

LMCP-28H-NG

Light Mobile Computing Platform

2x 100/1000Base-X HMA uplinks

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

3x or 5x 10/100/1000Base-T routed WAN ports – 1x of them 10GBase-T

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 128 GB RAM** ECC DDR4
- Dual removable SSD 2.5 inch
- On board expansion slot M.2 NVMe PCI-E 3.0 x4
- 1x 10GBase-T of 3/5 routed 1 GbE ports
- 8x 10/100/1000Base-T switched PoE+ ports
- 2x 100/1000Base-T/X ports⁴
- Advanced PoE+ management, max. output power budget 60 W
- Circular connectors MIL-DTL-D38999 series
- Linux-based router solutions supports a multitude of routing protocols
- 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 128 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

- 3x or 5x routed 1 GbE, Linux-based router solutions supports RIP v1, v2 and OSPF v2
10 GbE 1x of 3/5 ports
- 10x 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
- 2x 1 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)

- Default OS Debian (Web-based user interface with support Routing, VoIP and Video Server)
- Other OS Supplied with basic OEM drivers and switch interface, (other details on request):
 - Windows 7 SP1, Win 8 Enterprise, Windows 10
 - Fedora 22, 23, SuSE SLES 11 SP4, Oracle Linux 7
 - Ubuntu 14.04.3(4) LTS, Ubuntu 14.10 (15.10)
 - FreeBSD 10.1(2), FreeBSD 11, CentOS 7.0 and 7.2
 - VMware ESXi 5.5 U2, VMware ESXi 6.0 (U1a)
 - XenServer 6.5 SP1

Switch Feature⁴

- 8x 10/100/1000Base-TX RJ-45
- 2x 100/1000Base-X
- Cable diagnostic, Measuring cable normal or broken point distance
- Supports Green Ethernet IEEE802.3az EEE (Energy Efficient Ethernet) management to optimize the power consumption
- STP, RSTP, MSTP, ITU-T G.8032 Ethernet Ring Protection Switching (ERPS) for redundant cabling Supports up to 5 rings in one device
- μ -Ring for Redundant Cabling
- DHCP Server/Client/Relay/Snooping/Snooping option 82/Relay option 82
- QoS, Traffic classification QoS, CoS, bandwidth control for Ingress and Egress, Storm Control, DiffServ
- IEEE802.1q VLAN, MAC based VLAN, IP subnet based VLAN, Protocol based VLAN, VLAN translation, GVRP, MVR
- Dynamic IEEE 802.3ad LACP Link Aggregation, Static Link Aggregation
- IGMP snooping V1/V2/V3, IGMP Filtering/ Throttling, IGMP query, IGMP proxy reporting, MLD snooping
- Security: Port based and MAC based IEEE802.1X, RADIUS, ACL, TACACS+, HTTP/HTTPS, SSL/SSH v2
- Software upgrade via TFTP and HTTP, redundant firmware to avoid in case of upgrade failure
- Supports IEEE1588 PTP V2 for precise time synchronization to operate in Ordinary-Boundary, Peer to Peer Transparent Clock, End to End Transparent Clock, Master, Slave mode by each port
- RMON, MIB II, Port mirroring, Event syslog, DNS, NTP, IEEE802.1ab LLDP
- Supports IPv6 Telnet server /ICMP v6
- CLI, Web based management, SNMP v1/v2c/v3, Telnet server for management

Hardware Switch Specifications⁴

- Switch Architecture Back-plane (Switching Fabric): 7.6 Gbps Full wire-speed
- Flow Control IEEE 802.3x for full duplex mode Back pressure for half duplex mode
- Reverse Polarity Protection, Overload Current Protection Present, CPU Watch Dog
- Jumbo Frame 9.6 kB
- IEEE802.3ac Max frame size extended to 1522 Bytes (allow Q-tag in packet)
- MAC Address Table 8K, Memory Buffer 512 kBytes

- Warning Message System Syslog, SMTP/ e-mail event message

Software Switch Specifications⁴

- IEEE 802.1q VLAN, up to 4094 802.1Q VLAN VID
- IEEE 802.1q VLAN, up to 4094 Groups
- IP Subnet-based VLAN, up to 128 entries
- GVRP (GARP VLAN Registration Protocol)
- MVR (Multicast VLAN Registration)
- MAC-based VLAN, up to 256 entries
- Link Aggregation (Port Trunk) Static (Hash with SA, DA, IP, TCP/UDP port), up to 5 trunk group
- Dynamic (IEEE 802.3ad LACP), up to 5 trunk group
- QoS Features: Class of Service IEEE802.1p 8 active priorities queues for per port
- Bandwidth Control for Ingress/Egress
- Storm Control for Unicast, Broadcast, Multicast
- IGMP / MLD Snooping IGMP Snooping v1, v2, v3 / MLD Snooping v1, v2

Security

- IEEE 802.1X Port-Based/ MAC-Based
- ACL Number of rules : up to 256 entries for L2/ L3/ L4
- RADIUS authentication & accounting
- TACACS+ authentication & accounting, TACACS+ 3.0
- HTTPS, HTTP SSL / SSH v2
- User Name Password Authentication
- Local Authentication Remote Authentication (via RADIUS / TACACS+)
- Management Interface Access Filtering Web, Telnet / SSH, CLI RS-232 console

RS232

- Industrial converter with galvanic isolation
- Access to the serial line via a virtual serial port
- Drivers for Windows 32bit/ 64bit, Linux, MAC OS
- Automatic data flow switching without delay
- Max. data transfer rate 500 kb/s
- A unique serial number that allows the user – via USB-HUB – to connect multiple converters together with other USB devices

CANbus

- CAN specifications compliance 2.0A (11-bit ID) and 2.0B (29-bit)
- Firmware upgrade Via bootloader
- CAN bus baud rate 10, 100, 250, 500, 800, 1000 kbit/s

Front Control Panel LED indicators

- PWR, CPU, HDD SATA, Fail Motherboard LED
- NIC1/NIC2 Activity LED (Gbit LAN1/ LAN2)

Environmental

- Temperature operating¹: -10 °C to +50 °C
- Temperature storage: -40 °C to +85 °C
- Humidity: 5% to 95%
- Fulfills MIL-STD-810G, IP 65 protection
- EMC Standards According to MIL-STD-461E
- Dimensions W x D x H: 314 x 388 x 150 mm
- Weight: 10.7 kg

Ordering information

LMCP-28H		(X) ²		X		X(M) ³		X		YY		YY		XX-NG			
		On board M.2 NVMe SSD		1. Removable SSD SATA		2. Removable SSD SATA		Memory DDR4 RAM		2x GbE Fiber optic/metalic		Fiber distance		Can Bus		Routed GE ports	
R	-	0	-	0	-	0	-	-	-	CT	Metallic 1000Base-T RJ-45		N	-	3	3x	
1	240 GB	1	240 GB	1	240 GB	1	16 GB	M5	MM 50/125 μm	02	2 km MM	C	1	5	5x		
2	512 GB	2	512 GB	2	512 GB	2	32 GB	M6	MM 62.5/125 μm	10	10 km						
-	-	3	1 TB	3	1 TB	3	64 GB	S3	SM 1310 nm	30	30 km						
		4	2 TB	4	2 TB	4	128 GB	S5	SM 1550 nm	50	50 km						

- Note:** 1) during operation allowable working temperature range: -20°C to +50°C
 2) On request, to be consulted with Technical support:
 R – on board boot SSD M.2 NVMe 64 GB, data will be stored on two removable erasable 2TB SSDs, in RAID1 mode
 3) M – secure erase disks functionality

Example:

LMCP-28H-0102-M502-C5-NG: one 240 GB SSD; 32 GB RAM; 5x routed ports, 8+2 switch, 2x fiber optic MM 50/125 μm 2 km distance, CanBus interface;

LMCP-28H-R44M3-M502-C5-NG: 2x 2TB SSD in RAID1, on board boot SSD M.2 NVMe 64 GB, 5x routed ports, 2x fiber optic MM distance 2 km, CanBus interface;

Standard accessories: Manual

Options:

Power supply cable, connectors:

- Power cable DC 3 m: LMCAB-PSC-03-D3-26WB2SN-DC
- 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

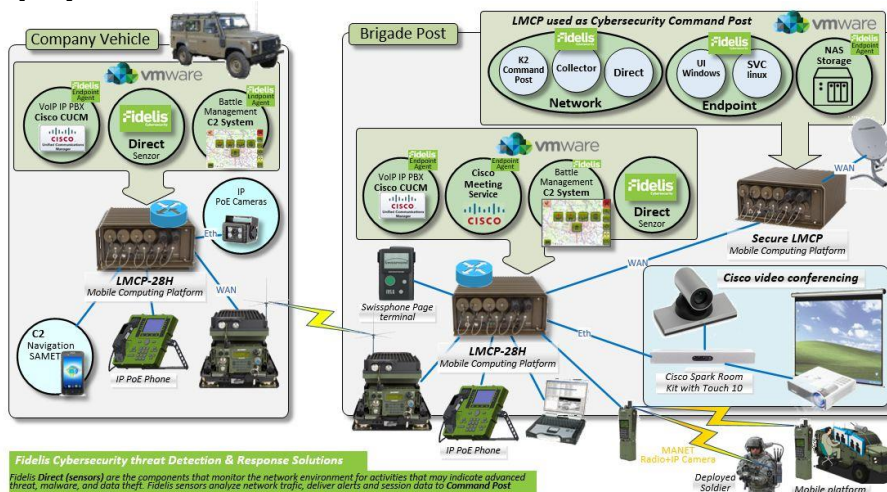
LAN cable:

- 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_03-17_EN-LMCAB-LMCP.pdf and CAB_01-18_EN-RJF45-MIL.pdf

Secure package: LMSPK-02, designed for SSD erasing

Example of deployment

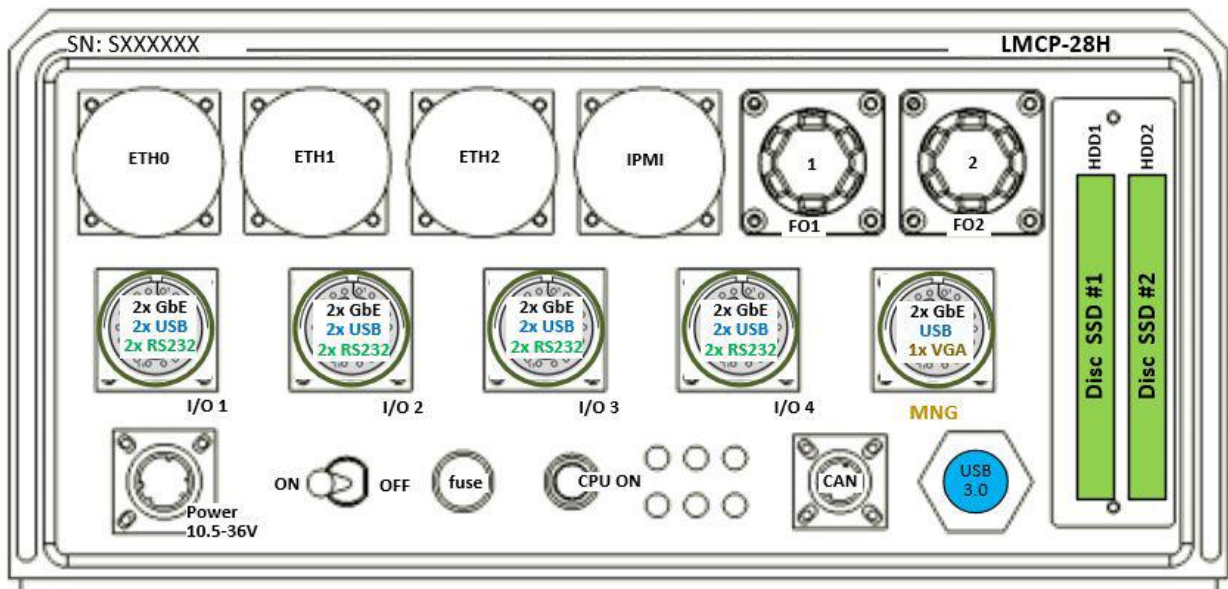


Dimensional view



Front panel LMCP-28H-NG

Front panel interfaces:



LMCP-28H-XXXX-M502-C5-NG version