Data Sheet

HUBER+SUHNER

SENCITY® Rail MIMO Antenna
1399.17.0221

Description

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 (optional).
Cable conduit support (optional).

Product Configuration

Technical Data

Electrical Data

	Band 1	Band 2	Band 3	Band 4
Band Name	Cell/Wi-Fi 1	Cell/Wi-Fi 2	Cell/Wi-Fi 3	Cell/Wi-Fi 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	180	130	130
Ambient temperature (°C)	25	25	25	25
Port Isolation (dB)	15	15	15	20

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

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 (m)	0.2	0.2
Polarization	vertical	vertical
DC grounded	Yes	Yes

Connections

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

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.

Mechanical Data

Dimensions (mm)	81.6 x 102.5 x 352.5 (Heigth x Width x Depth)
Weight (kg)	2

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).
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.

Environmental Data

Environmental conditions	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 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-00341713
3D-model	DOC-0000786471

Additional Information

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