

## DATA AUXILIARY SET 816 TYPE

### TEST PROCEDURES

#### 1. GENERAL

1.01 This section contains information necessary to perform tests on Data Auxiliary Set 816A1 and Data Auxiliary Set 816B1.

1.02 Information concerning the customer's business machines is not included in this practice.

1.03 Data Auxiliary Set 816A1 and Data Auxiliary Set 816B1 will be called in this section DAS 816A1 and DAS 816B1, respectively.

#### 2. TEST PROCEDURE

2.01 Before proceeding with any tests, verify that private line facilities have been tested in accordance with the Plant Series Section entitled, Private Line Data Circuits, Over-all Tests (314-410-500).

2.02 The following tests are described in this procedure.

- (1) Ground noise tests
- (2) Interface tests
- (3) Loop-Back tests
- (4) End-to-End tests

2.03 Tests procedures and adjustments of the 130-type TTY subscriber set will be in accordance with the Plant Series Section associated with such tests and adjustments (570-303-503).

#### *Ground Noise Tests*

2.04 When required, measure the noise between the DAS ground and the business machine ground using a 6A Impulse Counter and a Interface Test Adapter (cover of Data Test Set 901B) as shown in Fig. 1.

#### *Interface Tests*

2.05 The following test equipment is required for this test.

- (1) Interface Test Adapter
- (2) KS-14510, List 1 Volt-Ohm-Milliammeter, or equivalent.

2.06 The interface test adapter shall be arranged so that the captive shorting clips for terminals 1 through 8 are in the open position.

*Note:* In order to avoid damage to the DAS 816-type, it is important that the interface test adapter captive shorting clips be positioned before connecting to the DAS.

2.07 Table A should be used to check the ability of DAS 816-type to present to the customer's business machine the proper voltages when DAS is placed in test (TST) mode.

*Note:* For installations where 130-type TTY subscriber set is not located adjacent to DAS, arrangements must be made for selecting the proper switch, the 43A1 channel REC switch during the test procedure.

2.08 The following procedure will explain the use of Table A to test the designated lead:

- (1) Operate the 43A1 REC switch to designated position.
- (2) Operate the NOR-TST switch to designated position.

*Note:* When testing DAS 816A1, use external TST (S3). Verify that NOR-TST switch on data coupling unit is in normal (NOR) position.

- (3) Operate the selector control of the KS-14510 VOM to the designated position.

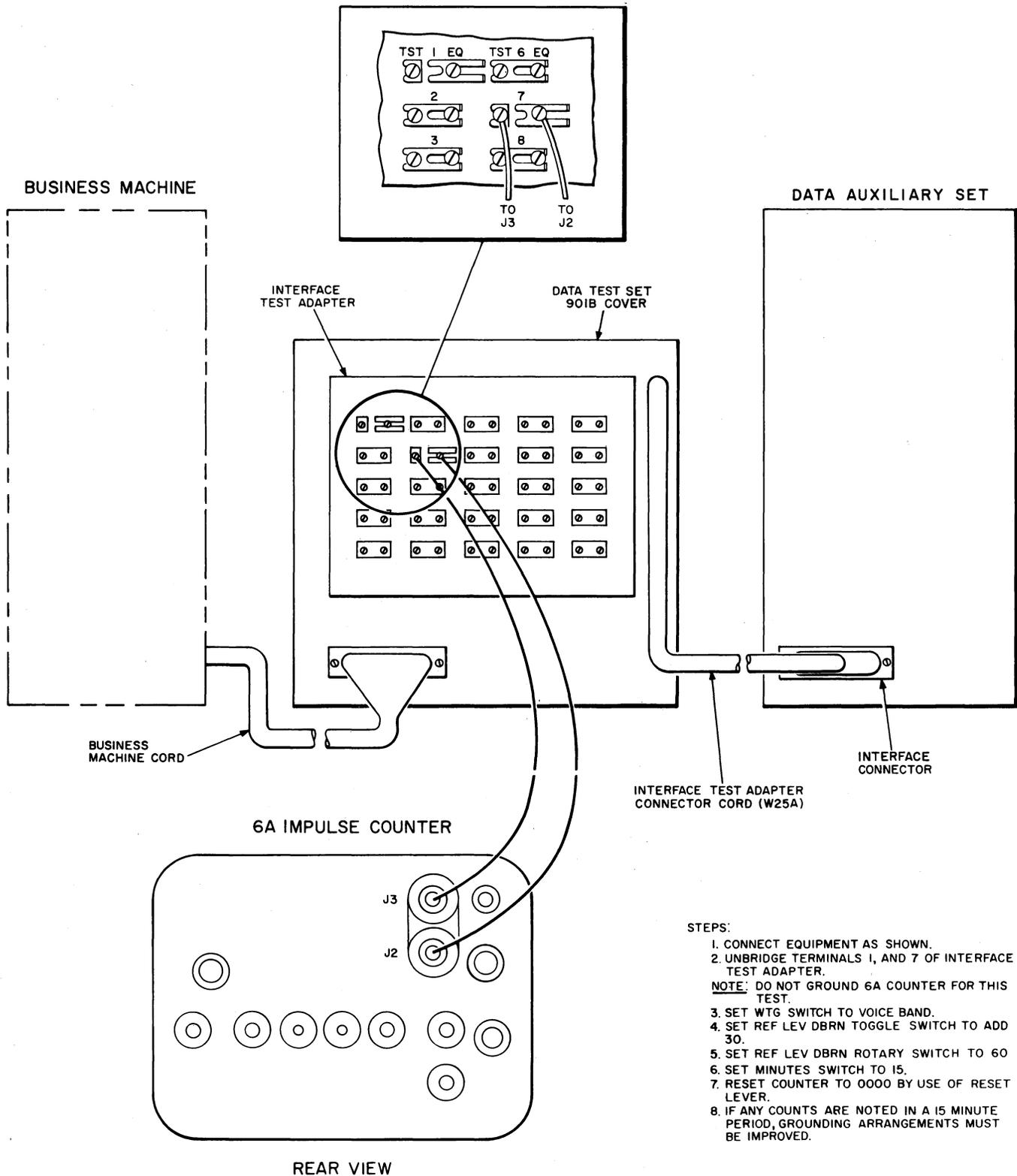


Fig. 1 — 6A Impulse Counter Test

(4) Connect + (plus) test lead of VOM to specified EQ terminal on the Interface Test Adapter.

(5) Connect - (negative) test lead of VOM to specified EQ terminal of Interface Test Adapter.

(6) VOM reads requirement value.

**2.09** The following test procedure may be used as a preliminary check for the correct operation of DAS 816-type prior to the tests performed with the private line telegraph test board.

**2.10** The following test sets will be required for this test, in addition to the station to telegraph test board tests.

(1) 911A or 164C-type Transmission Measuring Set, or equivalent.

(2) 1011-type test set.

(3) KS-14510, Volt-Ohm-Milliammeter, or equivalent.

**2.11** It is assumed that the current has been adjusted to 20 ma during the test procedures and adjustments for the 130-type TTY subscriber set as per section entitled 130-Type Teletypewriter Subscriber Set, Tests and Adjustments (570-303-503).

**2.12** Test procedure:

(1) Operate NOR-TST switch to TST (external switch on DAS 816A1).

**TABLE A — INTERFACE TEST**

LEAD DESIG	*43A1 CHAN REC SW POSITION	NOR-TST SW POSITION	KS-14510			REQUIREMENT† (APPROX)
			SELECTOR POSITION	EQ TERM NO.		
				+ LEAD	- LEAD	
CA	H+ (L+)	NOR	OHMS X1	4	5	0 OHMS
	H+ (L+)	TST	OHMS X1	4	5	∞ OHMS (OPEN)
CB	H+ (L+)	NOR	60 DC VOLT	7	5	0 VOLTS DC
	H+ (L+)	TST	60 DC VOLT	7	5	-20 VOLTS DC
CC	H+ (L+)	NOR	60 DC VOLT	6	7	+20 VOLTS DC
	H+ (L+)	TST	60 DC VOLT	7	6	-20 VOLTS DC
CF‡	H+ (L+)	NOR	60 DC VOLT	8	7	+20 VOLTS DC
	H+ (L+)	TST	60 DC VOLT	8	7	+20 VOLTS DC
CF§	H+ (L+)	NOR	60 DC VOLT	7	8	-20 VOLTS DC CF LAMP LIGHTS
BB	H+ (L+)	NOR	60 DC VOLT	7	3	-19 VOLTS DC
	H+ (L+)	TST	60 DC VOLT	7	3	-20 VOLTS DC
	L+ (H+)	NOR	60 DC VOLT	3	7	+17 VOLTS DC

\* Position in ( ) are for channels in high frequency group, top three channels sending.

† All voltages are made with respect to pin 7 (ground). Polarity is determined by the position of the (+) or (-) leads.

‡ Relay SU in 130-Type TTY subscriber set blocked operated.

§ Relay SU in 130-Type TTY subscriber set blocked released. When blocking tool is removed CF lamp shall extinguish.

- (2) Verify that TST lamp lights.
  - (3) Connect 1011-type test set (MON-TALK key to MON) to terminals 1 and 16 of 130-type TTY subscriber set.
  - (4) Verify OSC switch of 43A1 channel terminal is operated to ON.
  - (5) VF tone heard in 1011-type test set.
  - (6) Operate REC switch of 43A1 channel terminal to opposite position.
  - (7) Tone shifts as REC switch is operated from one (H+) position to the other (L+).
- Note:* This test verifies the ability of DAS 816-type to receive a signal from the 130-type TTY subscriber set and transmit this received signal back to the 130-type TTY subscriber set.
- (8) Restore REC switch on 43A1 channel terminal to normal operating position.
  - (9) Disconnect 1011-type test set.
  - (10) Restore NOR-TST switch to NOR (external switch on DAS 816A1).

**Loop-Back Test**

**2.13 Test Procedure:**

- (1) Disconnect the power to 130-type TTY subscriber set.
- (2) Disconnect RLT (terminal 19) lead on 130-type TTY subscriber set and connect to the sleeve of 347A plug associated with 2P31A cord (or equivalent), associated with the

164C-type Transmission Measuring Set (TMS), or equivalent.

- (3) Connect tip conductor of 347A plug associated with 2P31A cord to terminal 19 on 130-type TTY subscriber set.
- (4) Insert 359A plug of 2P31A cord into the INPUT JACK of the 911A or 164C-type TMS.

*Note:* Verify that all connections are not crossed, shorted, or grounded.

- (5) Connect power cord of 130-type TTY subscriber set.
- (6) Place a telephone call to the Serving Test Center (STC) and arrange for a test of DAS 816-type.
- (7) When requested by STC, operate NOR-TST switch to TST.

*Note:* Operation of NOR-TST switch (external switch on 816A1) to TST will allow STC to perform loop-back test of DAS 816-type.

- (8) When requested by STC, adjust REC BIAS potentiometer for 0 bias as read on 911A or 164C-type TMS, or equivalent.

**End-To-End Test**

**2.14** When all previous tests have been performed and requirements have been met, request the customer to prepare a test message as prescribed by the business machine manufacturer.

**2.15** Request customer to contact another data station and arrange for an operational test which shall include transmitting *and* receiving of data signals.