FTTx OLT Solution

C9016

System Overview

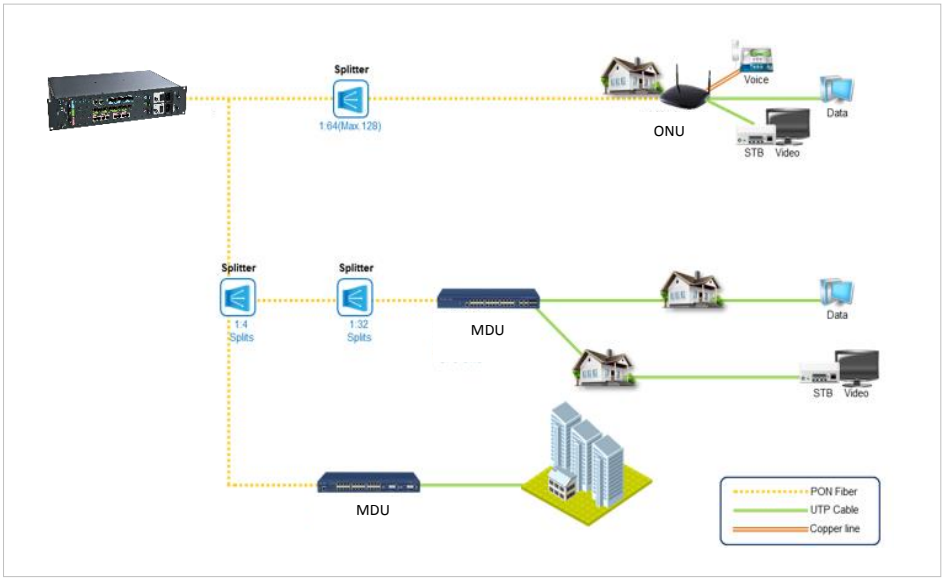
The C9016 is a PON Optical Line Termination(OLT) with 2RU height of compact form factor. Its front access design allows rapid installation and reduced maintenance time. The C9016 OLT can be used for various passive optical network applications such as FTTH, FTTB, and FTTC.

At the user side, the C9016 terminates PON links and connects ONUs or ONTs over PON. At the network side, it terminates Gigabit Ethernet or 10G Ethernet links (GE/10GE) for Service Node Interfaces(SNIs). The SNIs of C9016 can be bind in LACP protocol to connect to the aggregation switch for link protection.
The C9016 can be configured and managed by the Command Line Interface (CLI) locally. It can be also managed remotely by the secure SSH command line or through the Simple Network Management Protocol Version 3 (SNMPv3). For remote management, out-of-band and in-band management modes are supported.

The C9016 supports remote configuration and management of VLANs and port interfaces of PON ONTs. PON ONTs can be configured and managed remotely through the OLT, which allows easy and effective management of CPEs.

To manage the passive optical network, the C9016 OLT measures optical power from the ONU/ONTs and assigns an unique ID to each of them for identification and management when new ONU/ONTs are added to the network.

Deployment Diagram



Features

- 19 inch rack mountable chassis type
- 3 service card slots
- All cards hot swappable
- 1(one) Switch and Control Unit(SCU) with built-in 4 x 1G ports (SFP) and 2 x 10G ports (SFP+)
- 8 port 2.5G GPON Interface Unit (PIU-8G) up to two slots
- 8 port 1.25G EPON Interface Unit (PIU-8E) up to two slots
- 1(one) FAN Module Unit
- 2(two) Power Supply Units
- Hot Swappable and Load-Balancing
- UL/FCC, CE Compliant
- DPoE ver 1.0 certified

ubiQuoss Inc.

68, Pangyo-ro, 255beon-gil,
Bundang-gu, Seongnam-si,
Gyeonggi-do, 463-400, Korea

TEL : +82-70-4865-0570

FAX : +82-31-8017-1184

URL : www.ubiquoss.com

oversea.group@ubiquoss.com

Specification

HW Specification

System Architecture & Console

- Total 4 slots
  - 1 Slot for SCU (Switching and Control Unit)
  - 2 Slots for PIU-8G (GPON Interface Unit)
  - 2 Slots for PIU-8E (EPON Interface Unit)
  - 2 Slots for PSU-DC or AC (Power Supply Unit – AC or DC)
  - 1 slot for FMU (Fan Module Unit)
- RS-232C Console Port
- 10/100 Base-Tx Management Port

Physical Dimension

- 482mm(W) x 295mm(D) x 88.8mm(H)
  - 19inch Standard Rack Mountable
  - 2RU height
- 12Kg

System Monitoring

- Watchdog
- Sensing failure of FAN and Improper power
- Monitoring temperature
- Console Port Connection Detection

Environment Condition

Input power and frequency

- AC type : 100-240VAC, 50/60Hz
- DC type : -48 VDC

Power Consumption

- Max. 160W

Operating Temperature

- 0 ~ 50℃

Storage Temperature

- -20 ~ 60℃

Performance

Switch Fabric Performance

- 128 Gbps non-blocking

Throughput

- 95 Mpps wire-speed Switching

Service and features

EPON

- IEEE 802.3ah compliant
- Single LLID per ONU
- Wire speed processing
- 1.25 Gbps upstream/downstream rate
- 128-bit Advanced Encryption Standard (AES) encryption engine for PON security and privacy with up to 128 unique keys.
- AES-128 Downstream Encryption
- 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
- IEEE 802.1p with four priority queues
- IEEE 802.1Q VLAN mapping
- Supports Local and Remote Loop-back test

GPON

- Fully compatible with ITU-T G.984.x
- ITU-T G.984.4 ONT OMCI
- 4K port-ID and 1K alloc-ID
- Multiple T-CONTs per ONU (ONT)
- Wire speed forwarding rate
- On-chip embedded reassembly buffer per GPON channel
- 2.5 Gbps downstream rate on each PON channel
- 1.25 Gbps upstream rate on each PON channel
- 512 Alloc-IDs per GPON channel
- Internal GPON SERDES and Burst CDR
- 128-bit Advanced Encryption Standard (AES) encryption engine for PON security and privacy with up to 128 unique keys.
- Flexible optical transceiver interface for multiple vendor support.
- ITU-T G.984 compliant Forward Error Correction (FEC) encoding and decoding for improved link budget.
- Hardware-based configurable Dynamic Bandwidth Allocation (DBA)
- IEEE 802.1D bridging: 8K MAC Address learning and aging on local interface
- IEEE 802.1p with four priority queues
- IEEE 802.1Q VLAN mapping

Layer 2

- 802.1Q, Max 4K VLANs, 4K VLAN IDs
- Private VLAN
- 802.3ad Link Aggregation
- Load-balancing based on source and destination MAC/IP
- 802.1d Spanning Tree Protocol
- 802.1w Rapid STP
- Per VLAN STP
- IGMP v1/v2, Snooping
- Max 1K Group Support
- Static Mac Address
- Port Mirroring

Layer 3

- Static Routing, RIP, OSPF, BGP
- Default Gateway, VRRP
- ECMP Max 8 paths
- PBR (Policy Based Routing)
- PIM-SM, IGMP v2
- Max 1K Group Support
- DHCP Relay
- Blocking of illegal IP users
- DAI (Dynamic ARP Inspection)

QoS

- Layer 2: Source/Destination MAC Address, VLAN ID, COS Field
- Layer 3: Source/Destination IP address, DSCP
- Layer 4: Source/Destination TCP/UDP port
- TCP control flag
- Marking/Remarking: DSCP, COS
- Packet Drop
- Mirroring to Port, Redirect to Port
- Metering, Rate Limiting with 1Mbps unit
- COS – Queue
- DSCP - Queue
- 8 queues per port
- SPQ, DWRR, Hybrid (SPQ+DWRR)
- Egress rate shaping per port/queue with 1Mbps unit

Security

- Netbios, NBT filtering
- DHCP filtering
- Packet filtering with ACLs
- Block the illegal Source MAC address
- ALL 0's, 1's, System Mac, Default G/W Mac
- Block the illegal Source IP address
- Broadcast, DLF, Multicast packet rate control
- Cut-off of illegal traffic per Source MAC
- Static Mac address
- Mac filtering
- Limitation on Maximum Mac counts
- Port based Self Loop Detect

System Security

- RADIUS
- TACACS+
- Telnet, SNMP with ACL
- CPU Packet Filtering with ACL
- Isolate the users who generate overly CPU-intensive Packet
- 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
- Syslog

ubiQuoss

Seamless Network Solution
All IP Convergence
Perfective Technology
The best partner of the main Internet Service Providers in Korea
Best OAM (Operation, Administration, Maintenance) Support
Many Experience of System Deployment