

LMSB-14.X / CIM X COMM ALL Communication and Information Modules



NATO supplier code: 1583G

NATO IST RTG 095 LEADER

Research project with support of the
Ministry of Industry and Trade

Description:

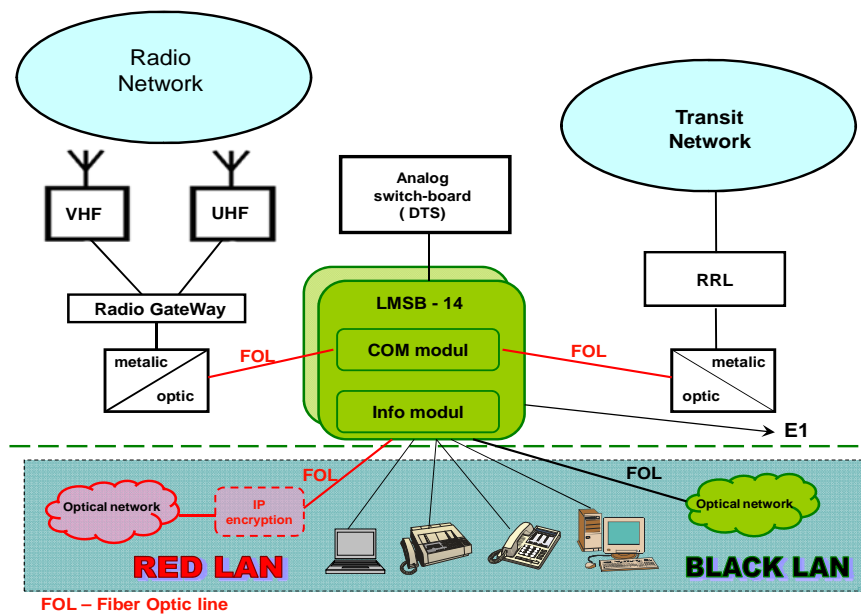
The LMSB-14.X CIMx COMM ALL is the original **C**ommunication and **I**nformation **M**odule which enables to connect x PC subscribers (x depends on the number of LMSW-xx switches used to expand subscriber capacity) and to connect any type of communication equipment or systems (VHF, HF, UHF, SAT, TETRA, GSM, PSTN) from different suppliers.

The LMSB-14.X comprises a set of modular, mobile, compact blocks which are easy transportable. The LMSB 14.X includes:

- LMSB-14.2 Communication block, ensures power supplying for LMSB-14.4 as well
- LMSB-14.4 Black LAN block with Application and Video server – video projection of C2/C4 simulations, respective 3D projections
- LMSB-14.3 Red LAN secret block (with Power Supply)

The connection of CIM block into a higher system is ensured via optical and metallic cables, radio relay systems and satellite devices.

Schematic diagram:



In the case of a customer requirement for LMSB-14.X CIMx COMM ALL architecture then red and black LAN for processing secure and unsecure information can be provided.

The LAN includes two application servers, data storage – Network Area Storage (NAS) and TIME server. The graphical station with 5x 2D output can display four map blades SW application of C2/C4 simultaneously and one 3D for SW C2/C4. The graphical station allows simultaneous displaying of press.

The LAN supports the video conference unit HW with a LCD display output and remote controlled spatial camera.

The RED LAN enables the implementation of a certified cryptographic tools, delivered by the users, according to their requirements. The set is designed for the classification level up to "SECRET".

The technical solution enables the use of defined blocks for installation of sets, designed for operation in standardized communication nodes as the headquarters communication center.

The optical cables used in military networks are based on Expanded Beam technology, which preserves all the advantages of signal transmissions through optical lines in harsh environmental field conditions. The optical cables as well as optical ports of CIM blocks are fitted with HMA ruggedized optical connectors.

LMSB-14.2 COMM Communication Module

Description:

The LMSB-14.2 is a part of CIMx COMM ALL, original **C**ommunication and **I**nformation **M**odule which enables to connect x PC subscribers (x depends on the number of LMSW-xx switches used to expand subscriber capacity) and to connect any type of communication equipment or systems (VHF, HF, UHF, SAT, TETRA, GSM, PSTN) from different suppliers.

The LMSB-14.2 comprises a set of data networking devices in a compact block which is easy transportable. The LMSB 14.2 includes:

- Communication block
- LAN block
- Call manager
- Air conditioning system
- Power supply

The connection of COM block into a higher system is ensured via fiber optic and copper cables, radio relay systems and satellite devices.



Features:

- Flexible integration of IP communication
- System mobility and modularity
- Local or network operation with Call Manager Express
- Ruggedized and weather-proof design
- Easy and fast installation
- Fiber/copper cable, RRL and satellite connection
- Proven Expanded Beam HMA connector technology
- Inter operation with radio systems

Power supply:

- Input 24 to 28 V DC / 160 V – 294 V AC (any is main or backup)
- Surge Protection 1110 Joules, lower than 1 ns, 30 000 A (3x MOV 10 000 A)
- UPS Capacity 5 – 10 min
- Power Consumption up to 227 W max (577 W with air conditioner)
- Output for LMSB-14.4 up to 505 W max (732 W with air conditioner)

Mechanical:

- Dimensions 583 x 845 x 400 mm (W x D x H)
- Weight 34 / 49 kg with airconditioner

Environmental:

- Fulfils MIL-STD 810E, IP 63 protection.
- Temperature: Operating -30 °C to +50 °C
 Storage -50 °C to +70 °C.
- Humidity 10% to 95%.

Functionality:

Routing:

- Integration with voice, video, security, wireless, mobility, and data services
- High Performance up to 75 Mbps
- WAN routed ports 10/100/1000 Gigabit Ethernet
 - 2x 1000Base-FX
 - 1x 10/100/1000Base-T
 - 1x G.HDSL
- Modular interfaces, support to increasing bandwidth requirements, time-division multiplexing (TDM) interconnections
- Two high-speed USB 2.0 ports and two external Compact Flash slots

Procols support:

IPv4, IPv6, Static Routes, OSPF, IGRP, EIGRP, BGP, IS-IS, Multicast Internet Group Management Protocol (IGMPv3) Protocol Independent Multicast sparse mode (PIM SM), PIM Source Specific Multicast (SSM), Distance Vector Multicast Routing Protocol (DVMRP), IPsec, Generic Routing Encapsulation (GRE), Bi-Directional Forwarding Detection (BFD), IPv4-to-IPv6 Multicast, MPLS, L2TPv3, 802.1ag, 802.3ah, L2 and L3 VPN.

Management:

Embedded Traffic Management Web Services Management Agent , Embedded Event Manager, SNMP, Remote Monitoring (RMON), syslog, NetFlow, and TR-069.

Switching:

- Total 10 System Ports Gigabit Ethernet + Two mini-GBIC expansion slot.
- 8x any of the RJ-45 ports support 802.3af PoE and 802.3at PoE, Maximum power of 15.4 W
- The switching can be fully managed using the Web GUI or using a full command-line interface (CLI).
- Switching Capacity 20 Gigabits per Second.
- Standard 802.1d Spanning Tree support.
- Support for up to 4096 VLANs simultaneously, Voice VLAN, Multicast TV VLAN.
- IP telephony support: embedded QoS intelligence to prioritize delay-sensitive services such as voice and video.
- Static routing/Layer 3 switching between VLANs.
- IPv4 DHCP Server, IPv6 support.

Strong security:

Embedded security, Extensive access control lists (ACLs), Guest virtual LANs (VLANs), Bridge Protocol Data Unit (BPDU), Secure Core Technology (SCT)

VoIP Call Manager:

- VoIP gateway that is fully compliant with SIP standard, H.323 and Cisco Communications Manager Express and Survivable Remote Site Telephony.
- Digital voice support SIP/ H.323 sessions: 150.
- Video conferencing.

24x FXS subscribers ports:

- 12x RJ-45 ports, 12 lines in two MP34 (3x4 pairs) connectors.
- SIP protocol for analog phones, fax machines and legacy PBX systems.
- Gigabit Ethernet Session Initiation Protocol (SIP) sessions: 200.
- Supported voice/Fax codecs include G.711, G.723.1, G.726A/B, iLBC, T.38 Fax.
- Identity management using authentication, authorization, and accounting (AAA) and public key infrastructure.
- Embedded hardware-accelerated VPN encryption.
- Over-voltage and over-current protection (ITU-T, K.21).
- 4 SIP Server profiles per system and independent SIP account per port.

LMSB-14.4 CIM Unclassified

Communication and Information Module – BLACK LAN

3D graphical server and backup server for intranet

- IPC features Intel® Q67 Express Chipset, combined with the Intel® Core Intel i5-2400 3,1 GHz
- 16 GB DDR 3
- Front: 2* USB 2.0, REAR: 2* COM,VGA,2* Displayport,HD Audio,6* USB 2.0, 3* LAN 10/100/1000
- on Board RAID 0, 1, 5 and 10
- 2 x PCI 32 Bit full size, optional 1x PCI_e x 16 + 1 x PCI_e x 4, optional 1* PCI_e x 16 + 1 c PCI 32 bit
- 1 x 3,5 bay, 1 x 5,25, 1 x 3,5" internal
- Windows 7 64 Bit

Server for intranet

- IPC features Intel® Q67 Express Chipset, combined with the Intel® Core i5-2510E 2,5 GHz
- 8 GB DDR3 x 2 (max. 16 GB)
- 6 x SATA (incl. 2 x SATA III), 14 x USB 2.0, 3 x Intel® GB LAN incl. Intel® AMT 7.0 support
- 1*3,5 bay accessible 1* Slim bay accessible, 2,5 inch internal
- Free slot 1 * PCI_e x 16
- Windows 7

Switch

- Total 10 System Ports Gigabit Ethernet + Two mini-GBIC expansion slot.
- 8x any of the RJ-45 ports support 802.3af PoE and 802.3at PoE, Maximum power of 15.4 W
- The switching can be fully managed using the Web GUI or using a full command-line interface (CLI).
- Static routing/Layer 3 switching between VLANs.
- IPv4 DHCP Server, IPv6 support.
- Support for up to 4096 VLANs simultaneously, Voice VLAN, Multicast TV VLAN.
- IP telephony support: embedded QoS intelligence to prioritize delay-sensitive services such as voice and video.

Network attached storage (NAS) server

- optimized for small and medium businesses looking for an affordable yet high performance network storage solution.
- 1GB DDR3 RAM
- 4 x 3.5" or 2.5" SATA I/II hard disk drive hot-swappable and lockable tray
- 8 TB NAS optimized HDD
- 2 x USB 3.0 port, 2 x USB 2.0 port, Supports USB printer, disk, pen drive, USB hub, and USB UPS
- 2 x eSATA port

Power supply

- completely ensured from the modul LMSB-14.2
- Power Consumption up to 505 W max (855 W with airconditioner).

Dimensions

- Dimensions 583 x 845 x 400 mm (W x D x H).
- Weight 30 kg /45 kg with air conditioner.

Environmental

- Fulfils MIL-STD 810E, IP 63 protection.
- Operating -30 °C to +50 °C, storage -50 °C to + 70 °C.
- Humidity 10% to 95%.

LMSB-14.3 CIM Secret Communication and Information Modul – RED LAN

1U Rack Mount free space for user- supplied scrambler - not included!

- 1U standalone network encryption platforms
- A commercial, off-the-shelf (COTS) platform that can be customized as needed

2x Server:

Server for intranet - Main

Server for intranet - Backup

- IPC features Intel® Q67 Express Chipset, combined with the Intel® Core i5-2510E 2,5 GHz
- 8 GB DDR3 x 2 (max. 16 GB)
- 6 x SATA (incl. 2 x SATA III), 14 x USB 2.0, 3 x Intel® GB LAN incl. Intel® AMT 7.0 support
- 1*3,5 bay accessible 1* Slim bay accessible, 2,5 inch internal
- Free slot 1 * PCI_e x 16
- Windows 7

Switch

- Total 10 System Ports Gigabit Ethernet + Two mini-GBIC expansion slot.
- 8x any of the RJ-45 ports support 802.3af PoE and 802.3at PoE, Maximum power of 15.4 W
- The switching can be fully managed using the Web GUI or using a full command-line interface (CLI).
- Static routing/Layer 3 switching between VLANs.
- IPv4 DHCP Server, IPv6 support.
- Support for up to 4096 VLANs simultaneously, Voice VLAN, Multicast TV VLAN.
- IP telephony support: embedded QoS intelligence to prioritize delay-sensitive services such as voice and video.

Power supply

- Separate power supply with UPS same as the LMSB-14.2.
- Power Consumption up to 444 W max (794 W with air conditioner).

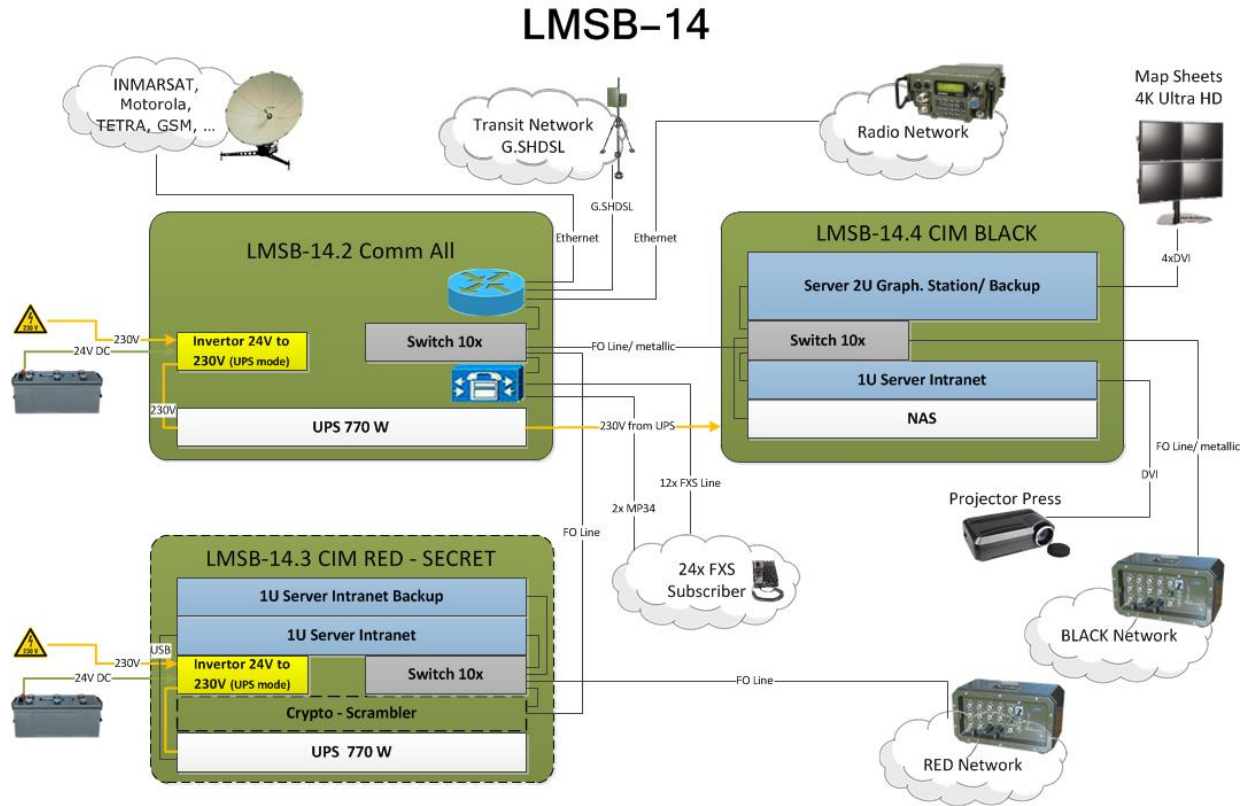
Size and weight

- Dimensions 583 x 845 x 400 mm (W x D x H).
- Weight 43 kg /58 kg with airconditioner.

Environmental

- Fulfils MIL-STD 810E, IP 63 protection.
- Operating -30 °C to +50 °C, storage -50 °C to + 70 °C.
- Humidity 10% to 95%.

Application diagram:



LMSB-14 modules: Recommended connecting diagram

Note:

LMSB-14.3:

Crypto – Scrambler device is not included. It is completed by user according to confidential – secret level requirements.