

# FTTH GE-PON 솔루션 >> OLT >> U9264H

## GE-PON OLT



### 소개

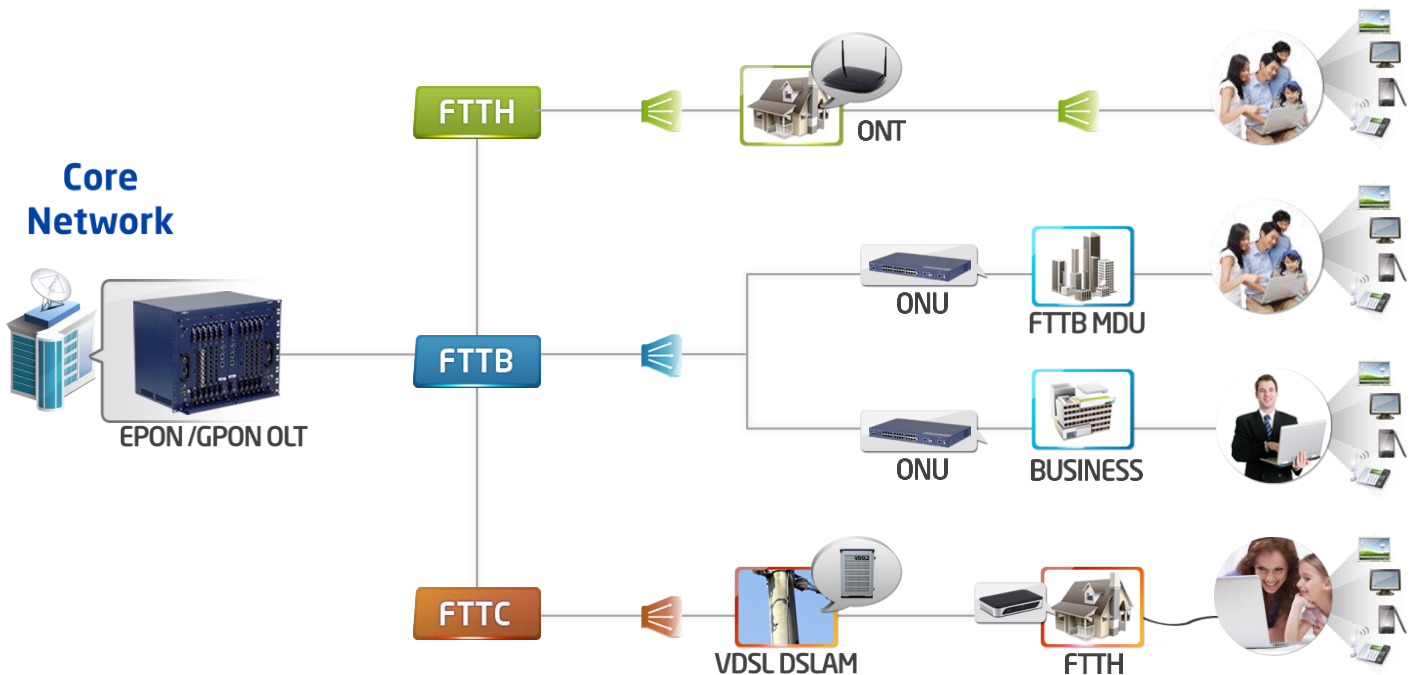
유비쿼스의 U9264H는 대표적인 FTTH 기술인 GPON 및 GE-PON을 선택적으로 수용할 수 있는 고용량 OLT입니다.

GE-PON에서 GPON으로 또는 GPON에서 GE-PON으로 전환시, 전체 시스템을 모두 교체할 필요 없이 해당 PON 카드만 교체하면 되기 때문에 매우 효율적인 솔루션입니다.

U9264H는 8 포트 PON 카드를 최대 8 개까지 수용하기 때문에 단일 쉐시에서 총 64 PON을 수용할 수 있습니다.

GE-PON의 경우 1:32 분기로 서비스를 제공하는 경우 하나의 PON 포트가 최대 32 가입자를 수용할 수 있기 때문에 단일 쉐시에서 최대 2,048 명의 가입자를 대상으로 TPS 서비스를 제공하는 것이 가능합니다. 또한 다양한 업링크를 위해 8 포트 1GE 카드 및 2 포트 10GE 카드를 제공하며 다양한 SFP/XFP 광모듈을 지원합니다.

안정적인 서비스 제공을 위해 U9264H는 스위치 및 전원부의 이중화를 지원함으로써 서비스 중단을 최소화하고 시스템 가동 시간을 극대화하여 높은 가용성을 제공합니다.



## 특징

- 모듈기반 고용량 L3 GPON/GE-PON 공용 플랫폼
- FTTH기술방식 중 GPON 및 GE-PON을 선택적으로 수용
- GE-PON/GPON 전환시 해당 카드만 교체하여 서비스 제공
- PON/Gigabit 인터페이스 유닛
  - 모듈당 8 포트 GE-PON/GPON 인터페이스 지원 (최대 64xGE-PON/GPON 포트)
- 새시당 2,048명 TPS 서비스 가입자 수용 가능 (PON포트당 1:32 분기 기준)
  - 모듈당 2 포트 10GE-PON 인터페이스 지원 (최대 16x10GE-PON 포트)
  - 모듈당 2 포트 10GPON 인터페이스 지원 (최대 16x10GPON 포트)
- 라인인터페이스 유닛 (업링크용)
  - 모듈당 2x10GE 포트 지원 (최대 4x10GE 포트)
  - 모듈당 8x1GE 포트 지원 (최대 16x1GE 포트)
  - 다양한 SFP/XFP 광모듈 지원
- 이중화 구조의 안정적인 전원공급유닛
- 스위치 및 제어부 모듈 이중화 지원
- 3개의 팬 모듈 지원
- 최대 400Gbps 스위칭 패브릭 및 310Mpps 쓰루풋 지원

## 기능

항목	설명
PON	<ul style="list-style-type: none"> <li>• Max 4 bidirectional unicast LLID per ONU</li> <li>• Max 256 bidirectional unicast LLID per OLT port</li> <li>• Wire speed processing</li> <li>• 1.25 Gbps upstream/downstream rate</li> <li>• 128-bit Advanced Encryption Standard (AES) encryption engine for PON security and privacy with up to 128 unique keys.</li> <li>• AES-128 Downstream Encryption</li> <li>• Forward Error Correction(FEC) encoding and decoding</li> <li>• Flexible optical transceiver interface for multiple vendor support.</li> <li>• Hardware-based configurable Dynamic Bandwidth Allocation (DBA)</li> <li>• IEEE 802.1D bridging: 8K MAC Address learning and aging on local interface</li> <li>• IEEE 802.1p with four priority queues</li> <li>• IEEE 802.1Q VLAN mapping</li> <li>• Supports Local and Remote Loop-back test</li> </ul>
L2	<ul style="list-style-type: none"> <li>• MAC address               <ul style="list-style-type: none"> <li>- Max 32K Mac Address Table</li> <li>- Limiting No. of MAC Address per Subscriber</li> <li>- Enable/Disable MAC Learning</li> <li>- Configurable Learned MAC aging time</li> </ul> </li> <li>• VLAN               <ul style="list-style-type: none"> <li>- Max 4K VLANs, 802.1Q Support</li> <li>- Private VLAN</li> <li>- 802.1ad Q-in-Q</li> <li>- Tagging/Stacking</li> <li>- Port to VLAN Mapping</li> <li>- Service to VLAN Mapping</li> </ul> </li> <li>• Link Aggregation               <ul style="list-style-type: none"> <li>- 802.3ad Link Aggregation</li> <li>- Load-balancing based on source and destination MAC/IP</li> </ul> </li> <li>• Spanning Tree               <ul style="list-style-type: none"> <li>- 802.1d Spanning Tree Protocol(STP)</li> <li>- 802.1w Rapid STP(RSTP)</li> <li>- 802.1s Multiple STP(MSTP)</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>- Rapid Per VLAN Spanning Tree Plus(RPVST+)</li> <li>• Multicast <ul style="list-style-type: none"> <li>- IGMP v1/v2/v3, snooping</li> <li>- Max 4K Group Support</li> </ul> </li> <li>• Others <ul style="list-style-type: none"> <li>- Static Mac Address</li> <li>- Ethernet Jumbo Frame</li> <li>- Port Mirroring</li> </ul> </li> </ul>
L3	<ul style="list-style-type: none"> <li>• Routing <ul style="list-style-type: none"> <li>- Static Routing</li> <li>- RIPv2(IPv4)</li> <li>- RIPng(IPv6)</li> <li>- OSPFv2(IPv4)/v3(IPv6)</li> <li>- IS-IS</li> <li>- BGP4(IPv4)/4+(IPv6)</li> <li>- VRRPv2(IPv4)/v3(IPv6)</li> <li>- PBR(Policy Based Routing)</li> <li>- ECMP Max 8 Routes</li> <li>- Max 12K Routing Entries</li> </ul> </li> <li>• Multicast <ul style="list-style-type: none"> <li>- PIM-SM</li> <li>- PIM-SSM</li> <li>- IGMP v2/v3</li> <li>- IGMP Proxy</li> <li>- Max 1K Group Support</li> <li>- IGMP snooping</li> <li>- IGMP Join/Leave</li> <li>- PIM-ECMP Support</li> <li>- IGMP Join Filter/Count Limit</li> </ul> </li> <li>• DHCP <ul style="list-style-type: none"> <li>- DHCP Server/Relay</li> <li>- Blocks illegal IP users</li> <li>- DHCP option82</li> <li>- DHCP Snooping</li> <li>- DAI(Dynamic ARP Inspection)</li> </ul> </li> </ul>
QoS	<ul style="list-style-type: none"> <li>• DBA(Dynamic Bandwidth Allocation)</li> <li>• Support LLID for GE PON</li> <li>• Classification <ul style="list-style-type: none"> <li>- Layer 2: Source/Destination MAC Address, VLAN ID, 802.1p Field</li> <li>- Layer 3: Source/Destination IP Address, DSCP</li> <li>- Layer 4: Source/Destination TCP/UDP Port</li> <li>- Flow Classification through CoS, VLAN CoS</li> </ul> </li> <li>• Actions <ul style="list-style-type: none"> <li>- Marking/Remarking: DSCP, 802.1p based on IEEE 802.1p bit support 8 priority levels or equivalent based on TOS (IP Precedence/DSCP)</li> <li>- Packet Drop</li> <li>- Mirroring/Redirect to Port</li> <li>- Metering, Rate Limiting with 64Kbps unit</li> <li>- Rate Limit per subscriber</li> <li>- Rate Limit per service per subscriber</li> <li>- Peak Information Rate (PIR)</li> <li>- Sustained Information Rate (CIR)</li> </ul> </li> <li>• Queue <ul style="list-style-type: none"> <li>- 8 queues per port</li> <li>- SPQ, DWRR, Hybrid (SPQ+DWRR)</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>▪ Rate Shaping               <ul style="list-style-type: none"> <li>- Egress rate shaping per port/queue with 64Kbps unit</li> </ul> </li> </ul>
Security	<ul style="list-style-type: none"> <li>• Packet Filtering               <ul style="list-style-type: none"> <li>- Netbios, NBT filtering</li> <li>- DHCP filtering</li> <li>- Packet filtering with ACLs</li> <li>- Destination MAC address</li> <li>- Ether type VLAN ID</li> <li>- Destination/Source IP address</li> </ul> </li> <li>• Enable/Disable data encryption upstream/downstream</li> <li>• Abnormal Traffic blocking               <ul style="list-style-type: none"> <li>- Illegal Source MAC address block</li> <li>- ALL 0's, 1's, System Mac, Default G/W Mac</li> <li>- Illegal Source IP address block</li> </ul> </li> <li>• Storming Control               <ul style="list-style-type: none"> <li>- Broadcast, DLF, Multicast packet rate control</li> <li>- Source MAC based excessive traffic Block</li> </ul> </li> <li>• Subscriber Access Control               <ul style="list-style-type: none"> <li>- ONU/ONT auto discovery</li> <li>- Static Mac address</li> <li>- Mac filtering</li> <li>- Max Mac Number limit</li> </ul> </li> <li>• Subscriber Loop Detect               <ul style="list-style-type: none"> <li>- Port based Self Loop Detect</li> </ul> </li> <li>• IP anti-spoofing</li> <li>• ARP packet traffic limit</li> <li>• Blocking of user-to-user flows</li> <li>• Subscriber Isolation</li> <li>• MAC Address Anti Spoofing</li> <li>• User Protection               <ul style="list-style-type: none"> <li>- ARP spoofing / ARP cache poisoning</li> <li>- IP spoofing</li> <li>- DHCP spoofing</li> <li>- Broadcast flooding</li> <li>- MAC address spoofing</li> <li>- MAC flooding</li> <li>- 802.1Q tagging</li> </ul> </li> </ul>
System Security	<ul style="list-style-type: none"> <li>• Access Control               <ul style="list-style-type: none"> <li>- RADIUS,</li> <li>- TACACS+</li> <li>- Telnet, SNMP with ACL</li> <li>- DHCP, 82/60 option DHCP, PPPoE(option105) and static IP</li> </ul> </li> <li>• Protection               <ul style="list-style-type: none"> <li>- CPU Packet Filtering with ACL</li> <li>- CPU overload Packet traffic sender block</li> <li>- TCP sync attack protection with sync cookies</li> <li>- CPU packet rate-limit</li> </ul> </li> <li>• Management               <ul style="list-style-type: none"> <li>- Management packet priority control</li> </ul> </li> <li>• Others               <ul style="list-style-type: none"> <li>- Gratuitous ARP</li> </ul> </li> </ul>
Management	<ul style="list-style-type: none"> <li>• Remote Access               <ul style="list-style-type: none"> <li>- Telnet, SSH, SNMP v1/v2/v3</li> <li>- GUI Based Management through EMS</li> </ul> </li> <li>• OS/Configuration               <ul style="list-style-type: none"> <li>- Remote OS Upgrade using TFTP, FTP</li> <li>- Dual Flash Image</li> <li>- Remote Configuration Data Download</li> </ul> </li> </ul>

- |  |   |
|--|---|
|  | <ul style="list-style-type: none"> <li>• Others             <ul style="list-style-type: none"> <li>- NTP</li> <li>- Packet monitoring with TCPDUMP</li> <li>- RMON, Syslog</li> <li>- Type based Port, CPU Packet statistics</li> </ul> </li> </ul> |
|--|---|

## 사양

제품 사양	
Slot capacity	14 slots
Full-duplex Switching Capacity	960Gbps
System Throughput	310Mpps
Full-duplex Capacity per slot	80G per slot
Physical Dimension	437mm(W) x 352mm(H) x 300mm(D) : 19 inch Rack Mount, 8 RU height
Chassis per rack	4 chassis(2200mm : 45RU)
전원	
Total power Consumption	Max. 800W
Rated input voltage	210~240VAC(47~63Hz), -48VDC
환경 조건	
Temperature	-20 ~ 60°C
Humidity	90%
Management Interfaces	RS-232C, 10/100 Base-T

## 주문 정보

Line Item	PBA Description	Quantity
PSBP & Chassis	PON OLT system Back Board assembly	1
PSU-AC	PON OLT system Power Unit -AC	2
PSU-DC	PON OLT system Power Unit -DC	
FMU-P	PON OLT system FAN Module ( 1 FAN / 1 Module )	3
SCU	SCU	2
	PON OLT system Switch & Control Unit	
LIU	LIU-8T	2
	LIU-8M	
	LIU-2X	
	LIU-4X	
PIU	PIU-8E	8
	E-PON Interface Unit for DS 1.25G/US 1.25G E-PON, 8 ports	