

## DATA SETS 201A3, A4 AND 201B3, B4

### TRANSMITTER-RECEIVER

### MAINTENANCE

#### 1. GENERAL

**1.01** This section contains information concerning the maintenance of Data Sets 201A3, A4 and 201B3, B4. In this section, Data Sets 201A3, A4 and 201B3, B4 will be referred to as Data Sets 201.

**1.02** This section is reissued to add information which pertains to Data Sets 201B3 and 201B4. Because of extensive revision, change arrows have been omitted.

#### 2. MAINTENANCE

**2.01** Routine maintenance is not required on a Data Set 201. For information concerning the maintenance of the data auxiliary sets, refer to Part 3 of this section.



*Check all options for proper strapping as specified in Section 592-011-201.*

**2.02** If the set meets test requirements, proceed as follows:

- (a) Confirm that the business machine and associated cords test satisfactorily,
- (b) Check for cord and connector defects,
- (c) Check for intermittent trouble in drop, inside wire, protector, etc.

**2.03** Data sets which fail requirements of Section 592-011-501 should be replaced. The following methods may be used to identify a defective wiring board(s):

- (a) If either (or both) power supply test fails, loosen the four retaining screws and remove the power supply from the data set chassis

(Fig. 1 and Fig. 2). Connect the power supply to a 117-volt 60-Hz source. Measure the voltage between pin 3 and pin 4 (GRD) on the power supply socket. The reading should be greater than +12.8 volts. Measure the voltage between pin 5 and pin 4 (GRD) on the power supply socket. The reading should be greater than -12.3 volts.

(b) Conduct test according to Section 592-011-501. Record readings on a worksheet similar to Fig. 3. Compare the test summary with trouble patterns A through M in Table A. In Example 1, the first failure occurs under test position 23. Check Table A for failures listed under 23. Note that there are two possibilities, trouble patterns A or B. Trouble pattern A matches Table A while trouble pattern B does not. The probable solution to the trouble is to replace board T3 or T5.

**2.04** In Example 2, a failure condition occurs under position 19. Possible trouble is indicated opposite pattern F, G, or K. By comparing Example 2 to Table A, it is evident that pattern K is the only one which meets the failure condition. The probable solution to the trouble is to replace board R11.



*Some failure conditions will not completely match Table A. Failure conditions which do not match should be corrected first. For example, assume that the data set fails all eight tests. Pattern C is the only one which matches, but this pattern does not include all failures. Replace board T9 or board T5 as indicated and perform the tests again. The new failure pattern should now be used with Table A as previously described.*

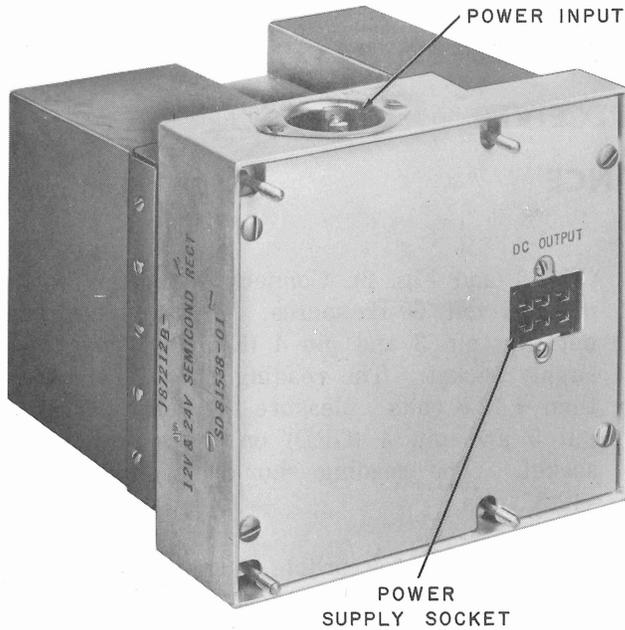


Fig. 1—Data Sets 201A or 201B, Power Supply

**2.05** In all patterns where blank spaces appear in Table A, the pass or fail condition of the test position can be disregarded when analyzing the trouble. For example, in pattern A, a fail at position 23 and a pass at position 22 indicate replacement of board T3 or board T5 regardless of the pass or fail condition of the remaining six readings.

**2.06** When clearing trouble by exchanging boards between sets, follow the order specified in Table A. Determine which board is causing the trouble. If boards are to be ordered, include both first and second choice boards.

**2.07** Circuit boards R13-R16 make up Group Code BT2 for Data Set 201A or Group Code BT4 for Data Set 201B. Group Codes BT1, BT2, and BT4 are to be tested as a group. If any card of the group is defective, the entire group should be replaced. If a single card of a group is replaced, the entire group should be tested as specified in Section 592-011-151 entitled Data Sets 201A3, A4 and 201B3, B4 Transmitter-Receiver, Theory of Operation and Supplementary Information.

**2.08** When ordering circuit boards, refer to Section 592-011-101 entitled Data Sets 201A3, A4 and 201B3, B4, Transmitter-Receiver, Description and Operation. Include the quantity of boards required.

**3. REFERENCES**

**3.01** The following Bell System Practices provide maintenance information concerning the data auxiliary sets used with Data Sets 201A and 201B.

SECTION	TITLE
598-010-300	Data Auxiliary Sets 801A1 and 801A2, Maintenance
598-010-301	Data Auxiliary Set 801A6, Maintenance
598-012-300	Data Auxiliary Set 801C2, Maintenance
598-012-301	Data Auxiliary Set 801C4, Maintenance
598-030-100	Data Auxiliary Set 804A

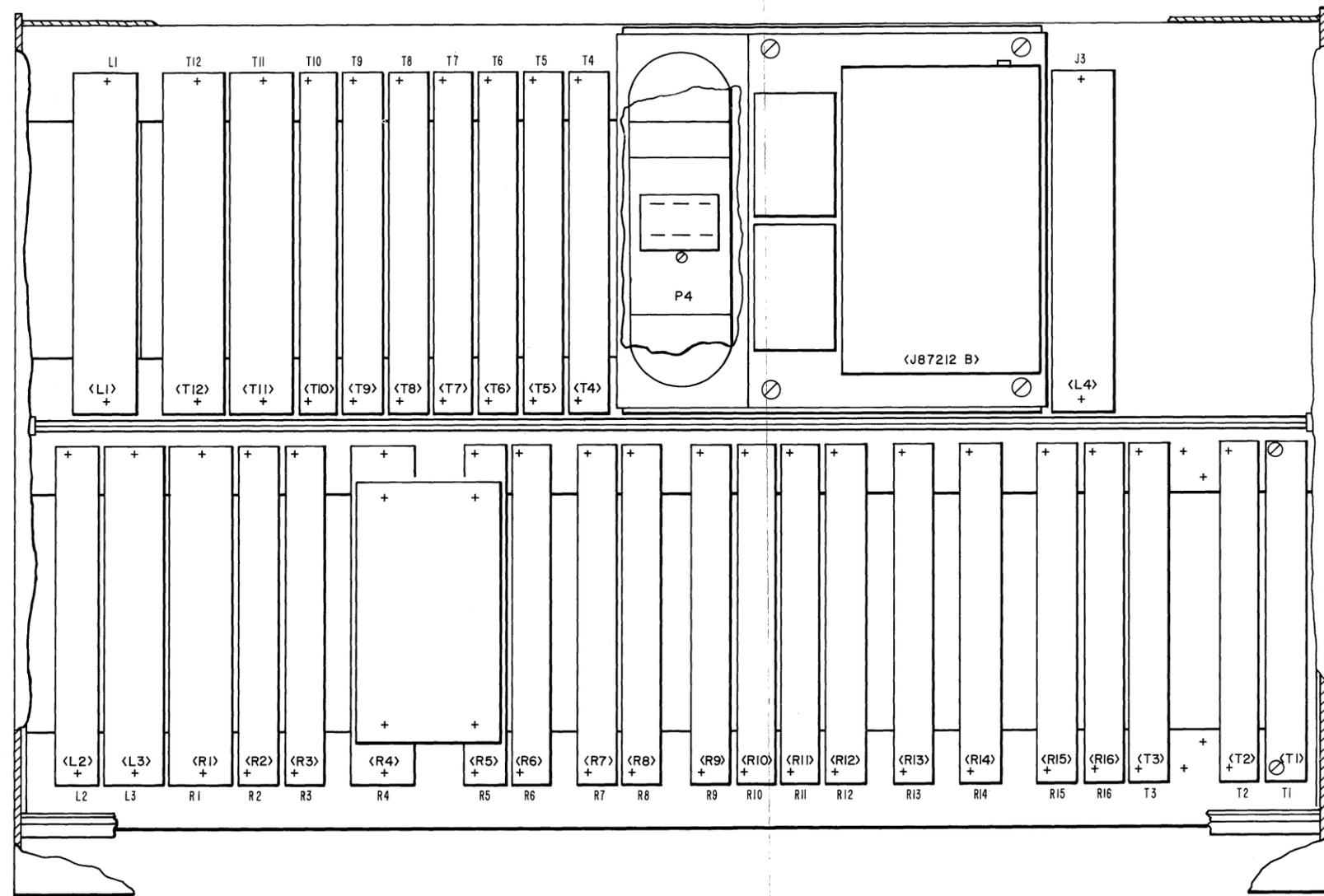


Fig. 2—Data Sets 201A or 201B, Top View

B TEST POSITION		TEST POSITION A							LINE READING
		23	22	21	20	19	18	17	
3	dc				PASS				
	ac				PASS				
4	dc	FAIL	PASS	PASS	PASS	FAIL	PASS	PASS	PASS
	ac	PASS	PASS	PASS	PASS	FAIL	PASS	PASS	
5	dc				PASS				
	ac				PASS				
8	dc			PASS	PASS	PASS	PASS	PASS	PASS
	ac			PASS	PASS	PASS	PASS	PASS	
SUMMARY*		FAIL	PASS	PASS	PASS	FAIL	PASS	PASS	PASS

\* Summary totals become the significant analysis data.

Fig. 3—Data Set 201A or 201B, Worksheet

**TABLE A**  
**TROUBLE PATTERN ANALYSIS**

TROUBLE PATTERN	A TEST POSITION							LINE READING	REPLACE BOARD NO.	
	23	22	21	20	19	18	17		FIRST CHOICE	SECOND CHOICE
A	FAIL	PASS							T3 or T5	T2
B	FAIL	FAIL	PASS						T1	T2 or T3
C			FAIL					FAIL	T9	T5
D	PASS	FAIL							T3	T5
E			PASS					FAIL	T5, L2	T9-T12
F				FAIL	FAIL	FAIL	FAIL	PASS	R1, R2, or R3*	R12
G					FAIL	FAIL	PASS	PASS	R13-R16†	R11, R12
H				PASS	PASS	PASS	FAIL		R12	R3
J					PASS	FAIL	PASS		R11	
K					FAIL	PASS	PASS		R11	R10
L				FAIL	PASS	PASS	PASS	PASS	R7, R9	R4, R5‡, R6, R8, R10, R12
M				PASS			FAIL		R12	

\* If trouble is found in R1, R2, or R3 (Group Code BT1), all three boards must be replaced (see paragraph 2.07).

† If trouble is found in R13, R14, R15, or R16, all four boards must be replaced (see paragraph 2.07).

‡ Boards R4 and R5 are mechanically connected together.

**EXAMPLE 1**

PATTERN TROUBLE	TEST POSITION A							LINE READING
	23	22	21	20	19	18	17	
A	FAIL	PASS						
B	FAIL	PASS	PASS					

**EXAMPLE 2**

PATTERN TROUBLE	TEST POSITION A							LINE READING
	23	22	21	20	19	18	17	
F				PASS	FAIL	PASS	PASS	PASS
G					FAIL	PASS	PASS	PASS
H				PASS	PASS	PASS	FAIL	
J					PASS	FAIL	PASS	
K					FAIL	PASS	PASS	
L								