

PRC7700H 100W

Spectre H™ Tactical HF 100W Mobile Radio System

SPECTRE™ H



Datron's Spectre H™ radios offer secure communications in ruggedized form-factors, provide a sophisticated feature-set, and utilize a simplified user interface for ease of operator training. The PRC7700H is an IP-addressable, digital HF software defined radio (SDR) that combines DSP-IF circuitry and powerful microprocessors in a robust manpack configuration that is also suitable for mobile, rack-mounting or desktop use. The PRC7700H is fully interoperable with Datron's RT7700H HF transceiver, supporting the demands for voice and data communications.

The Joint Interoperability Test Command (JITC) certifies that the PRC7700H, manufactured in the USA, conforms to the mandatory requirements of Military Standard (MIL-STD)-188-141B, including conformance to the Automatic Link Establishment (ALE) specifications in Appendix A.

The PRC7700H is capable of transmitting up to 25 Watts PEP continuous 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-188-141B ALE MODEM and a MIL-STD-188-110B HF MODEM. Supported modes and data rates are FSK to 600 bps, Serial Tone (PSK to 2400 bps) and PSK/QAM (to 9600 bps). 19,200 bps is supported using 2-ISB.

Being IP addressable, the PRC7700H can be remotely controlled via Ethernet port, over a LAN or WAN. The PRC7700H is fully supported with a remote control and messaging software application.

In order to facilitate maintenance, the PRC7700H incorporates a comprehensive BITE system with the ability of isolating faults down to the LRU level (lowest replaceable unit).

A full range of software and hardware accessories are available including MHS (H-189/U) handsets, tuners, and antennas, among others. These accessories support the integration of the PRC7700H into a wide range of user environments.

- AM, AME, USB, LSB, ISB, DATA and Digital Audio (MELPe)
- DSP-IF Based with Direct Digital Synthesizer
- JITC-Certified Integrated MIL-STD-188-141B ALE MODEM
- MIL-STD-810F Construction
- Integrated MIL-STD-188-110B MODEM
- Digital COMSEC
- ECCM
- Support for External Pre/Post-Selector
- Internal GPS Receiver
- Available in OD Green and Desert Sand



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Certification # 08,347.1
ISO 9001:2008
Registered Quality System
Datron World Communications, Inc.

Subject to export regulations

** As permitted by core hardware design

Specifications subject to change without notice - rev 150414

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Made in the USA

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

2x ISB, USB, LSB, AM, AME, CW, and DATA

• MODULATION

Analog and Digital (MELPe)

• MEMORY RETENTION

Non-volatile

• 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

• RADIO TYPE

SDR Radio. Waveforms, modulation types, wide/narrow bands, and communications security can be updated via software**.

• DATA MODEM

Integrated MIL-STD-188-110B, which includes error correction (FEC)

• ALE MODEM

Integrated MIL-STD-188-141B

• COMSEC/ECCM

Integrated high-level encryption option with front panel quick-connect Key Fill port and zeroize button.

• RF INPUT/OUTPUT IMPEDANCE

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 will reduce 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 TNC antenna connector mounted on front panel

ENVIRONMENTAL

• TEMPERATURE

-30°C to +60°C (-40°C to +70°C storage)

• HUMIDITY

95% at +50°C

• ENVIRONMENTAL TESTING

MIL-STD-810F, methods 501.4, 502.4, 507.4,

• VIBRATION

MIL-STD-810F, method 514.5

• EMI

MIL-STD-461E, CS101, CE102, RE102 and RS103

RECEIVER

• SELECTIVITY - SSB

300 Hz to 3050 Hz, per MIL-STD 141B paragraph 5.2.7.1

• SELECTIVITY - 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-Ohm

Handset: 1K-Ohm Ear

• IMAGE & IF REJECTION

80 dB minimum

• AGC

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

Operates at VSWR 2:1

(Automatic power reduction above 2:1)

• AUDIO INPUT

Microphone and 600-Ohm lines



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PRC7700H 100W System

PRC7700H	HF Transceiver, 25W PEP
MHS	Military style handset, H-189/U-type
AM7700H	100W HF linear amplifier (1.5 to 30 MHz), 24VDC
MT7700H	28VDC Vehicle adapter
RAT7000B	125W Automatic antenna tuner, includes C991620 antenna lead
PRC7700H-IOX	IP expander
PRC7700H-IOXMM	PRC7700H-IOX mounting kit
AM7700H-MM	AM7700H mounting kit
RAT7000B-SM	RAT7000B shock mounting kit
MAR-16T	16 ft. (4.9m) whip antenna with tilt-mount adapter and flexible spring base