

## FTTx OLT Solution

# C9264



## System Overview

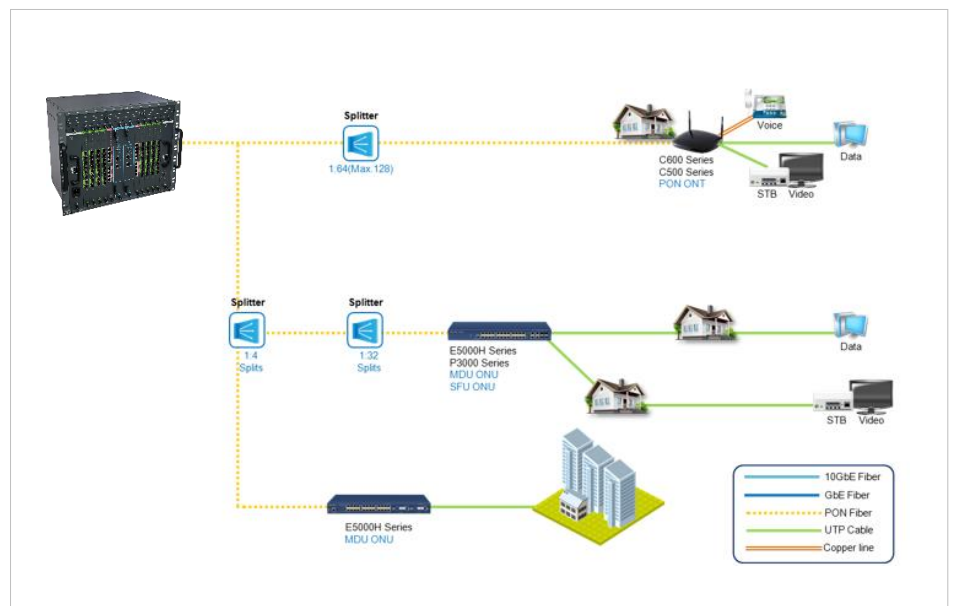
C9264 is a high density, high capacity, and multi-functional EPON Optical Line Terminal. C9264, built on a high capacity layer 3 switch platform, is an efficient and cost effective solution optimized for service providers to offer reliable Triple Play Service (TPS) over EPON.

C9264 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 C9264 can accept 8-port 1G card, 2-port 10G card, or 4-port 10G card up to 2 modules. The PIU slots can accept 8-port 1.25G EPON up to 8 modules.

C9264 adopts full redundancy design of SCU and PSU to improve availability and reliability of the system. On top of that, C9264 offers Layer 2 switching, Layer 3 routing, QoS, OAM, and Security features as well.

C9264 can accommodate maximum 4,096 subscribers in a typical EPON deployment with 1:64 splits, since it can support total 64 PON ports.

## Deployment Diagram



## Features

- Future broadband capable platform of multi slot chassis
- 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
- 960 Gbps switching capacity
- 714 Mpps System throughput
- 64 GEAPON ports
- Redundant Switch and CPU modules for high availability
- J1TC compliant

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# Specification

## HW Specification

### System Architecture & Console

- System Architecture
  - Medium sized Chassis : 14 slots, 8RU
  - 19 inch mounting
  - 3 FAN Modules
  - Power Module with either AC or DC source
  - RS-232C, 10/100 Base-T
- Slot configuration
  - Total 14 slots : 10 service interface module slots / 2 Switch & CONTROL slots / 2 PSU slots
- PON interface
  - Max. 8 slots: up to 64 PON ports
  - 1:32 or 1:64 Split Ratio per EPON port
- Network interface (Up to 2 LIU Modules per Chassis)
  - 8 ports 1000Base-X Interface Module (LIU-8M)
  - 8 ports 1000Base-TX Interface Module (LIU-8T)
  - 4 ports 10GBase-R XFP Interface Module (LIU-4X)
  - 2 ports 10GBase-R XFP Interface Module (LIU-2X)

### Physical Dimension

- 437mm(W) x 354.4mm(H) x 295mm(D)
- 19inch Rack Mount
- 8RU height

## Environment Condition

### Input power and frequency

- AC : 210~240VAC(47~63Hz)
- DC : -48VDC

### Power Consumption

- Max. 600W (in full load configuration)

### Operating Temperature

- 0 ~ 50°C

### Storage Temperature

- -20~60°C

## Performance

### Switch Fabric Performance

- 960 Gbps non-blocking

### Throughput

- 714 Mpps wire-speed Switching

## Service and features

### EPON

- Full IEEE802.3ah EPON Standard functionality.
- Single LLID / Multi LLID
- Wire speed processing
- 1.25 Gbps upstream/downstream rate
- Forward Error Correction(FEC) encoding and decoding

- Flexible optical transceiver interface for multiple vendor support
- Hardware-based configurable Dynamic Bandwidth Allocation (DBA)
- IEEE 802.1D bridging: 8K MAC Address learning and aging on local interface
- Supports Local and Remote Loop-back test

### Layer 2

- TR-156 Compliant
- Max 32K Mac Address Table
- Max 4K VLANs, 802.1Q Support
- Private VLAN
- 802.3ad Link Aggregation
- Load-balancing based on source and destination MAC/IP
- 802.1d Spanning Tree Protocol(STP)
- 802.1w Rapid STP(RSTP)
- 802.1s Multiple STP(MSTP)
- IGMP v1/v2/v3, snooping
- Max 4K Group Support
- Static Mac Address
- Port Mirroring

### Layer 3

- Static Routing
- RIPv2(IPv4), OSPFv2(IPv4), BGP4(IPv4)
- VRRPv2(IPv4)
- PBR(Policy Based Routing)
- ECMP Max 8 Routes
- Max 12K Routing Entries
- DHCP Relay
- Blocks illegal IP users
- DHCP Snooping
- DAI(Dynamic ARP Inspection)

### Multicast

- PIM-SM, PIM-SSM
- IGMP v2/v3, IGMP Proxy
- Max 1K Group Support
- PIM-ECMP Support
- IGMP Join Filter/Count Limit
- IGMP Snooping
- IGMP Join/Leave

### QoS Features

- Layer 2: Source/Destination MAC Address, VLAN ID, 802.1p Field
- Layer 3: Source/Destination IP Address, DSCP
- Layer 4: Source/Destination TCP/UDP Port
- Marking/Remarking: DSCP, 802.1p
  - based on IEEE 802.1p bit support 8 priority levels or equivalent
  - based on TOS (IP Precedence/DSCP)
- Packet Drop
- Mirroring/Redirect to Port
- Metering, Rate Limiting with 64Kbps unit
- 8 queues per port
- SPQ, DWRR, Hybrid (SPQ+DWRR)
- Egress rate shaping per port/queue with 64Kbps unit

**Security**

- Netbios, NBT filtering
- DHCP filtering
- Packet filtering with ACLs
- MAC Filtering based on detination MAC address
- 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
- 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
- ARP spoofing / ARP cache poisoning
- IP spoofing
- DHCP spoofing
- Broadcast flooding
- MAC flooding
- 802.1Q tagging

**System Security**

- RADIUS,
- TACACS+
- Telnet, SNMP with ACL
- 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 ARP

**Management**

- 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

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