Lifelink Onboard – Cab Radio over MCx

The Cab Radio is an onboard communication unit dedicated to driver and passenger services. It provides MCX connectivity between onboard audio systems, driver panels and MCX servers over IP through 4G/5G networks. It can work as a standalone unit when the modem is integrated, or can be connected to the rolling-stock ecosystem, thus it can offer a various type of interfaces for a complete integration in the rolling stock. The form factor can be either adapted regarding constraints and connectivities needed.





Product Description

In automatic train operation (without a driver), it has the capability to control the intercom system through standard interfaces.

In manual train operation (with a driver), it allows emergency, group and point-to-point calls via dedicated HMI software, which can be displayed on the driver's panel.

It is fully manageable using "Lifelink O&M Software Tools", which can monitor and upgrade configurations or software versions for the entire fleet (Fleet Management).

It integrates

- Lifelink Cab Radio Manager - Eviden MCx SDK
- HMI Web Based Server (For Driver) - IO Interfaces manager - Lifelink O&M manager - Redundancy Management - Radio network modem (Optional)

It can be connected to:

- the onboard Information system
- The driver Panel
- The Passenger announcement system

Features

- MCX Connectivity
- Up to 2.5G Radio
- Digital / Analog Audio interface





Highlights

Cyber Resilience Act compliant

EN 50155 and EN 45545 Compliant – Wide range power supply from 24V to 110 VDC – Embedded operating system based on Linux – MCx SDK developped by EVIDEN under 3GPP standards – Configuration through Dataplug (Plug and play maintenance exchange) – Cybersecurity for authentication, data transmission and file transfers

Technical components The MCX Cab radio consists of:

Form Factor: Rack 3U 9T (Half Rack)

- 3U (72V-110V) Power Supply module (40 W) - (option 24V) - 3U Intel CPU Module with 5G or Wifi Slot - External data plug , Serial - 2 x 1 Gbit/s port - M.2 Modem with internal SIM - QMA Antennas connectors

Form Factor: Compact

- Integrated Power Supply module(72V-110V) (15 W) - (option 24V)
- CPU Module with 5G / Wifi / GNSS
- External data plug

IO Interface:

Audio Interface (Micro input , Line (I/O), Speaker Output
Digital I/O : 2 Optocoupled inputs and 2 output 20mA 150V Max
Serial : Isolated RS232

Accessories: External TouchScreen, Handset, Microphone, Speakers

Features

General Features

Lifelink Cab Radio Manager (Group Call, Point to point Call, PA/Emergency Call) - Lifelink MCx SDK - HMI Web Based Server (For Driver) - IO Interfaces Manager - SNMP V3 Agent – SFTP Server

Optional

MQTTS Client - SIP Client - Sound Card – Display interface – Serial – DIO – Modem Radio (4/5G) Interfaces and protocols for various vehicles - Wifi integrated (802.11ax, 2.4GHz/ 5 GHz) - GNSS

Technical Data

Interfaces	**3U / 9T**	**Compact**
Power Supply	M12 (A coded) – Front panel	M12 A – Front Panel
Ethernet (1 Gb/s)	2 × M12 (X coded) – Front panel	1 × M12D – Front panel
SIM	SIM slot (internal)	SIM slot (internal)
Modem	Dual M.2 slot	M.2 slot
Antennas	2 to 8 QMA (optional) – Front panel	2 to 4 QMA (optional) – Front panel
Data Plug	DB9	DB9
Serial	DB9 socket for debug	N/A
USB	Maintenance USB socket	Maintenance USB socket
Protocols	MCx / SNMP / SFTP / SIP / MQTT / RTP	MCx / SNMP / SFTP / SIP / MQTT / RTP
Power Supply	**3U / 9T**	**Compact**
Input Voltage	24 V to 110 V	24 V to 110 V
Interruption / Tolerances	According to EN 50155	According to EN 50155
Maximum Power Consumption	< 40 W	< 15 W
Environmental Conditions	**3U / 9T**	**Compact**
Protection Class	IP 4X	IP 4X
Vibration and Shocks	According to EN 50155	According to EN 50155
EMC	According to EN 50121-3-2 and EN 50155	According to EN 50121-3-2 and EN 50155
Fire Protection	According to EN 45545-2 HL3	According to EN 45545-2 HL3
Climatic Constraints	**3U / 9T**	**Compact**
Storage Temperature Range	-25°C to +80°C	-25°C to +80°C
Operating Temperature Range	OT1	OT1
Size and Weight	**3U / 9T**	**Compact**
Width	241.3 mm	180 mm
Height	133.5 mm	50 mm
Depth	235.5 mm (without connectors)	120 mm (without connectors)
Weight (without any option)	< 2.5 kg	< 1.5 kg
Options	**3U / 9T**	**Compact**
4G / 5G / FRMCS	M.2 Modem (5G, LTE, UMTS, GNSS)	M.2 Modem (5G, LTE, UMTS, GNSS)
Wi-Fi	M.2 Modem (802.11ax, 2.4 GHz / 5 GHz)	Integrated
Software	Driver HMI Software	Driver HMI Software
Warranty		
12 months, covering factory repairs.		

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