

**SENCITY® Rail MIMO Antenna**

1399.17.0221

**Properties**

- Railway rooftop antenna for Cellular and Wi-Fi bands
- Supports 2x2 Cellular MIMO for 3G, 4G and 5G
- Supports 2x2 Wi-Fi MIMO in all Wi-Fi 6E bands
- Rugged design, meets EN 50155 Railway Standard
- Fire retardant according to EN 45545-2 and NFPA-130
- Dedicated grounding contact and Cable conduit support (sold separately)

**Electrical data**

	<b>Band 1</b>	<b>Band 2</b>	<b>Band 3</b>	<b>Band 4</b>
Name	Cell/Wi-Fi 1	Cell/Wi-Fi 2	Cell/Wi-Fi 3	Cell/Wi-Fi 4
Frequency	617 MHz ... 694 MHz	694 MHz ... 790 MHz	790 MHz ... 960 MHz	1350 MHz ... 2700 MHz
Impedance	50 Ω	50 Ω	50 Ω	50 Ω
VSWR	1.7	1.7	1.7	1.8
Gain	6 dBi	5 dBi	6 dBi	7.5 dBi
Isolation between Ports	15 dB	15 dB	15 dB	20 dB
Ambient Temperature	25 °C	25 °C	25 °C	25 °C
Composite Power max	250 W	180 W	130 W	130 W

	<b>Band 5</b>	<b>Band 6</b>	<b>Band 7</b>
Name	Cell/Wi-Fi 5	Cell/Wi-Fi 6	Cell/Wi-Fi 6
Frequency	2700 MHz ... 3300 MHz	3300 MHz ... 4900 MHz	4900 MHz ... 7125 MHz
Impedance	50 Ω	50 Ω	50 Ω
VSWR	2	2.1	1.9
Gain	6.5 dBi	6.5 dBi	7.5 dBi
Isolation between Ports	25 dB	25 dB	35 dB
Ambient Temperature	25 °C	25 °C	25 °C
Composite Power max	100 W	100 W	100 W

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Electrical remarks	
Remarks	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. High-voltage-protection: no voltage on RF port, if the catenary line touches the antenna (EN 50124-1, 3.8 kVDC, 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 (40kA/0.125s, 70kA/0.05s).

Ports		
	Port 1	Port 2
Port name	Cell/Wi-Fi 1	Cell/Wi-Fi 2
Connector	N, jack (female)	N, jack (female)
Cable type	RADOX_RF_142	RADOX_RF_142
Cable length	0.2 m	0.2 m
Polarization	vertical	vertical
DC grounded	Yes	Yes

Connections		
	Port 1	Port 2
Port name	Cell/Wi-Fi 1	Cell/Wi-Fi 2
Band 1	✓	✓
Band 2	✓	✓
Band 3	✓	✓
Band 4	✓	✓
Band 5	✓	✓
Band 6	✓	✓
Band 7	✓	✓

Mechanical data	
Weight	2 kg
Dimensions	81.6 mm x 102.5 mm x 352.5 mm (Height x Width x Depth)
Remarks	Corrosion: Low corrosion design acc. to MIL-DTL-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. 4x composite sealing washers included for silicone-free sealing of the mounting screws.

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

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Environmental data	
Operation temperature	-55 °C ... 85 °C
Storage temperature	-55 °C ... 85 °C
Transport temperature	-55 °C ... 85 °C
Environment (application)	Outdoor
Ingress protection (IP Rating)	IP67, IP69
Flammability rating	EN 45545-2 R24 HL3
Solar radiation	UL 746C, F1

**Environmental remarks**

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

**Additional Information**

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

There is no applicable EU directive nor related harmonized standard for passive antennas. Consequently, there is no CE marking on these antennas and no EU Declaration of Conformity can be issued.

**Antenna accessories**

Item description	Item number	Product name
9091.99.0261	85079842	SENCITY® Rail antenna mounting plate
9091.99.0256	85068236	SENCITY® Rail - M8 sealing washer kit
9091.99.0236	84079593	SENCITY® Rail antenna conduit support Kit
9091.99.0235	84079030	SENCITY® Rail antenna grounding kit

**Ordering information**

Item description	Item number	Product name
1399.17.0221	85088375	SENCITY® Rail MIMO Antenna

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