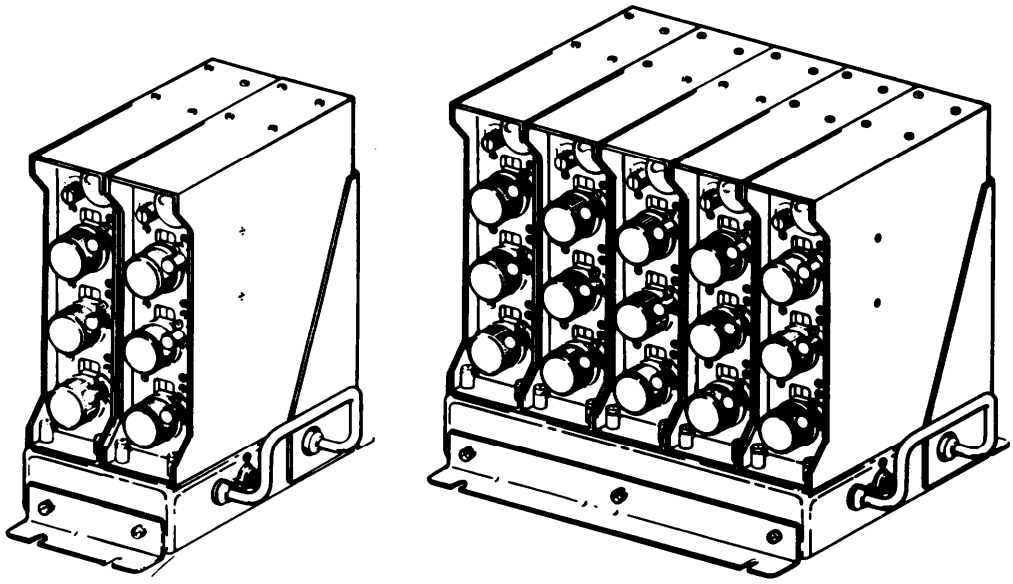
TM 11-5820-880-12

TECHNICAL MANUAL

OPERATOR'S AND ORGANIZATIONAL MAINTENANCE MANUAL



2-CHANNEL MULTIPLEXER TD-1288( )/GRC (NSN 5820-01-090-1414) AND 5-CHANNEL MULTIPLEXER TD-1289( )(V)/GRC (NSN 5820-01-090-5407)

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HEADQUARTERS, DEPARTMENT OF THE ARMY

24 AUGUST 1983

TECHNICAL MANUAL
No. 11-5820-880-12

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 24 August 1983

OPERATOR'S AND ORGANIZATIONAL MAINTENANCE MANUAL

2-CHANNEL MULTIPLEXER TD-1288( )/GRC
(NSN 5820-01-090-1414)
AND
5-CHANNEL MULTIPLEXER TD-1289( )(V)/GRC
(NSN 5820-01-090-5407)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in back of this manual direct to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: DRSEL-ME-MP Fort Monmouth, New Jersey 07703. A reply will be furnished to you.

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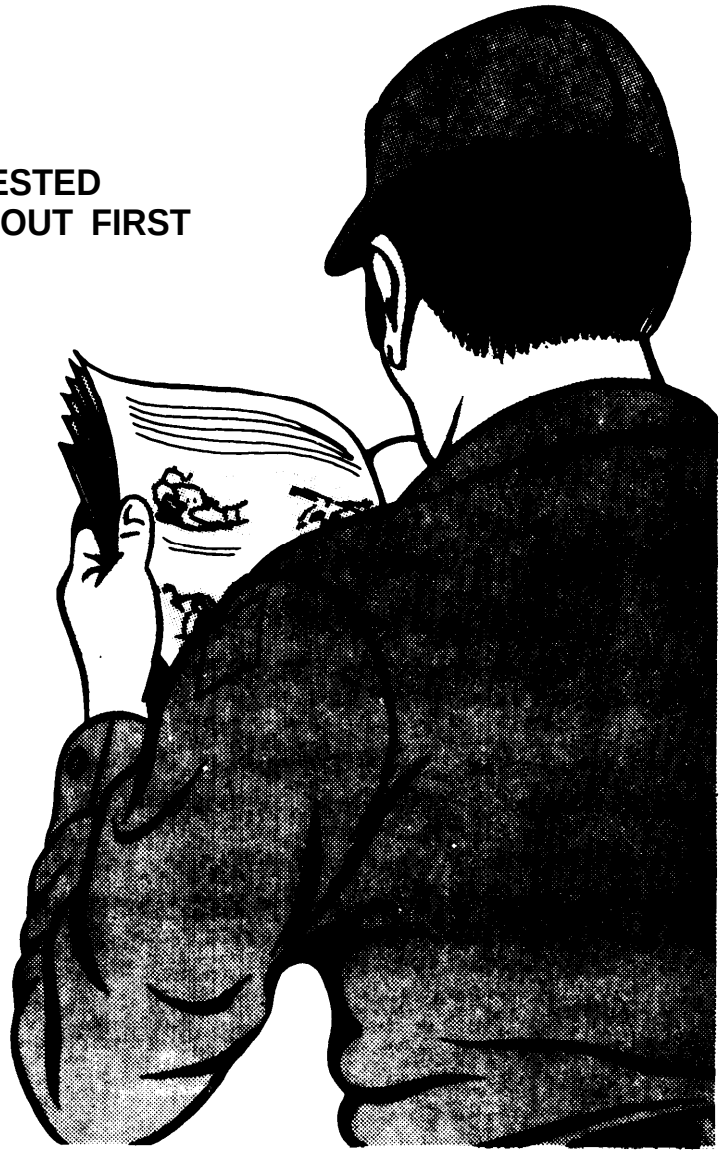
HOW TO USE THIS MANUAL

The front cover index will assist you in quickly locating information. It identifies information frequently used by the operator. Each item appearing on the front cover is boxed and identified by topic with the page number in the manual where the information is located. The page in the manual used in conjunction with the front cover has a black box on the edge of the page. Bend the manual in half and follow the margin index to the page with the black edge marker.

Entries within the table of contents which duplicate the entries on the front cover index are highlighted with a box.

NO ONE EVER REPAIRED OR TESTED ELECTRONIC EQUIPMENT WITHOUT FIRST READING THE OPERATION AND MAINTENANCE MANUAL.

IT IS THE MOST IMPORTANT TOOL YOU HAVE ! ! !



CHAPTER 1
INTRODUCTION

SECTION I
GENERAL INFORMATION

1-1 SCOPE.

This manual provides operator's and organizational maintenance instructions for the 2-Channel Multiplexer TD-1288 ( )/GRC and the 5-Channel Multiplexer TD-1289 ( )(V)/GRC. The 2-channel and the 5-channel multiplexer are primarily used with the RT-524/VRC and the RT-246/VRC which are components of the AN/VRC-12 radio family.

1-2 CONSOLIDATED INDEX OF ARMY PUBLICATIONS AND BLANK FORMS.

Refer to the lastest issue of DA Pam 310-1 to determine whether there are new editions, changes or additional publications pertaining to the equipment.

1-3 MAINTENANCE FORMS, RECORDS, AND REPORTS.

a. Reports of Maintenance and Unsatisfactory Equipment. Department of the Army forms and procedures used for equipment maintenance will be those described by TM 38-750, The Army Maintenance Management System.

b. Report of Packaging and Handling Deficiencies. Fill out and forward SF 364 (Report of Discrepancy (ROD)) as prescribed in AR 735-11-2/DLAR 4140.55/ NAVMATINST 4355.73/AFR 400-54/MCO 4430.3E.

c. Discrepancy in Shipment Report (DISREP) (SF 361). Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38/ NAVSUPINST 4610.33 B/AFR 75-18/MCO P4610.19C/DLAR 4500.15.

1-4 ADMINISTRATIVE STORAGE.

Administrative storage of equipment issued to and used by Army activities shall be in accordance with TM 740-90-1.

1-5 DESTRUCTION OF ARMY ELECTRONICS MATERIEL.

Destruction cf Army electronics materiel to prevent enemy use shall be in accordance with TM 750-244-2.

1-6 HAND RECEIPT (-HR) MANUALS.

This manual has a companion document with a TM number followed by "-HR" (which stands for Hand Receipt). The TM 11-5820-880-12-HR consists of preprinted hand receipts (DA Form 2062) that list end item related equipment (i.e, COEI, Bll, and AAL) you must account for. As an aid to property accountability, additional -HR manuals may be requisitioned from The US Army Adjutant General Publications Center, Baltimore, MD, in accordance with procedures in Chapter 3, AR 310-2, and DA Pam 310-10-2.

1-7 REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR).

If your multiplexer needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design. Put it on an SF 368 (Quality Deficiency Report). Mail it to Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: DRSEL-ME-MP, Fort Monmouth, NJ 07703. We'll send you a reply.

SECTION II
DESCRIPTION AND DATA

1-8 PURPOSE AND USE.

The purpose of the 2-Channel Multiplexer TD-1288 ( )/GRC is to allow an operator to use two transceivers with a maximum nominal power output of 60 watts each in the 30.00 MHz to 88.00 MHz frequency range and couple them to a single broadband antenna. The purpose of the 5-Channel Multiplexer TD-1289 ( ) (V)/GRC is to allow an operator to use three to five transceivers with a maximum nominal power output of 60 watts each in the 30.00 MHz to 88.00 MHz frequency range and couple them to a single broadband antenna. The Band-pass Filter F-1482 ( )/GRC provides the rf signal isolation and the Coupler CU-2266 ( )/GRC or the Coupler CU-2267 ( )/GRC provides the rf signal coupling which permits use of a single wideband antenna. Antennas such as AS-1729/VRC, AS-2731/GRC and RC-292 are NOT broadband antennas and must NOT be used with the TD-1288 ( )/GRC or the TD-1289 ( ) (V)/GRC. The mast mounted antenna AS-3166 (part of Antenna Group OE-254/GRC) is an example of a broadband antenna suitable for use with the TD-1288 ( )/GRC and TO-1289 ( ) (V)/GRC.

1-9 CHARACTERISTICS, CAPABILITIES, AND FEATURES.

- Tuning — 30.00 MHz to 88.00 MHz.
- Tuning Lock — To prevent detuning during operation.
- Impedance — 50-ohms for match with antenna and transceiver.
- Isolation — 5% difference between filter frequencies.
- Rf Power Handling — Each transceiver to be used must not produce more than a nominal 60 watts output.
- Ground Lug — A ground lug on the rear of the couplers provides a connecting point for earth ground.
- Rf Power Monitoring — Forward power, reflected power, and phasing at 60W or 6W scale.
- Weight

TD-1288 ( )/GRC	-6.62 Kg (14.6 lb)
TD-1289 ( ) (V)3/GRC	-10.84 Kg (23.9 lb)
TD-1289 ( ) (V)2/GRC	-13.11 Kg (28.9 lb)
TD-1289 ( ) (V)1/GRC	-15.38 Kg (33.9 lb)

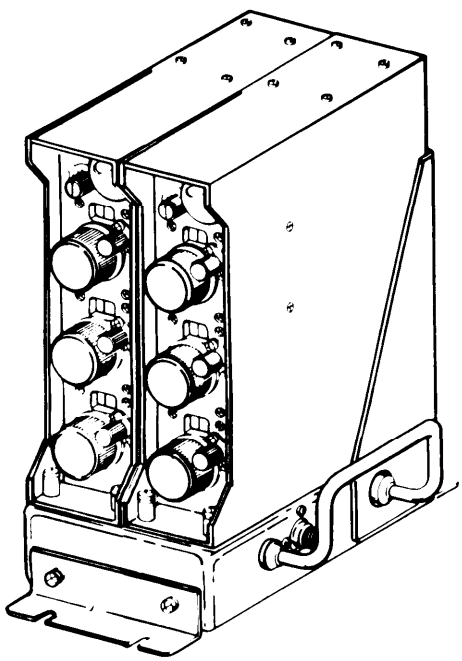
1-10 EQUIPMENT DATA.

- Frequency range — 30.00 MHz to 88.00 MHz.
- Rf power handling — Nominally 60 watts continuous input per channel.
- Temperature range
  - Operating — -500 F to + 125° F plus solar radiation at a rate of 360 Btu/ft^2/h.
  - Storage — -70° F to + 160° F.
- Operating altitude — 15,000 feet.
- Operating humidity — 95% relative humidity.
- Band-pass Filter input impedance — 50 ohms.
- Coupler Antenna output impedance — 50 ohms.
- Antenna requirements — Nominal 50 ohms broadband antenna with a maximum 3:1 VSWR.

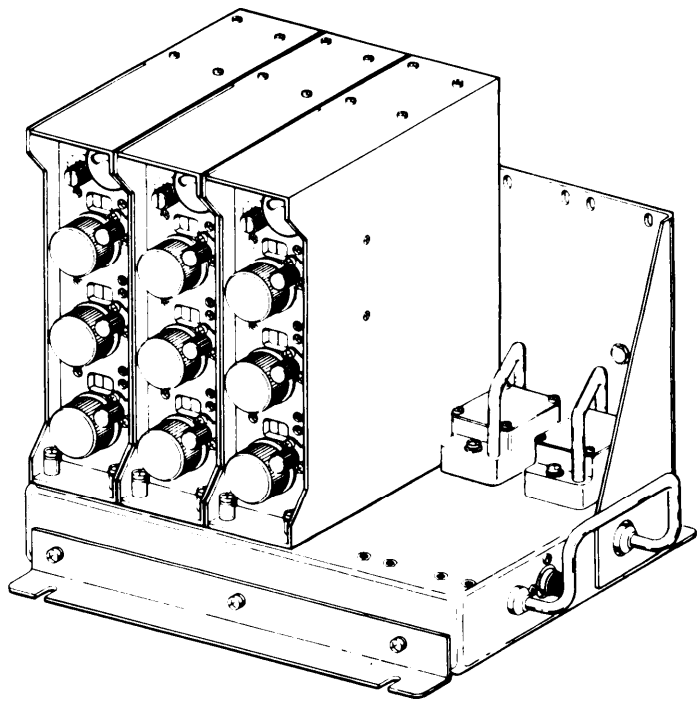
1-11 LOCATION AND DESCRIPTION OF MAJOR COMPONENTS.

A 2-Channel Multiplexer, TD-1288 ( )/GRC: The 2-channel multiplexer contains two band-pass filters and a coupler. The 2-channel multiplexer allows the simultaneous operation of two transceivers on a single broadband antenna by providing isolation between the two channels.

B 3-Channel Multiplexer TD-1289 ( )(V)3/GRC: The 3-channel multiplexer contains three band-pass filters, two termination units and a coupler. The 3-channel multiplexer allows the simultaneous operation of three transceivers on a single broadband antenna by providing isolation between the three channels.



2-CHANNEL MULTIPLEXER
TD - 1288( )/GRC



3-CHANNEL MULTIPLEXER
TD-1289() (V) 3/GRC