

## 3-WAY 4-WIRE BRIDGING REPEATER

### TEST EXTENDER

#### DESCRIPTION

	CONTENTS	PAGE
1.	GENERAL . . . . .	1
2.	EQUIPMENT DESCRIPTION . . . . .	1
3.	CIRCUIT DESCRIPTION . . . . .	1
4.	REFERENCES . . . . .	3

#### 1. GENERAL

**1.01** This section describes the J99338CB 3-way 4-wire bridging repeater test extender and its associated ED-1C336-30 extender cable (SD-96611-01). The test extender (Fig. 1) is required for alignment of the 3-way 4-wire bridging repeater (Fig. 2), which is described in Section 332-121-100.

**1.02** The test extender is equipped with nine test access jacks. These jacks provide:

- (a) Splitting access to the input and output circuits of each of the three ports.
- (b) Splitting access to the A and B signaling leads of port 3.
- (c) Splitting access to an external balancing network, if used.
- (d) Access to the input circuits of ports 1 and 2 through a 10-dB bridging pad and nonlocking key.

Jacks J1 through J5 and J9 are 600 ohms impedance. The impedance at jack J8 AMPL 4W IN 2W IN/OUT is 600 ohms when port 3 is used for 4-wire operation and 875 ohms in series with 2.15  $\mu$ F when port 3 is used for 2-wire operation. Table A gives the jack designations, their meanings, and functions.

**1.03** The extender cable connects the test extender to the bridging repeater location in the repeater bay. The bridging repeater is removed from its position in the bay, and one end of the extender cable is inserted in its place. The other end of the extender cable is connected to the test extender, and the bridging repeater is inserted into the test extender for alignment. The extender cable is an 11-foot long cord that allows table-height testing of the bridging repeater regardless of its location in the repeater bay.

#### 2. EQUIPMENT DESCRIPTION

**2.01** The 3-way 4-wire bridging repeater test extender consists of two parts: the J99338CB, L1 main container and the J99338CB, L2 cable assembly. The main container is approximately 12 inches long, 8.3 inches wide, and 10 inches high. The cable assembly is an 11-foot long cord terminated in a printed wiring board and cast aluminum frame at one end for insertion in the shelf connector in the repeater bay and equipped at the other end with a 50-pin connector that plugs into a receptacle on the test extender.

**2.02** Power to the test extender is obtained through the extender cable from the repeater bay. Power can be either -48 volt or -24 volt office battery.

#### 3. CIRCUIT DESCRIPTION

**3.01** Each of the three ports of the bridging repeater is terminated in double jacks located on the test extender (Fig. 3). One jack of each pair faces the cable facility and the other jack faces the repeater. When a plug is inserted into a jack, the circuit is opened to the other jack. This allows tests to be made on the cable facility without the repeater bridged on the circuit; this arrangement also allows testing of each of the repeater ports without having the cable bridged on during repeater tests.

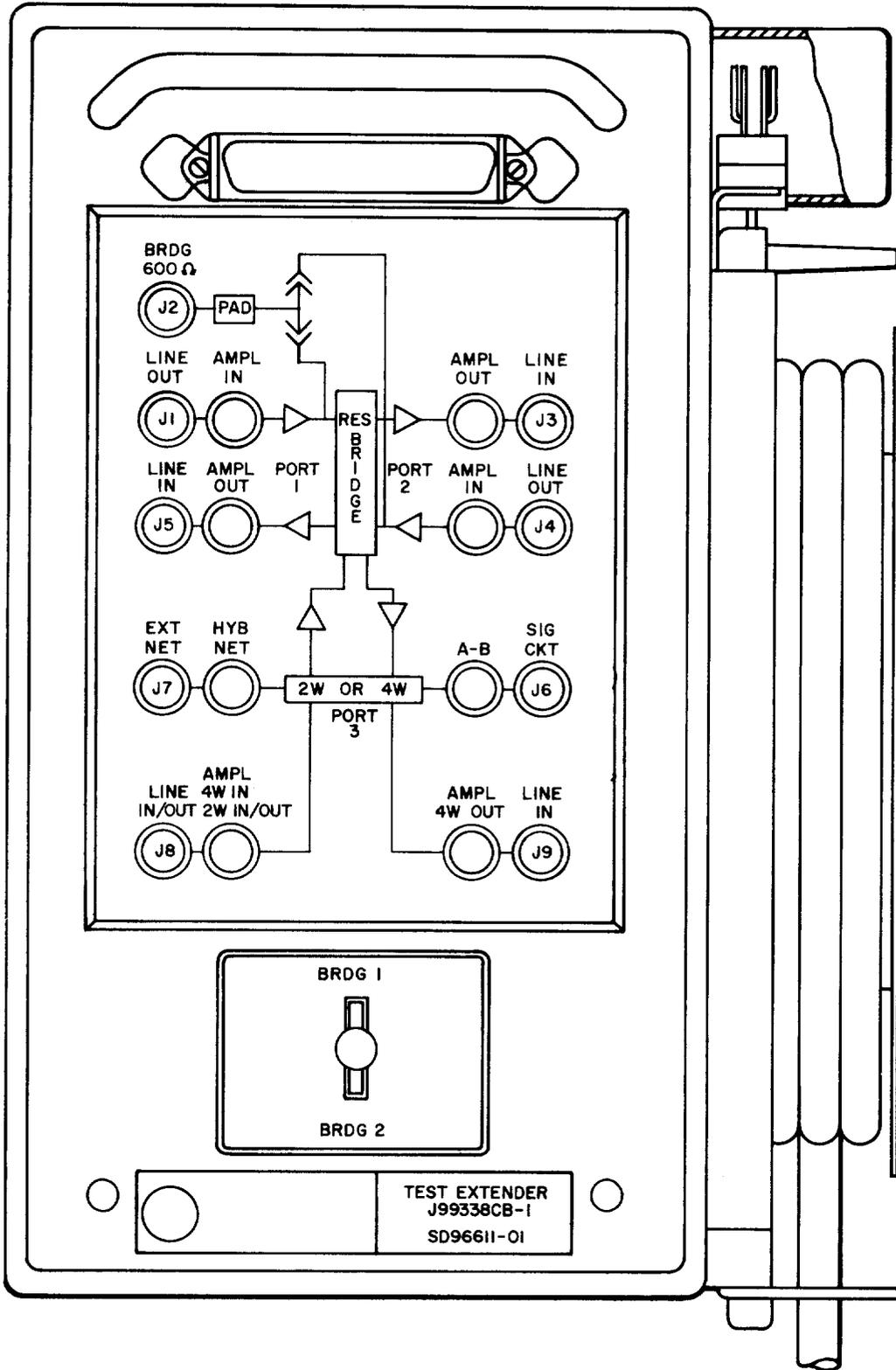
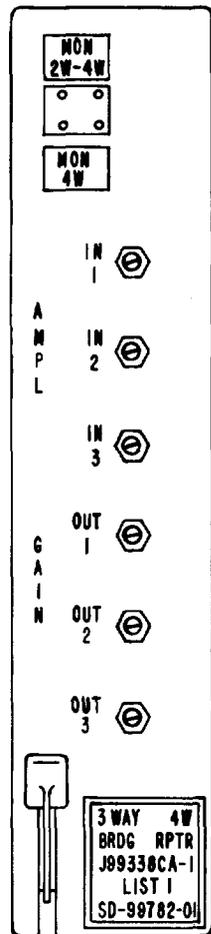


Fig. 1—Test Extender



**Fig. 2—3-Way 4-Wire Bridge**

**3.02** On the face of the test extender there is a nonlocking key labeled BRDG 1 and BRDG 2. Operation of this key inserts a 10-dB pad into

either the BRDG 1 or BRDG 2 position. When switched to the BRDG 1 position, the pad is connected to the output of the receive amplifier of port 1. This allows a 600-ohm measurement to be made by connecting a transmission measuring set (TMS) detector to jack J2, BRIDGE 600  $\Omega$ , and an oscillator to J1, AMPL IN. When switched to the BRDG 2 position, the pad is connected to the output of the receive amplifier of port 2. This allows a 600-ohm measurement to be made by connecting a TMS detector to J2, BRIDGE 600  $\Omega$ , and an oscillator to J4, AMPL IN.

#### 4. REFERENCES

**4.01** For additional information refer to the following documents:

SECTION	TITLE
CD-, SD-96611-01	
332-121-100	3-Way 4-Wire Bridging Repeater Description
332-121-500	3-Way 4-Wire Bridging Repeater Tests and Adjustments
801-407-154	3-Way 4-Wire Bridging Repeater Equipment Design Requirements

**TABLE A**  
**JACKS**

DESIGNATION	MEANING	MAIN FUNCTION
(J1) LINE OUT	Line receive local office side	Test cable to local office
(J1) AMPL IN	Amplifier in	Transmit test signal into port 1
(J2) BRIDGE 600Ω	Bridge measurement	Transmit test signal to or receive test signal from bridge pad
(J3) LINE IN	Line transmit to TSPS incoming trunk	Test cable to TSPS incoming trunk
(J3) AMPL OUT	Amplifier out	Receive test signal from port 2
(J4) LINE OUT	Line receive toll office side	Test cable from toll office
(J4) AMPL IN	Amplifier in	Transmit test signal into port 2
(J5) LINE IN	Line transmit to TSPS incoming trunk	Test cable to TSPS incoming trunk
(J5) AMPL OUT	Amplifier out	Receive test signal from port 1
(J6) SIG CKT	Signaling	Test cable to signaling circuit
(J6) A-B	A and B signaling	Signaling tests
(J7) EXT NET	External balancing network	Test cable to external network
(J7) HYB NET	Hybrid network	Test hybrid network
(J8) LINE IN/OUT	Line input/output	Test cable to the trunk line network
(J8) AMPL 4W IN 2W IN/OUT	Amplifier 4-wire input, Amplifier 2-wire input/output	Transmit and receive signals to port 3
(J9) LINE IN	Line input	Test cable when port 3 is 4-wire to trunk link network
(J9) AMPL 4W OUT	Amplifier 4-wire output	Receive test signals from port 3 when in 4-wire operation

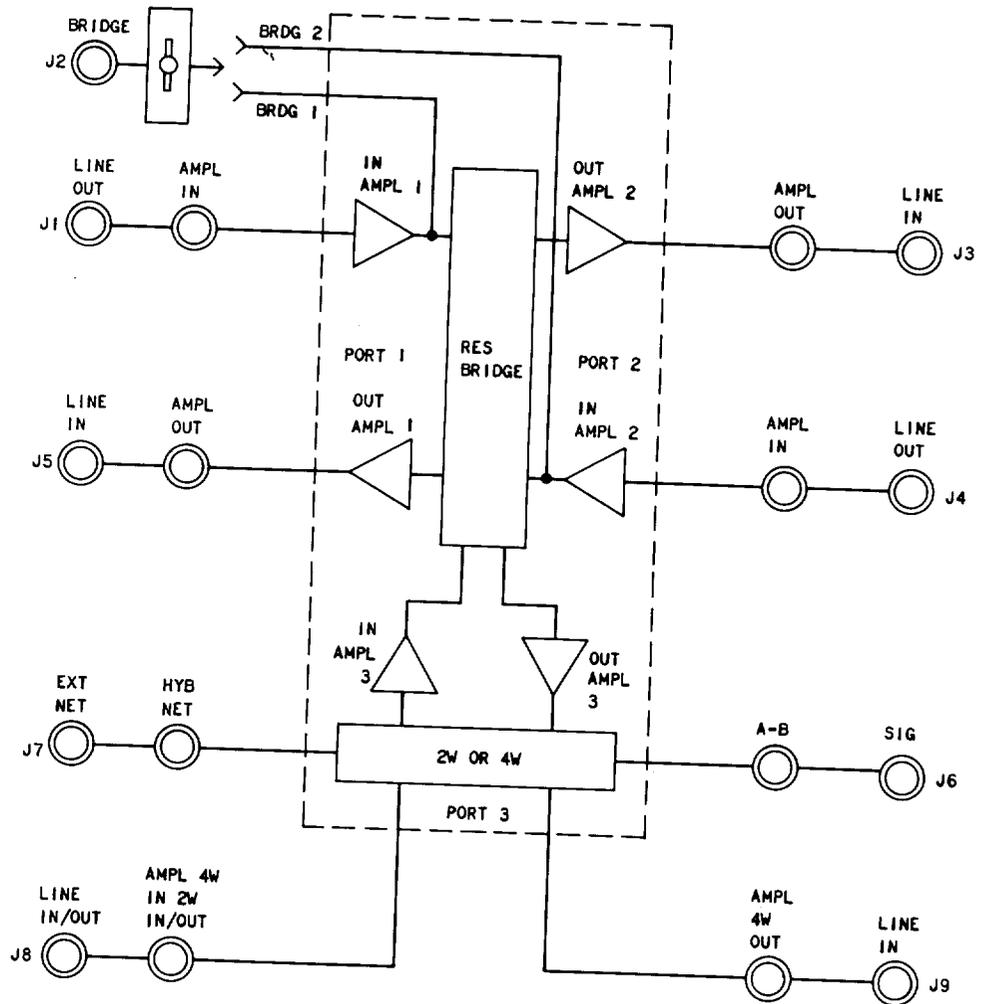


Fig. 3—Block Diagram of the Test Extender