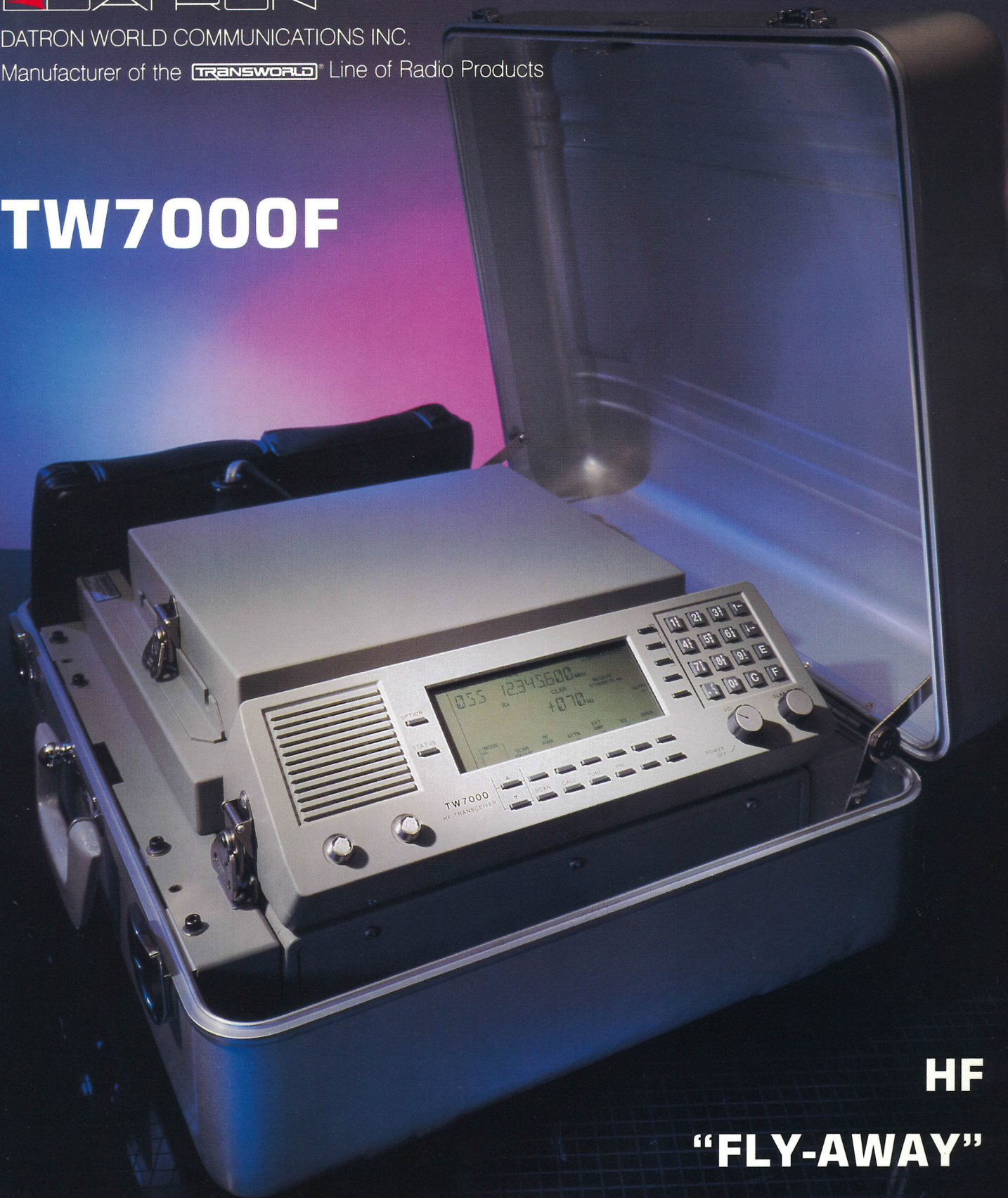


DATRON

DATRON WORLD COMMUNICATIONS INC.

Manufacturer of the **TRANSWORLD**® Line of Radio Products

TW7000F

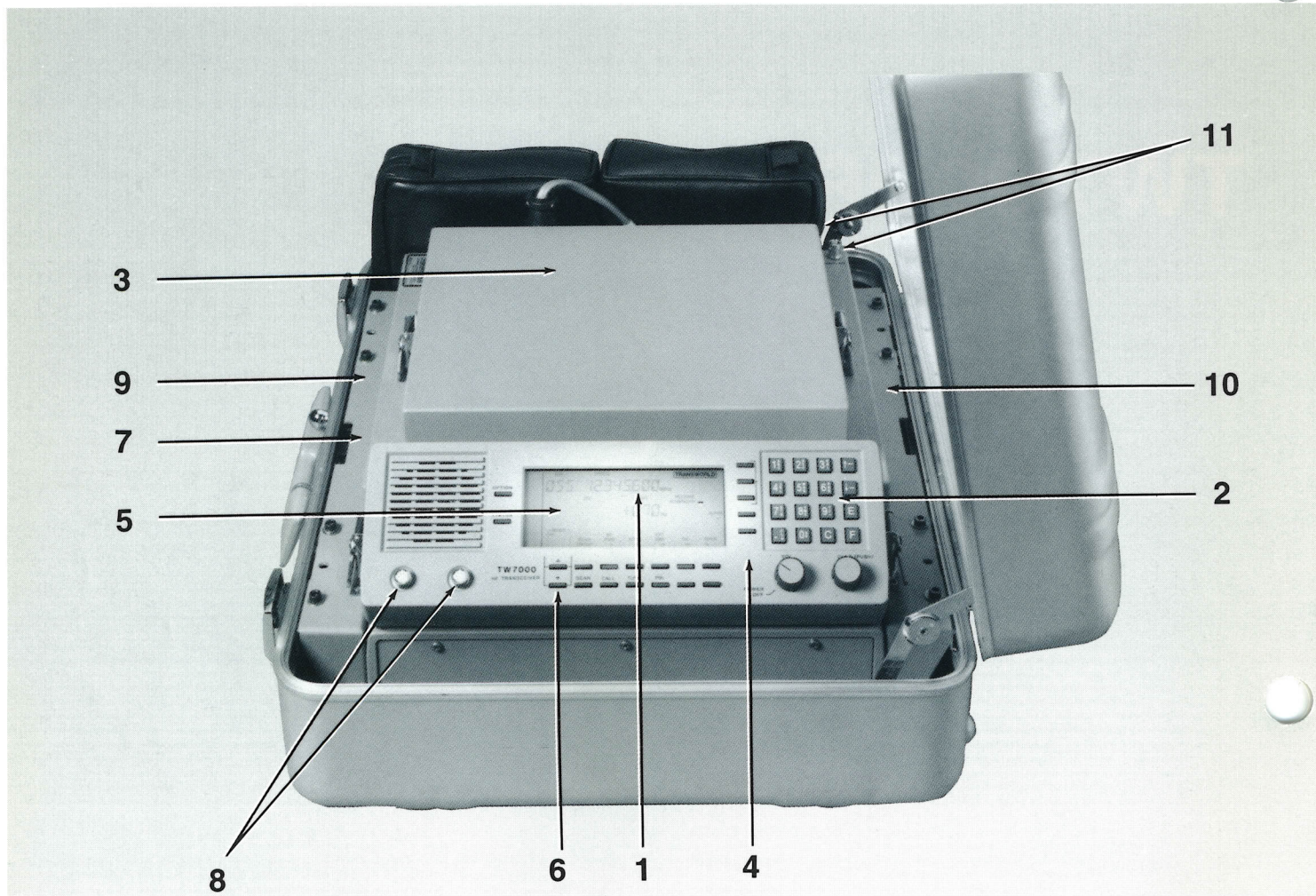


HF

"FLY-AWAY"

TRANSCEIVER SYSTEM

TW7000F Transceiver



The TW7000F is a completely self-contained 125-Watt HF Transceiver system designed for quick and convenient “Fly-Away” operation.

The TW7000F continues the **TRANSWORLD** tradition of innovation and leadership in the design and manufacture of “Fly-Away” HF transceiver systems. This new model offers many enhancements and additional capabilities over its predecessor, the TW100F—the world’s most popular and successful HF “Fly-Away” radio package.

Mounted in a rugged aluminum-skinned attache-type case and small enough to meet IATA underseat requirements, the powerful TW7000F includes all the accessories necessary to quickly establish long distance HF communications from temporary field locations. Included are: 125-Watt Continuous-Duty Transceiver, Universal Autoranging AC Power Supply, deployable full-function Control Unit with four meters of cable, deployable Automatic Antenna Tuner with Memory, Two-Section Longwire Antenna on spools, eight meters of Coax Cable, AC and DC Power Cables, Ground Strap, International Power Adapters, and Audio Adapters. Plug-in options such as Automatic Link Establishment (ALE), Digital Signal Processed Voice Enhancement, and Encryption give the TW7000F the flexibility to meet a wide variety of user requirements.

TW7000F Features

1. 1.6 to 30 MHz in 10-Hz Steps
2. Full Alphanumeric Keypad
3. Deployable Automatic Antenna Tuner with Memory
4. Deployable Control Unit
5. Custom Liquid Crystal Display
6. Multimode Operation
 - SSB
 - AME
 - CW
 - DATA
7. Plug-In Options
 - 7000 VEM Voice Enhancement
 - 7000 ALE FED-STD-1045
 - 7000 TC TRANSCALL ALE
 - 7000 ENCR
8. Multiple Audio Connectors (Two "Commercial" and one "Military")
9. 100% Continuous Duty Rating
10. Autoranging AC Power Supply
11. Dual Antenna Connectors
 - UHF
 - BNC

Multimode Capabilities

All standard modes, including USB, LSB, CW, PCS and AME, are available. A wideband data option is provided for high-speed data capability.

Reliable Multi-Level Power Amplifier

The TW7000F is suitable for voice or data operation. Output power is conservatively rated at 125-watts PEP, 100-watts average, in continuous keydown operation. Three front-panel-programmable levels are available which default to 5, 20, and 125 watts. Complete VSWR protection is provided, and an indication of excessive VSWR is displayed to warn the operator of a defective antenna condition.

Deployable Control Unit

To provide convenient operation in a variety of operating scenarios, the Control Unit of the TW7000F can be removed and remotely deployed. A four-meter control cable is included. The Control Unit includes an alphanumeric keyboard and a high-resolution, backlit, custom LCD display. In addition to the normal functions, the display includes two alphanumeric lines of display, BITE status, sub-menu data, and ALE order wire or data messages.

Deployable Automatic Antenna Tuner

The standard package includes the AT7000F Automatic Antenna Tuner. This compact and lightweight unit is fully deployable and comes complete with eight meters of lightweight coaxial and control cable. The tuner has a memory capacity of 100 channels with full scanning capability and provides an efficient match to a wide variety of whip and longwire antennas. Dual antenna connectors are provided: BNC for use with the Antenna Tuner, and UHF for use with broadband antennas.

Direct Digital Synthesizer

An advanced fast-switching DDS circuit is the heart of the TW7000F synthesizer. It provides a low-noise and spurious output, and permits fast scanning and high resolution.

Alphanumeric Keypad

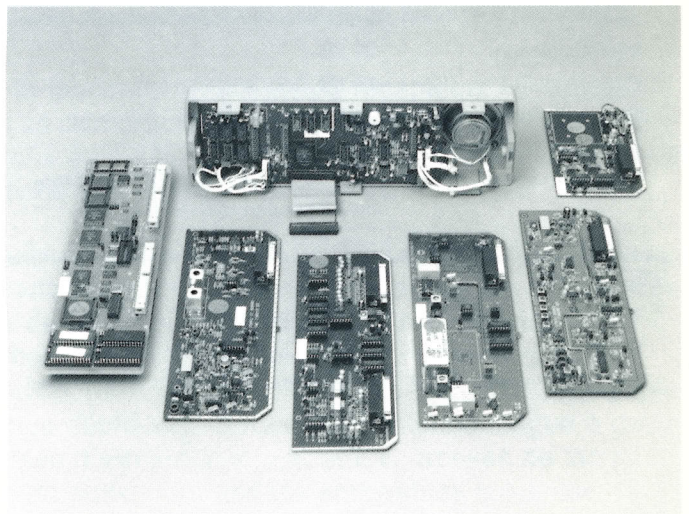
The standard front-panel keypad has full alphanumeric capability. The radio also has an input port so an external standard PC keyboard can be used.

BITE Capability

Automatic BITE capability, with fault isolation to the module level, is standard in the TW7000F. BITE status messages, which cover a variety of possible failure modes, are presented on the display. This allows even unskilled operators to easily troubleshoot the radio at the module level.

Fail-safe Input Power Protection

The TW7000F is fully protected against reverse polarity, over voltage, power surges and spikes.



Plug-in modular construction enhances servicability and field upgrades

TW7000F Options

Dual ALE Capability Options

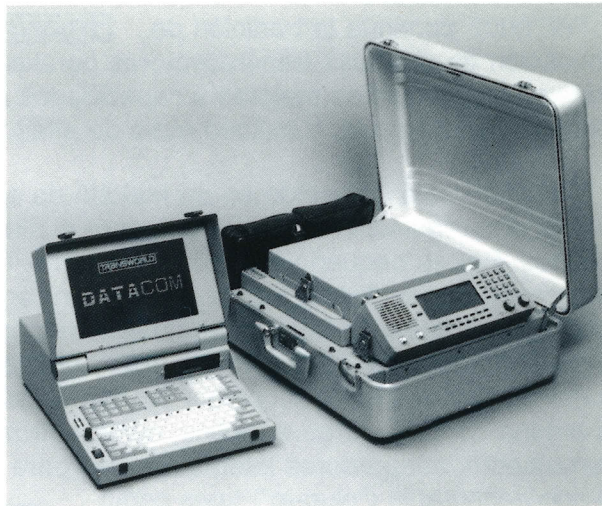
In addition to the widely used and cost-effective TRANSCALL system, the TW7000F also offers a full FED-STD-1045 compatible system which provides advanced features such as high-speed scanning, sounding, link-quality analysis, and send/receive orderwire message capability. Both of these plug-in ALE options provide selective calling as well as "best-available-channel" selection.

DSP Voice Enhancement Option

The optional, plug-in Digital Signal Processor (DSP) Voice Enhancement option reduces the effects of various types of noise and interference on voice communications.

High Level Encryption Option

This plug-in option provides high-level digital encryption of both voice and low speed data communications. It is interoperable with the popular TCC9000 series.



TW7000F shown with TW9200 Datacom Terminal.



TWPP rechargeable battery pack.



TW7000F shown with Control Unit and Antenna Tuner deployed.

TWPP Power Pack

A companion 25AH battery pack is also available. This unit provides the capacity for 24 hours of normal transceiver operation and includes a built-in AC charger. It is also packaged in a matching aluminum attache case.

El TW7000F es un sistema transreceptor de altas frecuencias (HF) diseñado para operaciones de rápido y conveniente despliegue en campo ("Fly-Away").

El TW7000F continua la tradición de **TRANSWORLD**® como líder innovador en el diseño y fabricación de sistemas transreceptores de altas frecuencias (HF) tipo "Fly-Away". Este nuevo modelo ofrece muchas mejoras y capacidades adicionales sobre su predecesor, el TW100F—el cual es el más popular y exitoso radio de altas frecuencias tipo "Fly-Away" en el mundo.

El TW7000F está contenido en un maletín de aluminio para uso rudo y pequeño en tamaño a fin de cumplir con regulaciones de la IATA para el almacenamiento de equipaje de mano debajo de asientos. Por su pequeño tamaño, el potente TW7000F incluye todos los accesorios necesarios para establecer de forma rápida una comunicación en altas frecuencias a larga distancia desde sitios y localidades en campo de carácter temporal. El sistema incluye: un transceptor de 125-watios de uso continuo, fuente de poder auto-ajustable (110/220 Vac), unidad de control desplegable con cuatro metros de cable, acoplador de antena automático desplegable con memoria, dos secciones de antena de cable largo en rollos, ocho metros de cable coaxial, cables AC y DC, banda de aterramiento, adaptadores internacionales para la fuente de poder y accesorios de audio. Opciones de tipo enchufable ("plug-in") tales como el establecimiento de enlace automático (ALE), procesamiento digital de señal, y encriptación le dan al TW7000F la flexibilidad de cumplir a cabalidad con una gran variedad de requerimientos y usos.

L'émetteur-récepteur HF TW7000F de 125 W est un appareil autonome conçu pour une utilisation rapide et commode en vol.



TW7000F meets IATA requirements for underseat transport.

Le TW7000F perpétue la tradition d'innovation et d'avant-gardisme de **TRANSWORLD**® dans la conception et la fabrication d'émetteurs-récepteurs HF conçus pour les opérations en vol. Ce nouveau modèle se démarque de son prédécesseur—le TW100F (l'émetteur-récepteur HF conçu pour les opérations en vol le plus demandé à travers le monde)—en apportant de nombreuses améliorations et additions aux fonctions existantes.

Monté dans une robuste mallette revêtue d'aluminium respectant les normes de l'IATA relatives aux bagages emportés sous les sièges d'avion, le performant TW7000F comporte tous les accessoires permettant d'établir des communications HF sur de grandes distances à partir de positions temporaires. En voici quelques exemples : émetteur-récepteur de 125 W pour service continu, alimentation c.a. à sélection automatique de tension, module de commande déployable avec câble de 4 m, boîtier d'adaptation d'antenne automatique déployable à mémoire, antenne longue à deux sections sur dévidoirs, câble coaxial de 8 m, câbles d'alimentation c.a. et c.c., tresses de terre, adaptateurs de courant international et adaptateurs audio. Les options enfichables suivantes confèrent à l'émetteur-récepteur TW7000F la souplesse lui permettant de répondre aux exigences les plus variées : établissement automatique de liaison (ALE), traitement numérique du signal, et chiffrement.

TW7000F Specifications

GENERAL

Frequency Range:	1.6 to 30 MHz.
Channel Spacing:	10 Hz, standard.
Channels:	256, standard, expandable to 1000.
Frequency Entry:	Keypad controlled.
Display:	Backlit Alphanumeric LCD.
Tuning:	Up and Down pushbuttons, variable frequency steps.
Scanning:	Multiple scan groups, operator selectable scan rates.
Antenna Impedance:	50 Ω .
Frequency Stability:	± 1 ppm -30 to 60 $^{\circ}\text{C}$; optional ± 0.1 ppm.
Operating Modes:	USB, LSB, AME, PCS, CW (standard); simplex or semi-duplex.
Control:	Control panel is removable for full-function remote operation.
Dual Antenna Ports:	1. BNC multiplexed to antenna tuner with single coax cable provided. 2. SO-239 UHF for 50 Ω broadband antennas.
Duty Cycle:	Continuous, keydown.
Input Power:	+12 Vdc, nominal; 10.5 to 16 Vdc, operational. 110/220 Vac (autoranging) $\pm 20\%$ 50/60 Hz universal input switching power supply.
Input Power Protection:	Reverse polarity, transient and under/over voltage.
Size (H x W x D):	8.5 in. x 21 in. x 17 in. (21.6 cm x 53.5 cm x 43 cm).
Weight:	45 lbs. (20 kg).

TRANSMITTER

Power Output:	125 W PEP, 100 W average; three levels, programmable from front panel.
Intermodulation:	-32 dB.
Harmonics:	-60 dB, 2 to 30 MHz.
Carrier Suppression:	50 dB.
Sideband Suppression:	55 dB.
VSWR Protection:	Protected against antenna mismatch including open and short circuit.

RECEIVER

Frequency:	100 kHz to 30 MHz.
Clarifier:	Digital ± 600 Hz in 10 Hz steps.
Receiver Protection:	Can withstand +43 dBm input without damage.

Sensitivity:	10 dB SINAD min., for 0.5 μV input (1.6-30 MHz).
IF Rejection:	-80 dB.
Selectivity:	SSB: 300-2700 Hz at 6 dB.
Spurious:	Per FED-STD-1045.
Attenuator:	+20 dB switchable.
Audio:	5 W min. into 4 Ω .
High-level Audio:	0 dBm into 600 Ω .
AGC:	Not more than 3 dB change in audio output for input signals from -103 to +13 dm.
Squelch:	Syllabic

ANTENNA TUNING

Antennas:	Whips, long wires.
Mode:	Fully automatic.
Memory:	100 Channels (optional).
Usage:	Deployable from main body of radio.

ENVIRONMENTAL

Temperature, Operating:	-30 to +60 $^{\circ}\text{C}$.
Temperature, Storage:	-40 to +70 $^{\circ}\text{C}$.
Shock and Vibration:	Per MIL-STD-810.

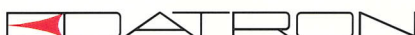
OPTIONS, INTERNAL

ALE:	Full-function FED-STD-1045 operational from front panel.
Encryption:	High-or medium-level voice or data.
Noise Blanker:	Impulse noise type.
High Stability:	± 0.1 ppm, -30 to +60 $^{\circ}\text{C}$.
Adaptive:	TRANSCALL/SELCALL, TW100 compatible; TRANSADAPT, PRC1099A compatible.
Voice Enhancement:	DSP-based.

TWPP POWER SOURCE

TWPP:	13.6 Vdc, nominal; 30A maximum; 25AH capacity at 20 $^{\circ}\text{C}$; 115/230 Vac input (switch selectable); 8-10 hours charge time (fully discharged battery) 7H x 21W x 13D in. (18 x 53 x 33 cm) 42 lbs. (20 kg).
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*Specifications subject to change without notice.
Measurements made at 13.8 Vdc.*



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