

## SENCITY® Tram MULTI Antenna 1399.99.0221

### Description

Rugged vehicle rooftop multi-band antenna for Light Rail.  
 Supports 2G/3G/4G/5G cellular, Wifi 2.4/5 GHz, Wifi 6E and  
 Dual Band GNSS (Beidou, Galileo, GPS, Glonass).  
 8 separate ports for 4x4 cellular MIMO and 3x3 Wifi MIMO plus GNSS.  
 Meets EN50155 railway standard.  
 Fire retardant acc. to EN45545-2 and NFPA-130.  
 Single hole mounting, easy cabling feed-through.



### Product Configuration

### Technical Data

#### Electrical Data

	Band 1	Band 2	Band 3	Band 4
Band Name	Cellular 1-4	Cellular 1-4	Cellular 1-4	Cellular 1-4
Frequency (MHz)	617 - 960	1350 - 2700	3300 - 4200	4900 - 7125
VSWR	2	2.1	2	2
Impedance (Ohm)	50	50	50	50
Gain (dBi)	2	4	4	5
Composite power max (W)	40	40	40	40
Ambient temperature (°C)	25	25	25	25
Port isolation (dB)	9	18	15	18

	Band 5	Band 6	Band 7	Band 8
Band Name	WiFi 1-2	WiFi 1-2	GNSS	GNSS
Frequency (MHz)	2400 - 2500	4900 - 7125	1164 - 1279	1559 - 1610
VSWR	2	2	1.5	1.8
Impedance (Ohm)	50	50	50	50
Gain (dBi)	6	6		
Composite power max (W)	30	30		
Ambient temperature (°C)	25	25		
Port isolation (dB)	24	24		

#### Ports

	Port 1 to 4	Port 5 to 7	Port 8
Port name	Cell 1-4 (white)	WiFi 1-2 (blue)	GNSS (black)
Connector	SMA, plug (male)	SMA, plug (male)	TNC, plug (male)
Cable Type	RADOX_RF_316_D	RADOX_RF_316_D	RADOX_RF_316_D
Cable Length (m)	0.3	0.3	0.3
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 to 4	X	X	X	X				
Port 5 to 7					X	X		
Port 8							X	X

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### General Data

Ground plane: Indicated VSWR values are valid for a metallic ground plane of 0.5 x 0.5m or larger and Isolation is provided as typical values. Indicated VSWR values are mostly valid for installations on non-metallic surfaces also (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)	45
LNA is connected to	Port 8
LNA input voltage range:	3..5V
LNA gain	38 dB
Total gain @90° elevation:	42 dBiC

### Mechanical Data

Dimensions (mm)	210 x 60 (Diameter x Height)
Weight (kg)	1.1
Mounting breakthrough	Ø30mm

### Environmental Data

Environmental conditions	outdoor
Operation temperature (°C)	-40 to 85
Storage temperature (°C)	-40 to 85
Transport temperature (°C)	-40 to 85
IP rating	IP68, IP69k
Flammability rating	EN45545-2, NFPA-130
Solar radiation	DIN 75220
2011/65/EU (RoHS - including 2015/863 and 2017/2102)	compliant
REACH 1907/2006/EC	compliant

Environmental tests: EN50155:2018-05  
High-voltage protection: EN50124-1:2017-03  
Low corrosion designed acc. to MIL-F-14072D  
This Antenna is compliant with the Radio Equipment Directive 2014/53/EU  
CE-Mark

### Material Data

Radome colour	RAL 9017 (black)
Radome material	PC (Polycarbonate)
Back plate/base plate material	Aluminium

### Related Products

(Order separately)  
9091.99.0250 Metal ground plane foil 0.6x0.6m

### Related Documents

Mounting instruction	DOC-0001163416
Painting instruction	DOC-0000256180
Security instruction	DOC-0000278984
Outline drawing	DOU-01158994
3D-model	DOC-0001155892