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DATA SHEET

SENCITY® Rail MIMO 2x2 Low Profile Antenna

1399.17.0145

Properties

- Railway rooftop antenna for 2G/3G/4G/5G cellular and Wi-Fi 6E bands
- Rugged design, meets EN 50155 Railway Standard
- Fire retardant acc. to EN 45545-2 and NFPA130
- Dedicated grounding contact (sold seperately)
- Extremely low profile (40mm)



Electrical data				
	Band 1	**Band 2**	**Band 3**	**Band 4**
Frequency	694 MHz ... 960 MHz	1350 MHz ... 1450 MHz	1450 MHz ... 2700 MHz	3300 MHz ... 4900 MHz
Impedance	50 Ω	50 Ω	50 Ω	50 Ω
VSWR	1.8	1.9	1.6	1.8
Gain	5 dBi	7 dBi	6.5 dBi	7.5 dBi
Isolation between Ports	15 dB	16 dB	20 dB	25 dB
Ambient Temperature	25 °C	25 °C	25 °C	25 °C
Composite Power max	40 W	40 W	40 W	40 W

	Band 5	**Band 6**
Frequency	4900 MHz ... 5150 MHz	5150 MHz ... 7125 MHz
Impedance	50 Ω	50 Ω
VSWR	1.8	1.8
Gain	9 dBi	8 dBi
Isolation between Ports	25 dB	25 dB
Ambient Temperature	25 °C	25 °C
Composite Power max	40 W	25 W

Electrical remarks	
Remarks	Indicated VSWR and gain values are valid for a metallic ground plane of 0.5 x 1 m or larger.

Ports		
	Port 1	**Port 2**
Port name	Cellular 1	Cellular 2
Connector	N, jack (female)	N, jack (female)

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Ports		
	Port 1	**Port 2**
Cable type	RADOX_RF316_D	RADOX_RF316_D
Cable length	0.365 m	0.39 m
Polarization	vertical	vertical
DC grounded	Yes	Yes

Connections		
	Port 1	Port 2
Port name	Cellular 1	Cellular 2
Band 1	✓	✓
Band 2	✓	✓
Band 3	✓	✓
Band 4	✓	✓
Band 5	✓	✓
Band 6	✓	✓

Mechanical data	
Weight	1.3 kg
Dimensions	40 mm x 108 mm x 474 mm (Height x Width x Depth)
Windload	Wind Speed survival: 500 km/h
Remarks	High-voltage-protection: no voltage on RF port, if catenary line touches 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).
	Corrosion: Low corrosion design acc. to MIL-F-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.

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

Environmental data	
Operation temperature	-55 °C ... 85 °C
Storage temperature	-55 °C ... 85 °C
Environment (application)	Indoor/Outdoor
Ingress protection (IP Rating)	IP69
Flammability rating	EN 45545-2
Solar radiation	UL 746C, F1
Standards	Railway EN 50155
	Railway EN 45545
	Railway NFPA130

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Environmental remarks

Flammability rating: EN45545-2:2023, NFPA-130:2023

Environmental tests: EN 50155:2018-05
§13.4.6 EN 60068-2-1:2008-01 Cold temperature test Ab, -55°C, 16h
§13.4.5 EN 60068-2-2:2008-01 Dry heat test Be +85°C, 16h
§13.4.7 EN 60068-2-30:2006-06 Damp heat cyclic test Db, +25/55°C, 2 cycles
§13.4.10 EN 60068-2-11:2000-02 Salt mist test, 96h
§13.4.11 EN 61373:2011-04 § 8, Cat. 1B Broadband Random Vibration
§13.4.11 EN 61373:2011-04 § 9, Cat. 1B Increased Random Vibration
§13.4.11 EN 61373:2011-04 § 10, Cat. 1B Mechanical shock
§13.4.12 Ingress Protection EN 60529:2014-09 IP6X, IPX5, IPX6, IPX8, IPX9

Additional Information

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

Antenna accessories

Item description	Item number	Product name
9091.99.0257	85068234	SENCITY® Rail - M10 sealing washer kit
9091.99.0235	84079030	SENCITY® Rail antenna grounding kit

Ordering information

Item description	Item number	Product name
1399.17.0145	85106683	SENCITY® Rail MIMO 2x2 Low Profile Antenna

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