ASCENT
Communication Technology

ACT AD511T
10G XGS-PON
SFU ONT

Quick Reference Guide

Revision B

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ACT Document Number: ACT AD511T-EU QRG

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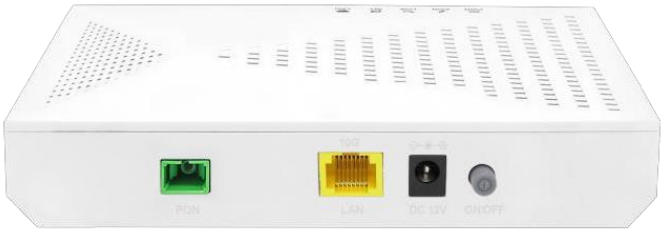
This document is produced to assist professional and properly trained personnel with installation and maintenance issues for the product. The capabilities, system requirements and/or compatibility with third-party products described herein are subject to change without notice.

For more information, contact ACT: support@ascentcomtec.com



Revision History

Revision	Date	Reason for Change
A	07/17/2023	Initial release
B	06/11/2025	Update Format

Table of Contents

1 Overview

1.1 Summary

The AD511T is the latest indoor Optical Network Terminal (ONT) designed to deliver high-speed fiber broadband access for residential and small business settings. Engineered for compatibility with standard-compliant XGSPON Optical Line Terminals (OLTs), it adheres to the symmetric 10G PON standard ITU-T G.9807.1 (XGS-PON), ensuring robust performance for a wide range of bandwidth-intensive applications.

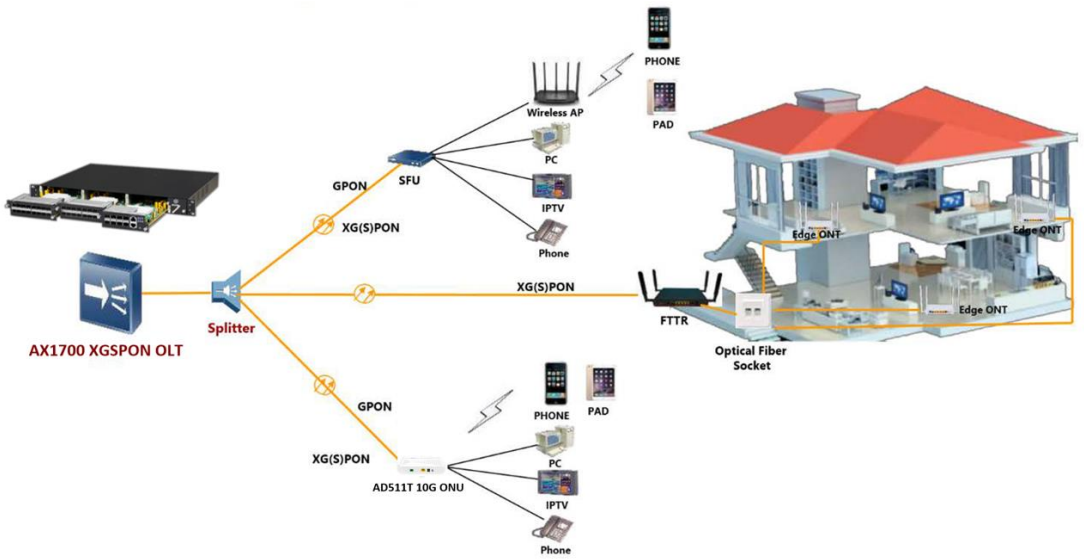
The AD511T enhances connectivity with advanced features tailored to modern network demands. It includes support for ONU auto-discovery and link detection, ensuring reliable connections, while port-based rate limitation and bandwidth control allow for optimized performance. The device also offers port VLAN configuration and MAC address learning, enabling precise traffic management and security. Its broadcasting storm resistance function further ensures network stability, making it a versatile solution for operators looking to streamline their fiber-to-the-home (FTTH) infrastructure.

Built for reliability and ease of management, the AD511T integrates a comprehensive feature set that includes dynamic bandwidth allocation (DBA) and EMS network management based on SNMP for convenient maintenance. The inclusion of a power-off alarm function simplifies troubleshooting, while support for firewall and remote WEB/Telnet access control enhances security and accessibility. This compact, standards-compliant terminal empowers users with stable, high-speed broadband while reducing operational complexity for service providers.

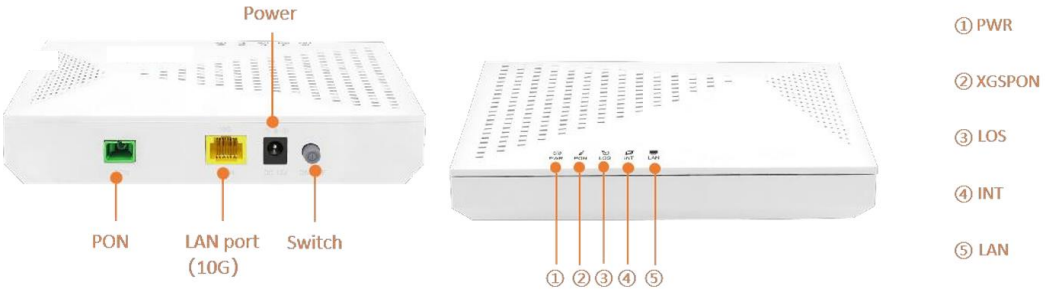
2 Features

- Support ONU auto-discovery/Link detection/remote upgrade of software
- Support SN and LOID+Password multiple registration methods
- Support port VLAN configuration
- Support port-based rate limitation and bandwidth control
- Support port flow-control
- Support MAC address learning
- Support MAC address learning account limit
- Support broadcasting storm resistance function
- Support Dynamic Bandwidth Allocation (DBA)
- Support AES encryption and decryption
- EMS network management based on SNMP convenient for maintenance
- Support power-off alarm function, easy for link problem detection
- Support Firewall
- Support MAC address/URL filter
- Support Remote WEB/Telnet access control

2.1 Application Diagram



2.2 Product Interface and LED



2.3 LED Definitions

Indicator		Description
PWR	Power Status	On: The ONT is power on Off: The ONT is Power off
	ONT Register	On: Success to register to OLT Blinking: In process of registering to OLT Off: Failed to register to OLT or no normal optical signal input
LOS	PON Optical Signals	On: Optical power lower than receiver sensitivity Off: Optical in normal
LAN	LAN Port Status	On: Ethernet connection is normal Blinking: Data is being transmitted through the Ethernet port Off: Ethernet connection is not set up
INT	Internet Status Indicator	On: The routed WAN Internet access service is normal Off: The routed WAN Internet access service is abnormal

3 Specifications

Parameter		Description
Hardware		
User Port (LAN)		RJ-45 connector 10GE Full/Half Duplex Auto MDI/MDI-X
Indicators		PWR / XGSPON / LOS / LAN / INT
PON Port	PON Mode	XGSPON: FSANG.9807.1standard
	Port Rate	XGSPON: 10Gbps/10Gbps downstream/upstream
	Wavelength	1270nm/1577nm
	Receiving Sensitivity	XGSPON: -28dBm
	Saturation Power	XGSPON: -9dBm
	Average Sending	XGSPON: +4 to +9dBm
Power Supply		
Adapter		External 12VDC/1A power supply adapter
Power Consumption		≤8.1W
Environment		
Working Temperature		0°C to 40°C
Operating Humidity		10 to 90% (Non-condensing)
Mechanics		
Dimensions		160mm(L) * 112mm(W) * 32mm(H)
Weight		200g

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