

# DTR SERIES 91 DIGITAL

## Transportable Troposcatter Systems

### General Information

Comtech Systems introduces its advanced transportable digital troposcatter terminal operating in the 2 GHz and 4.4 to 5 GHz bands. The terminal is self-contained with all necessary environmental conditioning equipment; power conditioning and optional battery backup; built-in diagnostics, alarm and test functions; link monitoring equipment; and extensive User interfaces for American, ITU, and military requirements. Included with the terminal are a series of User selectable transportable antennas to match the tropo link requirements, and optional generator sets for field operation.

The heart of this transportable troposcatter terminal is the Comtech Systems, CS678, advanced digital adaptive troposcatter modem. This modem operates at 8 Mb/sec, is designed for bandwidth efficiency, and works in the worst case multipath

and fading environments. Operating in dual or quad diversity, the modem can gain extra orders of diversity by using multipath effects and patented decision feedback equalization to mitigate against intersymbol interference.

Comtech has made extensive use of built-in test equipment (BITE) in this terminal. More than 50 internal digital and analog parameters are continuously monitored and stored. The terminal operation status is instantly available via programmable display, audible alarms, and remote terminal interface. The built-in features provide basic diagnostic functions and reduce the need to purchase external test equipment and ensures a common user interface for isolating faults and displaying operating conditions. BITE features, combined with conservative component derating, and extensive redundancy, ensure a reliable, easy-to-operate troposcatter terminal.

### Features

- 8 Mb/sec capacity over worst case multipath and dispersion
- 2 GHz and 4.4 to 5 GHz bands
- Dual or quad diversity
- QPSK modulation
- Built-in performance link monitoring
- Built-in alarm monitoring and fault diagnostics
- Built-in power control
- Field tunable over the operating frequency band
- Accommodates extreme multipath dispersion up to  $2\sigma/T = 3$
- 4 E1's or aggregate 8 Mb/sec capacity



For additional information, contact our marketing department:  
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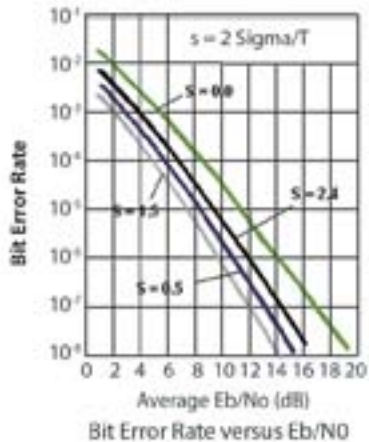
# DTR SERIES 91 DIGITAL Transportable Troposcatter Equipment Specifications

Comtech Systems, Inc.,  
is certified to the  
quality standard:

ISO 9001: 2000



## Modem Performance:



## System Specifications

Operating Frequency Ranges	1,700 to 2,400 MHz and 4,400 to 5,000 MHz
Frequency Tuning	100 KHz or 500 KHz steps
User Traffic	8,192 Mb/sec or 4 E1's (4 x 2,048 Mb/sec)
Modulation	QPSK at 8 Mb/s
Service Channels/Orderwire	Two 32 Kb/s channels for supervisory data and orderwire
IF Center Frequency	70 MHz
Traffic Interface	Programmable

## Receive Specifications

Noise Figure - LNA Input	2.5 dB max
Noise Figure - Cabinet Interface	Dependent on system configuration
RF Input Impedance	50 ohms; VSWR 1.25:1 max
Dispersion Handling	Up to $2\sigma/T = 3$
Receiver Sensitivity - QPSK, 8 Mb/sec	-88.6 dBm, $10^{-6}$ BER

## Transmit Specifications

Power Output - QPSK, 8 Mb/sec	1 watt up to 2,000 watts
Harmonics	Lower than -60 dBc
Spurious	Lower than -60 dBc

## Primary Power

Voltage	115/230 VAC, single phase, 50 or 60 Hz
Power	Approximately 34 Kw for a Quad diversity tropo terminal with environmental conditioning and 2 Kw transmitters

## Environmental

Temperature - Operating	-10 deg C to +50 deg C
Temperature - Storage	-20 deg C to +70 deg C
Relative Humidity - Operating	20% to 90% non-condensing
Altitude - Operating	3,000 meters
Altitude - Storage and Transport	12,000 meters
Shock and Vibration - Fixed Sites	As encountered when packaged for commercial shipping
Shock and Vibration - Mobile	See factory for details

## Available Options

- Ruggedized for tactical applications
- Uninterruptible power source (UPS)
- Different antenna sizes depending on requirements, fixed or transportable antennas
- Trailerized, single and dual generator sets for tactical applications

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