

# FX10BX

## AT-TN-109-A 10-PORT 100Mbps BX FTTx SERVICE MODULE

The FX10BX is one of a range of IEEE 802.3ah active FTTH/B service modules for the Allied Telesis integrated Multiservice Access Platform.

### Fiber to the Home or Business over a Single Fiber

The FX10BX is one of three Allied Telesis IEEE 802.3ah active FTTH/B service modules for the iMAP product family. This card provides 10 ports at 100Mbps (full-duplex) over a single fiber (single-mode). Also available are dual fiber options in either single-mode or multi-mode variations. The Gigabit feed into the iMAP backplane allows the FX10 modules to operate completely at wire speed.

The additional Layer 2+ switching allows service providers to meet the demands of multicast IP video, Video on Demand, voice and data services. With the FX10 modules, you can be assured that future bandwidth needs of HDTV will be addressed as consumer demand increases.

The Allied Telesis OAM solution allows for individual full configuration and monitoring of each port. The FX10 modules provide configuration tools to:

- Control or limit subscriber access
- Enforce port security rules

- Limit services to a port
- Manage Quality of Service (QoS) across the card
- Support network double-tagging
- Control ingress or egress service rates

A multitude of applications can be supported with the fiber-based 100Mbps access interfaces including:

- FTTH for voice, video and data services
- FTTB for IP PBX, Ethernet and VPN services
- Campus LAN network uplinks

Whether it is derived voice or high definition IP video, the FX10 will satisfy all bandwidth and mission critical services with ease.

### Part of the Allied Telesis IP Broadband Access Family

Whether broadband ADSL2+, FTTH or POTS, the iMAP family is the ideal platform for last mile service delivery. The FX10BX line card can be used with any of the iMAP family of carrier grade, IP multiservice access platforms:

- iMAP 9700 (9RU, 17 service slots)
- iMAP 9810 (3RU, 8 service slots)
- MiniMAP 9100 (1RU, 3 service slots)



### Key Features

#### Port-based

- » VLANs
- » VLAN translation
- » Double-tagging (HVLAN)
- » Filtering
- » Ingress metering
- » Egress port rate limiting
- » Counters
- » Classification and remarking
- » RMON

#### QoS

- » Four queues
- » Priority scheduling

#### Security

- » MAC limiting (up to 64)
- » MAC flooding – VLAN-based

#### Services

- » STP and RSTP
- » Video-optimized – IGMP snooping
- » Upstream forwarding only

#### Support for

- » Business services
- » Residential service
- » Single fiber, single-mode

Provisioning, management, and diagnostics of subscriber ports can be accomplished from either the iMAP command line interface or the NMS.

The FX10BX has been designed to survive the most rugged environmental conditions. It can be confidently deployed in either a central office or in outdoor enclosures withstanding extremes of heat, cold, and light exposure.

Allied Telesis provides a large portfolio of FTTx, Ethernet and xDSL transport and access equipment as well as a complete set of xDSL and FTTx CPE solutions in the form of gateways, Layer 2 / Layer 3 switches, routers or media converters to terminate the broadband link.

**iMAP**  
INTEGRATED MULTISERVICE  
ACCESS PLATFORM



## Specifications

### Interface

Number of ports: 10  
 AT-TN109 single-mode single fiber  
 Tx 1550nm, Rx 1310nm  
 19dB optical budget  
 SFF with SC connector  
 Backplane capacity: 1Gbps  
 Physical design: Front access

### Protocols

IEEE 802.1d,w Rapid Spanning Tree  
 IEEE 802.1D bridging  
 IEEE 802.1Q VLAN bridging  
 IEEE 802.1p prioritization  
 IEEE 802.3ah EFM OAM  
 IETF RFC 1112 IP multicasting/IGMP snooping v1  
 IETF RFC 2236 IP multicasting/IGMP snooping v2  
 DHCP relay agent option 82 (RFC 3046)

### Power Requirements

Maximum power: 36W

### Environmental Specifications

Operating temperature: -40°C to 65°C (-40°F to 149°F)  
 Storage temperature: -40°C to 75°C (-40°F to 167°F)  
 Relative humidity: 5% to 95%, non-condensing

### Regulatory Approvals

FCC Part 15 Class A/ANSI C63.4  
 EN 300 386 V1.3.1:2001-09/EN 55022:1998, Class A  
 VCCI Class A; ITE/ CISPR 22:1997 Class A  
 EN 300 386 V1.3.1:2001-09/EN 55022:1998, Class A  
 EN 300 386 V1.3.1:2001-09/EN 61000-4-3:1998  
 EN 300 386 V1.3.1:2001-09/EN 6100-4-6:1996  
 EN 300 386 V1.3.1:2001-09/EN 61000-4-4:1995  
 EN 300 386 V1.3.1:2001-09/EN 61000-4-5:1995  
 EN 300 386 V1.3.1:2001-09/EN 61000-4-2:1999  
 UL/cUL 60950: IEC60950  
 NEBS Level 3, GR-1089 Issue 3, GR63 Issue 2  
 USDA RUS

## Ordering Information

### FX10BX Service Module

**FX10BX (AT-TN-109-A)**  
 10-port service module, 100Mbps BX single-mode single fiber

### iMAP 9x00 Chassis

**iMAP 9810 (AT-TN-253G)**  
 8-slot chassis with DC power (without faceplates)

**iMAP 9700 (AT-TN-250G)**  
 17-slot chassis with DC power (without faceplates)

**iMAP 9400 (AT-TN-251G)**  
 7-slot chassis with DC power (without faceplates)

**MiniMAP 9101 (AT-TN-9101-A-80)**  
 3-slot mini chassis with DC power

**MiniMAP 9102 (AT-TN-9102-A-xx)**  
 3-slot mini chassis with AC power

### iMAP Common Control and Network WAN Modules

**CFC100 (AT-TN-409-A)**  
 100GbE switch controller card

**XE6**  
 6-port 10GbE WAN interface card

**CFC24 (AT-TN-401-B)**  
 24GbE switch controller card

**GE3 (AT-TN-301-A)**  
 3 x GbE WAN interface card

**CFC56 (AT-TN-407-A)**  
 56GbE switch controller card

**XE1 (AT-TN-308-A)**  
 10GbE WAN interface card

**CFC12 (AT-TN-408-A)**  
 12GbE switch controller card

### Related iMAP FTTx Line Cards

**FTTX (SM, Dual Fiber) (AT-TN-107-A)**  
 10-port 100Mbps single-mode fiber line card

**FTTX (SM, Single Fiber) (AT-TN-109-A)**  
 10-port 100Mbps single-mode, single fiber line card

**GE8 (AT-TN-117-B)**  
 8-port GbE line card

**GEPON2 (AT-TN-118-B)**  
 2-port GEPON line card

**Filler (AT-TN-M000-C)**  
 Full size service slot filler plate (eight pack)

### Related FTTx CPE

**AT-IMG606BD-R2**  
 intelligent Multiservice Gateway, 6 x LAN, single fiber WAN interface

**AT-IMG616BD-R2**  
 intelligent Multiservice Gateway, 6 x LAN, 1 x FXS, single fiber single-mode WAN interface

**AT-IMG646BD**  
 intelligent Multiservice Gateway, 6 x LAN, 4 x FXS, single fiber WAN single-mode Interface

Where xx = 10 for U.S. power cord  
 20 for no power cord  
 30 for U.K. power cord  
 40 for Australian power cord  
 50 for European power cord