

## 911P EIA TEST ADAPTER

### DESCRIPTION AND OPERATION

#### 1. GENERAL

**1.01** This section provides a physical and functional description and operating theory necessary for effective use of the 911P EIA test adapter.

**1.02** Whenever this section is reissued, the reason for reissue will be listed in this paragraph.

**1.03** The 911P EIA test adapter (Fig. 1) is a portable unit which provides access to Electronic Industries Association (EIA) interfaces. It is terminated at either end with an EIA interface connector, thereby allowing it to be connected in series with a data set and terminal equipment. It is intended for use primarily with 911-type data test sets (DTSs); however, it may also be used with a voltmeter, oscilloscope, or any test equipment that could be used with the 901B DTS cover. It may be used on an in-service or out-of-service basis.

**1.04** The 911P is provided with pin jacks and switches that are used to monitor, send, receive, or separately measure signals from either the data set or terminal equipment. Additionally, test signals, such as those generated by a 911-type DTS, can be substituted for either the terminal or the data set.

#### 2. PHYSICAL DESCRIPTION

**2.01** The 911P EIA test adapter shown in Fig. 1 and 2 is an integrated unit incorporating all the wiring necessary to serially connect a test set between the terminal equipment and the data set. It measures approximately 4-3/4 inches high, 2-1/2 inches wide, 1-inch deep, and weighs approximately 1 pound.

#### 3. FUNCTIONAL DESCRIPTION

**3.01** Figure 2 shows a functional diagram of the switches and plugs that comprise the 911P EIA test adapter. No connections are provided on the 911P EIA test adapter for leads other than those shown in Fig. 2. Leads not shown in Fig. 2 are connected through the 911P EIA test adapter

from the terminal connector to the data set connector on a lead-by-lead basis.

#### 4. OPERATION

##### A. Monitoring Incoming and Outgoing Signals

**4.01** Temporarily stop traffic on the circuit to be monitored, then connect the 911P EIA test adapter in series between the terminal equipment and data set. Ensure that all switches are in the normal [NOR (switches down when the connecting jacks are facing up)] position before restoring traffic. When all switches are in the normal position, all 25 leads of the circuit are connected through on a lead-by-lead basis.

**4.02** To monitor incoming signals, set the 911-type DTS INPUT switch to EIA or 911NA DTS INPUT switch to EIA HI, then connect the 911A DTS VOLT-IN jack or the 911NA DTS VOLT-INPUT jack to either BB-T or BB-DS and connect the 911-type ground terminal to the AB pin jack.

**4.03** To monitor outgoing signals, set the 911-type DTS INPUT switch to EIA or 911NA DTS INPUT switch to EIA HI, then connect the 911A DTS VOLT-IN jack or the 911NA DTS VOLT-INPUT jack to either BA-T or BA-DS and connect the 911-type ground terminal to the AB pin jack.

**4.04** The 911-type DTS monitors the incoming and outgoing signals on a high-impedance basis; therefore, it has no effect on the signals and the checks may be made on a normal operating basis.

##### B. Voltage Measurements of +V, -V, and CF

**4.05** Connect and set switches on the 911P EIA test adapter as described in 4.01.

**4.06** Connect an oscilloscope, KS-16979-L1 volt-ohm-milliammeter (VOM) or equivalent, between the AB pin jack and the +V, -V, or CF pin jack as required.

#### NOTICE

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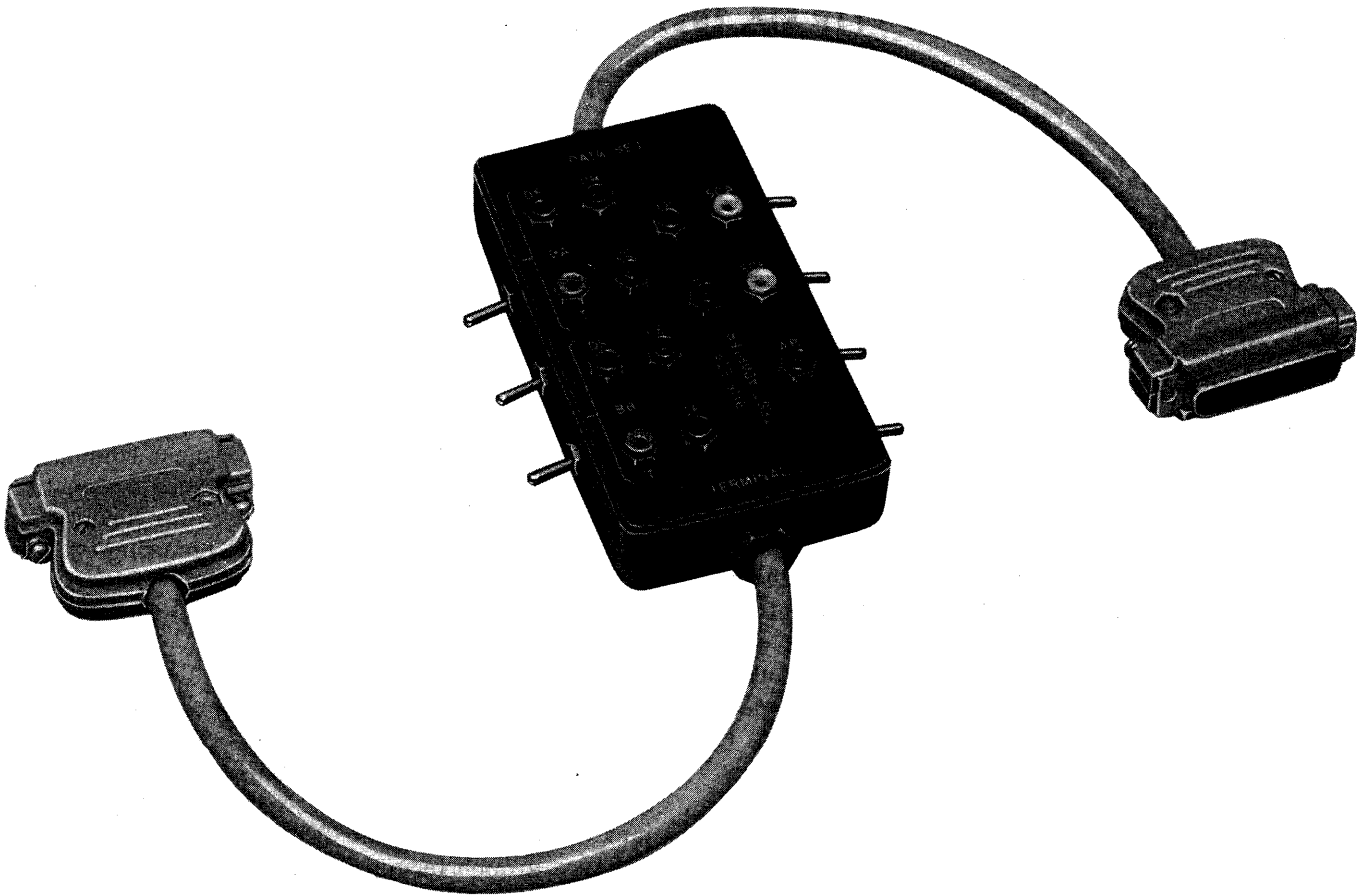


Fig. 1—911P EIA Test Adapter—Connector Side

**C. Transmission of Signals From a 911-Type DTS**

***Transmitting to Terminal Equipment***

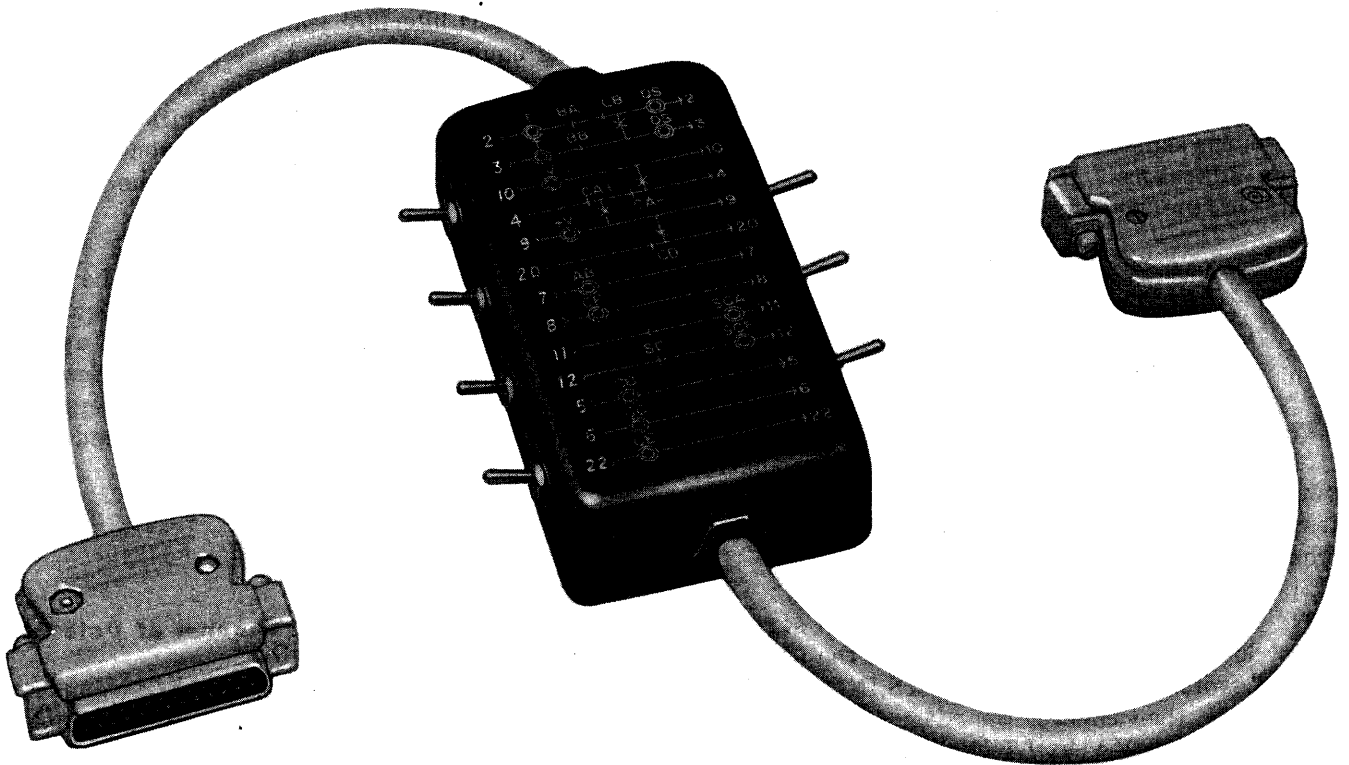
- 4.07 Connect and set switches on the 911P EIA test adapter as described in 4.01.
- 4.08 Operate the BB switch to the OPEN (up) position. This opens the BB lead from the data set, stopping normal data transmission from the distant end.
- 4.09 Connect the 911A DTS VOLT-OUTPUT jack (OUTPUT switch set to EIA) or 911NA DTS VOLT-OUT EIA jack to the BB-T pin jack and the 911-type ground terminal to the AB pin jack. Test signals can now be transmitted to the terminal equipment.

***Transmitting to Data Set***

- 4.10 Connect and set switches on the 911P EIA test adapter as described in 4.01.
- 4.11 Operate the BA switch to the OPEN (up) position. This opens the BA lead from the terminal equipment, stopping normal data transmission from the terminal equipment to the distant end.
- 4.12 Connect the 911A DTS VOLT-OUTPUT jack (OUTPUT switch set to EIA) or 911NA DTS VOLT-OUT EIA jack to the BA-DS pin jack and the 911-type ground terminal to the AB pin jack. Test signals can now be transmitted to and through the data set.

***Transmitting to an Outlying Selective Calling-Type Station Using the 911NA DTS***

- 4.13 Connect and set switches on the 911P EIA test adapter as described in 4.01.



**Fig. 2—911P EIA Test Adapter—Schematic Side**

**4.14** Operate the BA and BB switches to the OPEN (up) position. This opens the BA and BB lead, thereby stopping data transmission to and from the terminal equipment.

**4.15** Connect the 911NA DTS VOLT-OUT EIA jack to the BA-DS pin jack, the VOLT-INPUT jack to the BB-DS pin jack, the ground terminal to the AB pin jack, and set the INPUT switch to EIA HI.

**4.16** Using the 911NA DTS 3-character selectable message, transmit the required codes. The measuring portion of the 911NA DTS monitors the answer-back and other signals received from the outlying station and can be arranged to display the incoming signals on the RECEIVED CHARACTERS status indicators. It can also check the parity errors, amount, and type of distortion simultaneously.

**D. Testing an 85- or 86-Type Selective Calling Station at Customer Location Using the 911NA DTS**

**4.17** Gain access to the data auxiliary set (DAS) 820-type by substituting an AR751 EIA interface card for data set 108 or 109.

**4.18** Ensure that all switches on the 911P EIA test adapter are in the normal (NOR) position, then connect the TERMINAL end (female) connector of the 911P EIA test adapter to the interface connector of the AR751 EIA interface card.

**4.19** Connect the 911NA DTS VOLT-OUT EIA jack to the BB-T pin jack, the VOLT-INPUT jack to the BA-T pin jack, the GRD terminal to the AB pin jack, and set the INPUT switch to EIA HI.

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**4.20** Using the 911NA DTS 3-character selectable message, transmit the required codes. The measuring portion of the 911NA DTS monitors the answer-back and other signals received from the station controller and can be arranged to display the incoming signals on the RECEIVED CHARACTERS status indicators. It can also check the parity errors, amount, and type of distortion simultaneously.

### E. Loop-Back Operation

**4.21** Connect and set switches on the 911P EIA test adapter as described in 4.01.

**4.22** Operate the BA and BB switches to the OPEN (up) position and the LB (loop-back) switch to the LB (up) position. The 911P EIA test adapter will now loop-back signals transmitted from the far end.

**4.23** If it is desired to monitor the signals looped-back to the far end, set the 911-type INPUT switch to EIA or 911NA DTS INPUT switch to EIA HI, then connect the 911A DTS VOLT-IN jack or the 911NA VOLT-INPUT jack to either BA-DS or BB-DS and connect the 911-type ground terminal to the AB pin jack.

**4.24** If the far-end data set is equipped with loop-back capability (or by connecting the 911P EIA test adapter at the far end as described in 4.01 and 4.22), transmission through both data sets and the channel is checked with the 911-type DTS. In this case, connect the 911-type DTS to the 911P EIA test adapter at the near end as described in 4.14 and 4.15.

*Note:* The 911A DTS may be used for this test, since the 3-character selectable message is not required.

### F. Operation of the CA+, CA-, and CD Switches

**4.25** Connect and set switches on the 911P EIA test adapter as described in 4.01.

**4.26** To simulate a ready condition on the CA and CD interface leads, thereby making the terminal equipment appear to be ready to transmit and receive data, operate the CA+ and CD switches to the ON (up) position. The operation of these switches presents a positive voltage from interface lead +V to the CA and CD leads at the data set interface.

**4.27** In a similar manner, operation of the CA- switch to the OFF (up) position opens the CA lead toward the terminal equipment and applies a negative potential from -V toward the data set interface. The data set receives the negative voltage and interprets it as request-to-send (CA) OFF.

### G. Testing the Secondary Channel of Data Set 202-Type

**4.28** Pin jacks CB, CC, CE, SCA, and SCF provide access for making measurements on interface leads 5, 6, 22, 11, and 12 respectively. To open the paths between the terminal equipment and the 202-type data set on leads 11 and 12, operate the SC switch to the OPEN (up) position.

## 5. REFERENCES

**5.01** Additional information on the 911P EIA test adapter may be obtained from the following sources:

(a) SD- and CD-73112-01

(b) EL 3772

(c) BSP 807-462-152—Equipment Design Requirements.