.	AT-EN646MOD
iMG646MOD-PKG2	Outdoor Modular intelligent Multiservice Gateway with single-mode BiDi WAN, 6 x 10/100TX 4 x FXS plus HPNAv3 module. Requires the HPNA end-point to terminate each coaxial cable end-point. Requires enclosure AT-EN646MOD, power supply AT-iMG006G and AT-iMG646MOD-C01 cable for battery back-up.	AT-iMG646MOD-PKG2
iMG646MOD-PKG3	Outdoor Modular intelligent Multiservice Gateway with single-mode GEPON WAN, 6 x 10/100TX 4 x FXS. Requires enclosure AT-EN646MOD, power supply AT-iMG006G and AT-iMG646MOD-C01 cable for battery back-up.	AT-iMG646MOD-PKG3
iMG646MOD-L01-001	HPNA v3 LAN module. For use with AT-iMG646MOD and AT-iMG626MOD.	AT-iMG646MOD-L01-001
iMG646MOD-L02-001	iMG646MOD T1/E1 LAN module. Supports 2 x T1/E1 Circuit Emulation Service.	AT-iMG646MOD-L02-001
Battery back-up: order with the following:		
iMG006G	DELTA PowerShield Grounded battery back-up (indoor) – for RG/iMG series (requires relevant battery back-up cable: AT-iMG646MMOD-C01).	AT-iMG006G-xx*
iMG646MOD-C01	Battery back-up cable, for use with AT-iMG646MOD. 15' connectorized UV rated cable for connection between DELTA PowerShield battery back-up unit and iMG.	AT-iMG646MOD-C01

Configuration Cable

Model	Description	Part #
MOD console cable	Configuration cable.	AT-iMG-MOD-CONSOLECABLE-00

Related iMAP Line Cards and Chassis

Model	Description	Part #
FX10BX	10 ports, 100Mbps BX single-mode single fiber	AT-TN-109-A
FX20BX	20 ports, 100Mbps BS single-mode single fiber	AT-TN-139-A
iMAP 9700	17-slot chassis with DC power	AT-TN-250G-B
iMAP 9400	7-slot chassis with DC power	AT-TN-251G
MiniMAP 9101	3-slot mini chassis with DC power	AT-TN-9101-A-80
MiniMAP 9102	3-slot mini chassis with AC power	AT-TN-9102-A-xx*

*Power supply information Where xx = region specific power cord / adapter

*Where xx = 10 US power cord / adapter
30 UK power cord / adapter
50 European power cord / adapter (excluding UK)

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