

SI3000 LUMIA G16-C

CORD-Compliant Universal GPON OLT

ISKRATEL

Two

characters: conventional or virtualised operation

One

amphibian box for sustainable fibre access

Zero

hardware upgrade to virtualise the central office



Iskratel's **SI3000 Lumia G16-C** is world's first GPON OLT that allows operators to avoid an entire investment cycle when transforming their network towards software-defined, next-generation access. A **universal, virtualised GPON OLT** facilitates cost-effective virtualisation of existing central-office infrastructure before operators move on to securely introducing fully virtualised NGPON broadband.

The **SI3000 Lumia G16-C** is a one-of-a-kind "amphibian" GPON OLT that arms the operators with the right tool to virtualise and cloudify the network at their disposal.

SI3000 Lumia G16-C is a **dual-nature GPON OLT** that operates either as a conventional integrated OLT or as a disaggregated, **CORD- and VOLTHA-compliant** pOLT.

SI3000 Lumia G16-C uses the same hardware as Lumia G16, reaping all the benefits of its network processor. A mere software upgrade gives this 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 G16-C is a compact 1U OLT optimised for smaller fibre-access deployments. Combining **16 GPON**

ports (serving 2,048 users) and **six GE P2P** ports in the same box, it delivers performance optimised for residential and business users alike.

Unlike white-box pOLT boxes, SI3000 Lumia G16-C **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 GPON OLT
- 16 or 8 GPON OLT interfaces with 1:128 split ratio
- Dual nature: integrated OLT or disaggregated pOLT
- Fully CORD- and VOLTHA-compliant
- 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

Network interface	
GPON interface	16x or 8x GPON (2.5/1.25 Gbps)
10GE Ethernet	4x 10GE SFP+
1GE Ethernet	4x GE SFP + 2x GE SFP/RJ-45 (Combo)
PON interface	
GPON interface	G.984.x GPON, G.988 OMCI, TR-247 GPON certification OLT interop, TR-101, TR-156, AES, FEC
Split ratio	1:128
OLT port characteristics	4,096 GEM port IDs, 1,024 T-CONT, 128 ONT
Forwarding performance	
Switching capacity	86 Gbps
Packet sizes	Up to 1526 bytes
Mechanical and environmental	
Physical dimensions	H 45 mm (1U) x W 447 mm x D 235 mm, ETSI or 19" rack
Safety	EN 60950-1:2006 + A1:2010 + A2:2013 + A11:2009 + A12:2011
EMC	ETSI EN 300 386 V1.6.1 (EN55022 Class B)
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
Power supply	
Voltage and consumption	From -42 V DC to -72 V DC, 76 W (typ. with 16 SFPs)

CLOUDY OPERATION

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

EARTHLY OPERATION

Switching	
MAC table size and learning	64 k entries, learning rate 5,000 MAC/s
Link aggregation	Static LAG
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)
Service models	
VLAN service models	1:1 and N:1 (TR-156), 8k VLAN remarking rules
IP multicast	2,000 groups, IGMP v2/v3 snooping with suppression, Fast leave, IGMP filtering, IGMP proxy, Multicast CAC, Multicast group ACL, Static groups, MVR, IGMP forking, Static client
Quality of service	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
Security	
User-port isolation	Protected port, Private port
Filtering and DoS prevention	Wire-speed L2-L4 ACL, Remote access Telnet/SSH 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
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
Management	
Local management console	RS232 (over µUSB connector, adaptor 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 client, SSH client
Firmware upgrade	FTP, ACS, Dual firmware image
Time synchronisation	SNTP
Monitoring	Performance and quality monitoring, RMON, System resource monitoring, Port mirroring, Online debug
Event collection	Event log, Error log, Syslog client
Counters and statistics	
OLT port	Signal strength indication (RSSI), Digital diagnostic monitoring (DDM)
OLT port alarms	LOSi, LOS, LOFi, DOWi, SFi, SDi, LCDGi, RDii, 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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