

PERFORMANCE REQUIREMENTS
J99281S
TRANSMITTER CONTROL AND TONE SUPPLY BAY
J1 CONTROL TERMINAL
GENERAL EQUIPMENT REQUIREMENTS
RADIO SYSTEMS

1. GENERAL

1.01 This section covers the performance requirements which the transmitter control and tone supply bay shall meet before turnover to the telephone company.

1.02 This section is reissued to add timing parameters for code transmission of station identification. Since this reissue covers a general revision, the arrows ordinarily used to indicate changes have been omitted.

1.03 Reference shall be made to Section 800-630-180 covering General Requirements and Definitions for additional information necessary for the proper application of the requirements.

1.04 *Test Equipment:* Period measurements specified herein shall be made with a Hewlett-Packard Model 5243L or equivalent. In general, the counter must be able to average 1000 periods or more for the accuracy required. Transmission measurements shall be made with a vacuum-tube voltmeter (VTVM) and/or the 13A or 21A transmission measuring set. Timing tests shall be made with the J24753A timing set and/or a clock with a second hand, or a stopwatch.

1.05 Circuits under test shall be in operating condition for at least 2 hours immediately prior to the test.

1.06 The period counter shall be in operation for at least the time specified by the manufacturer, immediately prior to the tests.

1.07 Ambient temperature shall not change more than 10 F during warm-up and testing periods.

2. REQUIREMENTS

Transmission Tests

2.01 Frequency measured at the OSC OUT jack of each tone generator shall be read as a reciprocal and within the limits of Table A.

2.02 Output voltage measured by VTVM at the OSC OUT jack of each tone generator shall be:

$$3.25 \pm 0.25 \text{ Volts}$$

2.03 The variation in output voltage between any two tone generators in a group shall not exceed 0.1 volt rms.

2.04 Output measured at the OT OUT jack of each trunk originating circuit shall be with respect to Tone 1 and shall be read with the 21A transmission measuring set or equivalent. (See Table B.)

Timing Tests

2.05 The T0 relay shall operate 1 to 4 seconds after T relay has operated as read on the J27453A timing test set.

2.06 The T2 relay shall operate 500 to 600 milliseconds after T1 relay has operated, as read on the J27453A timing test set.

TABLE A

TONE POSITION	CRYSTAL FREQUENCY	OUTPUT PERIOD TOLERANCE IN MICROSECONDS	
		MIN	MAX
1	2070	1932.1805	1932.5539
2	2130	1877.7580	1878.1106
3	2190	1826.3172	1826.6508
4	2250	1777.6198	1777.9358
5	2310	1731.4518	1731.7517
6	2370	1687.6213	1687.9062
7	2430	1645.9551	1646.2260
8	2490	1606.2967	1606.5547
9	2550	1568.5044	1568.7505
10	2610	1532.4496	1532.6845
11	2670	1498.0151	1498.2396
12	2730	1465.0941	1465.3088
13	2790	1433.5890	1433.7945
14	2850	1403.4103	1403.6073
15	2910	1374.4760	1374.6649
16	2970	1346.7107	1346.8920
18	3090	1294.4146	1294.5822
19	3150	1269.7607	1269.9219
20	3210	1246.0283	1246.1836
21	3270	1223.1668	1223.3164
22	3330	1201.1291	1201.2733
23	3390	1179.8714	1180.0106
24	3450	1159.3531	1159.4875
25	3510	1139.5362	1139.6661
26	3570	1120.3854	1120.5110
27	3630	1101.8677	1101.9891
28	3690	1083.9521	1084.0696
29	3750	1066.6098	1066.7236
30	3810	1049.8137	1049.9239
31	3870	1033.5383	1033.6451
32	3930	1017.7599	1017.8635
33	3990	1002.4560	1002.5565

potentiometer fully counterclockwise and 37 to 44 seconds after the operation of T3 relay, with PTA potentiometer fully clockwise. These measurements

TABLE B

TONE POSITION	OUTPUT IN DBM BELOW TONE 1
1	—
2	0.1
3	0.3
4	0.5
5	0.7
6	1.0
7	1.3
8	1.6
9	1.7
10	1.8
11	2.0
12	2.1
13	2.3
14	2.5
15	2.7
16	2.9
18	3.3
19	3.4
20	3.6
21	3.8
22	4.0
23	4.2
24	4.4
25	4.6
26	4.7
27	4.9
28	5.0
29	5.1
30	5.2
31	5.4
32	5.6
33	5.8

All above readings shall be ± 0.3 dbm.

shall be made with a clock having a second hand or a stopwatch.

2.07 For "J" wiring, with ATF relay in the operated position, T2 relay shall operate 8 to 12 seconds after T1 relay has operated, as read with a stopwatch or clock with a second hand. For "K" wiring with ATF relay in the operated position, T2 relay shall operate 30 to 32 seconds after T1 relay has operated, as read with a stopwatch or clock with a second hand.

2.08 The T4 relay shall operate 1 to 4 seconds after T3 relay has operated with PTA

2.09 For "J" wiring, the T6 relay shall operate 13 to 20 seconds after T5 relay has operated, as read with a clock having a second hand or a stopwatch. For "K" wiring, the T6 relay shall operate 32 to 45 seconds after T5 relay has operated, as read with a clock having a second hand or a stopwatch.