

SYSTEMS

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COMPUTERS



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PRC-624

VHF/FM HANDHELD/MANPACK RADIO



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PRC-624

Powerful, lightweight, fullband VHF/FM Handheld/Manpack Radio

Designed for lightweight fixed frequency military communications, the battle-proven PRC-624 is in operational use by the Israeli Defense Forces and other armies as a replacement for the PRC-77 and other old-generation handheld and manpack radios.

Originally designed to replace the much larger PRC-77, the PRC-624 is an advanced handheld voice and data military VHF/FM radio that provides the performance capabilities generally expected only from significantly larger manpack radios.

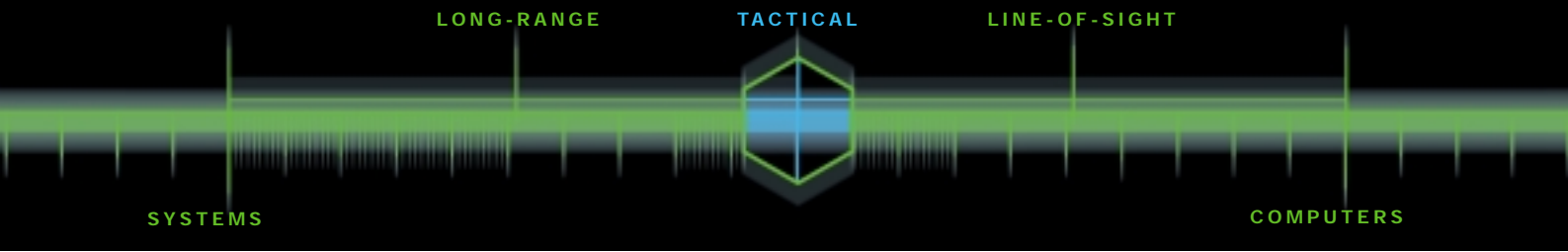
The PRC-624 completely covers the 30-88 MHz tactical VHF frequency band without sub-bands. The PRC-624 provides 2,320 channels at a 25 kHz channel spacing, without a single degraded channel. Any channel in the 30-88 MHz band can be used, and up to 10 channels can be easily preset by the operator. This extended coverage and channel spacing make the PRC-624 fully compatible with new generation combat net radios at any frequency. With its programmable squelch, the PRC-624 is also compatible with older generation radios such as the AN/PRC-77 and AN/VRC-12.

The PRC-624 is lightweight but powerful. The PRC-624 with its antenna and lithium battery weighs less than 1 kilogram. The PRC-624 nominal power output of 2 watts provides 5-8 kilometers typical range with its 90-centimeter antenna. For a reduced probability of interception and increased battery life, PRC-624 power output is adjustable to as little as 0.25 watts.

The PRC-624 has a Whisper capability that is ideal for patrols, ambushes and other operations requiring communications under stealthful conditions.

The PRC-624 has a robust built-in microphone/loudspeaker that enables operation without audio accessories. Its 350 mW audio output withstands noisy combat operations. Connection of a handset normally disables the microphone/loudspeaker; however, it is possible to use the loudspeaker even with a handset connected. The PRC-624 with built-in microphone/loudspeaker is submersible up to 1 meter and withstands prolonged exposure to high humidity levels. An automatic retransmit capability is possible by simply connecting two PRC-624 radio sets together via a single cable. The same cable is also used for automatic radio-to-radio parameter loading.

Ease of operation is a critical design factor. Soldiers can be proficient in the PRC-624 in minutes. Controls are simple and the 4-pushbutton front panel is clearly marked. Programmable audio alerts and a front panel display facilitate operation by indicating low battery voltage, signal strength, self test results, mode of operation, channel frequency and channel number.



Maintainability

The PRC-624 is designed for easy and inexpensive maintenance based on its high MTBF, 15-minute intermediate-level MTTR, and simple modular construction. A powerful and efficient built-in test (BIT) capability identifies and isolates equipment faults and indicates low battery voltage. An automatic on-line BIT indicates the existence of a fault, and an off-line BIT determines the type of fault.

Configurations

The PRC-624 is available in a handheld configuration using its built-in microphone/loudspeaker and belt pouch, or in a manpack configuration using an external handset and carrying harness. A 20W high-power configuration as well as secure and underwater versions are also available.

COMBINED ARMS

Recognizing the infantryman's critical need to communicate under changing battlefield conditions with a number of other elements besides his own squad or platoon, the PRC-624 provides full 30-88 MHz frequency coverage and allows the operator to rapidly select any channel frequency. Thus, the PRC-624 operator can communicate with other battlefield elements such as artillery for fire support, armor for combined arms operation, helicopters for insertion, extraction and medevac, adjacent units for boundary coordination and passage of lines, and other units when attached/detached by task organization.

CONFIGURATIONS

A variety of configurations to suit different operational needs are available: PRC-624 - Basic Handheld Manpack Radio Set, PRC-624(S) - Secure Radio Set, PRC-624(N) - Underwater Radio Set, PRC-624HP - High Power Radio Set.

PRC-624 Basic Handheld/Manpack Radio Set

Designed for handheld and manpack applications, the RT-624 transceiver is the heart of all configurations. Radio set complements include a variety of antennas, batteries, audio accessories and carrying harnesses.

PRC-624(S) Secure Radio Set

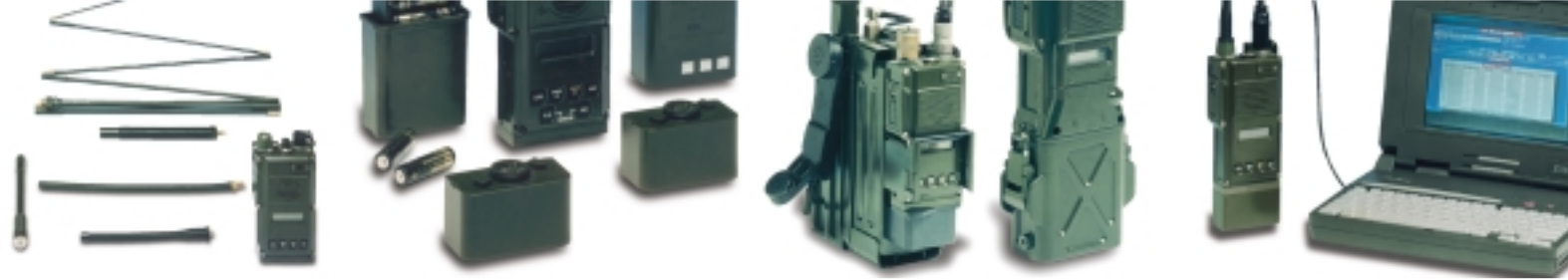
With almost no increase in weight or dimensions, the RT-624(S) transceiver, containing a built-in COMSEC module, provides an extremely high degree of security against enemy interception and deception systems. The PRC-624(S), built around RT-624(S) transceiver, is the digitally encrypted version of the PRC-624. PRC-624(S) COMSEC is fully compatible with CNR-900, CNR-9000, VRC-120(S) radio systems and PRC-710 COMSEC.

PRC-624HP/PRC-624(S)HP High Power Radio Set

Consisting of the RT-624/624(S) Receiver-Transmitter and the AM-7320 20 Watt Power Amplifier, the PRC-624HP/PRC-624(S)HP has a 20 kilometer typical range with its standard antenna. A completely operational PRC-624HP/PRC-624(S)HP weighs less than 5 kilograms, making it the lightest high power manpack radio on the market.

PRC-624(N) Underwater Radio Set

Designed for use by naval commandos, combat swimmers and other SCUBA-using forces, the PRC-624(N) is mechanically configured and specially sealed to withstand 40 meter immersion for prolonged periods. The PRC-624(N) Underwater Radio Set provides identical electrical performance to the standard PRC-624 Radio Set.



ACCESSORIES

The PRC-624 is available with a wide variety of ancillaries and accessories to enhance operation. The PRC-624 is fully compatible with PRC-77 antennas (AT-892 and AT-271) and audio accessories (H-250 and H-189 handsets, H-161 headsets etc



Audio Accessories

In addition to the PRC-77 audio accessories, the radio sets can be operated with the ultralight headset HS-624 which provides the ultimate in hands-free radio operation. Constructed in such a manner that the ear is not blocked from hearing surrounding sounds, the HS-624 uses a highly elastic headband specially designed to prevent the built-up of perspiration.

Antennas

PRC-624 antenna matching is automatic over the full 30-88 MHz band. Different antennas are available to provide different ranges. Antenna sizes vary from an 18-centimeter flexible antenna to a 3-meter collapsible antenna for the PRC-624HP.

Batteries

Rechargeable NiCad and various lithium batteries are available, as in AA Battery Pack which allows the PRC-624 to operate with off-the-shelf commercial batteries. Standard lithium battery life at 2 Watt power output is 18 hours (at a 1/2/7 Transmit/Receive/Standby ratio). A SAVE function enables consumption savings during standby periods. The BCT-624 Battery Charger charges 5 batteries in 4-6 hours.

Harnesses

The PRC-624 can be carried in the CW-624 Belt Pouch, or in the ST-624 Carrying Harness. The ST-624 allows the PRC-624 to be configured as a manpack radio without limiting the infantryman's ability to crawl or lie prone.

Reliability

Produced under MIL-Q-9858A and ISO-9000 standards, the PRC-624 meets a long list of US Military Standards. The PRC-624 operates to full specifications from -40°C to +65°C. PRC-624 calculated MTBF exceeds 8,500 hours.

Data

With the growing importance of data communications, the PRC-624 is capable of X-mode data communications up to 16 kb/s.

Control System

The PRC-624 Control System allows the programming of parameters such as the preset channel frequencies, whisper mode, power output for each individual channel, ability to operate the built-in loudspeaker even when the handset is connected, low battery audio/visual alert voltage level, squelch type, etc. Additionally, the Control System contains a built-in Time Elapsed Counter and stores the cause of the last equipment failure, thereby easing maintainability. The Control System records the radio production data and serial number in order to ensure proper accountability.



TECHNICAL SPECIFICATIONS

General

Frequency:	30 - 87.975 MHz
Channel Spacing:	25 kHz
Number of Channels:	2,320
Preset:	
• Channel frequency:	10
• Channel encryption keys/RT-624(S):	10
Preset Channel Programming:	Via keyboard, another radio, PC computer or keygun loader
Modulation:	FM (F3) Simplex
Modes:	
• RT-624:	Clear Voice and X-Mode Data
• RT-624(S):	Clear & Secure Voice and X-Mode Data
Operating voltage:	10-16.8 V DC
Power Consumption (RT-624):	
• Transmit:	650 mA
• Receive:	
Handset:	55 mA
Internal speaker:	135 mA
• Standby:	33 mA
Built-in-Test (BIT):	Automatic on-line and Operator-Initiated off-line
Environmental:	MIL-STD-810D/E
Weight:	700 grams
Dimensions:	180x80x40mm (HxWxD)

Receiver

Sensitivity:	RT-624: 0.4 uV for 10 dB SINAD RT-624(S): 0.5 uV for 10 dB SINAD
Voice Selectivity:\$	40 dB at +25 kHz 70 dB at +200 kHz 110 dB at +10 MHz
Squelch:	150-Hz tone Noise and CW (optional)
Audio output:	
• Internal speaker:	350 mW
• External earphone:	10 mW
Distortion:	< 5%
Audio response:	
• Narrowband:	300-3000 Hz
• Wideband:	10-8000 Hz
Image Rejection:#	Better than 60 dB
IF Rejection:	Better than 60 dB

Transmitter

Power output:	
• High Power:	2W (adjustable)
• Low Power:	1W (adjustable)
Output protection:	Open and Short Circuit
Audio response:	
• Narrowband:	300-3000 Hz
• Wideband:	10-8000 Hz
Audio distortion:	< 5%
Frequency Deviation:	5.6 kHz nominal
Tone Modulation:	150 Hz/3 kHz deviation
Spurious Emission:	90 dB below carrier at > 200 kHz
Harmonic Suppression:	50 dBc IV & higher