LINE REPEATERS AND REGENERATORS
TESTS USING THE J98710H TEST SET
T1 AND T1/OS DIGITAL LINES
DIGITAL TRANSMISSION SYSTEMS

This section contains procedures for testing 201-, 205-, 208-, 209-, 238-, and 239-type repeaters. ▶A procedure for testing 7-type regenerators is also provided in this section.◀

This section is reissued for the following reasons:

Provide a procedure for testing 7-type regenerators which are used for T1/OS with T2 on LOCAP cable

Specify testing low-power repeaters at 60 mA

Add low-power test set and 283A adapter to apparatus list

Add 7-type regenerator test in the summary

Change 836 network setting from M to L in Parts A, B, and E

Change the title to include T1/0S.

Arrows and shaded areas are used to indicate changes. This reissue does ***not*** affect the Equipment Test List.

There are six types of line repeaters ▶and one type of line regenerator◀ used in the T1 and T1/OS digital line: namely, 201-, 205-, 208-, 209-, 238-, and 239-type repeaters and ▶7-type regenerator.◀ For the tests in this section, the repeaters are grouped according to circuitry (integrated or nonintegrated) and powering (standard 140 mA or low 60 mA); see Table A. ▶The 7A regenerator operates at 80 mA only.◀

When troubleshooting a T1 digital line, many repeaters ▶and regenerators◀ are unnecessarily replaced because they are suspected of being defective. Therefore, repeaters ▶and regenerators◀ returned to the central office from outside plant should be tested before they are shipped to the Western Electric repair center. If a suspected repeater ▶or regenerator◀ meets the requirements of this section, it should ***not*** be returned for repair but should be placed in stock for future use.

The following tests and a summary are contained in this section.

NOTICE
Not for use or disclosure outside the
Bell System except under written agreement

TABLE A

STANDARD POWER INTEGRATED CKT REPEATER				LOW POWER INTEGRATED CKT REPEATER		STANDARD POWER NONINTEGRATED CKT REPEATER		7-TYPE REGENERATOR
TEST A				TEST B		TEST C		TEST D
REPEATER CODES				REPEATER CODES		REPEATER CODES		REGENERATOR CODE
201	205	208	209	238	239	201	205	7A
G	G	A	A	A	A	A	A	
H	H	B	B	B	B	B	B	
J	J	C	C	C	C	C*	D	
K	K	D	D	D	D	D	E	
L*	M	E	E		*	E		
	N	F	F			F*		
		AA	AA					
		AB	AB					

*Available equipment will not permit testing of the 201C, 201F, and 201L bridging repeaters.

A. ***Tests of Standard Power Integrated Circuit-Type Repeaters:*** The performance of these repeaters and the ALBO network is checked under the conditions in which they are expected to operate. The repeaters are also tested for shorts and leakage between the circuit and the cover.

B. ***Tests of Low-Power Integrated Circuit-Type Repeaters:*** The performance of these repeaters and the ALBO network is checked under the conditions in which they are expected to operate. The repeaters are also tested for shorts and leakage between the circuit and the cover.

C. ***Tests of Standard Power Nonintegrated Circuit-Type Repeaters:*** The performance of these repeaters is checked when they are equipped with the 836-type LBO networks with which they are to operate. The repeaters are also tested for shorts and leakage between the circuit and the cover.

D. ***Tests of 7-Type Regenerators:*** The performance of these regenerators and the ALBO network is checked under the conditions in which they are expected to operate. The regenerators are also tested for shorts and leakage between the circuit and the cover.

E. ***Summary:*** Tests A, B, C, and D are summarized in chart form.

APPARATUS:

1—J98725AD T1C/T1 Fault-Locate Test Set (FLTS) or J98710F Fault-Locating Set (FLS)

1—J98725AC T1C/T1 Office Bipolar Violation Detector (OBVD) or J98710G Error-Detecting Set (EDS)

1—J98710H Repeater Test Set (RTS) (see Note 1)

2—P3BH Patch Cords

2—836-Type Networks (as required, Test C)

1—215A Adapter (for testing 208- and 238-type repeaters) (see Note 2)

1—216A Adapter (for testing 209- and 239-type repeaters) (see Note 2)

1—283A Adapter (for testing 7-type regenerators)

Note 1: The J98710H, List 1 test set can only be used to test repeaters at 140 mA. The List 2 and List 3 test sets can be used to test repeaters from 60 mA to 140 mA. Therefore, it is recommended that a List 2 or List 3 test set be used when testing low-power repeaters and 7-type regenerators. Without the availability of either a List 2 or List 3 test set, it is permissible to test low-power repeaters and 7-type regenerators at 140 mA. However, if low-power repeaters and 7-type regenerators are tested at 140 mA, there is a small probability that the test will be insufficient.

Note 2: The 215A and 216A adapters are electrically identical; therefore, either may be used for test purposes. However, it is recommended that the repeaters be tested in the adapter with which they may be used.

STEP	PROCEDURE

A. Tests of Standard Power Integrated Circuit-Type Repeaters

1 Connect test equipment as shown in Fig. 1.

2 Set switches on RTS as follows:

SWITCH OR CONTROL DESIGNATION	SWITCH OR CONTROL POSITION
PERFORMANCE—CONTINUITY	CONTINUITY
TEST	See Note
836 NETWORK	B
OFF—ON	OFF
PWR ADJ	Extreme Counterclockwise

STEP	PROCEDURE

Note: Set TEST switch to 201A-1 when testing bidirectional repeaters or to 201B-1 when testing unidirectional repeaters. Refer to the following list to determine if repeater is bidirectional or unidirectional.

REPEATER CODES				TYPE OPERATION
201	205	208	209	
G	G	A	A	
H	H	B	B	
	M	E	E	BIDIRECTIONAL
	N	F	F	
		AA	AA	
J	J	C	C	
K	K	D	D	UNIDIRECTIONAL
		AB	AB	

3 Set switches on FLTS or FLS as follows:

J98725AD (FLTS)

SWITCH DESIGNATION	SWITCH POSITION
PULSE DENSITY	11 REF
FUNCTION	BI-POLAR SIGNAL

J98710F (FLS)

SWITCH DESIGNATION	SWITCH POSITON
PULSE PERIOD	REF
FUNCTION	BIPOLAR SIGNAL

Note: Disregard all other controls on the FLTS or FLS when making this test.

4 If the repeater under test is a 201 or 205 type, insert it into the RTS and proceed to Step 9; otherwise, continue with Step 5.

5 Insert an adapter (215A if testing 208-type repeater or 216A if testing 209-type repeater) into the mounting well of the RTS.

STEP	PROCEDURE

Note: The 215A and 216A adapters are electrically identical; therefore, either may be used for test purposes. However, it is recommended that the repeaters be tested in the adapter with which they may be used.

6 If the repeater under test is a 208AA or 209AA, set the FL option on the repeater to STD.

7 If the repeater under test is a 208AA or AB or 209AA or AB, provide the required power option (through or loop).

Note: Instructions for selecting options on the 208AA or AB or 209AA and AB repeaters are shown on the housing of these repeaters.

8 Insert the repeater into the adapter.

9 Set ON—OFF switch on RTS to ON.

10 Momentarily depress pilot lamp assembly.

Requirement: The lamp in the pilot lamp assembly should extinguish. (If the lamp remains lighted, leakage is indicated between the repeater or adapter and the case.)

11 Adjust PWR ADJ control on RTS for meter indication of 9.5 volts (this corresponds to 140 mA).

12 Depress VOLT TEST pushbutton.

Requirement: For 201- or 208-type repeaters, the meter shall indicate 11.1 to 12.5 volts. For 205- or 209-type repeaters, the meter shall indicate 12.6 to 14.1 volts.

13 Set MODE switch on OBVD to CTR OFF or PULSES-ERRORS switch on EDS to PULSES.

14 Depress ERROR pushbutton on RTS.

Requirement: The SIGNAL LOSS LED on OBVD shall be extinguished or the lamp on EDS shall light, indicating that the repeater is regenerating pulses.

15 If using an EDS, set PULSES-ERRORS switch to ERRORS.

16 Depress ERROR pushbutton on RTS.

Requirement: While ERROR pushbutton remains depressed, the BIPOLAR VIOLATIONS LED on OBVD or the lamp on EDS shall be extinguished.

Note: If the LED or lamp flashes only at the instant ERROR pushbutton is depressed, the repeater under test is not defective.

17 Set FUNCTION switch on FLTS to MEAS 3 SIGNAL or on FLS to MEAS 3.

STEP	PROCEDURE

18 Depress ERROR pushbutton on RTS.

Requirement: The BIPOLAR VIOLATIONS LED on OBVD or lamp on EDS shall light, indicating errors.

Note: These errors indicate proper operation of the repeater under test.

19 Set FUNCTION switch on FLTS to BI-POLAR SIGNAL or on FLS to BIPOLAR SIGNAL.

20 Set 836 NETWORK switch on RTS to ◗L◖ and repeat Steps 13 through 18.

21 Set TEST switch on RTS to 201A-2 or 201B-2, as required, and set 836 NETWORK switch to B.

22 Set FUNCTION switch on FLTS to BI-POLAR SIGNAL or on FLS to BIPOLAR SIGNAL.

23 Repeat Steps 13 through 20 to test side 2 of the repeater.

B. Tests of Low-Power Integrated Circuit-Type Repeaters

1 Connect test equipment as shown in Fig. 1.

Note: ◗The repeater test set should be List 2 or List 3 to test low-power repeaters. If a List 1 test set is used, the procedure is the same except the power adjust control is set for an indication of 9.5 volts with a requirement of 7.3 to 8.3 volts for 238-type repeaters and 8.9 to 9.9 volts for 239-type repeaters.◖

2 Set switches on RTS as follows:

SWITCH OR CONTROL DESIGNATION	SWITCH OR CONTROL POSITION
PERFORMANCE—CONTINUITY	CONTINUITY
TEST	See Note
836 NETWORK	B
OFF—ON	OFF
PWR ADJ	Extreme Counterclockwise

Note: Set TEST switch to 201A-1 when testing bidirectional repeaters or to 201B-1 when testing unidirectional repeaters. Refer to the following list to determine if repeater is bidirectional or unidirectional.

STEP	PROCEDURE

REPEATER CODES		TYPE OPERATION
238	239	
A C	A C	BIDIRECTIONAL
B D	B D	UNIDIRECTIONAL

3 Set switches on FLTS or FLS as follows:

J98725AD (FLTS)

SWITCH DESIGNATION	SWITCH POSITION
PULSE DENSITY	11 REF
FUNCTION	BI-POLAR SIGNAL

J98710F (FLS)

SWITCH DESIGNATION	SWITCH POSITION
PULSE PERIOD	REF
FUNCTION	BIPOLAR SIGNAL

Note: Disregard all other controls on FLTS or FLS when making this test.

4 If the repeater under test is a 238A or C or 239A or C, set FL option on the repeater to STD.

5 Provide the required power option.

Note: Instructions for selecting options on the 238- and 239-type repeaters are shown on the housing of these repeaters.

6 Insert an adapter (215A if testing 238-type repeater or 216A if testing 239-type repeater) into the mounting well of the RTS.

STEP	PROCEDURE

Note: The 215A and 216A adapters are electrically identical; therefore, either may be used for test purposes. However, it is recommended that the repeaters be tested in the adapter with which they may be used.

7 Insert the repeater into the adapter.

8 Set ON—OFF switch on RTS to ON.

9 Momentarily depress pilot lamp assembly.

Requirement: The lamp in the pilot lamp assembly should extinguish. (If the lamp remains lighted, leakage is indicated between the repeater or adapter and the case.)

10 Adjust PWR ADJ control on RTS for meter indication of ⧫4.0⧫ volts (this corresponds to ⧫60⧫ mA).

11 Depress VOLT TEST pushbutton.

Requirement: For 238-type repeaters, the meter shall indicate ⧫6.4 to 7.6⧫ volts. For 239-type repeaters, the meter shall indicate between ⧫7.1 to 8.3⧫ volts.

12 Set MODE switch on OBVD to CTR OFF or PULSES-ERRORS switch on EDS to PULSES.

13 Depress ERROR pushbutton on RTS.

Requirement: The SIGNAL LOSS LED on OBVD shall be extinguished or the lamp on EDS shall light, indicating that the repeater is regenerating pulses.

14 If using an EDS, set PULSES-ERRORS switch to ERRORS.

15 Depress ERROR pushbutton on RTS.

Requirement: While ERROR pushbutton remains depressed, the BIPOLAR VIOLATIONS LED on OBVD or the lamp on EDS shall be extinguished.

Note: If LED or lamp flashes only at the instant ERROR pushbutton is depressed, the repeater under test is not defective.

16 Set FUNCTION switch on FLTS to MEAS 3 SIGNAL or on FLS to MEAS 3.

17 Depress ERROR pushbutton on RTS.

Requirement: The BIPOLAR VIOLATIONS LED on OBVD or the lamp on EDS shall light, indicating errors.

Note: These errors indicate proper operation of the repeater under test.

18 Set FUNCTION switch on FLTS to BI-POLAR SIGNAL or on FLS to BIPOLAR SIGNAL.

STEP	PROCEDURE

19 Set 836 NETWORK switch on RTS to ▶L◀ and repeat Steps 12 through 17.

20 Set TEST switch on RTS to 201A-2 or 201B-2, as required, and set 836 NETWORK switch to B.

21 Set FUNCTION switch on FLTS to BI-POLAR SIGNAL or on FLS to BIPOLAR SIGNAL.

22 Repeat Steps 12 through 19 to test side 2 of the repeater.

C. Tests of Standard Power Nonintegrated Circuit-Type Repeaters

Note 1: When lightning protection is required, the 201-type repeater should be tested with the 4037-type lightning protection network in place. The P44H177 or P44H178 lightning protection network is built into the 205-type repeater.

Note 2: To eliminate the chance of rejecting a good repeater during this test, retighten all LBO screws on any repeater failing to meet the requirements; then retest the repeater. If the repeater meets all requirements, the failure was due to a faulty LBO contact or loose screws.

1 Connect test equipment as shown in Fig. 1.

2 Set switches on RTS as follows:

SWITCH OR CONTROL DESIGNATION	SWITCH OR CONTROL POSITION
PERFORMANCE—CONTINUITY	CONTINUITY
TEST	See Note
836 NETWORK	Set to lettered position corresponding to network installed in side 1. (If A or B network is used, set switch to B.)
OFF—ON	OFF
PWR ADJ	Extreme Counterclockwise

Note: Set TEST switch to 201A-1 when testing bidirectional repeaters or to 201B-1 when testing unidirectional repeaters. Refer to the following list to determine if repeater is bidirectional or unidirectional.

STEP	PROCEDURE

REPEATER CODES		TYPE OPERATION
201	205	
A D	A D	BIDIRECTIONAL
B E	B E	UNIDIRECTIONAL

3 Set switches on FLTS or FLS as follows:

J98725AD (FLTS)

SWITCH DESIGNATION	SWITCH POSITON
PULSE DENSITY	11 REF
FUNCTION	BI-POLAR SIGNAL

J98710F (FLS)

SWITCH DESIGNATION	SWITCH POSITION
PULSE PERIOD	REF
FUNCTION	BIPOLAR SIGNAL

Note: Disregard all other controls on FLTS or FLS when making this test.

4 Install 836-type networks in sides 1 and 2 of the repeater, as required, for the location where the repeater is to be installed.

Note: Be sure that the network specified for side 1 is installed in side 1 and the network specified for side 2 is installed in side 2. (Refer to span line record card.)

5 Provide the required power option.

Note: The "through" option is normally provided at the factory (T screws tightened and L screws unused). Check this option or, if required, provide the "looped" option (L screws tightened and T screws unused). Remove the two unused screws for either option.

6 Insert repeater into the mounting well of the RTS.

STEP	PROCEDURE
7	Set ON—OFF switch on RTS to ON.
8	Momentarily depress pilot lamp assembly. ***Requirement:*** The lamp in the pilot lamp assembly should extinguish. (If the lamp remains lighted, leakage is indicated between the repeater and the case.)
9	Adjust PWR ADJ control on RTS for a meter indication of 9.5 volts (this corresponds to 140 mA).
10	Depress VOLT TEST pushbutton. ***Requirement:*** For 201-type repeaters, the meter shall indicate 9.2 to 12.5 volts. For 205-type repeaters, the meter shall indicate 9.9 to 14.0 volts. ***Note:*** If testing 201-type repeaters equipped with lightning protection network, use the requirement for 205-type repeaters.
11	Set MODE switch on OBVD to CTR OFF or PULSES-ERRORS switch on EDS to PULSES. ***Note:*** At this point, the BIPOLAR VIOLATIONS LED on OBVD or the lamp on EDS may or may not be lighted. Whether the LED or lamp is or is not lighted is not significant until ERROR pushbutton on RTS is depressed.
12	Depress ERROR pushbutton on RTS. ***Requirement:*** The SIGNAL LOSS LED on the OBVD shall be extinguished or the lamp on EDS shall light, indicating that the repeater is regenerating pulses.
13	If using an EDS, set PULSES-ERRORS switch to ERRORS.
14	Depress ERROR pushbutton on RTS. ***Requirement:*** While ERROR pushbutton remains depressed, the BIPOLAR VIOLATIONS LED on OBVD or the lamp on EDS should not light. (If the lamp was previously lighted, it should be extinguished.) If the LED or lamp on OBVD or EDS flashes only at the instant ERROR pushbutton is depressed, the repeater is not defective.
15	Set FUNCTION switch on FLTS to MEAS 3 SIGNAL or on FLS to MEAS 3.
16	Depress ERROR pushbutton on RTS. ***Requirement:*** The BIPOLAR VIOLATIONS LED on OBVD or the lamp on EDS shall light, indicating errors. (This indication denotes proper operation of the repeater.)
17	Set TEST switch on RTS to 201A-2 or 201B-2, as required, and set 836 NETWORK switch to the lettered position corresponding to the network installed in side 2.

STEP	PROCEDURE

18 Set FUNCTION switch on FLTS to BI-POLAR SIGNAL or on the FLS to BIPOLAR SIGNAL.

19 Repeat Steps 11 through 16 to test side 2 of the repeater.

◗D. Tests of 7-Type Regenerators

1 Connect test equipment as shown in Fig. 1.

Note: The repeater test set should be List 2 or List 3 for testing 7-type regenerators. If a List 1 test set is used, the procedure is the same except the power adjust control is set for an indication of 9.5 volts with a requirement of 11.3 to 13.7 volts.

2 Set switches on RTS as follows:

SWITCH OR CONTROL DESIGNATION	SWITCH OR CONTROL POSITION
PERFORMANCE—CONTINUITY	CONTINUITY
TEST	201B-1
836 NETWORK	B
OFF—ON	OFF
PWR ADJ	Extreme Counterclockwise

3 Set switches on FLTS or FLS as follows:

J98725AD (FLTS)

SWITCH DESIGNATION	SWITCH POSITION
PULSE DENSITY	11 REF
FUNCTION	BI-POLAR SIGNAL

J98710F (FLS)

SWITCH DESIGNATION	SWITCH POSITION
PULSE PERIOD	REF
FUNCTION	BIPOLAR SIGNAL

Note: Disregard all other controls on FLTS or FLS when making this test.

4 Insert a 283A adapter into the mounting well of the RTS.

5 Insert the 7-type regenerator into the adapter.

STEP	PROCEDURE
6	Set ON—OFF switch on RTS to ON.
7	Momentarily depress pilot lamp assembly.
	Requirement: The lamp in the pilot lamp assembly should extinguish. (If the lamp remains lighted, leakage is indicated between the regenerator or adapter and the case.)
8	Adjust PWR ADJ control on RTS for meter indication of 5.5 volts (this corresponds to 80 mA).
9	Depress VOLT TEST pushbutton.
	Requirement: 10.3 to 12.7.
10	Set MODE switch on OBVD to CTR OFF or PULSES-ERRORS switch on EDS to PULSES.
11	Depress ERROR pushbutton on RTS.
	Requirement: The SIGNAL LOSS LED on OBVD shall be extinguished or the lamp on EDS shall light, indicating that the repeater is regenerating pulses.
12	If using an EDS, set PULSES-ERRORS switch to ERRORS.
13	Depress ERROR pushbutton on RTS.
	Requirement: While ERROR pushbutton remains depressed, the BIPOLAR VIOLATIONS LED on OBVD or the lamp on EDS shall be extinguished.
	Note: If LED or lamp flashes only at the instant ERROR pushbutton is depressed, the regenerator under test is not defective.
14	Set FUNCTION switch on FLTS to MEAS 3 SIGNAL or on FLS to MEAS 3.
15	Depress ERROR pushbutton on RTS.
	Requirement: The BIPOLAR VIOLATIONS LED on OBVD or the lamp on EDS shall light, indicating errors.
	Note: These errors indicate proper operation of the repeater under test.
16	Set FUNCTION switch on FLTS to BI-POLAR SIGNAL or on FLS to BIPOLAR SIGNAL.
17	Set 836 NETWORK switch on RTS to L and repeat Steps 9 through 14.

E. Summary

Tests of Standard Power Integrated Circuit-Type Repeaters

Setup, Fig. 1

STEP	PROCEDURE

RTS—CONTINUITY; 201A-1 or 201B-1; OFF; PWR ADJ counterclockwise

FLTS or FLS—11 REF to BI-POLAR SIGNAL (FLTS) or REF to BIPOLAR SIGNAL (FLS)

OBVD or EDS—CTR OFF (OBVD) or PULSES (EDS)

Plug adapter and repeater into RTS.

CONTROL OR SWITCH	DEPRESS	INDICATION
RTS—ON	Pilot Lamp	Pilot lamp off
PWR ADJ		9.5 volts
	VOLT TEST	▶11.1 to 12.5 volts for 201 or 208 type 12.6 to 14.1 volts for 205 or 209 type
PULSE (EDS)	ERROR	SIGNAL LOSS LED off (OBVD) or lamp on (EDS)
ERROR	ERROR	BIPOLAR VIOLATIONS LED off (OBVD) or lamp off (EDS)
MEAS 3	ERROR	BIPOLAR VIOLATIONS LED on (OBVD) or lamp on (EDS)◀

Note 1: Repeat last three steps with NETWORK switch set to ▶L.◀

Note 2: Repeat last three steps with TEST switch set to 201A-2 or 201B-2 and NETWORK switch set to B and then to ▶L.◀

Tests of Low-Power Integrated Circuit-Type Repeaters

Note: ▶The following summary is based on the use of List 2 or List 3 test set. If a List 1 test set is used, the power adjust is set for 9.5 volts with a volt test indication of 7.3 to 8.3 volts for 238-type repeaters and 8.9 to 9.9 volts for 239-type repeaters.◀

Setup, Fig. 1

RTS—CONTINUITY; 201A-1 or 201B-1; OFF; PWR ADJ counterclockwise

FLTS or FLS—11 REF to BI-POLAR SIGNAL (FLTS) or REF to BIPOLAR SIGNAL (FLS)

OBVD or EDS—CTR OFF (OBVD) or PULSES (EDS)

FL option to STD on 238A and C

Either power option

STEP	PROCEDURE

Plug adapter and repeater into RTS.

CONTROL OR SWITCH	DEPRESS	INDICATION
RTS—ON	Pilot Lamp	Pilot lamp off
PWR ADJ		◗4.0 volts◖
	VOLT TEST	◗6.4 to 7.6◖ volts for 238 type
		◗7.1 to 8.3◖ volts for 239 type
PULSES (EDS)	ERROR	SIGNAL LOSS LED off (OBVD) or lamp on (EDS)
ERRORS	ERROR	BIPOLAR VIOLATIONS LED off (OBVD) or lamp off (EDS)
MEAS 3	ERROR	BIPOLAR VIOLATIONS LED on (OBVD) or lamp on (EDS)

Note 1: Repeat last three steps with NETWORK switch set to ◗L.◖

Note 2: Repeat last five steps with TEST switch set to 201A-2 or 201B-2 and NETWORK switch set to B and then to ◗L.◖

Tests of Standard Power Nonintegrated Circuit-Type Repeaters

Setup, Fig. 1

RTS—CONTINUITY; 201A-1 or 201B-1; NETWORK to same as repeater side 1 network; ON

FLTS or FLS—11 REF to BI-POLAR SIGNAL (FLTS) or REF to BIPOLAR SIGNAL (FLS)

OBVD or EDS—CTR OFF (OBVD) or PULSES (EDS)

836-type networks in repeater

Either power option

Lightning protection in repeater when required

Plug repeater into RTS.

STEP	PROCEDURE

CONTROL OR SWITCH	DEPRESS	INDICATION
RTS—ON	Pilot Lamp	Pilot lamp off
PWR ADJ		9.5 volts
	VOLT TEST	9.2 to 12.5 volts for 201 type 9.9 to 14.0 volts for 205 type
PULSES	ERROR	SIGNAL LOSS LED off (OBVD) or lamp on (EDS)
ERRORS	ERROR	BIPOLAR VIOLATIONS LED off (OBVD) or lamp off (EDS)
MEAS 3	ERROR	BIPOLAR VIOLATIONS LED on (OBVD) or lamp on (EDS)

Note: Repeat last three steps with TEST switch set to 201A-2 or 201B-2 and NETWORK switch same as repeater side 2 network.

Tests of 7-Type Regenerators

Note: The following summary is based on the use of List 2 or List 3 test set. If a List 1 test set is used, the power adjust is set for 9.5 volts with a volt test indication of 11.3 to 13.7 volts.

Setup, Fig. 1

RTS—CONTINUITY; 201B-1; OFF; PWR ADJ counterclockwise

FLTS or FLS—11 REF to BI-POLAR SIGNAL (FLTS) or REF to BIPOLAR SIGNAL (FLS)

OBVD or EDS—CTR OFF (OBVD) or PULSES (EDS)

Plug adapter and repeater into RTS.

STEP	PROCEDURE		
	CONTROL OR SWITCH	**DEPRESS**	**INDICATION**
	RTS—ON	Pilot Lamp	Pilot lamp off
	PWR ADJ		5.5 volts
		VOLT TEST	10.3 to 12.7 volts
	PULSES (EDS)	ERROR	SIGNAL LOSS LED off (OBVD) or lamp on (EDS)
	ERRORS	ERROR	BIPOLAR VIOLATIONS LED off (OBVD) or lamp off (EDS)
	MEAS 3	ERROR	BIPOLAR VIOLATIONS LED on (OBVD) or lamp on (EDS)

Note: Repeat last three steps with NETWORK switch set to ▶L.◀

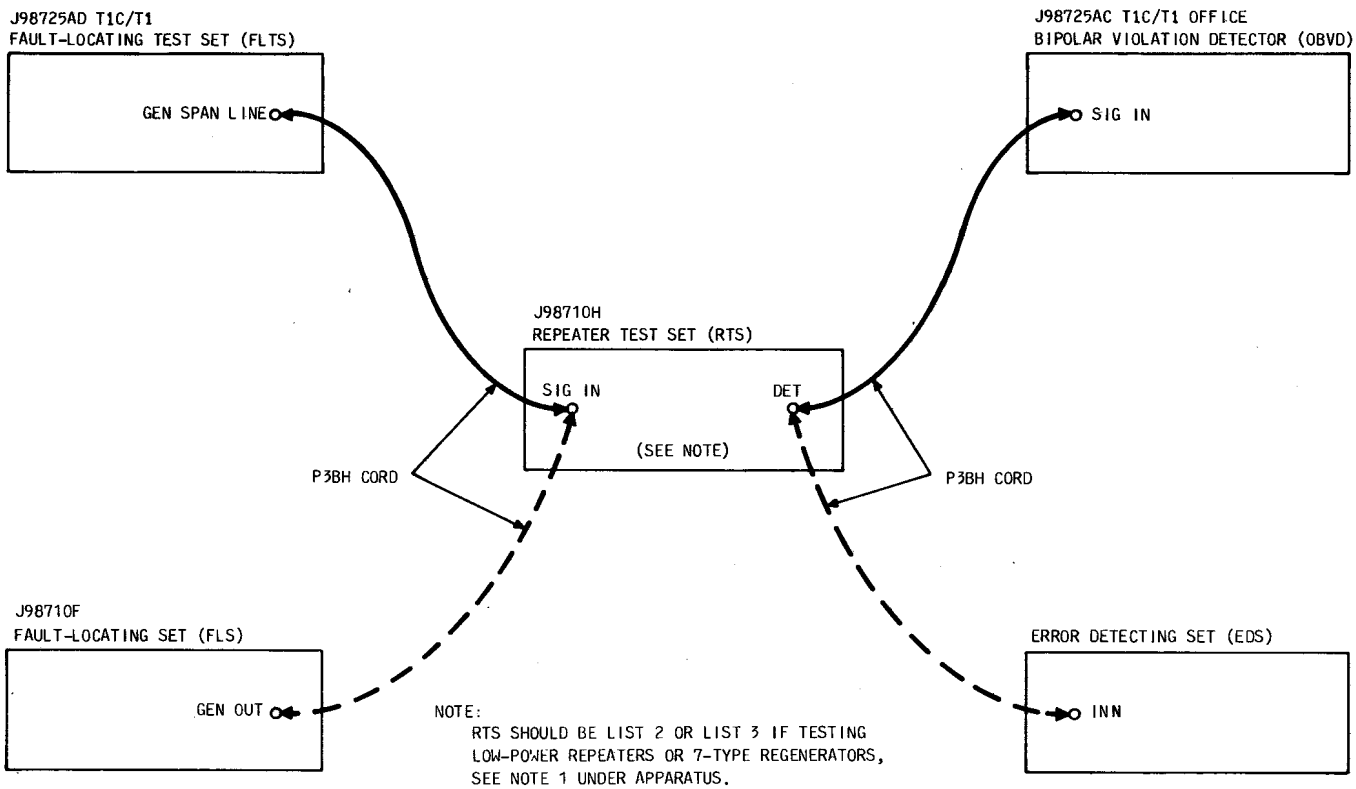

Fig. 1—▶Test Setup◀