



GE-PON-OLT ST-3501-FX

Overview

The Spiktel 3501-FX is a high density, high capacity, and multi-functional GE-PON FTTH Optical Line Terminal. 3501-FX, built on a high capacity Layer 3 switch platform, is an efficient and cost effective solution optimized for service providers to offer reliable TPS services over GE-PON.

3501-FX has total 14 slots that can accommodate 2 SCUs(Switch & Control units), 2 PSUs(Power Supply Units), 2 LIUs(Line Interface Units), and 8 PIUs(PON Interface Units). The LIU slots of 3501-FX can accept 8-port 1G card, 2-port 10G card, or 4-port 10G card up to 2, meanwhile the PIU slots can accept 8-port 1.25G GE-PON card up to 8

The 3501-FX adapts full redundancy design of SCU and PSU to improve availability and reliability of system. On top of that, The 3501-FX offers Layer 2 switching, Layer 3 routing, QoS, OAM, and Security features as well.

The 3501-FX can accommodate maximum 4096 subscribers in a typical GPON deployment with 1:64 splits, since it can support total 64 PON ports.

Features

- * Easy and flexible deployment
- * Non-blocking architecture
- * All Front Access
- * Packet processing functionalities for IP-based "Triple Play Service" delivery
- * 19 inch Chassis with 8 RU Height, 14 slots
- * 960Gbps switching capacity,
- * Max. 64 GPON ports

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Features

- * System Architecture
 - 14 slots, 8RU, 19 inch mounting
 - 3 FAN Module
 - AC / DC Power Module(Redundancy)
- * Slot configuration
 - Total 14 slots: 2 PSU slots / 10 data slots / 2 Switch & CONTROL slot
- * PON interface
 - Max. 8 slots: up to 64 PONs
 - All Cards and Modules Hot-swapping
- * Network interface
 - Max. 2 slots: 8-port 1GE / card or 2/4-port 10GE / card
- * Subscriber Capacity
 - GPON: 64 GPON Max. 4096 subscribers(1:64 split)
- * Switching capacity: 960Gbps/3Mpps
- * Switching Fabric: 800Gbps(80G per slot)
- * Fully Redundant System
 - Switch & Control Card (SCU)
 - AC/DC Power Supply Unit (PSU)
 - Any two PON ports from any two PIU cards
- * Support Various SFP/XFP transceiver
- * Management :1 port 100Base-Tx & RS-232
- * Module based High Capacity L3 switching GPON Common Platform
 - 2 slots Power Supply Unit (PSU)
 - 8 slots PON Interface Unit (PIU)
 - 2 slots Line Interface Unit (LIU)
 - 2 slots Switch & Control Unit (SCU)
- * Various Line Interface Unit (LIU)
 - 2/4 port 10GE module (Up to 8 X 10GE ports, 2 slots)
 - 8-port 1G module (Up to 16 X 1GE ports, 2 slots)
- * PON Interface Unit(PIU)
 - 8-port GPON module (Up to 64 GPON ports, 8 slots): Max. 4096 TPS Subscriber per chassis(1:64 split)
- * Network interface
 - Combination of the interfaces cards below:
 - * 8-port 1GE card with 1000Base-T interface
 - * 8-port 1GE card with 1000Base-X interface
 - * 2-port 10GE card with 10GBase-R interface
 - * 4-port 10GE card with 10GBase-R interface
- * 10Km/20Km at different splits (32) at -22dBm(Basic) or -27dBm(Optional)
- * S/W Upgrade without service interruption
- * Loop-Back Test Function
- * RSSI (Received Signal Strength Indicator)
 - Detects and indicates EPON signal strength by checking Rx/Tx signal of ONTs.
- * Automatic Laser Diode Shutdown (in case of ONT fault)
 - Detects any ONT working in continuous mode and shutdowns the laser diode of the ONT to prevent service failure over PON.

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Specifications

Hardware

Product Specification

Slot capacity	-	14 Slots
Full-duplex Switching Capacity	-	960G
System Throughput	-	357.3Mbps
Full-duplex Capacity per slot	-	80G per slot
Physical	-	437mm(W) x 354.4mm(H) x 295mm(D) : 19inch Rack Mount, 8RU height
Chassis per rack	-	4 chassis(2200mm : 45RU)

Electrical specifications for the AC/DC power

Total power Consumption	-	520 W
Rated input voltage	-	210~240VAC(47~63Hz), -48VDC

Environmental conditions

Temperature	-	0*~ 50* (Operation), -20~60* (Storage)
Management Interfaces	-	RS-232C, 10/100 Base-T
Humidity	-	90%

Software

Features	Description
PON Features	<ul style="list-style-type: none">Max 4 bidirectional unicast LLID per ONUMax 256 bidirectional unicast LLID per OLT portWire speed processing1.25 Gbps upstream rate on each PON channel128-bit Advanced Encryption Standard (AES) encryption engine for PON security and privacy with up to 128 unique keys.Forward Error Correction(FEC) encoding and decodingFlexible optical transceiver interface for multiple vendor supportSupports Local and Remote Loop-back testHardware-based configurable Dynamic Bandwidth Allocation (DBA)IEEE 802.1D bridging: 8K MAC Address learning and aging on local interfaceIEEE 802.1p with four priority queuesIEEE 802.1Q VLAN mapping
L2 Features	<ul style="list-style-type: none">Max 32K Mac Address TableLimiting No. of MAC Address per SubscriberEnable/Disable MAC LearningConfigurable Learned MAC aging timeMax 4K VLANs, 802.1Q SupportPrivate VLAN802.1ad Q-in-QTagging/StackingPort to VLAN MappingService to VLAN Mapping802.3ad Link Aggregation

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	<p>Load-balancing based on source and destination MAC/IP</p> <p>802.1d Spanning Tree Protocol(STP)</p> <p>802.1w Rapid STP(RSTP)</p> <p>802.1s Multiple STP(MSTP)</p> <p>Rapid Per VLAN Spanning Tree Plus(RPVST+)</p> <p>IGMP v1/v2/v3, snooping</p> <p>Max 4K Group Support</p> <p>Static Mac Address</p> <p>Ethernet Jumbo Frame</p> <p>Port Mirroring</p>
L3 Features	<p>Static Routing</p> <p>RIPv2(IPv4)</p> <p>OSPFv2(IPv4)</p> <p>BGP4(IPv4)</p> <p>VRRPv2(IPv4)</p> <p>PBR(Policy Based Routing)</p> <p>ECMP Max 8 Routes</p> <p>Max 12K Routing Entries</p> <p>PIM-SM</p> <p>PIM-SSM</p> <p>IGMP v2/v3</p> <p>IGMP Proxy</p> <p>Max 1K Group Support</p> <p>IGMP snooping</p> <p>IGMP Join/Leave</p> <p>PIM-ECMP Support</p> <p>IGMP Join Filter/Count Limit</p> <p>DHCP Server/Relay</p> <p>Blocks illegal IP users</p> <p>DHCP option82</p> <p>DHCP Snooping</p> <p>DAI(Dynamic ARP Inspection)</p>
QoS Features	<p>DBA(Dynamic Bandwidth Allocation)</p> <p>Support LLID for GE-PON</p> <p>Layer 2: Source/Destination MAC Address, VLAN ID, 802.1p Field</p> <p>Layer 3: Source/Destination IP Address, DSCP</p> <p>Layer 4: Source/Destination TCP/UDP Port</p> <p>Flow Classification through CoS, VLAN CoS</p> <p>Marking/Remarking: DSCP, 802.1p</p> <p>based on IEEE 802.1p bit support 8 priority levels or equivalent</p> <p>based on TOS (IP Precedence/DSCP)</p> <p>Packet Drop</p> <p>Mirroring/Redirect to Port</p> <p>Metering, Rate Limiting with 64Kbps unit</p> <p>Rate Limit per subscriber</p> <p>Rate Limit per service per subscriber</p> <p>Peak Information Rate (PIR)</p> <p>Sustained Information Rate (CIR)</p> <p>8 queues per port</p> <p>SPQ, DWRR, Hybrid (SPQ+DWRR)</p>

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<p>Security Features</p>	<p>Netbios, NBT filtering DHCP filtering Packet filtering with ACLs Destination MAC address Ether type VLAN ID Destination/Source IP address Enable/Disable data encryption upstream/downstream Illegal Source MAC address block ALL 0's, 1's, System Mac, Default G/W Mac Illegal Source IP address block Broadcast, DLF, Multicast packet rate control Source MAC based excessive traffic Block ONU/ONT auto discovery Static Mac address Mac filtering Max Mac Number limit Port based Self Loop Detect IP anti-spoofing ARP packet traffic limit Blocking of user-to-user flows Subscriber Isolation MAC Address Anti Spoofing ARP spoofing / ARP cache poisoning IP spoofing DHCP spoofing Broadcast flooding MAC address spoofing MAC flooding 802.1Q tagging</p>
<p>System Security Features</p>	<p>RADIUS, TACACS+ Telnet, SNMP with ACL DHCP, 82/60 option DHCP, PPPoE(option105) and static IP CPU Packet Filtering with ACL CPU overload Packet traffic sender block TCP sync attack protection with sync cookies CPU packet rate-limit Management packet priority control Gratuitous AR</p>
<p>Management Features</p>	<p>Telnet, SSH, SNMP v1/v2/v3 GUI Based Management through EMS Remote OS Upgrade using TFTP, FTP Dual Flash Image Remote Configuration Data Download NTP Packet monitoring with TCPDUMP RMON, Syslog Type based Port, CPU Packet statistics</p>



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