

# RC900. GSM-R cab radio.



## State-of-the-art voice and data GSM-R cab radio.

### Track-to-train Communications.

- One or two DMI (Driver Machine Interface), according to the rolling stock topology
- Modular concept and standard interfaces to other onboard equipments & applications
- One or two GSM-R modems, for voice and data communications (CSD and GPRS) or backup configuration
- Remote diagnosis and Over-The-Air (OTA) software updates, using CSD, GPRS or Wi-Fi
- Built-in GPS module for time synchronization and location based applications
- Designed and Certified according to EIRENE (for railways)

### Railways Specific Applications

- Functional Addressing (FA)
- Location Dependant Addressing (LDA)
- Railways Emergency Calls
- Shunting Radio Mode

### Advanced Call Speech (ASCI)

- Enhanced Multi-level Precedence and Pre-emption (eMLPP)
- Voice Broadcast Calls (VBS) / Voice Group Calls (VGCS)
- Follow Me

### Other GSM-R Features

- Point-to-point calls and multi driver communication
- Entry of train data / functional registration
- Call train staff, passengers addressing & intercom
- Call hold & call waiting and call arbitration
- Text messaging (SMS), self testing, language settings
- Data transmission in idle mode
- Events registration, e.g. self-tests results, key presses, established communications

## RC900 GSM-R CabRadio



The RC900 cab radio was designed according to the latest EIRENE system requirements specification (SRS) and functional

requirements specification (FRS). It is fully compliant with all mandatory requirements defined in the FRS v15 & SRS v7 specifications, delivering an integrated platform for future voice and data applications.

Special attention was given to the cab radio exposure to the very tough conditions experienced in railways environments, both in terms of temperature and humidity as well as

shock and vibration, in order to provide extreme reliability all the time.

The RC900 / DMI900 was designed and developed with the twofold objective of turning installation and maintenance routines into simple and quick tasks, and of allowing for future expansions, whenever necessary, with minimal impact to the hardware and software components.

## DMI900



The DMI900 (Driver Machine Interface) together with the audio accessories (handset, loudspeaker and cradle) allows cab radio operation and configuration.

An optical link supports the voice and data flows between the DMI900 and the RC900, thus avoiding electromagnetic interference. The DMI900 is based on a low power processor and LINUX operating system.

## Outstanding New Features

- One or two 8 Watt GSM-R modems for voice and data communications or backup configuration
- Remote diagnosis and over-the-air (OTA) software updates, using CSD, GPRS or Wi-Fi
- Built-in GPS module for time synchronization and location based applications
- Cradle to support a OPH/GPH GSM-R handheld with charging capability
- Access portal for remote configuration / log files access
- 4GB micro SD, offering extra data storage capacity
- Control unit based on a COLIBRI board with the latest technology (RISC processor and LINUX operating system)

## Available interfaces

- The RC900 comes with standard built-in digital interfaces (I/O), allowing the communication with other onboard systems & applications:
- 4 digital input + 4 digital output
  - 2 x RS232 interfaces
  - RS422/485 interface
  - 1 Ethernet interface
  - UIC 568 for passengers addressing and intercom

## Main Characteristics

Frequency bands	R-GSM, E-GSM and P-GSM
Channel spacing / uplink-downlink spacing	200KHz / 45MHz
Output power / sensibility	Class 2 (8 Watt) / -104 dBm
Weight	< 5,7 Kg (RC900) / < 2 Kg (DMI900)
Dimensions (W x H x D): Rack / DMI (outer) / DMI (fitting)	482,6 x 132 x 240 mm / 284 x 130 x 78 mm / 250 x 120 x 74 mm
Power supply interruption / Operating temp. / Storage temp.	Class S1 (EN 50155) / Class T3 (EN 50155) -25 to +70° C / -40 to +85°C
Nominal power supply voltages	24, 72 or 110Vdc; from 16 to 150 Vdc
Protections, shocks & vibrations / EMC	EN 50155 parts 10.2.6, 10.2.7 and 10.2.11 / EN 50121-1, EN 50121-3-2 and relevant EN 61000-4
GPS frequency band / GPS amplifier gain	1574,42 - 1576,42 MHz / > 27 dB (29 dB medium)
GPRS features	Mobile station class B, GPRS multislot class 10 (Rx=4; Tx=2; Sum= 5)
Wireless LAN / frequency band / Tx power / sensitivity	802.11b/g; 2.412 to 2.472 GHz; 15 dBm; -88 dBm (11 Mbps) and -74 dBm (54 Mbps)

### Kapsch Group

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