

## CUSTOMER'S PREMISES FACILITY TERMINAL FOR TYPE F SIGNALING SYSTEM MAINTENANCE AND LINEUP

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### 1. GENERAL

**1.01** This section describes the initial lineup and maintenance procedures for the customer's premises facility terminal (CPFT) (J99249A). References for touch-up of gain, loss, and equalization are also included.

**1.02** The equipment assembly provides a mounting arranged to terminate two 4-wire metallic facilities with plug-in devices that can be readily replaced in the event of trouble or changes in circuit requirements. Each circuit provides for type F single-frequency (SF) signaling and voice-frequency (VF) gain and equalization. This terminal can be used with standard or prescription design (Section 851-300-101).

**1.03** This section assumes that the terminal has been assembled and installed per Section 332-601-200 and that strapping options have been made. Prescription settings, unit tests, and alignment may be performed before terminal installation at the customer location to minimize installation time. A source of negative 48 Vdc is required if the optional 115-Vac powered supply (J99349AB) supply is not available.

**1.04** Preselection of plug-in units and their settings will be provided through circuit layout forces. The circuit layout information should include:

- The codes of apparatus to be plugged into the various mountings
- Optional equipment
- Screw and switch settings
- 1000-Hz gain or loss and equalization adjustments.

Each plug-in item should be checked to ensure that it is fully inserted in the correct mounting and that all adjusting screws and switches are set as specified in the circuit layout record (CLR) information. Adjacent to each screw-type or slide switch on the plug-in units is a designation consisting of letters or numerals or both. Some of the designations express the resistance or capacitance under control of the switches; others indicate the function of the switch on the circuit.

**1.05** The tests in this section are general because of the varied requirements and optional equipment that may be in or connected to the terminal. Reference should be made to the section covering each F signaling application if more detailed information is required.

**1.06** Because of the varied test equipment that may be utilized for lineup, this section will not specify test equipment by type. Transmission test sets selected must provide the termination (600 ohms, 900 ohms, or high impedance) depending upon the type of plug-in unit being used and test being made. All test equipment must be removed before placing the terminal in service.

### 2. TRANSMISSION TESTS

**2.01** Transmission tests and alignment will normally be made from the jacks provided

**SECTION 332-601-500**

within the terminal. A simplified diagram of the terminal showing test connections for transmission measurements is shown in Fig. 1. The amplifier impedance is 600 ohms; the auxiliary impedance may be 900 ohms, depending upon the impedance of the auxiliary unit. A correction of 0.2 dB should be subtracted from the apparent loss if an impedance mismatch exists between the equipment and the test set.

**2.02** The CLR should specify the overall gain or loss of the terminal and the pad settings of the FU( ) unit. Test procedures should avoid input power levels greater than 1 milliwatt (0 dBm). The slide switches on the front of the FU( ) unit should be adjusted for zero loss (no attenuation), or the TMS levels should be adjusted while measuring overall gain or loss of the terminal to compensate for the slide switch losses.

**2.03** Overall tests under control of the serving test center should be made from the equipment side of the terminal.

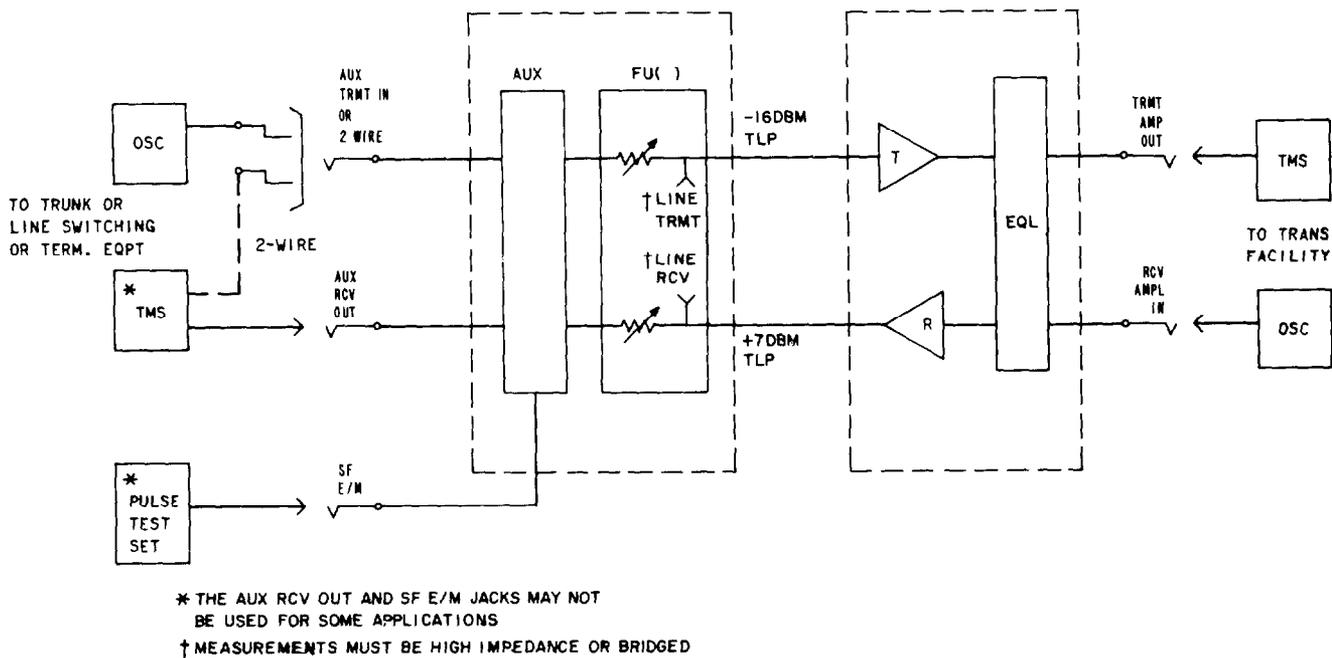
**Caution:** *Transmitting SF tone should be removed from the circuit by control lead operation during transmission tests.*

**2.04** A 1023A headset equipped with a 354A plug will provide high-impedance monitoring at the LINE RCV or LINE TRMT pin jacks on the face of the SF unit or at the MON pin jack on the face of the V4 amplifier.

**2.05** The F58122 amplifier is normally adjusted to clamp (insert losses) at a power level 13 dB below the transmission level point (TLP). When tests are made on the terminals using the F58122 amplifier, the usual test tone level cannot be used. Normally, the test tone is applied at a power level in dBm corresponding to the TLP. For example, -16 dBm would normally be applied at a -16 TLP. In the case of the F58122 amplifier, test tones must be applied at least 13 dB below the TLP, or automatic gain control (AGC) action will reduce the tone to that level. This would produce false or improper circuit lineup. Section 332-104-503 describes the tests and adjustments of the F58122 amplifier.

**3. SIGNALING TESTS**

**3.01** E & M supervisory and pulsing tests of the terminal can be performed from the SF E/M jacks.



**Fig. 1—Test Connections for Lineup and End Tests of CPFT**

**3.02** Tests of A & B lead connections should be made from connecting equipment or at the 66K1 terminal connecting pins.

**3.03** Twenty-Hz ringing tests can be made by taking voltage measurements at the AUX jacks.

**3.04** The type F test extender (Section 179-361-101) permits test access for transmission and signaling measurements of the F signaling plug-in modules. When the extender is applied, the circuit must be turned down and the signaling unit removed from the terminal.

#### 4. VOLTAGE AND TONE SUPPLY MEASUREMENTS

**4.01** Table A lists the limits for measurements at the pin jack located on the face of the tone and power unit (J99349AA).

TABLE A	
JACK	LIMITS
-24	-22.5 to 25.5 Vdc
-48	-42.5 to -52.0 Vdc
RS	100 to 145 Vac (measured to ground)
TN	-10 dBm $\pm$ 1.0 dBm at 2600 $\pm$ 9 Hz

#### 5. MAINTENANCE

**5.01** Should any plug-in item prove defective, repair attempts should not be made in the field. The plug-in module should be replaced and returned to the local Western Electric Service Center for testing and repair.

**5.02** Table B lists section references and general information on the type F auxiliary units.

**5.03** Terminals equipped with the optional 332A relay for line loop-around should be measured from the test center and levels recorded for future reference. Operation of the relay will connect the SF RCV OUT terminals of the FU( ) unit to the SF TRMT IN terminals of the FU( ) unit through a 600-ohm, 23-dB pad.

#### 6. REFERENCES

**6.01** The following sections contain additional lineup and maintenance information:

SECTION	TITLE
179-302-501	Single-Frequency Systems—Signaling Tests
179-361-101	Type F Signaling—Test Extender
179-362-101	Type F Signaling—FWA and FWB
179-363-101	Type F Signaling—FUA Converter
322-104-100	V4 Telephone Repeater
332-104-103	F58122 Amplifier
332-104-500	V4 Telephone Repeaters—Initial Lineup
332-115-ZZZ	849 Network—Description
332-116-ZZZ	359 Equalizer—Description
332-119-101	332A Relay—Description
332-601-100	Customer's Premises Facility Terminal For Type F Signaling—Description
332-601-200	Customer's Premises Facility Terminal For Type F Signaling—Identification, Connection, and Installation
333-125-500	Dial Pulsing Test on FX and WATS Circuits
333-126-500	Pulsing Tests on Dial Tie Trunks
333-127-500	Pulsing Tests on Switched Services—Network Access Lines
851-300-101	Prescription Design of Switched Special Service Circuits
975-260-100	Type F Single-Frequency Signaling System—Description

TABLE B  
TYPE F AUXILIARY AND MISCELLANEOUS SIGNALING UNITS  
GENERAL INFORMATION AND APPLICATION

CODE	SECTION	FUNCTIONAL DESCRIPTION	GENERAL APPLICATION	SPECIFIC USE
FA ( )	179-364-101	600- or 900-Ohm 2W E&M Lead	2-Way Trunks	2-Wire Switching
FB ( )	179-364-101	4W E&M Lead	2-Way Trunks	4-Wire Switching DP or MF
FC ( )	179-364-101	Loop Reverse Battery, Originating	1-Way Trunks	DP or MF 2W, 900-Ohm
FD ( )	179-364-101	Loop Reverse Battery, Terminating	1-Way Trunks	DP or MF 2W, 900-Ohm
FL ( )	179-365-101	Special Access CO End	Special Access Loop-Start or Ground-Start	2W, 600- or 900-Ohm
FP ( )	179-365-101	Special Access CO End	Special Access Loop-Start or Ground-Start	4-Wire Extension
FR ( )	179-365-101	Special Access Station End	Special Access Loop-Start or Ground-Start	4-Wire Extension
FS ( )	179-365-101	Special Access Station End	Special Access Loop-Start or Ground-Start	2W, 600- or 900-Ohm
FM ( )	179-366-101	Nonsignaling By-Pass	Nonsignaling By-Pass	Nonsignaling By-Pass