PRC7700H

Spectre H™ Tactical HF Manpack

Datron's Spectre H™ radios offer secure communications in ruggedized form-factors, providing a sophisticated feature-set, and utilizing a simplified user interface for ease of operation.

The PRC7700H is an IP-addressable, digital HF software defined radio (SDR) that combines DSP-IF circuitry and powerful processors in a robust manpack configuration. The PRC7700H is also suitable for mobile, rack-mounting or desktop use. The PRC7700H is fully interoperable with Datron's RT7700H HF transceiver for voice and data communications.

The Joint Interoperability Test Command (JITC) confirms that the PRC7700H, manufactured in the USA, supports the mandatory requirements for the core radio, including the Automatic Link Establishment (ALE) specifications in Appendix A. The PRC7700H also supports STANAG-4538 for 3G-ALE.

The PRC7700H is capable of transmitting up to 25 Watts PEP RF power over a 100% duty cycle. The DSP-IF and audio circuitry are optimized to support voice and data services. The radio provides excellent AGC group delay characteristics through the DSP-based IF and audio circuitry. Modes of operation include 2x ISB, USB, LSB, AM, AME, CW, Data and Digital Voice (MELPe), with optimized bandwidths.

The PRC7700H integrates a MIL-STD-188-141D ALE MODEM and a MIL-STD-188-110D HF MODEM. Supported modes and data rates are FSK to 600 bps, Serial Tone (PSK to 2400 bps) and PSK/QAM (to 9600 bps in 3 kHz, SSB). 19,200 bps is supported using 2-ISB.

The PRC7700H can be remotely controlled via an Ethernet port, over a Local or Wide Area Network through its IP-addressable interface. The PRC7700H is fully supported with a remote control and messaging software application.

The PRC7700H includes a comprehensive BITE system to facilitate maintenance with the ability to isolate faults down to the LRU level (lowest replaceable unit).

Datron offers a full range of software and hardware accessories including MHS (H-189/U) handsets, tuners, amplifiers, and antennas that support PRC7700H integration into a wide range of user environments.

Key Features

- AM, AME, USB, LSB, ISB, DATA and Digital Audio (MELPe)

- DSP-IF Based with Direct Digital Synthesizer

- Integrated 2G ALE Modem MIL-STD-188-141D (Basic and Appendix A)

- STANAG 4538 (3G ALE)

- MIL-STD-810G construction

- Immersion: MIL-STD-810F 512.4; IP-67: 1m for 30 minutes

- Integrated MIL-STD-188-110D Modem/ STANAG 4539

- DIGITAL COMSEC (AES-256)

- ECCM - up to 25 hops/sec

- Internal GPS Receiver

- Support for External 100W Amplifier

DATRON
Performance You Require. Value You Expect.®

PRC7700H

Spectre H™ Tactical HF Manpack

Datron World Communications, Inc.

995 Joshua Way, Suite A

Vista, CA, USA 92081

Tel: +1-760-597-1500

Fax: +1-760-597-1510

E-mail: sales@dtwc.com

Web: http://www.dtwc.com

* Subject to export regulations

** As permitted by core hardware design

Specifications subject to change without notice - rev 210504

Made in the USA

This datasheet contains no ITAR data.

Performance You Require. Value You Expect.®

GENERAL

• FREQUENCY RANGE	TX: 1.5 to 30 MHz (10 Hz steps) RX: 100 kHz to 30 MHz
• TOTAL CHANNELS	≥ 280,000
• PROGRAMMABLE CHANNELS	1000 Simplex or half-duplex
• FREQUENCY STABILITY	±0.5 x 10⁻⁶
• MODES OF OPERATION	Clear, Digital (MELPe) and Encryption (COMSEC must be enabled)
• MODULATION	2x ISB, USB, LSB, AM, AME, CW, and DATA
• MEMORY RETENTION	Non-volatile
• ALE SCAN	Manual or Automatic (2 or 5 channels/sec w/ALE)
• LOCAL CONTROL	Front panel keypad for frequency, modes, and other core parameters. Computer or Fill Gun for COMSEC and ECCM (Frequency Hopping)
• REMOTE INTERFACE	Ethernet (10/100BaseT)
• ADDRESSABILITY	Radio is IP addressable
• DATA MODEM	Integrated MIL-STD-188-110D, which includes error correction (FEC)
• 2G/3G ALE MODEM	2G-ALE per MIL-STD-188-141D Option 3G-ALE per STANAG-4538 Option
• COMSEC OPTION	Integrated High-Level AES-256 Encryption option
• ECCM OPTION	Integrated Frequency Hopping Option (up to 25 H/S)
• RF INPUT/OUTPUT IMPEDENCE	50-Ohm nominal unbalanced; whip or long wire antenna
• ANTENNA INPUT PROTECTION	To -43 dBm. Lightning protection via an external RF Surge Suppressor
• OVERHEATING PROTECTION	Transmitter reduces power in the event of overheating
• BITE	Fault isolated to module level (LRU), descriptive readout on front panel, and individual module indication
• MTBF	≥ 5000 Hours, per MIL-HDBK-217F
• MTTR	≤ 15 Minutes, per MIL-HDBK-472, procedure V, part B
• INPUT POWER	DC: 11–32 VDC
• FORMAT	Manpack or mobile/vehicular mount
• GPS	Internal GPS receiver with external antenna TNC antenna connector mounted on front panel

ENVIRONMENTAL

• TEMPERATURE	Operating: -20°C to +60°C; Storage: -40°C to +70°C
• HUMIDITY	95% at +50° C
• ENVIRONMENTAL TESTING	MIL-STD-810F, methods 501.4, 502.4, 507.4
• VIBRATION	MIL-STD-810F, method 514.5
• IMMERSION	MIL-STD-810F, method 512.4; IP-67: 1m for 30 minutes
• EMI	MIL-STD-461E, CS101, CE102, RE102 and RS103

MECHANICAL

• SIZE (H x W x D) w/Battery Case	8.5 in. x 3.5 in. x 9.5 in. (21.6 cm x 8.9 cm x 24.1 cm)
• WEIGHT	10.76 lbs. (4.88 kg) without battery pack

RECEIVER

• SELECTIVITY	SSB: 300 Hz to 3050 Hz AM: ± 3000 Hz
• ADJACENT CHANNEL REJECTION	Greater than 50 dB
• SENSITIVITY	SSB/ISB: -113 dBm for 10 dB SINAD (2–30 MHz) AM: -97.5 dBm for 10 dB SINAD (2–30 MHz) CW: -116 dBm for 10 dB SINAD (2–30 MHz)
• AUDIO OUTPUT	Line audio: Up to 15 mW into 600-Ohms Handset: 1k-Ohm typical Balanced speaker: 15mW into 600 Ohms
• IMAGE & IF REJECTION	80 dB minimum
• AGC	Fast, medium, slow (compatible with selected mode of operation)
• SQUELCH	Syllabic

TRANSMITTER

• OUTPUT POWER	SSB, 2-ISB: 25W PEP Total; AM: ≥ 5W average
• HARMONIC SUPPRESSION	Greater than 40 dB
• CARRIER SUPPRESSION	Greater than 50 dB
• UNDESIRED SIDEBAND	Greater than 50 dB
• VSWR	Full power at 2:1 VSWR (Automatic power reduction above 2:1)
• DUTY CYCLE	100%
• GPS	Integrated receiver with external antenna
• SYNCHRONIZATION	GPS or TOD
• AUDIO INPUT	Microphone and 600-Ohm lines