ORTeS

RailTRx™

RailTRx™ 2-300

RailTRx™ 2-500

Ku/Ka-Band Train Stabilized VSAT Product Line

Global Broadband Evolution

RailTRx™ is an innovative platform supporting a variety of stabilized train antenna system configurations in Ku and Ka bands. As a common platform, it is inherently designed to accommodate the current and future needs of the train market. With a track record of dozens of operational systems, RailTRx™ features outstanding RF performance, system availability and high immunity to environmental electromagnetic interferences. As such, the system is an optimal solution for the evolving broadband communications needs of inter-city, regional and high speed trains.

RailTRx™ product line comprises two product series:

300 Series

Ku band support

RailTRx™ 2-300 features a low profile high gain Ku-band antenna.

500 Series

Ka inherent support

RailTRx™ 2-500 features a low profile high gain Ka-band antenna. The 500 Series offers built-in Ka fully compatible design to ensure smooth migration to future high-speed Ka services.

FEATURING

- Dozens of systems in operation for more than four years
- Ku-band or Ka-band
- High gain low profile antenna with superior EIRP & G/T
- Specially designed for train applications (including high speed trains):
  - High immunity to environmental electromagnetic interference, (high current cables) and ferromagnetic influence
  - Reinforced radome with high resistance
  - Enhanced design for harsh environments
  - Operates in temperatures from -40°C to +65°C
- Simple installation & integration:
  - Entire system is housed in one autonomous roof-top unit.
  - Interoperability with large variety of modems and various BUC vendors
  - Supports OpenAMIP and SNMP protocols
  - IP Interface with the modem (Ethernet via TCP/IP and SNMP protocol), including M&C of the Control System and the BUC (such as temperature and Tx control)
  - Fully independent of the train, requiring only a 24V DC power supply, generated by the 72 (nominal) Volt DC Bus (50-90V)
- Optimal system RF and tracking design:
  - Fully automatic acquisition and tracking modes, with no need for operator intervention once configured
- Combination of microwave tracking (Step-Track) and inertial stabilization (rate gyro or IMU)
- Instantaneous reacquisition after RF signal blockage (tunnels, stations, etc.)

RailTRx™ 2-300 and RailTRx™ 2-500 Typical Features and Specifications

Antenna/RF Subsystem Specifications			
Parameter	**Units**	**Values**	
		RailTRx™ 2-300 Ku-band	**RailTRx™ 2-500 Ka-band**
Frequency Range Tx Rx	GHz	 13.75 - 14.50 10.95 - 12.75	 29.00 - 31.00 18.20 - 21.20
System G/T (Typical at mid-range, Including all losses)	dB/K°	13.5	14
System EIRP (Typical at mid-range, including all losses)	dBW	44 (with 8W BUC) Available BUCs: 8W & 25W	44 (with 4W BUC) Available BUCs: 4W & 10W
Cross Pol. Discrimination (Tx)	dB	>30	>25
Polarization (motorized)		Linear: Tx (V) & Rx (H) Or Tx (H) & Rx (V)	Circular: Tx(RHCP) & Rx (LHCP) or Tx(LHCP) & Rx (RHCP)
Travel Azimuth Elevation Polarization	 Deg Deg Deg	 360, continuous +5 to +50, Consult factory for other ranges 180	 360, continuous +15 to +65 Consult factory for other ranges +45 to -45 (RHCP/LHCP)

General Features		
Parameter	**Units**	**Values**
Maximum Train Speed	Km/hr	350
Input Voltage	VDC	24VDC
Operating Temperature	ºC	-25 to 65 -40 to 65 (Optional)
Storage Temperature	ºC	-40 to 85 -55 to 85 (Optional)
Railways applications electronic equipment used on rolling stock	EN50155	
Earth stations on board trains ("EST") operating in 14/12 GHz frequency bands	ETSI EN 302 448	
Shock and Vibration	EN61373 Class A Category 1	
EMC	EN50121-3-2, EN61000-4-4, EN61000-4-3, EN61000-4-6 And CE	
Cabling and installations	STM-E-001	
Materials - Railway rolling stock fire behavior	NF F16-101, NF F16-102	

Physical Dimensions			
Parameter	**Units**	**Values**	
		RailTRx™ 2-300	**RailTRx™ 2-500**
Diameter	cm/inch	105.8/41.6	105.8/41.6
Height	cm/inch	48.8/19.2	41.8/16.5
Weight	kg/lb	96/211	94/207

Specifications are subject to change without prior notice

RailTRx™ 2 Typical System Layout