

SENCITY® Rail PTC Antenna
1302.99.0026**Description**

Railway rooftop antenna for Positive train control (220 MHz).
Embedded GNSS antenna with integrated LNA.
Supports GPS L1, Galileo E1, BeiDou B1 and GLONASS G1.
Rugged design, meets EN 50155 Railway Standard.
Fire retardant according to EN 45545-2 and NFPA-130.
Dedicated grounding contact (optional).
Cable conduit support (optional).

**Product Configuration****Technical Data****Electrical Data**

	Band 1	Band 2
Band Name	PTC	GNSS
Frequency (MHz)	219.98 - 220.02	1559 - 1620
VSWR	1.5	1.8
Impedance (Ohm)	50	50
Gain (dBi)	1.72	
Composite power max (W)	80	
Ambient temperature (°C)	25	

Ports

	Port 1	Port 2
Port name	PTC	GNSS
Connector	N, jack (female)	TNC, plug (male)
Polarization	vertical	circular right
DC grounded	Yes	No

Connections

	Band 1	Band 2
Port 1	X	
Port 2		X

General Data

Indicated VSWR values are valid for a metallic ground plane of 2.0 x 2.0m or larger. Indicated gain values will be achieved on a metallic ground plane of 1.0 x 1.0 m or larger.

Electrical Data LNA

LNA noise figure dB	1.6
LNA current consumption (mA)	20
LNA is connected to	Port 2
MTBF (h)	3000000

This Antenna is compliant with the Radio Equipment Directive 2014/53/EU

EMC: EN50121-3-2 (2016)

ETSI EN 303 413 V.1.1.1 (2017-06)

ETSI EN 301 489-1 V2.2.3 (2019-03)

ETSI EN 301 489-19 V2.1.1 (2019-04)

LNA input voltage range: 3...5V

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Total gain @90° elevation: 30 dBiC

Values for LNA power consumption, noise figure and gain are given for a 5V operating voltage and may differ slightly for a lower voltage.

Mechanical Data

Dimensions (mm)	154 x 100 x 256 (Height x Width x Depth)
Weight (kg)	1.6

High-voltage-protection: no voltage on RF port, if the catenary line touches antenna (EN 50124-1, 27.5 kVAC/1min).

High-current-protection: Designed acc. to UIC 533, DC-grounded antenna element protection against lightning and short circuit with catenary lines (EN50388, EN 50122-1, 40kA/0.125sec)

Corrosion: Low corrosion design according to MIL-F-14072(E), 96 hours Salt Spray test.

Mounting: Shall be installed in longitudinal position to the wind/driving direction.

Suitable for installation on high speed trains with a maximum speed of 500 km/hr.

Environmental Data

Environmental conditions	indoor/outdoor
Operation temperature (°C)	-55 to 85
Storage temperature (°C)	-55 to 85
Transport temperature (°C)	-55 to 85
IP rating	IP67, IP69
Flammability rating	EN 45545-2 R24 HL3
Solar radiation	UL 746C, F1
2011/65/EU (RoHS - including 2015/863 and 2017/2102)	compliant acc. Annex III
Lead-free soldered	yes
WEEE 2012/19/EU	no special marking needed
ELV 2000/53/EC	compliant
REACH 1907/2006/EC	compliant

Environmental tests: EN 50155:2018-05

Flammability rating: EN45545-2:2013 + A1:2015, NFPA-130:2017

Tested according to ISO 4589-2:2017, NFX 70-100-1:2006, ISO 5659-2:2011.

Material Data

Radome colour	RAL 7043 (dark grey)
Radome material	PC (Polycarbonate)
Back plate/base plate colour	grey
Back plate/base plate material	Aluminium
Plating	Passivated (Plating)

Related Products

9091.99.0235 Sencity Rail antenna grounding kit

9091.99.0236 Sencity Rail antenna conduit support Kit

9091.99.0261 Sencity Rail antenna mounting plate

9091.99.0252 Sencity Rail antenna adaptor plate

Related Documents

Mounting instruction	DOC-0000295392
Painting instruction	DOC-0000256180
Security instruction	DOC-0000278984
Outline drawing	DOU-00399698
Outline drawing 2	DOU-00154160
3D-model	DOC-0000890925
CE compliance	DOC-0000896952

Additional Information