



CYBER & SECURITY SOLUTIONS

MATRICES NG-OP-AVM

The new generation driver console
for transport





The New Generation Operator Unit (NG OP-AVM) is Leonardo's Intelligent Driver console, specifically designed and approved for automotive applications. Thanks to its compact size, the NG-OP-AVM is easy to install in the vehicle's cockpit, close to the driver, providing all operational and safety support functions quickly and interactively.

NG-OP-AVM features a 7" intelligent color touchscreen display designed to present information to the driver and to display images from the vehicle's doors. In addition, the display can provide supplementary information related to system maintenance.

NG-OP-AVM offers a wide viewing angle, ensuring excellent visibility under all lighting conditions. Additional external buttons assist the driver in performing operations quickly and easily.

By default, NG-OP-AVM is equipped with 10/100 Mb/s Ethernet, USB, and RS485 interfaces. Optionally, it can be equipped with Wi-Fi, LTE, and GPS connectivity. Furthermore, it can be supplied with an SD card and an ISO14443 Type A RFID sensor, compliant with the MiFare standard, to support driver authentication.

NG-OP-AVM can also be connected to and operated in conjunction with Leonardo On-Board Units, in particular the latest-generation eNOBU (AI)/(AI-ER), to provide an advanced onboard platform capable of delivering complete vehicle integration within a single solution.

MAIN FEATURES

The **Intelligent Driver Console**, leveraging its powerful processor and large memory capacity, is capable of integrating the following applications:

- Service scheduling and regulation CAN BUS integration for maintenance purposes
- Vehicle localization
- Public announcements through external loudspeakers
- Voice and messaging functions enabling driver communication with the operations center
- Display of video streams from up to two vehicle doors to assist the driver during bus stop operations
- Integration with LED displays and ticketing machines via RS485 or LAN interface

This solution provides public transport companies with a tangible advantage in terms of efficiency, reliability, and service performance, while offering significant benefits in support of drivers.

ONBOARD CAN-BUS FUNCTIONALITY

NG-OP-AVM, through a dedicated port, can interface with the CAN-BUS in compliance with the **FMS** Standard.

In this configuration, it is capable of collecting data and transmitting it via the **LTE/Wi-Fi** interface.

These data can then be collected and processed by the central module of the **Leonardo MATRICS-AVM** platform, supporting the transport company through the provision of operational reports (e.g., kilometers traveled, fuel consumption, etc.), real-time alarm management, and assistance for scheduled maintenance activities.

VIDEO SURVEILLANCE

By means of an external switch, **NG-OP-AVM**, equipped with a suitable internal SD card, can host the **Leonardo onboard video surveillance application module**, which is capable of:

- Managing the recording of up to **four IP streaming channels** with **H.264** compression at various Resolutions and frame rates (up to **720p** and **25 frames per second**)
- Supporting **dynamic OSD (On-Screen Display)** information, including date and time, bus ID, route, and GPS data

All data stored locally are **encrypted using AES-256** for maximum security.

AVM FUNCTIONALITY

When operating in **stand-alone mode**, the device can perform the functions of both **AVM (Automatic Vehicle Monitoring)** and **AVL (Automatic Vehicle Location)**, managing service-related information and maintaining a continuous connection with the **central AVM application**



TECHNICAL SPECIFICATIONS

HARDWARE	
Display - misura	7"
Resolution	800x600 dpi
Features	Touchscreen, 16 push buttons
Enclosure Material	ABS plastic chassis
Power Supply	9 V - 36 Vcc
PROCESSORE/MEMORIA	
CPU	Dual Core
RAM	1 Gbyte
Flash	8 Gbyte
SD	Up to 1 Gbyte
Operating System	Linux 4.1
INTERFACCE I/O	
Wi-Fi	802.11n (optional)
3G/4G	LTE with integrated GPS
Ethernet	n.1 10/100Mb/s 802.3 interface
Satellite	Integrated GPS
I/O Ports	• n.1 RS485 port • n.1 CAM port (optional) • n.1 odometer input • n.2 x digital inputs • n.2 x digital relay outputs • RFID ISO14443 Type A interface (optional)
Audio	• n.2 x microphone inputs (optional) • n.1 x pre-amplified analog output (optional) • n.1 x 1.5W audio output (optional) • Audio Matrix
CERTIFICATIONS / STANDARDS	
CE Marking	• 2014/53/EU Directive • ECE R10 (E24 R10-041738) • EMC 2004/108/EC Directive
EN 50155	Directive compliant
ROHS	Compliant with Directive 2011/65/UE
Operating Temperature	from -25°C to +55°C class T1 [-13°F to 131°F]
Vibration	Compliant with technical regulations CEI EN 60068-2-6 (value 2g), CEI EN 60068-2-64 (value 0.1g2/Hz)
Shock	Compliant with technical regulations CEI EN 60068-2-27 (value 3g)
Protection	IP 65

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