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This supplement to PUB 41014, "Data Communications Using DATAPHONE<sup>®</sup> Select-A-Station Service, June, 1976" is being issued to correct one detail contained in the preliminary description of the addressable version of the service, and to transmit the seven tables which were inadvertently omitted from the document.

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Correction to 2.2.1 - Addressing Protocol

After preliminary transmission testing of the addressable system, it seems advisable to include some added protection against the possibility of turn-off transients mutilating address information. A way of accomplishing this with minimal effect on overhead is by the addition of an extra stop bit at the end of of the address character. This adds 0.83 msec overhead per character. The change is most easily implemented by altering the data format at the customer interface. Hence, customer address information is to be presented to the SCU as one (or more) characters consisting of a start bit, a seven bit address, and even parity bit, and two stop bits.

This change in data format also slightly affects the validity of Figures A-6 through A-9, which will be revised in the next issue of this Technical Reference.

TABLE 1

CATALOG OF CONNECTION TIMES (IN MILLISECONDS)

20	280	1920
30	320	2080
40	360	2240
50	400	2400
60	440	2560
70	480	3200
80	520	3840
90	560	4480
100	600	5120
110	640	5760
120	800	6400
130	960	7040
140	1120	7680
150	1280	8320
160	1440	8960
200	1600	9600
240	1760	10240

TABLE 2

SUMMARY OF END-TO-END BANDWIDTH AND FACILITY PARAMETER LIMITS

1.	Attenuation Distortion (Reference 1004 Hz) 504 - 2804 Hz	-4 to +14 dB
2.	Envelope Delay Distortion 804 - 2604 Hz	1750 $\mu$ sec
3.	1004 Hz Loss Variation long term	$\pm 6$ dB
4.	C-Message Noise at 4-wire station termination at 2-wire station termination	46 dBrnC 32 dBrnC
5.	C-Notched Noise 1004 Hz signal to C-notched noise ratio	21 dB
6.	Impulse Noise threshold with respect to received 1004 Hz test tone power -6 dB -2 dB +2 dB	maximum counts above threshold allowed in 15 minutes 30 18 10
7.	Single Frequency Interference	at least 3 dB below C-message noise limits
8.	Frequency Shift	$\pm 5$ Hz
9.	Phase Jitter	15 $^{\circ}$ peak to peak
10.	Nonlinear Distortion (Four Tone Measurement Method) signal to 2nd order signal to 3rd order	25 dB 28 dB
11.	Phase Hits (objective) no. of hits $>20^{\circ}$ in 15 minutes	8
12.	Gain Hits (objective) no. of hits $>3$ dB in 15 minutes	8
13.	Dropouts (objective) no. of dropouts in 15 minutes	2

TABLE 3

INPUT FREQUENCIES HAVING INBAND DISTORTION  
BUILDING UP AT RELATIVELY  
FEW OUTPUT FREQUENCIES  
(PCM SYSTEMS)

<u>Input Frequency (Hz)</u>	<u>Distortion Output Frequencies (Hz)*</u>
800	800, 1600, 2400, 3200
888 8/9	888 8/9, 1777 7/9, 2666 2/3
1000	1000, 2000, 3000
1142 6/7	1142 6/7, 2285 5/7, 3428 4/7
1333 1/3	1333 1/3, 2666 2/3
1600	1600, 3200
1777 7/9	888 8/9, 1777 7/9, 2666 2/3
2000	2000
2285 5/7	1142 6/7, 2285 5/7, 3428 4/7
2400	800, 1600, 2400, 3200
2666 2/3	2666 2/3
3000	1000, 2000, 3000
3200	1600, 3200
3428 4/7	1142 6/7, 2285 5/7, 3428 4/7

\* 0 Hz and above 3500 Hz excluded.

TABLE 4  
GUIDELINES FOR  
ROUND TRIP PROPAGATION DELAY  
(IN MILLISECONDS)

<u>Airline Miles</u>	<u>Estimated Best Case</u>	<u>Typical</u>	<u>Estimated Worst Case</u>
0- 20	0.1	3	11
20- 50	1.5	4	14
50- 100	2	6	19
100- 180	4	8	21
180- 300	5	11	22
300- 400	7	12	26
400- 500	8	15	32
500- 600	10	16	32
600- 700	12	17	32
700- 800	14	20	32
800- 900	15	21	35
900-1000	17	23	35
1000-1250	18	25	37
1250-1500	20	28	43
1500-1750	24	32	47
1750-2000	27	35	48
2000-2250	31	38	52
2250-2500	33	41	60
2500-3000	36	46	60

TABLE 5

SEQUENTIAL INTERFACE

<u>PIN NO.</u>	<u>DIRECTION</u>	<u>LEAD</u>
1		Not Used
2-5		Reserved for Addressable Offering
6	From SCU	Data Set Ready (CC)
7		Signal Ground (AB)
8		Reserved for Addressable Offering
9-11		Not Used
12	From SCU	Primary Frame (PF)
13		Not Used
14	To SCU	Send Secondary Control Signal (SC)
15		Not Used
16	From SCU	Secondary Frame (SF)
17-18	From SCU	End-to-End Receive Pair
19	To SCU	Send Primary Control Signal (PC)
20		Reserved for Addressable Offering
21-22		Not Used
23-24	To SCU	End-to-End Transmit Pair
25		Reserved for Addressable Offering

TABLE 6  
ADDRESSABLE INTERFACE

<u>PIN NO.</u>	<u>DIRECTION</u>	<u>LEAD</u>
1		Not Used
2	To SCU	Transmitted Data (BA)
3	From SCU	Received Data (BB)
4	To SCU	Request to Send (CA)
5	From SCU	Clear to Send (CB)
6	From SCU	Data Set Ready (CC)
7		Signal Ground (AB)
8	From SCU	Received Line Signal Detector (CF)
9-11		Not Used
12	From SCU	Primary Acknowledgment (PA)
13		Not Used
14	To SCU	Send Secondary Control Signal (SC)
15		Not Used
16	From SCU	Secondary Acknowledgment (SA)
17-18	From SCU	End-to-End Receive Pair
19	To SCU	Send Primary Control Signal (PC)
20	To SCU	Data Terminal Ready (CD)
21-22		Not Used
23-24	To SCU	End-to-End Transmit Pair
25	To SCU	Carrier Detector Reset (CR)

TABLE 7

SUMMARY OF USER OPTIONS

Master Site (833A Data Station)

1. Addressable or sequential for each SCU
2. AC or DC power for each data mounting
3. Signal Ground-Frame Ground connection for each data mounting
4. Rack or cabinet mounted

Data Station Selector (DSS)

1. Primary or secondary
2. If secondary, port number on primary to which it is to be connected.
3. Sequential or addressable
4. If addressable, single or double address technique for error control
5. If sequential; automatic step, automatic step with reset, or controlled step
6. Fixed connection time (for automatic step, automatic step with reset, and sequential mode of addressable) - see Table 1 for times
7. Cycle length (for sequential and sequential mode of addressable) - in steps of 8 up to 128 for sequential and up to 125 for sequential mode of addressable

Remote Station

1. 2-wire or 4-wire
2. DSS port number to which it is to be connected