Mobile Communication Gateway

MSCG6407 series is a family of Mobile Communication Gateways designed to be installed on rolling stock. The devices are useful for implementing board to ground communication via different radio networks that fully comply with EN 50155 and IEC 60571 railway standards.

The compact design combined with the availability of a different combination of interfaces and characteristics allows the implementation of different application enabling the user to direct connect the on board equipment to a ground infrastructure or to collect data to be forwarded to the ground server. The availability of the multi standard GNSS receiver with dead reckoning features and digital I/Os increase the possibility in application design.

The software features have been developed by means of a standard Linux-based solution that runs over hardware designed by MIOS Elettronica exclusively for railway applications.

The device manage the most common protocols via Ethernet, WiFi, 4G/LTE and CAN interfaces such us: TCP, UDP, TRDP, IPT-Comm, Ethernet-IP, FTP-S, SSH, CanOpen, J1939 and other.

An embedded Web-based user interface completes the product allowing full management and configuration of the device.

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EN 50155
IEC 61375
EN 45545-2

International Standards
Railway Standards: EN 50155/IEC 60571, EN 50121-3-2, IEC 61000-6-2, IEC 61000-6-4, IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-30, IEC 61737, EN 50124-1, EN 45545-2, IEC 61375-2-5, IEC 61375-2-3, IEC 61375-3-4. Networking Standards: IEEE 802.3-2012, IEEE 802.3ad, IEEE 802.3x, IEEE 802.3u, IEEE 802.11a/b/g/n,

Technical Data	
Dimensions (W x H x D)	232,0 x 120 x 65,5 mm.
Weight	1,5 Kg. approx.
Protection Level of Enclosure	IP40 according to IEC 60529
Input Nominal Voltage	24 to 110 Vdc
Operating Voltage	16,8 to 143 Vdc (14,4 to 154 Vdc for 100 msec.)
Power interruption	Class S2 according to EN 50155/IEC 60571
Power Consumption	15W max.
Operating Temperature	-40° C to +70° C (+85° C for 10 min.) according to EN 50155 class OT4 + class ST1 or according to IEC 60571 class TX
Storage Temperature	-40° C to +85° C

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Technical Data	
Humidity (operating non condensing):	<75% yearly average <95% for 30 consecutive days in one year
Shock and Vibration	According to IEC 61373 category 1, class B
EMC	According to EN 50121-3-2 and relevant referenced standards
Ethernet interfaces	• 2x 10/100 Mbps on M12 4 poles connectors
Mobile communication	• 1x 4G/LTE modem on SMA type connector (on M.2 slot) with internal SIM holder (eSIM option available).
WiFi	• 1x WiFi4 access point/bridge 2.4 and 5 GHz IEEE802.11a/b/g/n on N connector
CAN	• 1x CAN 2.0 with Sub-D 9 poles connectors
GNSS	• 1x GNSS simultaneous multiconstellation receiver (GPS/Galileo/Glonass/BeiDou/QZSS/SBAS) with dead reckoning features on TNC connector with power supply for LNA.
I/Os	• 4x Digital inputs wide range voltage with self test on Sub.D 15 poles • 2x Digital solid state outputs wide range voltage, 500mA max. on sub.D 9 poles connectors. • 1x Relay outputs 30W max.
LED indication	8 LEDs on front panel for diagnostics information

Dimensional Drawing