

TECHNICAL MANUAL

OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT
AND GENERAL SUPPORT MAINTENANCE MANUAL
FOR

TRANSMITTER ET-A TYPE NUS 5951

Technical Manual)
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)
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HEADQUARTERS
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OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT
 AND GENERAL SUPPORT MAINTENANCE MANUAL
 FOR
 TRANSMITTER ET-A TYPE NUS 5951

REPORTING OF ERRORS

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PREFACE

This manual describes transmitter NUS 5951 used at the mainline and tributary sites. It provides installation instructions, operating procedures, theory of operation, and maintenance information. Theory of operation is described at the equipment level, and emphasis is placed on the interrelation of the modules rather than on circuit details. The modules are described in Section VI.

The transmitter conforms to a modular concept and is maintained to the direct support (3rd echelon) level. Maintenance to this level of support is concerned with localizing trouble to a particular module. When the trouble is localized, replace the defective module. Refer to Instruction Manual for Test Facilities Kit MK-884/FRC-81(V), TM 11-6625-647-14/1 and -14/2 for maintenance information on the modules.

The transmitter is a component equipment in the ET-A communications system. The following is a list of publications pertaining to the ET-A communications system component equipments.

SECTION I

DESCRIPTION AND LEADING PARTICULARS

1-1. SCOPE OF MANUAL.

1-2. This instruction manual provides information on Transmitter NUS 5951 (figures 11 and 12). The equipment is built by ITT Federal Laboratories, Nutley, N.J. Included herein is information on description and theory of operation of the transmitter, and instructions for its installation, operation, and maintenance. A separate manual is included (in Section 6) for each module contained in the transmitter.

1-3. DESCRIPTION.

1-4. OVERALL EQUIPMENT.

1-5. The transmitter provides single or multi-channel voice and voice frequency telegraph communication by frequency-modulated microwave radio in the 4400- through 5000-mc band. To ensure uninterrupted service, the intelligence (baseband input to transmitter) is transmitted using quadruple space diversity (polarization marking) in over-the-horizon communication links, or dual space diversity with complete redundancy in line-of-sight-communication links.

1-6. The transmitter cabinets are provided in pairs at each shelter (see figures 11 and 12). The transmitters which operate as low-level exciters for the power amplifiers at 1 or 10kw quadruple diversity sites consist of cabinet pairs NUS 59513 and 7, NUS 595111 and 12, or NUS 595111 and 23. The 3 and 7 pair is used for single channel requirements while the 11 and 12 pair or the 11 and 23 pair can accommodate from 12 to 120 channels. The 11 and 12 pair incorporates an rf switchover and power divider drawer in the cabinet designated transmitter B and is used to drive a 1kw power amplifier. The 11 and 23 pair incorporates only an rf switchover drawer (without the power divider) in the B transmitter. The single output from this transmitter pair is used to drive two 10kw power amplifiers, with the power divider located in the 10kw van. The transmitter cabinet in each pair having the numerically lower NUS dash number is always transmitter A (on the right); the higher numbered transmitter cabinet is always transmitter B on the left. Refer to paragraph 110 for further details on the rf switchover drawers. Conversely, all cabinet pairs which are used to supply 1watt rf outputs directly to the antenna system employ the modulator switchover and power divider drawer. The modulator switchover and power divider drawer is mounted in the transmitter B cabinet of each pair. Refer to paragraph 19 for further details on the modulator switchover and power divider drawer. The cabinet pair consisting of NUS 595116 and 17 is used in multi-channel shelters configured for either quadruple space diversity or line-of-sight dual diversity with complete transmitter redundancy. The cabinet pair consisting of NUS 595121 and 25 is used in similar configurations but for single channel requirements. The single channel transmitters may accommodate either one or two voice channels, depending on the system requirements. These transmitters will be referred to as single channel, whether or not two voice channels are used.

1-7. DRAWERS.

DESCRIPTION AND LEADING PARTICULARS
NUS 5951

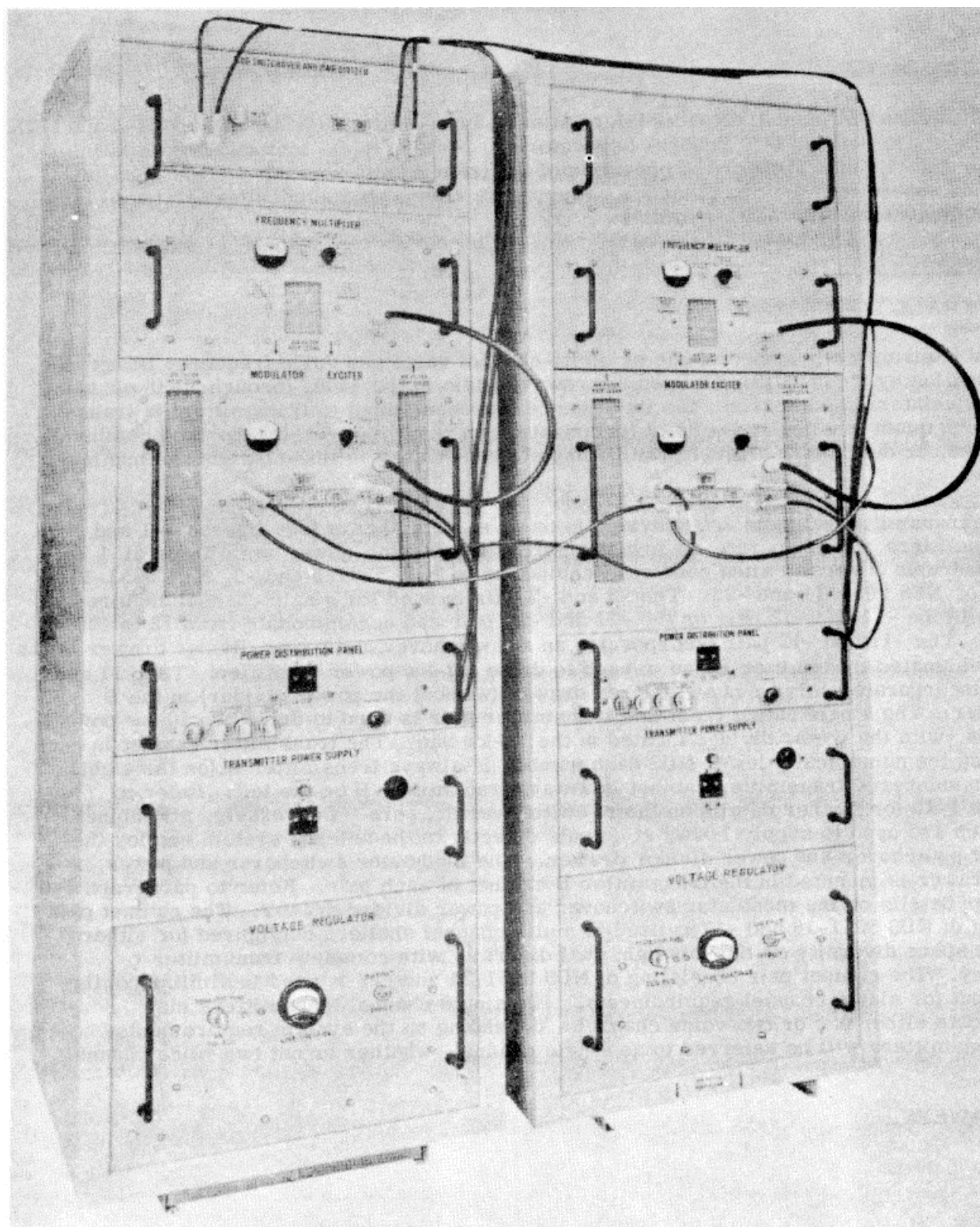


Figure 1-1. Transmitter With Modulator Switchover