DATA SET 202D-TYPE TRANSMITTER-RECEIVER INSTALLATION

1. GENERAL

1.001 This addendum is issued to supplement information found in Section 592-016-200, Issue 2.

1.002 This addendum is issued to specify the use of either a variable attenuator or fixed pad to reduce the output power of the data set. Present tariffs specify that the composite data signal power level reaching a serving central office will be no greater than −12 dBm.

1.003 The information in 1.002 is added to the section as Part 3 of the practice.

3. LOOP LOSS MEASUREMENT AND PADDING

3.01 To meet the required power levels, the necessary pad may be either ordered assembled or made up in the field and installed in accordance with Fig. 4. For information on ordering pads and identifying resistor color codes, refer to Fig. 4.

3.02 Data sets manufactured with the codes D3 and D4, Series 4, will have a variable attenuator provided in the transmitter card CP AS77.

3.03 A variable attenuator is also provided for data sets coded as equipped with reverse-channel 1A2 Data Units. This attenuator controls the output of the reverse-channel data unit only.

3.04 Figure 5 shows the location of the variable attenuators on both transmitter card AS77 and the reverse-channel 1A2 Data Unit.

3.05 The screwdriver used for making adjustments in the data set must be the insulated blade type. A KS-6854 screwdriver with a 3-1/2 inch blade may be used by taping the blade.

FIXED PAD ATTENUATOR

3.06 Measure the 1000-Hz loop loss by dialing the central office mW supply or requesting the local test board to send 1000 Hz at 0 dBm out on the loop. This call may be made over the data line to the central office with a 1013-type handset or to the local test board from a nearby telephone.

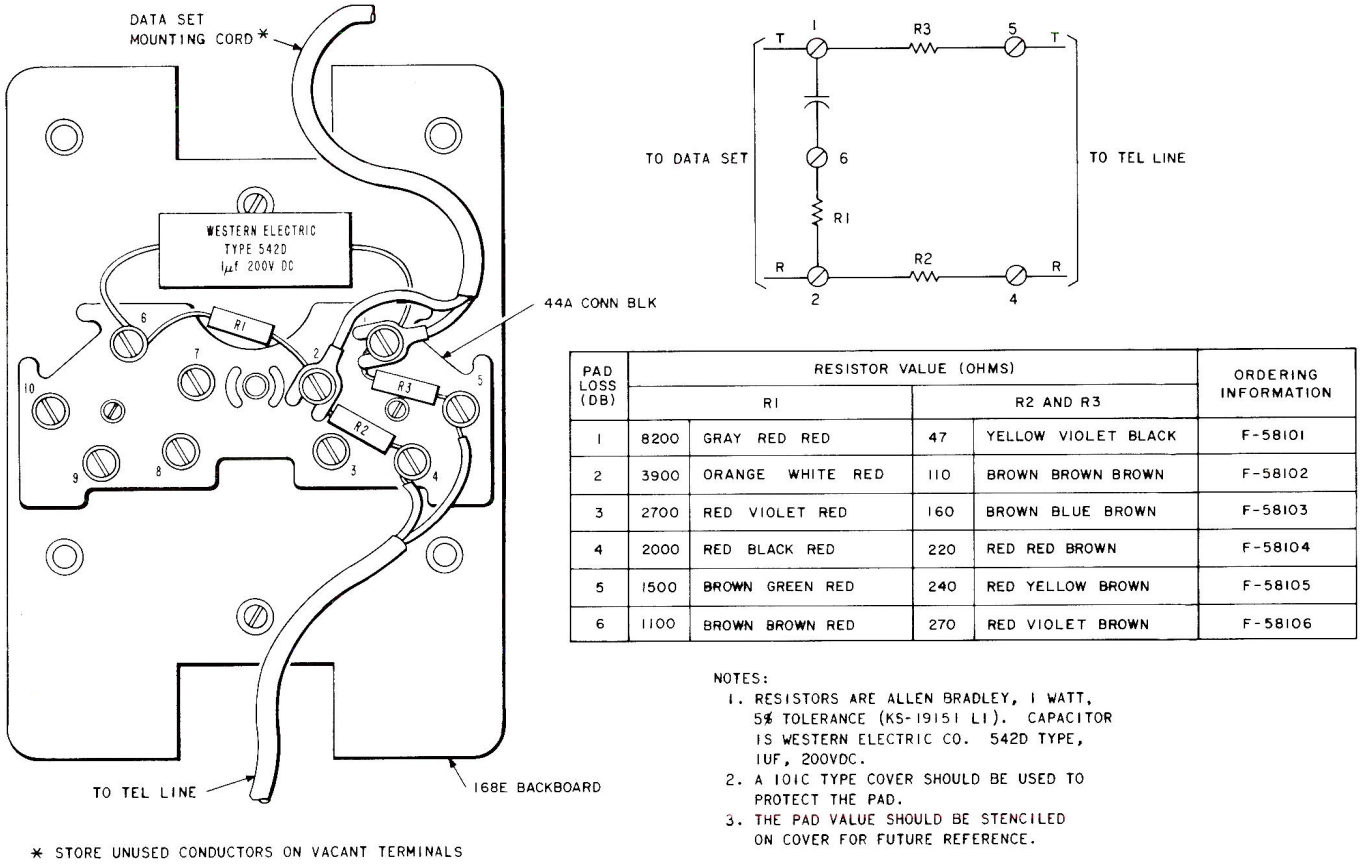
3.07 Determine the required power setting and pad value for the measured loop loss per Table B.

VARIABLE ATTENUATOR

3.08 For data sets equipped with the variable attenuator, the following method may be used to obtain the proper dB loss. Dial the central office and request the local test board to send 1000 Hz at 0 dBm on the loop (the central office 1 mW supply).

3.09 Use a TTS-4 transmission measuring set (TMS) or equivalent to measure and record the level (in dBm) of the incoming signal across the T and R of the line. This may be accomplished in two ways, the first being to bridge the TTS-4 in parallel with the data set across the line with the REC IMP switch set at the high-impedance position. Put the data set in the data mode and measure the incoming signal. The alternate method is to remove the data set from the T and R. Place the TTS-4 across the T and R of the line, set the REC IMP switch on the proper line impedance (900 ohms) and measure the incoming signal.

3.10 Request the local test board to remove the 1000-Hz tone from the line. Measure the output power level of the transmitter, both the 1200-Hz MARK tone and, if so equipped, the 387-Hz reverse-channel tone of the 1A2 Data Unit (in dBm). This can be accomplished in the same manner as described in the previous paragraph. However, the data set must be placed in the send data



PAD LOSS (DB)	RESISTOR VALUE (OHMS)				ORDERING INFORMATION
	R1		R2 AND R3		
1	8200	GRAY RED RED	47	YELLOW VIOLET BLACK	F-58101
2	3900	ORANGE WHITE RED	110	BROWN BROWN BROWN	F-58102
3	2700	RED VIOLET RED	160	BROWN BLUE BROWN	F-58103
4	2000	RED BLACK RED	220	RED RED BROWN	F-58104
5	1500	BROWN GREEN RED	240	RED YELLOW BROWN	F-58105
6	1100	BROWN BROWN RED	270	RED VIOLET BROWN	F-58106

NOTES:
1. RESISTORS ARE ALLEN BRADLEY, 1 WATT, 5% TOLERANCE (KS-19151 L1). CAPACITOR IS WESTERN ELECTRIC CO. 542D TYPE, 1UF, 200VDC.
2. A 101C TYPE COVER SHOULD BE USED TO PROTECT THE PAD.
3. THE PAD VALUE SHOULD BE STENCILED ON COVER FOR FUTURE REFERENCE.

Fig. 4—Insertion Loss Pad Connections

condition of the data mode (a voltage greater than −3 volts for the MARK condition and a voltage greater than +3 volts for the SPACE condition) to make this measurement.

3.11 Adjust the potentiometer R35 on the transmitter CP AS77 (1200-Hz MARK tone) and, if applicable, the R12 on the 1A2 Data Unit (387-Hz reverse-channel tone) so that the data set output is equal to the difference (in dB) between the desired central office power level of −12 dBm and the reading obtained from the signal level (in dBm) on the T and R of the line found in 3.09.

3.12 Record the addition of the pad and new power levels on the circuit layout record card.

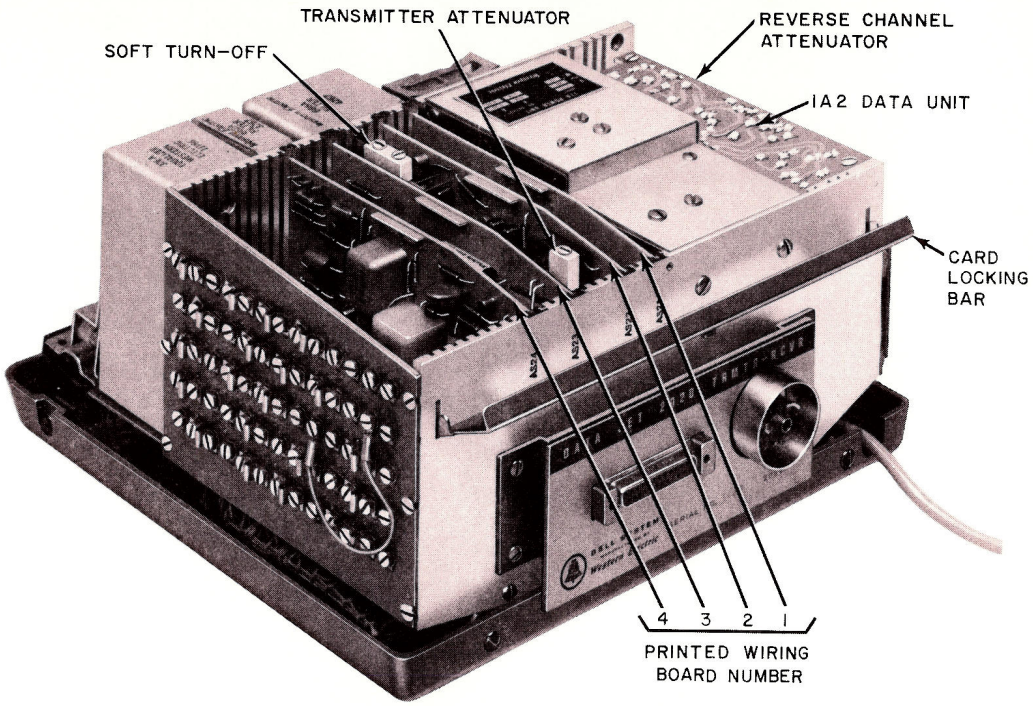


Fig. 5—Data Set 202D-Type, Rear View

TABLE B

MEASURED LOOP LOSS IN DB	0–1	1–2	2–3	3–4	4–5	5–6	6–7	7–8	8–9	9–10	10–11	11–12
POWER SETTING (DATA SET OPTION STRAP)	–9	–9	–9	–9	–6	–6	–6	–3	–3	–3	0	0
PAD (dB) LOSS	3	2	1	–	2	1	–	2	1	–	2	1