

BELL SYSTEM PRACTICES  
Transmission and Engineering Data  
Telegraph Systems  
Circuit Layout Engineering Practices  
Toll Test Room Operations  
Description and Operating Principles  
Teletypewriter

ADDENDUM AB85.025  
ADDENDUM E45.572  
ADDENDUM P70.500 ✓  
ADDENDUM CLE 5.58  
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Long Lines Department  
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ENGINEERING AND OPERATING CONSIDERATIONS INVOLVED  
IN FURNISHING CIRCUITS  
TO WESTERN UNION TELEGRAPH COMPANY UNDER SPECIAL CONTRACT

1. GENERAL

1.01 This addendum to AB85.025, also numbered E45.572, and P70.500, is issued to include (a) Tables 1 and 2 covering additional information on circuit levels to be employed for Facsimile and Data Signals and (b) Figure 1 covering circuit interconnection arrangements. Figure 1 of the addendum replaces Figures 1A and 1B of the attachment to the main section entitled "Engineering Notes".

2. ENGINEERING AND MAINTENANCE INFORMATION

2.06 Replace paragraph 2.06 with the following:

The levels for AM and FM data are included in Tables 1 and 2. These levels apply only to voice-bandwidth channels. Where channels of wider bandwidth are involved, the latest information should be obtained.

TABLE 1

FACSIMILE AND DATA CHANNELS  
(BINARY TRANSMISSION SYSTEMS)

Recommended Channel Levels at Zero db  
Level Point on Telephone Circuit

<u>Type of System</u>	<u>No. of Signal Channel per Telephone Channel</u>	<u>Maximum Signal</u>		<u>Average Power of Signal</u>
		<u>dbm</u>	<u>Volts Peak-Peak</u>	<u>dbm</u>
AM Facsimile	Single	-4	1.39	-10 *
FM Facsimile	Single	-8	.875	- 8
AM Data	Single	-8	.875	-11
FM Data	Single	-8	.875	- 8
AM Data	N	-8 **	Table 2	-11 **
FM Data	N	-8 **	Table 2	- 8 **

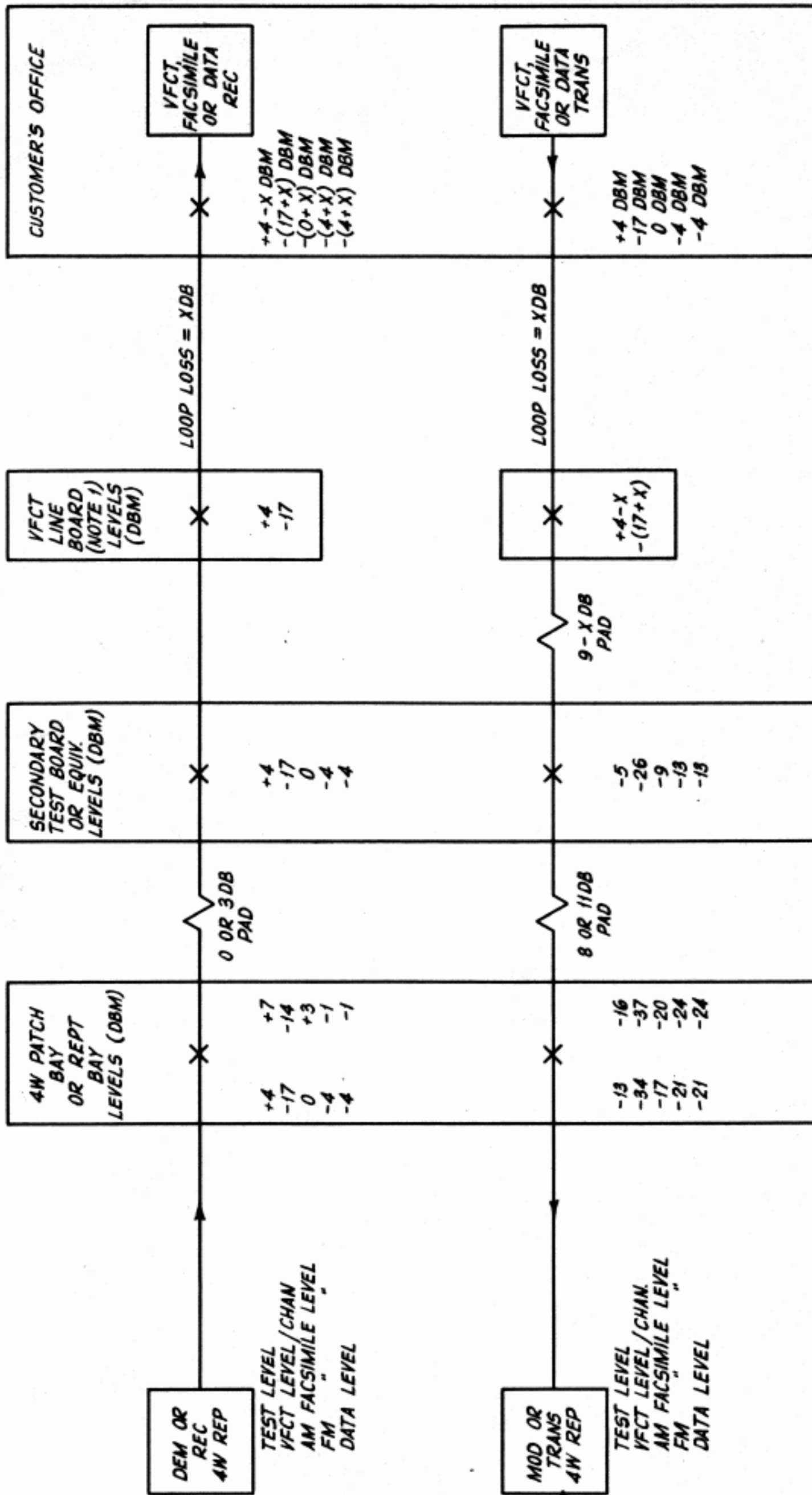
\* Depends on subject. May be lower for "black maximum" and typewritten copy.

\*\* Total power for N channels. Power per signal channel is  $-(8+10 \log N)$ .

TABLE 2

Relation Between Number of  
Signal Channels and Signal Power

<u>No. of Signal Channels (N)</u>	<u>Total Power per Telephone Channel (dbm)</u>	<u>Power per Signal Channel (dbm)</u>	<u>Peak Power per Telephone Channel</u>	
			<u>dbm</u>	<u>Volts Peak-Peak</u>
1	-8	-8	-8	.875
2	-8	-11	-5	1.24
4	-8	-14	-2	1.75
8	-8	-17	+1	2.50
16	-8	-20	+4	3.50
N	-8	$-(8+10 \log N)$		



NOTE 1 - CIRCUIT ROUTED VIA  
 VFCT LINE BOARD ONLY WHEN  
 EXISTING DC TELEGRAPH LOOPS  
 ARE USED.

FIG. 1 - INTERCONNECTING CIRCUIT AND CIRCUIT LEVELS (DBM) FOR VFCT, FACSIMILE AND DATA LAYOUTS  
 FURNISHED TO TELEGRAPH COMPANIES