MATRICS-OBU

THE NEW GENERATION OPERATOR UNIT (NG-OP-AVM)

The **New Generation Operator Unit (NG-OP-AVM)** is the new Leonardo Intelligent Driver Display, specifically designed and homologated for automotive applications. Due to its reduced size, NG-OP-AVM is easy to be installed on the vehicle cockpit, close to the driver.

NG-OP-AVM is an intelligent 7" touch colour display where driver information and images from the vehicle's doors can be displayed. In addition the display can provide information for the maintenance of the system.

NG-OP-AVM has a wide view angle guarantee an excellent view in all light conditions. Additional external push button help driver in order to perform operations in a simple and fast way.

NG-OP-AVM it equipped by default with 10/100 Mb/s, USB and RS485 interface. Optionally it can be equipped with Wi-Fi, LTE and GPS Connections. Moreover it can be equipped with SD Card and RFID ISO14443 Type A, compatible with Standard MiFare in order to support driver logon.

NG-OP-AVM can also be connected and enslaved to Leonardo NG-OBU to have an advanced on-board platform for a complete vehicle integration

KEY FEATURES

The Intelligent Driver Display, using its powerful processor and huge memory, is able to integrate in modular way the following functionalities:
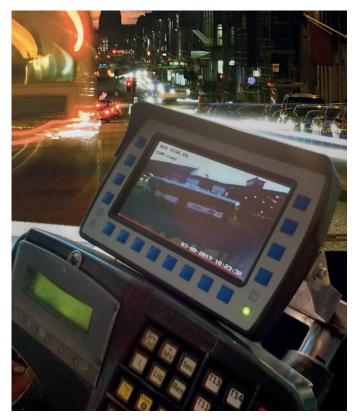- Fleet Management
- CAN BUS for bus maintenance
- Video surveillance. The new Matrics-AVM on-board intelligent driver display can support the following functionalities:
  - Localization
  - On-board Public announcement, using an external loudspeakers
  - Voice and messaging Driver interaction with Operational Center
  - TVCC functionalities up to two vehicle's doors to support driver during bus stop operations
  - Integration with LED displays and ticketing machine using and RS485 interface or LAN interface.

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CAN-BUS ON-BOARD FUNCTIONALITIES

NG-OP-AVM, using its local CAN BUS Interface, can interface FMS 3.0 interface, compliant with J.1939.
In this configuration it can collect data from FMS interface and download these data using LTE/Wi-Fi Interface.
These data can be collected and processed by Leonardo CAN BUS Operational Center, in order to support transportation company providing operational report (Km report, Gasoline usage report, etc.), operation alarm management and programmed maintenance.

VIDEO SURVEILLANCE

Using an external unmanaged switch with up to 8 POE channels, NG-OP-AVM, equipped with a suitable internal SD, can install on-board the Leonardo Videosurveillance software module, that it is able to manage the recording of up to 4 IP Streaming Channels with compression H264/H265 at resolution and different frame rate (up to 720p and 25 frame/sec). Moreover Dynamic OSD (Date and Hour, Bus, Line, GPS) is supported.
The locally stored data are cyphered with AES-256. Access at stored data can be performed using http or https protocol.

TECHNICAL SPECIFICATIONS

Hardware	
Display size	7"
Resolution	800x600 dpi
Features	touchscreen, 16 push buttons
Case material	ABS plastic chassis
Power Supply	9V to 36V DC

Processor/Memory	
CPU	IMX6 solo or dual-lite
RAM	1 Gbyte
Flash Disk	8 Gbyte
SD	up to 1 Gbyte
Operating Syst.	Linux 4.1

Interfaces I/O	
Wi-Fi	802.11n (optional)
3G/4G	LTE with integrated GPS
Ethernet	1 ethernet interface 10/100Mb/s 802.3
Satellite	integrated GPS
Ports I/O	• 1 RS485 port • 1 CAM port (optional) • 1 odometer input • 2 x digital input • 2 x relays digital output • RFID ISO14443 Type A Interface (optional)
Audio	• 2 x microphone inputs (optional) • 1 x analog preamplified output (optional) • 1 x 1,5W audio output (optional) • Audio Matrix

Certification Compliance	
CE marking	• Compliant to Directive 2014/53/EU • ECE R10 (E24 R10-041738) • EMC Directive 2004/108/EC
EN 50155	Directive compliant
ROHS	Directive compliance 2011/65/UE
Operating temp.	-25°C to +55°C T1 class [-13°F to 131°F]
Vibrations	• Compliant to technical rules CEI EN 60068-2-6 • (2g value), CEI EN 60068-2-64 (0.1g2/Hz value)
Shock	Compliant to tech. rule CEI EN 60068-2-27 (3g value)
IP protection	IP 65

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