Iskratel Lumia C16

Compact, dual-nature, energy-saving Combo PON (XGS-PON and GPON) OLT

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Iskratel Lumia C16 is world's first Combo PON (XGS-PON and GPON) OLT that allows operators to avoid an entire investment cycle when migrating to software-defined, next-generation access. A **universal, virtualised Combo PON OLT** facilitates cost-effective virtualisation of the central-office infrastructure before operators move on to securely introducing fully virtualised next-gen broadband.

Iskratel Lumia C16 is a compact OLT optimised for smaller fibre-access deployments. With 16 Combo ports it serves up to 4,096 users and delivers performance optimised for residential and business users alike.

The record-low energy consumption helps operators implement their sustainability strategy and reduce the impact on the environment.

Iskratel Lumia C16 excels in compactness and saves rack space with its ETSI-compliant 235 mm depth. Its size and industry-leading temperature range make it fit into street cabinets perfectly.

Iskratel Lumia C16 is a one-of-a-kind OLT that lets operators virtualise the network at their own pace. This dual-nature OLT operates as a conventional, integrated OLT or as a disaggregated, CORD®- and vOLTHA-compatible pOLT with vOLT software running in the cloud. Only software configuration gives two distinct characters to a box with programmable hardware. Zero hardware upgrade is needed to virtualise the central office, allowing operators to avoid an entire investment cycle.

KEY FEATURES AND BENEFITS

- Super compact Combo PON OLT in 1U format
- Sixteen Combo PON OLT ports with 1:128 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 (black-box operation)
- Deployment in central office and street cabinets

Two
characters: conventional or virtualised operation

One
dual-nature box for sustainable fibre access

Zero
hardware upgrade to virtualise the central office

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Lumia C16

Network (uplink) interface	
xPON interface	16× Combo PON interface (GPON 2.5/1.25 Gbps and XGS-PON 10/10 Gbps)
25/10GE Ethernet	4× 25/10/1GE SFP+
100GE Ethernet	2× QSFP28 *(targeted for 2023 product release)*
PON interface	
GPON interface	G.984.x GPON, G.988 OMCI, TR-247 GPON certification OLT interop, TR-101, TR-156, AES, FEC, DBA
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 1:128, 4k GEM port IDs for GPON, 1:265 8k GEM port IDs for XGS-PON, 16k T-CONT, max. 128 GPON ONTs / 256 XGS-PON ONTs per port
Forwarding and performance	
Switching capacity	150 Gbps
Packet sizes	Up to 1,600 bytes in GPON mode, 9 kB in XGS-PON mode
MAC table size and learning	64k entries, learning rate 5,000 MAC/s
VLAN	4,094 VLANs, Port-based/Native VLAN, Remarking, Provider-edge bridging (802.1ad, Selective Q-in-Q)
Link aggregation	Static LAG, LACP
Ring resiliency	ERPS (G.8032v2)
Loop prevention	802.1w RSTP, 802.1s MSTP
Virtualisation and flow provisioning	
Compatibility/compliance	R-CORD 6.0, vOLTHA, ONOS
No. of concurrent flows	64k
Northbound interface	Standard OpenOLT adapter, REST/YANG interface
Local management interface	CLI (management console)
Timing and synchronisation	
Frequency, phase sync	Synchronous Ethernet, Stratum3E, IEEE 1588v2 Precision time protocol
Service models	
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, Static client
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, Tail-drop), scheduling (Strict, WFQ), 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 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	PPPoEIA, DHCP RA with flexible option 82, DHCPv6 RA with interface ID option
Management	
Local management console	RS232 (over µUSB connector, adapter needed)
Management interfaces	CLI (Console, Telnet, SSH), SNMP, Web (RESTCONF) element manager. DHCP-based or static IP assignment
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
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
Mechanical and environmental	
Physical dimensions	H 45 mm (1U) × W 447 mm × D 235 mm, ETSI or 19" rack
Safety	EN 62368-1:2014 + A11:2017
EMC	EN 55032:2015 + A11:2020, EN 55035:2017 + A11:2020, EN 61000-3-2:2019 and EN 61000-3-3:2013 + A1:2019
Storage conditions	ETS 300 019-1-1, class 1.2, temp. –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, temp. –40..+65 °C, RH 5..90% non-condensing. Refer to user manual for details.
Power supply	
Voltage and consumption	From –42 V DC to –60 V DC, 155 W typ. (with 16 SFPs), redundant DC power supply CoC compliant, Tier 2021, 60% consumption (67% as per Tier-2023 levels)

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ISO 9001 Q-009
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ISO/IEC 27001 I-046

SILVER 2022 ecovadis Sustainability Rating

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