

Sencity Rail MIMO Antenna

1399.99.0130

Description

Railway rooftop antenna for Cellular and WiFi bands.
 Supports 2x2 Cellular MIMO for 3G, 4G and 5G.
 Supports 2x2 WiFi MIMO in all Wi-Fi 6E bands.
 Rugged design, meets EN 50155 railway standard.
 Embedded combined GPS+GLONASS antenna with integrated LNA.
 Fire retardant acc. to EN 45545-2, BS 6853, DIN 5510-2, NF F16-102.
 Works on non-metallic surfaces.
 Dedicated grounding contact (optional).
 Cable conduit support (optional).
 Note: For NFPA-130 approval use antenna type 1399.99.0148.



Product Configuration

Technical Data

Electrical Data

	Band 1	Band 2	Band 3	Band 4
Frequency (MHz)	617 - 694	694 - 790	790 - 960	1350 - 2700
VSWR	1.7	1.7	1.7	1.8
Impedance (Ohm)	50	50	50	50
Gain (dBi)	6	5	6	7.5
Composite power max (W)	250	250	180	130
Ambient temperature (°C)	25	25	25	25
Port Isolation (dB)	15	15	15	20

	Band 5	Band 6	Band 7	Band 8
Band Name				GPS/Glonass
Frequency (MHz)	2700 - 3300	3300 - 4900	4900 - 7125	1574 - 1610
VSWR	2	2.1	1.9	1.8
Impedance (Ohm)	50	50	50	50
Gain (dBi)	6.5	6.5	7.5	
Composite power max (W)	130	100	100	
Ambient temperature (°C)	25	25	25	25
Port Isolation (dB)	25	25	35	

Ports

	Port 1	Port 2	Port 3
Port name	Cell/WiFi 1	Cell/WiFi 2	GNSS
Connector	N, jack (female)	N, jack (female)	TNC, plug (male)
Cable Type	ENVIROFLEX_142	ENVIROFLEX_142	ENVIROFLEX_316_D
Cable Length (m)	0.24	0.12	0.17
Polarization	vertical	vertical	circular right
DC grounded	Yes	Yes	No

Connections

	Band 1	Band 2	Band 3	Band 4	Band 5	Band 6	Band 7	Band 8
Port 1	X	X	X	X	X	X	X	
Port 2	X	X	X	X	X	X	X	
Port 3								X

General Data

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Indicated VSWR values are valid for a metallic ground plane of 0.5 x 0.5m or larger. In the 790-7125 MHz band, Indicated VSWR values are also valid for installations on non-metallic surfaces (no specific ground plane requirements). Indicated gain values will be achieved on a metallic ground plane of 1 x 1 m or larger.

Electrical Data LNA

LNA noise figure dB	2
LNA current consumption (mA)	30
LNA is connected to	Port 3

EMC: EN 50121-3-2

LNA input voltage range: 3..5V

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)	81.6 x 102.5 x 352.5 (Height x Width x Depth)
Weight (kg)	1.5

High-voltage-protection: no voltage on RF port, if the catenary line touches the antenna (EN 50124-1, 3.8 kVDC, 27.5 kVAC).

High-current-protection: Designed acc. to UIC 533, DC-grounded antenna element (protection against lightning and short circuit with catenary lines(40kA/0.125s, 70kA/0.05s).

Corrosion: Low corrosion design acc. to MIL-DTL-14072(E).

Mounting: Shall be installed in longitudinal position to the wind/driving direction. 4x composite sealing washers included for silicone-free sealing of the mounting screws.

Environmental Data

Environmental conditions	outdoor
Operation temperature (°C)	-40 to 85
Storage temperature (°C)	-55 to 85
Transport temperature (°C)	-40 to 85
IP rating	IP69
Flammability rating	DIN 5510
Solar radiation	DIN 75220
2011/65/EU (RoHS - including 2015/863 and 2017/2102)	compliant
WEEE 2012/19/EU	no special marking needed
REACH 1907/2006/EC	compliant

Environmental tests EN 50155

Flammability rating BS 6853, NF F16-101/102, EN 45545-2.

Material Data

Radome colour	RAL 7043 (dark grey)
Radome material	ASA (acrylic ester-styrene-acrylonitrile)
Back plate/base plate material	Aluminium

Related Products

9091.99.0235 Sencity Rail antenna grounding kit

9091.99.0236 Sencity Rail antenna conduit support Kit

9091.99.0256 Sencity Rail - M8 sealing washer kit

9091.99.0261 Sencity Rail antenna mounting plate

Related Documents

Mounting instruction	DOC-0000443802
Painting instruction	DOC-0000256180
Security instruction	DOC-0000278984
Outline drawing	DOU-00205090
3D-model	DOC-0000421492
CE compliancy	DOC-0000785714

Additional Information

This product meets the Deutsche Bahn specifications for rolling stock equipment. Protected by Patents: DE202015009331(U1), US10116056(B2), CN106663861B.

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