

# SI3000 LUMIA XG8

CORD®-Compatible Universal XGS-PON OLT

ISKRATEL



**Two**

characters: conventional or virtualised operation

**One**

dual-nature box for sustainable fibre access

**Zero**

hardware upgrade to virtualise the central office

Iskratel's **SI3000 Lumia XG8** is world's first XGS-PON OLT that allows operators to avoid an entire investment cycle when transforming their network towards software-defined, next-generation access. A **universal, virtualised XGS-PON OLT** facilitates cost-effective virtualisation of existing central-office infrastructure before operators move on to securely introducing fully virtualised NGPON broadband.

The **SI3000 Lumia XG8** is a one-of-a-kind dual-nature XGS-PON OLT that arms the operators with the right tool to virtualise and cloudify the network at their disposal.

SI3000 Lumia XG8 is a **dual-nature XGS-PON OLT** that operates either as a conventional integrated OLT or as a disaggregated, **CORD®- and vOLTHA-compatible** pOLT.

SI3000 Lumia XG8 uses the same hardware as Lumia XG8, reaping all the benefits of its network processor. A mere software upgrade gives the single box two distinct characters. After the upgrade, only configuration

options turn it into a fully virtualised pOLT, with vOLT software running in the cloud. **Zero hardware upgrade** is needed to virtualise the central office, allowing operators to **avoid an entire investment cycle**.

SI3000 Lumia XG8 is a compact 1U OLT optimised for smaller fibre-access deployments. With **eight XGS-PON**

ports (serving 2,048 users) it delivers performance optimised for residential and business users alike.

Unlike white-box pOLT boxes, SI3000 Lumia XG8 **excels in compactness**: ETSI-compliant 235 mm depth saves rack space (mounting back-to-back) or fits into street cabinets.



## KEY FEATURES AND BENEFITS

- Super compact format of 1U XGS-PON OLT
- Eight XGS-PON OLT interfaces with 1:512 split ratio
- Dual nature: integrated OLT or disaggregated pOLT
- Fully CORD®- and vOLTHA-compatible
- Zero hardware upgrade for virtualisation
- Cost-effective virtualisation of central office
- Seamless transition to virtualised next-gen fibre access
- Network processor-based hardware design
- Easy management and provisioning integration
- Hierarchical multi-level QoS
- Standards-compliant OMCI management
- Deployment in central office and street cabinets

## COMMON CHARACTERISTICS

<b>Network interface</b>	
XGS-PON interface	8x XGS-PON (10/10 Gbps)
10GE Ethernet	4x 10GE SFP+, MEF certified
<b>PON interface</b>	
XGS-PON interface	G.9807 (XGS-PON), G.988 (OMCI), TR-101, TR-156, AES, FEC, Dynamic bandwidth allocation (DBA)
OLT port characteristics	Split ratio 1:512, 8192 GEM port IDs, 16K T-CONT, 512 ONT
<b>Forwarding performance</b>	
Switching capacity	120 Gbps
Packet sizes	Up to 1526 bytes
<b>Mechanical and environmental</b>	
Physical dimensions	H 45 mm (1U) x W 447 mm x D 235 mm, ETSI or 19" rack
Safety	EN 62368-1:2014
EMC	ETSI EN 300 386 V1.6.1 (Class B), EN 55032:2012, EN 55035:2017, EN 61000-3-2:2014, EN 6100-3-3:2013
Storage conditions	ETS 300 019-1-1, class 1.2, temperature -50..+70 °C, RH 10..100%
Transport conditions	ETS 300 019-1-2, class 2.3
Operating conditions	ETS 300 019-1-3, class 3.1E, temperature -40..+65 °C, RH 5..90% non-condensing
<b>Timing and synchronisation</b>	
Frequency, phase sync	Synchronous Ethernet, Stratum3E, IEEE 1588v2 Precision time protocol
<b>Power supply</b>	
Voltage and consumption	From -42 V DC to -72 V DC, 164 W (typ.) with 8 SFPs

## CLOUDY (pOLT) OPERATION

<b>Virtualisation and flow provisioning</b>	
Compatibility/compliance	R-CORD 6.0, vOLTHA, ONOS, OpenFlow 1.3
No. of concurrent flows	TBD
Northbound interface	Based on OpenOLT driver/adapter
Local management interface	CLI (management console)

## EARTHLY (INTEGRATED OLT) OPERATION

<b>Switching</b>	
MAC table size and learning	64 k entries, learning rate 5,000 MAC/s
Link aggregation	Static LAG
Ring resiliency	ERPS (G.8032v2)
Loop prevention	802.1w RSTP, 802.1s MSTP
VLAN	4,094 VLANs, Port based/Native VLAN, Remarking, Provider-edge bridging (802.1ad, Selective Q-in-Q)
<b>Service models</b>	
VLAN service models	1:1 and N:1 (TR-156), 8k VLAN remarking rules
IP multicast	2k groups, IGMP v2/v3 snooping with suppression, Fast leave, IGMP filtering, IGMP proxy, Multicast CAC, Multicast group ACL, Static groups, MVR, IGMP forking
Quality of service	Hierarchical QoS, L2-L4 classification (PCP/CoS, MAC, VLAN, ToS/DSCP, DiffServ, IP, TCP/UDP port), marking, policing, queuing (32 per ONT, RED, Tail-drop), scheduling (Strict, WFQ, LLQ), shaping, CAC
Traffic management	Dynamic buffer management, 8k queues with dynamic allocation
Software-defined networking	Flow awareness L1-L4, Per-service flow policing and shaping, Profile-based management
<b>Security</b>	
User-port isolation	Protected port, Private port
Filtering and DoS prevention	Wire-speed L2-L4 IPv4/v6 ACL, Telnet/SSH access filtering, App rate limiting, Selective overload protection
Storm control	Per ONT packet-rate control for broadcast, multicast and unicast DLF traffic
MAC spoofing and flooding	Port security, Port security per VLAN, MAC source guard, MAC forced forwarding
Port-based security	DHCP snooping, IP source guard, Dynamic ARP inspection
Unauthorised DHCP server	Prevention with DHCP filtering, DHCP options 60 and 43 (for ACS)
User-line traceability	PPPoA, DHCP RA with flexible option 82, DHCPv6 RA with interface ID option
<b>Management</b>	
Local management console	RS232 (over µUSB connector, adapter needed)
Management interfaces	CLI (Console, Telnet, SSH), SNMP, Web (RESTCONF) element manager
IP assignment	DHCP or static
Management protocols	SNMPv2c, SNMPv3, ACS client, Radius client, TACACS+ client, Telnet/SSH clients, SNTP time sync
Firmware upgrade	FTP, ACS, Dual firmware image
Monitoring	Performance and quality monitoring, RMON, System resource monitoring, Port mirroring, Online debug
Event collection	Event log, Error log, Syslog client
<b>Counters and statistics</b>	
OLT port	Signal strength indication (RSSI), Digital diagnostic monitoring (DDM)
OLT port alarms	LOSi, LOS, LOFi, DOWi, SFi, SDi, LCDGi, RDli, TF, SUFi, DFi, LOAi, DGi, LOAMi, MEMi, MISi, PEEi, TIWi, TIA, LOKI
ONT alarms	Inactive ONT, LOS, LOF, DOW, DG, SF, SD, LCDG, RD, TF, SUF, LOA, MEM, PEE, OAML
Traffic counters	Per VLAN per ONT, Control-protocol counters, Traffic-type counters

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