Allied Telesis™

AT-iMG646PX-ON
GEPON intelligent Multiservice Gateway for Outdoor Deployment

AT-iMG646PX

6 x 10/100TX LAN ports, 4 x FXS ports, 1 x PX20, SC/UPC fiber WAN port

GEPON intelligent Multiservice Gateway for IP Triple Play Services

The AT-iMG646PX expands Allied Telesis' portfolio of FTTH gateway products with the addition of an IEEE 802.3ah EPON WAN interface. Based on the successful Residential and intelligent Multiservice Gateways, the AT-iMG646PX leverages powerful Layer 2 and Layer 3 functionality and proven VoIP support. Optimized for outdoor service provider deployment, the AT-iMG646PX is temperature hardened, and mounts in an environmentally sealed enclosure. With solutions for passive or active Ethernet FTTH deployments, the iMG600 family supports your point-to-point or point-to-multipoint FTTH network.

Applications
Optimizing Fiber Infrastructure

The AT-iMG646PX is an IEEE 802.3ah PX20 standards based solution. The iMAP EPON OLT can support up to 16 or 32 AT-iMG646PX ONUs through an optical splitter, at a distance of up to 20km. A PON infrastructure enables FTTH deployments to utilize existing fiber infrastructure between the CO or Remote Cabinet and new developments, reducing the costs of deploying high revenue generating FTTH equipment. The AT-EN646 enclosure provides integrated fiber-optic drop cable management, 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.

Optimized for IP Triple Play
Quality of Service

The AT-iMG646PX-ON ensures Quality of Service through ISO Layer 2 and 3 prioritization techniques including priority

tagging with IEEE 802.1p and Type of Service (ToS) bits.

IP Video Streaming

The AT-iMG646PX-ON 'snoops' IGMP packets in-transit allowing simultaneous delivery of different multicast transmissions required for IPTV. The efficient delivery of multiple video streams results in high quality transmission with support for quick channel changes, without impacting IP telephony or Internet browsing. The AT-iMG646PX's unique MPEG stream monitoring tool allows remote assessment of video quality for MPEG video service management and problem diagnosis.

IP Telephony

The AT-iMG646PX-ON offers 4 FXS interfaces leveraging H.323, SIP and MGCP Voice over IP (VoIP) protocols, with interoperability established with major softswitch vendors. The AT-iMG646PX-ON supports the connection of modems and faxes to the PSTN for business applications in SOHO environments.

Data Delivery and Security
Differentiated Bandwidth Internet Services

The AT-iMG646PX-ON provides extensive support for per-port rate-limiting enabling service providers to deliver tiered data services over a wide spectrum of end-customer profiles.

Firewall Capability

The AT-iMG646PX-ON has an integrated Stateful Inspection Firewall with NAT, Denial of Service (DoS) and an Intrusion Detection System (IDS) with blocking for protecting end-customer networks.

Management
Easy to Deploy and Manage

Fiber-To-The-Home (FTTH) with the AT-iMG646PX-ON has never been easier. The AT-EN646 Outside Plant Enclosure may be pre-installed, and accommodates fiber

Key Features

- Up to 1Gbps bandwidth delivery

- Optimized for IP Triple Play

- Stateful Inspection Firewall / NAT for security of customer and provider

- Single Bi-Directional fiber for reduced infrastructure cost

- Remote configuration with AlliedView™ NMS or Zero Touch Configurator

- Major Softswitch manufacturer compatibility established

- Service specific management and monitoring – ensures Quality of Service 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 backup option for lifeline POTS support

- Remote power monitoring

termination and grounding for the iMG. When services are ordered, the AT-iMG646PX-ON electronics chassis mounts easily into the enclosure, and will terminate in-home wiring and power connection.

Remote iMG Configuration with Allied Telesis Software

The AT-iMG646PX-ON is designed to be easy to deploy and manage. With the Zero Touch Configurator (ZTC) software platform, the AT-iMG646PX can be provisioned and managed remotely. The AT-iMG646PX, in conjunction with the iMAP EPON2 blade, provides an integrated, end-to end FTTH deployment. Allied Telesis' AlliedView NMS supports provisioning, management, and diagnostics for your EPON network.

Specifications

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

WAN Ports
1G PX20 single-fiber (SC/UPC)
Transmit: 1310nm
Launch power: -1 to +4dBm
Receive: 1490nm
Receive sensitivity: -26.5 to -3dBm

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

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

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

LED Status Indicators
Power
System
POTS   Use/Ready/Ringing
WAN   Link/Activity
LAN   Link/Activity

Technical Specifications

Power Characteristics
Input electrical rating   12vDC, 2.0A
Power consumption   12W (typical)
                          24W (maximum)

Environmental Specifications
Operating Temperature   -40°C to +60°C
Storage Temperature   -40°C to +80°C
Operating Humidity   5% to 95% RH non-condensing

Physical Characteristics
AT-EN646 Enclosure
Dimensions   16.7 x 11.7 x 4.7 in.
               (H x W x D)
Weight   3.6 lbs

AT-iMG646PX-ON
Dimensions   12 x 8.7 x 1.2 in.
               (H x W x D)
Weight   2.65 lbs

EPON Standards
IEEE 802.3ah   EFM TM-2004
IEEE 802.3ah   EFM PON Clause 64
IEEE 802.3ah   OAM Clause 57
IEEE 802.3ah   Optics Clause 60

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

Ordering Information

AT-iMG646PX-ON-00 (990-001617-00)
1 x GEPON Ethernet, 6 x 10/100 TX LAN, 4 x FXS. Requires enclosure, EN646

Options
AT-EN646 (990-001961-00)
Outdoor enclosure

AT-iMG006G-10 (990-002154-xx)
Battery backup

AT-RG013-00 (990-00670-00)
Battery backup cable

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

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

Connecting The (IP) World

Allied Telesis™