

Chapter 5 Multichannel Radio Equipment

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**AN/GRC-103(V)
Radio Set**

NSN: 5820-00-935-4931 (AN/GRC-103(V)1)
5820-00-116-6029 (AN/GRC-103(V)2)
5820-00-116-6030 (AN/GRC-103(V)3)
5820-01-081-8866 (AN/GRC-103(V)4)

Reference: TM 11-5820-540-12

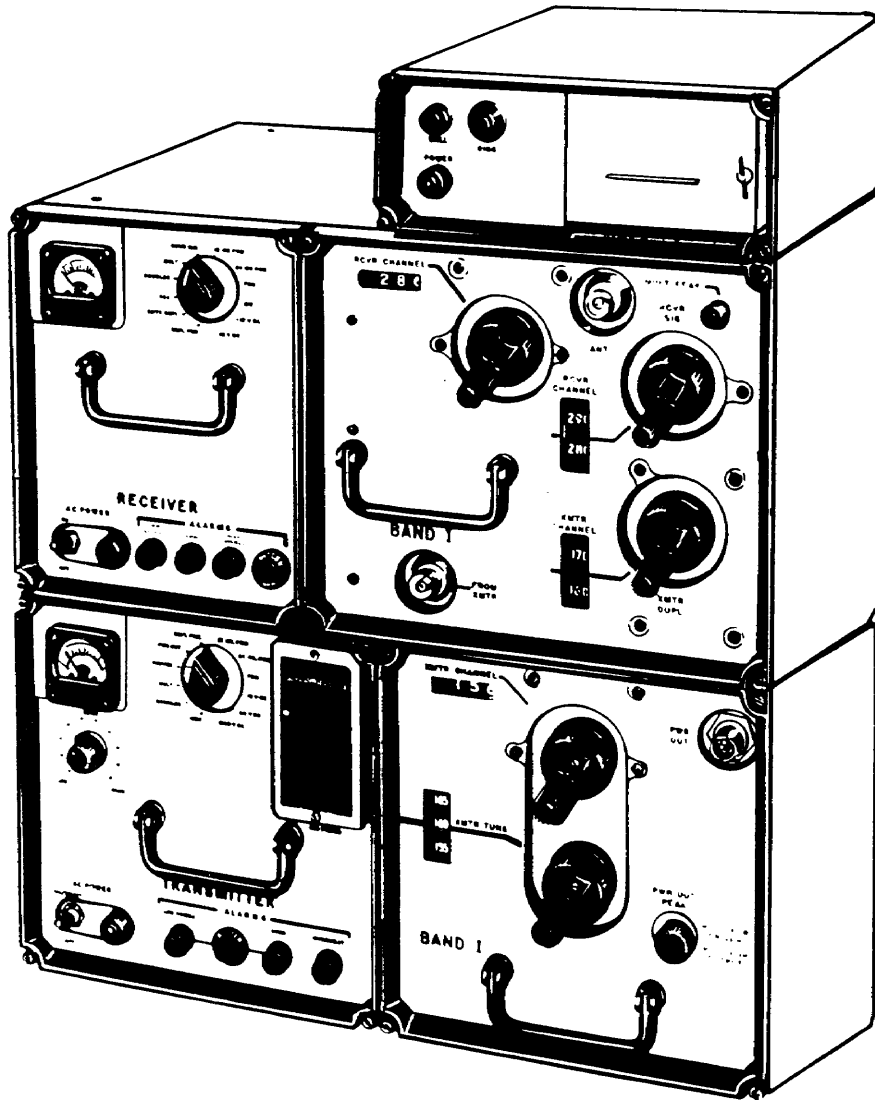
General Information

The AN/GRC-103(V) is a compact, transportable UHF-FM radio set which provides facilities for multichannel transmission and reception of PCM signals. It will accommodate up to 24 telephone channels when used with appropriate PCM multiplex equipment. The multichannel radio system can be secured by using electronic key generator TSEC/KG-27. In various configurations, the AN/GRC-103(V) can be employed as radio terminals or repeater stations. The difference between the models is the frequency range of bands I, II, III, and IV.

Technical Characteristics

Frequency Range	Band I, 220 to 404.5 MHz Band II, 394.5 to 705 MHz Band III, 695 to 1000 MHz Band IV, 1350 to 1850 MHz
Frequency Separation:	
Transmit to Receive	16.5 MHz
Planning Range	80 km (50mi)
Number of Channels	Band I, 369 Band II, 621 Band III, 610 Band IV, 1,000
Power Input	115 V AC, 47 to 420 Hz
Power Output	15 to 25 W
Antenna	Combination of Mast AB-952/GRC-103 and either the AS-1852/GRC-103, Band I; AS-1853/GRC-103, Band II; AS-1854/ GRC-103, Band III; or AS-3047()/ GRC-103, Band IV
Tuning	Continuous
Type of service	500KF9W (designed for use with multichannel PCM equipment only)
Weight	212.5 kg (468 lb)

AN/GRC-103(V) Radio Set



FM 24-24

**AN/GRC-143
Radio Set**

NSN: 5820-00-926-7355

Reference: TM 11-5820-595-12

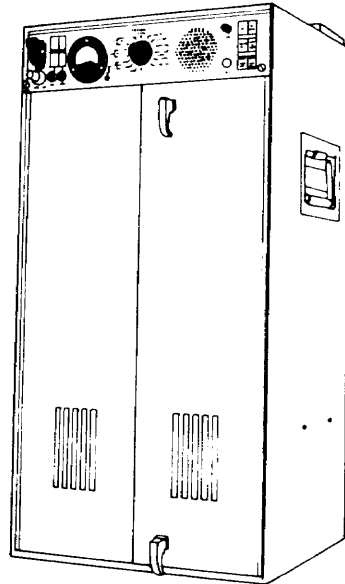
General Information

The AN/GRC-143 is a general purpose, FM tactical radio set which provides duplex operations. The radio set can be used for diffraction and tropospheric scatter modes of propagation at ranges to 161 km (100 mi), when used with a suitable antenna. The AN/GRC-143 is compatible with PCM multiplex equipment for 12 or 24 channel full-duplex operation.

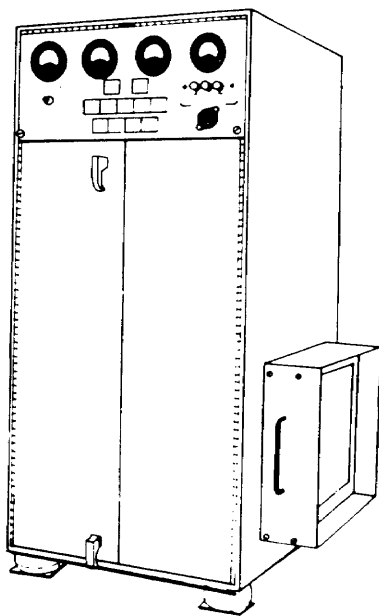
Technical Characteristics

Frequency Range	4400 to 5000 MHz
Power Output	1 kw
Power Requirement	115/230 V AC, 47 to 63 Hz, 5.37 kW
Planning Range	161 km (100mi)
Antenna	AN/TRA-37 (not included)
Type of Service	3200KF9W (PCM equipment only)
Weight	326.4 kg (719 lb)

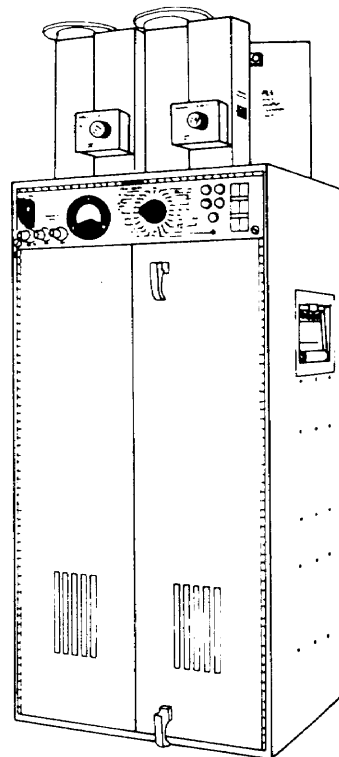
AN/GRC-143 Radio Set



TRANSMITTER, RADIO
T-961/GRC-143



AMPLIFIER, RADIO FREQUENCY
AM-6090/GRC-143



RECEIVER, RADIO
R-1287/GRC-143

FM 24-24

**AN/GRC-144
Radio Set**

NSN 5820-00-926-7356

Reference: TM 11-5820-695-12

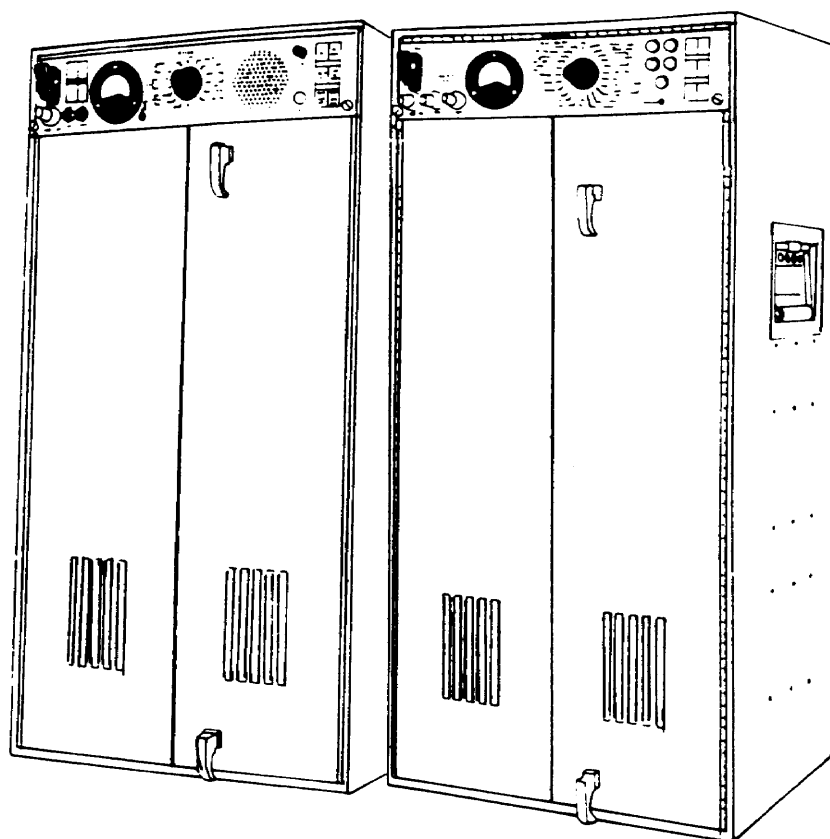
General Information

The AN/GRC-144 is a general purpose FM tactical radio set which provides duplex operations. The radio set is primarily intended for use in a multichannel LOS communications system where difficult terrain or other considerations prevent the use of cable. The radio set is compatible with standard PCM multiplex equipment. The AN/GRC-144 can be used as a radio terminal or as a radio repeater.

Technical Characteristics

Frequency Range	4400 to 5000 MHz
Power Output	25 W
Power Requirement	120 V AC, 50 to 60Hz
Planning Range	80km (50mi)
Type of service	3000KF9W (PCM equipment only)
Weight	136kg (299 lb)

AN/GRC-144 Radio Set



FM 24-24

**AN/GRC-163
Radio Terminal Set**

NSN: 5820-00-832-5617

Reference: TM 11-5820-713-15

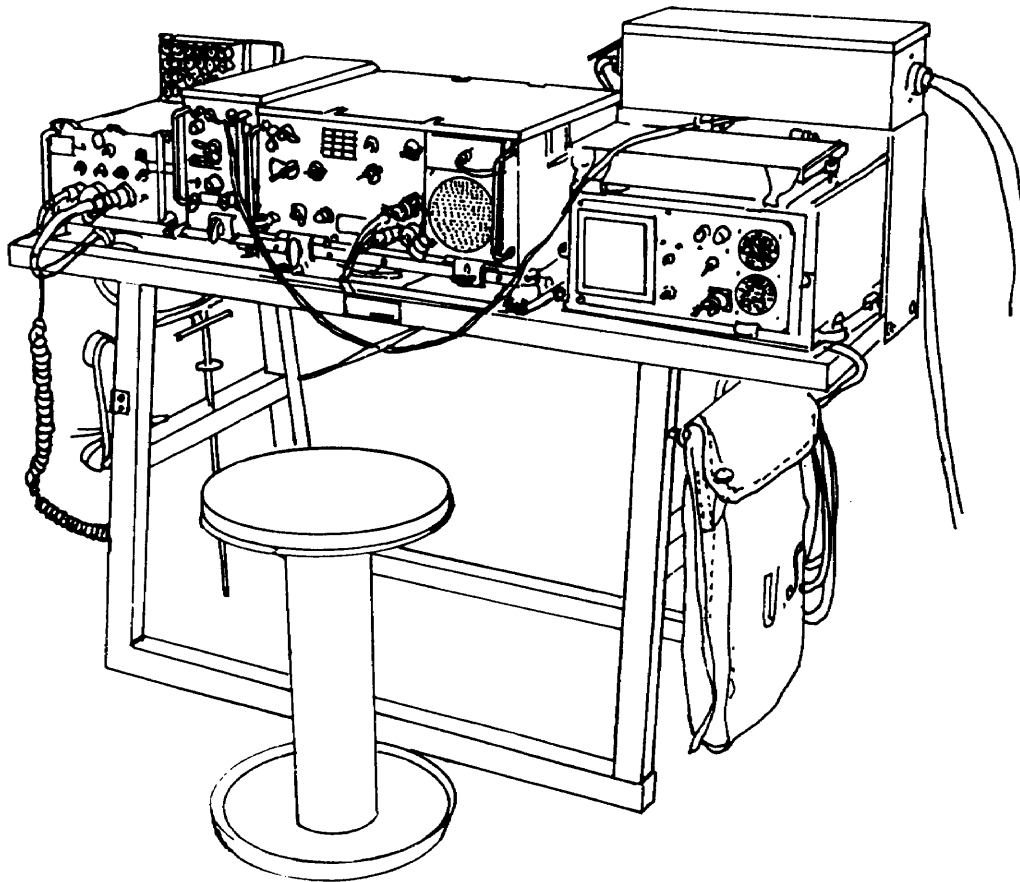
General Information

The AN/GRC-163 is a compact, transportable, multichannel VHF-FM radio terminal set used in point-to-point radio circuits. It can provide four voice and two teletypewriter channels plus an orderwire circuit. Four telephone ringers are built into the AN/TCC-70. Although the RT-524 can provide a secure single voice channel, current tactical bulk encryption devices are not compatible with the AN/TCC-70; therefore, this system cannot be operated in a secure mode.

Technical Characteristics

Frequency Range30,00 to 75.95 MHz
Frequency Separation	Transmit to receive vehicular whips, 10 MHz; fixed, with antennas 30.50 m (100 ft) apart, 3 MHz
Planning Range	8 to 41 km (5 to 25.5mi)
Number of Channels	920
Power Input115 V AC, 50, 60, or 400 Hz or 230 V AC, 50 to 60Hz
Power Source15kW Generator Set, SF-15-MD
Power Output	Low, 3 W; High, 35W
Antenna	Log periodic AS-2169/G (two each) or 3.05 m (10 ft) Whip AS-1729 (two each)
Tuning	Detent
Squelch	150 Hz tone and noise
Type of Service	40 K0F9W (multichannel system)
Weight	105.1 kg (231 lb)

AN/GRC-163 Radio Terminal Set



FM 24-24

**AN/GRC-222
Radio Set**

NSN: 5820-01-260-9945

Reference: TM 11-5820-1028-12

General Information

The AN/GRC-222 is designed as a short range wideband digital radio. The transmitter and receiver are tunable in 100 kHz steps over the 4.4 to 5.0 GHz frequency range. The modular design of the radio set reduces the amount of time necessary to troubleshoot and return the radio set to full service. If a problem occurs in a module, the procedure is to replace that module with an identical spare module. The faulty module is then returned to the factory for repair. The power supply module provides the DC power required to operate the radio set.

Technical Characteristics

Frequency Range	4.4 to 5.0 GHz
Power Input	115/230 V AC 60 HZ
Power Output	+15 V, +5 V, -5.2 V, and -20 V DC
Planning Range	40 km (25mi) LOS mode 8 km (5 mi) SRWBR mode
Antenna	AS-1425/GRC and AB-1309 (V)/TRC)
Weight	44.9 kg (99 lbs)

AN/GRC-222 Radio Set

