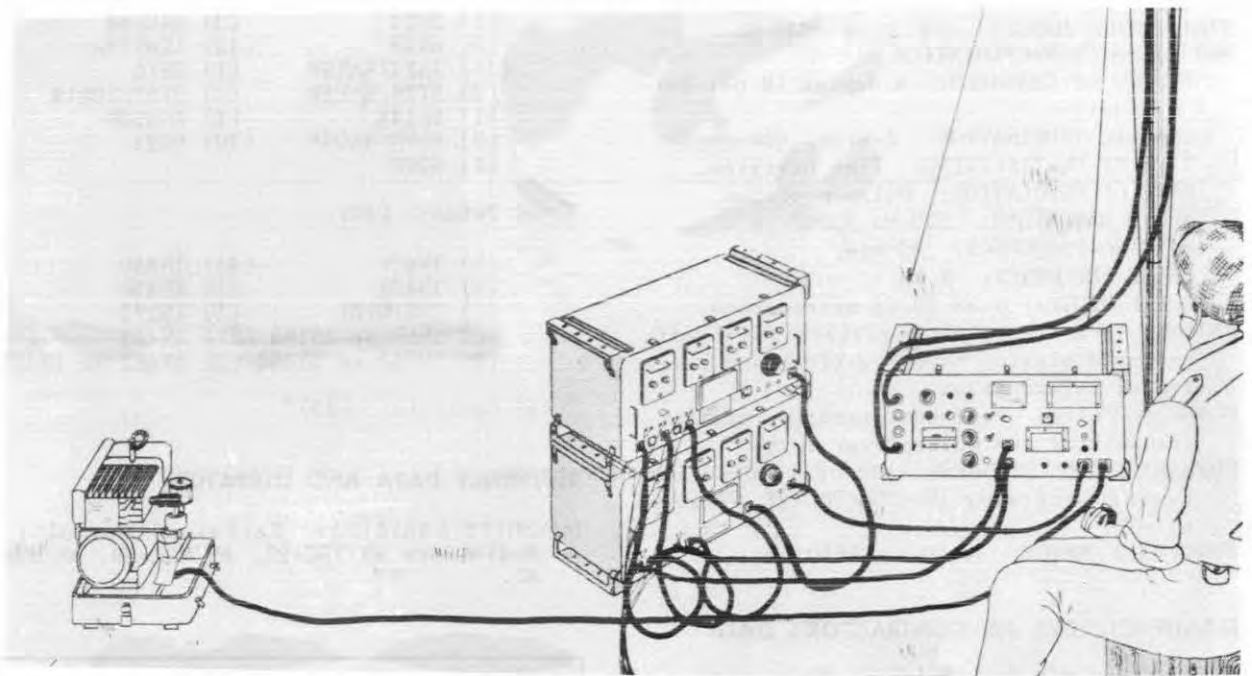


April 1959

RADIO SET

AN/TRC-27



Radio Set AN/TRC-27

FUNCTIONAL DESCRIPTION

The AN/TRC-27 is designed as a small light-weight, portable radio communication system which provides one (1) to eight (8) duplex communication channels and is primarily for use in forward operation areas. Facilities are provided for net operations with Radio Set AN/GRC-27. It provides two-way microwave radio transmission for eight telephone channels.

No field changes in effect at time of preparation (24 April 1959).

RELATION TO OTHER EQUIPMENT

The AN/TRC-27 is similar in operation as the AN/MRC-59 and AN/MRC-60 except that it differs in equipment supplied.

EQUIPMENT REQUIRED BUT NOT SUPPLIED

(5) Packboard Standard Army FII-8465-262-5281, (1) Sledge Hammer (5 lb), (1) Telephone type EE-8 or equivalent, (1) Telephone Line (Three ft or suitable length), (1) Fuel Can, (1) Compass, (1) Protractor. Set of maps, of

installation area as required.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF EMISSION: P3f type of emission.

TYPE OF FREQUENCY CONTROL:

TRANSMITTER: Variable frequency triode oscillator.

RECEIVER: Variable frequency klystron local oscillator.

TYPE OF RECEIVER: Superheterodyne, 60 mc IF.

RANGE DATA

ATTENUATION: Max allowable attenuation is 158 db.

SPACE ATTENUATION: For various ranges at 4700 mc shown below:

RANGE (MILES)	ATTENUATION (DB)	FADE MARGIN (DB)
1	110	48
5	124	34
10	130	28
20	136	22
30	140	18
40	142	16
50	144	14
60	146	12
80	148	10
100	150	8

April 1959

Radio-Transceivers

AN/TRC-27

RADIO SET

TEMPERATURE RANGE: -54° C to +65° C.

MULTIPLEX CHARACTERISTICS

NUMBER OF CHANNELS: 4 duplex (8 per terminal).

CHANNEL TERMINATION: 2-wire, 600-ohm.

TYPE OF MULTIPLEXING: Time Division.

TYPE OF MODULATION: Pulse-position.

AUDIO BANDWIDTH: 300 to 3500 cps.

RINGING FREQUENCY: 25 cps.

FRAME FREQUENCY: 8 kc.

PULSE WIDTH: 0.45 ±0.05 microsecond.

ANTENNA TYPE: Paraboloid reflector with off-center diplexing horn, vertical and horizontal polarization.

POWER SUPPLIES: Self contained in receiver-transmitter and multiplexer units.

PRIMARY POWER SOURCES: 400 cycle Gasoline Engine Generator PU-278/TRC-27 (2-supplied)

FREQUENCY RANGE: 4400 to 5000 mc.

(1) 2K22	(3) 6AU6WA
(2) 6X4W	(12) 12AT7WA
(13) 5654/6AK5W	(1) 5670
(2) 5726/6AL5W	(3) 5727/2D21W
(1) 5814A	(1) 5933WA
(2) 6005/6AQ5W	(20) 6021
(1) 6280	

Total Tubes: (67)

(1) 1N659	(41) 1N460
(8) 1N458	(1) 1N459
(3) 1N21C(R)	(1) 1N295
(8) 1N67 or 1N198	(17) 1N422
(2) 1N252 or 1N251	(3) 1N482 or 1N457

Total Crystals: (85)

REFERENCE DATA AND LITERATURE

NAVSHIPS 93098(A): Technical Manual for Radio Sets AN/TRC-27, AN/MRC-59, AN/MRC-60.

MANUFACTURER'S OR CONTRACTOR'S DATA

Raytheon Mfg Co., Waltham, Mass.

Type No. LM103.

Contract NObsr-71035, dated 28 September 1955.

TUBE AND/OR CRYSTAL COMPLEMENT

(4) OA2WA (1) SV-9

TYPE CLASSIFICATION	BUSHIPS
DESIGN COGNIZANCE	BUSHIPS
PROCUREMENT COGNIZANCE	MIL-R-15378(SHIPS)
STOCK NO.	
R.D.B. IDENT. NO.	

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Receiver-Transmitter RT-252/TRC-27	11-3/8 X 14-5/16 X 25-5/16	61
2	Multiplexer TD-101/TRC-27	9-7/8 X 14-5/16 X 25-5/16	55
1	Antenna Group OA-1378/GRC Including: 1-Antenna AS-682/TRC-27 1-Mast AB-357/TRC-27 1-Antenna Case CY-2123/GRC	9 X 17 X 27	58
2	Gasoline Engine Generator PU-278/TRC-27	12-5/8 X 13-1/4 X 17-5/16	51
2	22 ft Coaxial Antenna Cable (included with RT-252/TRC-27)		
5	5 ft Coaxial Cable (included with RT-252/TRC-27)		
2	5 ft Power Cable (included with TD-101/TRC-27)		
1	50 ft Power Cable (included with OA-1378/GRC)		

RADIO SET

AN/TRC-27

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Winterization Kit		
1	Set of Equipment Spares		
2	Technical Manual NAVSHIPS 93098(A)	1 X 9-1/4 X 11-1/2	

