AN/TSC-185 Satellite Transportable Terminal (STT)

Applications

Command Control

Reachback and Range Extension

Voice, data and video

EoIP

VoIP

Description

General Dynamics' STT AN/TSC-185 terminal is an optimized, over-the-horizon communications vehicle ideally suited for tactical communications missions On-the-Quick-Halt. This terminal is the U.S. Army's Joint Network Node (JNN)/ WIN-T Increment 1 satellite transportable terminal (STT).

Improving on previous designs, the AN/TSC-185 incorporates proprietary active compensation tracking techniques that positively track out the effects of wind while permitting significant platform weight reduction. The resulting trailer frame absorbs more of the off-road shock and vibration while also providing increased rack and storage space capacity for additional equipment, systems or fuel. Active compensation tracking also eliminates the necessity for outriggers permitting simple jackstands to provide stabilization as needed and facilitates quicker setup and teardown while further reducing structural weight. The AN/TSC-185 is designed to carry all equipment necessary to support SATCOM bands.

Key Features

- Next generation trailer offers Ku and Ka-band operation on a single trailerized platform
- HMMWV towable; C-130 and C-17 transportable, CH-47 helicopter lift
- Active compensation tracking eliminates outriggers - faster set up, smaller footprint and reduced structural weight
- Environmentally controlled equipment enclosure, 2-bay with 38 RUs of installed rack space plus central bay with space for up to 15 RUs
- Supports a wide variety of modems, multiple carriers and data rates from 4 Mbps up to 155 Mbps
- Terminal controller combines antenna control, M&C, tracking receiver and spectrum analyzer functions
- Common user interface across all Warrior products
- IESS, XTAR, WGS and DSCS compliant
- Airlift without use of spreader bars
- High quality UPS with shore power surge protection
- Shore power or generator (36 hours continuous operation without refueling), meets MIL-STD 810F roadability requirement
- Operational from -20 to 60°C

Active Programs

- JNN
- WWSS
- WIN-T

GENERAL DYNAMICS
SATCOM Technologies

AN/TSC-185 Satellite Transportable Terminal

System Performance	Receive	Transmit
Frequency Bands (GHz)		
Ku, 4-port, LP	10.95-12.75	13.75-14.5
Ka, 2-port, CP	20.2-21.2	30.0-31.0
G/T (@ 20° elevation)		
Ku	25.5 dB/° K	
Ka	28.7 dB/° K	
EIRP (max)		
Ku	76.7 dBW	
Ka	77.6 dBW	

Munson Road and Rail Impact

Joint Network Node-Network Tactical Mobile Satellite Trailer (JNN-TMST)
LR-RT-M-DY-08-30
Dynamic Test Branch
Environmental Test Division
Redstone Technical Test Center
U.S. Army Developmental Test Command

Environmental Testing

Wyle Report No. T55538-01
Wyle Laboratories, Inc.
Huntsville, AL

Joint Network Node-Network (JNN-N) Satellite Transportable Terminal (STT)
ATEC Project No. 2008-DT-ATC-WINTX-D8577
Test Record No. WF-E-78
U.S. Army Developmental Test Command
Aberdeen Proving Ground, MD

Transportation

Helicopter Sling Loading Certification
ATEC Project No. 2008-DT-ATC-WINTX-D9682
Report No. ATC-9738
U.S. Army Aberdeen Test Center
Aberdeen Proving Ground, MD

Certified USAF Aircraft:
C-130 E/H/J C-130 J-30
C-17 A C-5 A/B/C
File Number: 2008.08.05
ATTLA/USAF

Modular RF Payloads:

Each modular RF payload consists of a feed plate with a feed assembly, waveguide filtering network, an LNB and an HPA with an embedded BUC. All signal cabling to and from the feed is L-band simplifying interconnections and ease of setup for alternative frequency bands. The Ku-Band Tunable LNB covers the entire Ku-band without requiring an LNB change or waveguide disconnections. Frequency band changes are simplified to removing the two standard hand-screw alignment fasteners and disconnecting a few Mil-Circular and N-Type connectors – no tools are required – and can be performed by one operator wearing MOPP-IV or artic gear.

Equipment Enclosure

The equipment enclosure provides for easy access to the rear of the racks for cable connection and patching using two large, removable, waterproof access panels as well as slide-out frames for easy maintenance of LRU devices.

RF Terminal	
Antenna Optics	2.4 meter (95.5 in.) carbon fiber with 3-axis motorized positioner
Travel	
Azimuth	±150° continuous
Elevation	0° to 90° of reflector boresight
Polarization	±90°
Wind	
Operational	45 mph (72 kph) gusting to 60 mpg (96kph)
Survival, stowed (with tie downs)	>90 mpg 9145 kph)
Temperataure Range	Operational -20° C to +60° C MIL-STD ECU (R407C)
Set-up Time	<20 minutes
Transport	HMMWV or other wheeled vehicle, CH-47 or C-130 aircraft, rail rated (MIL-STD 209K & 810 compliant)
System Weight	<3900 lbs. (wet)
Vehicle Size (inches)	87 W x 97 H x 190 L
Onboard Storage	27 cubic feet provides enough space to store multiple amplifiers and feeds (for multi-band operation) or other equipment
Power Consumption	5800 W
Generator Run Time	36 hours
Modems (compatible with FDMA, TDMA, CDMA systems)	Multiple modems supported simultaneously (Radyne, ViaSat Linkway, iDirect, ComTech)

Generator	
Run time	36 hours
Power (@1.0 power factor)	7500 W
Voltage	120 volts
Frequency	60 Hz
Phase	1
Current	62.5 ampere
Line Circuit Breakers	2-pole, 30 or 35 amp
Automatic Transfer Switch (ATS)	Spring activated

Environmental Control Unit	
Cooling Capacity	9,000 BTUH
Heating Capacity	5,500 BTUH
Power	115 VAC, 1 Phase, 50/60 Hz
Refrigerant	R-407C

UPS	
Input Voltage	85-260 VAC
Input Frequency	60 Hz
Frequency Regulation	(+/-)0.5% No Load to Full Load
Output Voltage	120 VAC Single Phase
Output Frequency	60 HZ
Inverter Voltage Regulation	(+/-) 3% No Load to Full Load
Distortion	Less than 5% THD
Less than 3% single harmonic	
Load Power Factor	0.7 lag (without PFC)
Overload	110% for 5 minutes
Input P.F	0.95 (at 50-100% load)

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