

LMCP-28H-xxC-NG

Light Mobile Computing Platform

Server:

7x 10/100/1000Base-T routed ports

1x 1/10GBase-T routed port

Switch:

1x 1/10GBase

8x 10/100/1000Base-T switched PoE LAN port

Description:

The OPTOKON introduces the LMCP-28H-NG new generation of highly versatile mobile computing platform which delivers a powerful and rugged **network router, network switch, server and VoIP** call manager in a single low-SWaP device. As the center of the mobile data network, it provides an integrated and versatile communications server for military, public safety, C4ISR and other network-centric communications systems.

The system is equipped with power full **Intel® Xeon®** processor which delivers exceptional value and unmatched performance density per watt in an SoC package, high capacity RAM, two removable Storage disc SSD and wide range of connection ports, both fiber optic and copper wires. The LMCP is available in rugged boxes to fill all demands on communication system used in harsh environmental conditions. **Fiber optic** ports are equipped with rugged HMA connectors operated according to Expanded Beam technology, which allows to use all advantages of highspeed data transmission in field conditions.



LMCP-28H-NG

Features:

- Robust compact design resistant to harsh environmental conditions and rough handling
- Intel® Xeon® processor D-1500 product family
- **Up to 64 GB RAM**
- Dual removable SSD 2.5 inch
- On board expansion slot M.2 NVMe PCI-E 3.0 x4
- 8x 10/100/1000Base-T switched PoE+ ports
- 1x port 1/10GBase-X²
- 6-7x routed 100/1000Base-T/X ports
- Linux-based router solutions supports
- Circular connectors MIL-DTL-D38999 series
- Wide range power input 20-40 V DC
- Passive fan less cooling, no-moving-parts

Functionality:

Server:

- Intel® Xeon® processor D-1528
9 MB, 6-Core, 12 Threads 1.9 GHz
- System memory up to 64 GB DDR4 2133 MHz

Solid State Drives

- 1x M.2 NVMe PCI-E 3.0 x4, up to 512 GB
- Dual removable 2.5" SATA SSD up to 2x 2 TB
- 2 Drive Tray less Hot Swap SATA Mobile Rack
- iData Guard for abnormal power failure

Input / Output

- up to 7x routed 1 GbE, Linux-based router solutions supports RIP v1, v2 and OSPF v2, 1x of them 10 GbE
- 9x USB 2.0 and 1x USB 3.0
- 8x serial RS232
- CAN bus, High-speed CAN transceiver 82C251
- Video VGA port

Switch:

- 8x 10/100/1000Base-T LAN RJ-45 ports with PoE
- 1x 1/10 Gbps fiber optic HMA connectors or UTP, RJ-45

Management and monitoring

- IPMI with dedicated LAN, Support for Intelligent Platform Management Interface v2.0 with virtual media over LAN and KVM-over-LAN
- HW Monitoring (CPU, temperature, voltage, failure,...)
- HW Notifications sent via email and SNMP traps

Power consumption

- Nominal conditions 75 W
- Maximum load 120 W + PoE power budget 60 W

Detailed specifications

OS Compatibility Chart (SATA AHCI mode)

- CentOS – basic operating system
- Other OS Supplied with basic OEM drivers and switch interface, (other details on request):
 - Windows 10, Windows Server
 - Fedora, SuSE SLES, Oracle Linux
 - Ubuntu, Debian, ...
 - FreeBSD, CentOS 7.9 and newer
 - VMware ESXi
 - XenServer

Climatical conditions, MIL-STD 810G

- Operating temperature¹: -10 ° C to + 50 ° C
- Storage temperature: -40 ° C to + 85 ° C
- Humidity: 5% to 95%

Mechanical parameters

- ČOS 999902, 3rd edition according to method 7B - light tracked vehicle (in the range of 5-2000 Hz - transverse and longitudinal direction and in the range of 5-2000 Hz for the vertical direction).
- IP 65 protection
- Dimensions (W x L x H): 314 x 388 x 150 mm
- Weight: 17.0 kg
- Color: RAL 6014

Switch configuration

- 8x 10/100/1000Base-TX RJ-45
- 1x 1/10GBase – Fiber optic HMA connector or copper RJ-45²

Primary features:

10G uplinks, 1G downlinks

Enables high-quality video and data communication for next generation of bandwidth-intensive use cases such as tactical data centers, HD video surveillance, self-driving vehicles, and future-proofing A compact form factor that can withstand harsh environments (-40 to +70°C operating temperature)

Robust compact design

Security

Enterprise-grade Cisco IOS-XE switching security features ensure highly secure voice, video, and data communication

Manageability

Power over Ethernet

Facilitates easy deployment and rapid configuration with easy-to-use WEB UI and familiar Cisco CLI PoE standard IEEE 802.3af on request with visibility and management from Cisco IOS-XE Software

Layer 2 switching

Enables to offer enterprise-grade Layer 2 switching feature set to end customers

Quality of service

Allows customers to prioritize flows and ensure make sure that mission-critical flows are not affected by low-priority traffic

IEEE standards:

IEEE 802.1D MAC Bridges, STP
IEEE 802.1p Layer2 COS prioritization
IEEE 802.1q VLAN
IEEE 802.1s Multiple Spanning-Trees
IEEE 802.1w Rapid Spanning-Tree
IEEE 802.1x Port Access Authentication
IEEE 802.1AB LLDP
IEEE 802.3ad Link Aggregation (LACP)
IEEE 802.3ah 100BASE-X SMF/MMF only
IEEE 802.3x full duplex on 10BASE-T
IEEE 802.3 10BASE-T specification
IEEE 802.3u 100BASE-TX specification
IEEE 802.3ab 1000BASE-T specification
IEEE 802.3z 1000BASE-X specification

RFC compliance:

RFC 768: UDP
RFC 783: TFTP
RFC 791: IPv4 protocol
RFC 792: ICMP
RFC 793: TCP

EMC compatibility

ČOS 599902, 3rd edition (MIL-STD-461F)

- Radiated emissions:
2 MHz-18 GHz requirement RE 102;
- Conducted emissions:
10 kHz-10 MHz requirement CE 102;

Electromagnetic susceptibility

- susceptibility to interfering fields, electric fields, 30 MHz-18 GHz requirement RS 103;
- susceptibility to line-borne interference, injection into cable harnesses, 10 kHz-200 MHz requirement CS 114

Reliability

- Mean Time Between Failure (MTBF) - min. 20,000 hours;
- Mean Time To Repair (MTTR) - min. 180 minutes;
- Time between overhauls - TBO (Time Between Overhaul) - at least 5 years.

RFC 826: ARP
RFC 854: Telnet
RFC 959: FTP
RFC 1157: SNMPv1
RFC 1901,1902-1907 SNMPv2
RFC 2273-2275: SNMPv3
RFC 2571: SNMP Management
RFC 1166: IP Addresses
RFC 1256: ICMP Router Discovery
RFC 1305: NTP
RFC 1492: TACACS+
RFC 1493: Bridge MIB Objects
RFC 1643: Ethernet Interface MIB
RFC 1757: RMON
RFC 2068: HTTP
RFC 2131, 2132: DHCP
RFC 2236: IGMP v2
RFC 3376: IGMP v3
RFC 2474: DiffServ Precedence
RFC 3046: DHCP Relay Agent Information Option
RFC 3580: 802.1x RADIUS
RFC 4250-4252 SSH Protocol

Ordering information

LMCP-28H	R	X	X(M) ³	X	(XX-XX) ²	CXC-NG
	On board M.2 NVMe SSD	1. Removable SSD SATA	2. Removable SSD SATA	Memory DDR4 RAM	(1x WAN switch port) 1/10 GbE FO FO distance	CAN bus Routed server ports Type of switch
R	480 GB	0 -	0 -	-	CT WAN 1/10GBase-T	C CAN bus
1	240 GB	3 1 TB	3 1 TB	1 16 GB	M5 MM 50/125 μm 02 2 km MM	X Number of routed ports ⁴
2	512 GB	4 2 TB	4 2 TB	3 64 GB	M6 MM 62.5/125 μm 10 10 km	C Cisco ESS 3300 switch
					S3 SM 1310 nm 30 30 km	

- Note:**
- 1) during operation allowable working temperature range: -20°C to +50°C
 - 2) variant with WAN 1/10G switch port: RJ-45 or HMA optical connector, distance at 10 Gbps on MM fiber is limited to 220 m.
 - 3) M – secure erase disks functionality, external secure package LMSPK-02 for SSD erasing is required - to be ordered as option
 - 4) routed ports: 6x, if FO or CT WAN port of the switch is equipped, 7x - variant LMCP-28H-R44M3-C7C-NG without WAN port of the switch

Configuration example: LMCP-28H-R44M3-C7C-NG:

2x 2 TB SSD in RAID1 erasable with external button, 64 GB RAM; 7x RJ-45 routed ports, 8x switch LAN, CanBus interface;

Version with WAN FO HMA: LMCP-28H-R443-M502-C6C-NG:

2x 2 TB SSD in RAID1 erasable with external button, 64 GB RAM; 6x RJ-45 routed ports, 1x FO WAN HMA fiber optic port, CanBus interface;

Standard accessories: Manual

Power supply cable DC 3 m: PSCAB2-03

Options:

Power supply cable, connectors:

- Power supply connector set: LMCON-PSC-01

LMCP cables:

- LMCP Multi-radio Full I/O Cable: 37-pin 26WD35PN to 2x RJ45 female, 2x USB2.0 female and 2x serial DB9 male
- LMCP Management cable: 37-pin 26WD35PN to 2x RJ45 female, 1x USB2.0 female, video VGA male
- CANbus cable: 26WA35SN to other side on request



Full I/O Cable

LAN cable:

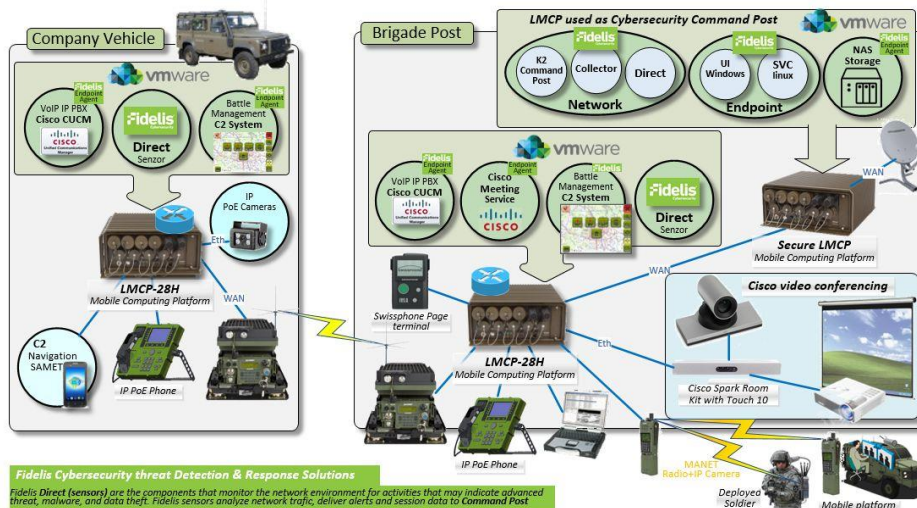
- Ethernet LAN Cat5e cable: Amphenol RJFTV6G (RJ-45) to RJ45 jack
- Military tactical fiber cable with OPTOKON HMA plugs

See detailed ordering info on these datasheets:

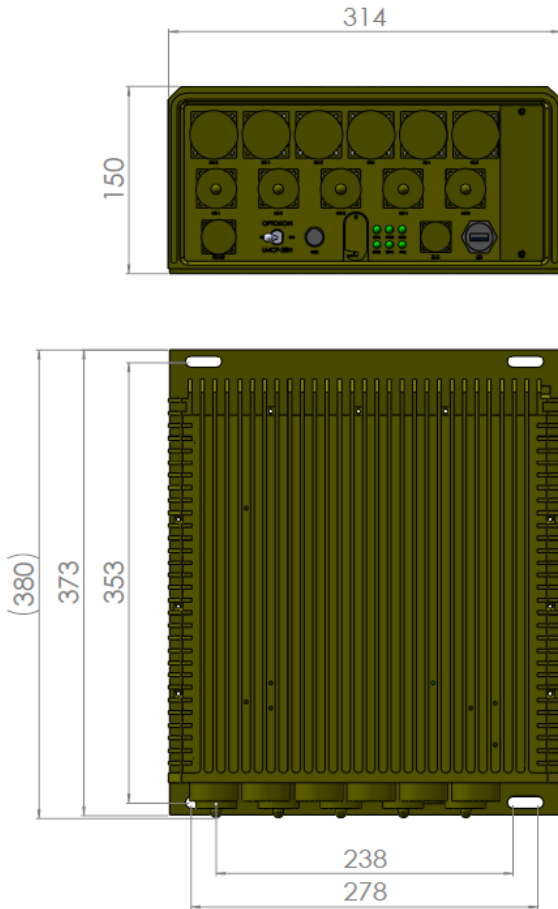
CAB_01-21_EN-LMCAB-Multi D38999.pdf and CAB_01-18_EN-RJF45-MIL.pdf

Secure package: LMSPK-02, external box with button for SSD erasing

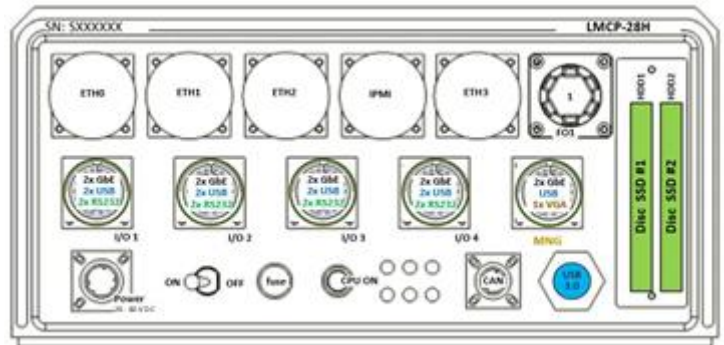
Example of deployment



Dimensional view

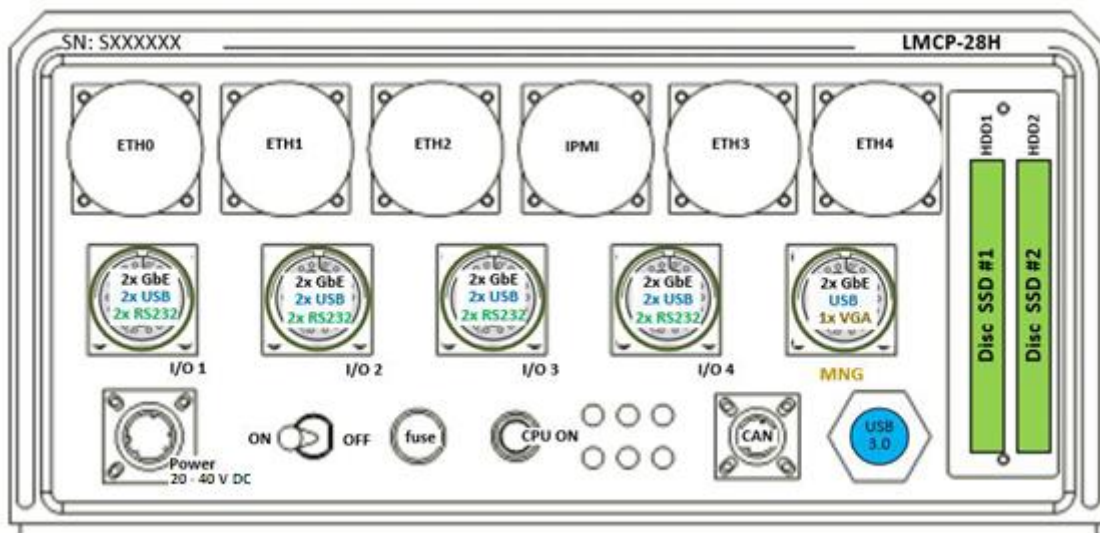


LMCP-28H-R44M3-C7C-NG



LMCP-28H-R443-M502-C6C-NG

Front panel interfaces:



LMCP-28H-R44M3-C7C-NG

ETH0-ETH3, MNG (2x 1G): server routed 1G ports, ETH2: 10G port
 ETH4 / FO1: WAN 10G switch port (optionally: server routed port #7⁴)
 I/O1 – I/4: LAN 1G switch ports with PoE, 2x in multipin connector