

1800B-L1 DATA CONTROL UNIT (RCU) DESCRIPTION AND OPERATION

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Otherwise the RCU will provide only monitoring functions.

1.04 The RCU may be desk-top or shelf mounted. Connection to a 1200A DM is made via the DDD network utilizing data sets (DSs) 212A-type (Fig. 3). The RCU is connected to a DS 212A-type using an M25J cord which is supplied with the RCU. The 1800B RCU can also be used to link external test sets to the multiplexer. An additional 25 pin Electronic Industries Association (EIA) connector on the rear panel of the RCU (Fig. 4) provides a connection for the external test equipment.

1. GENERAL

1.01 This section contains the physical and functional descriptions of the 1800B-L1 data control unit (referred to as RCU). The RCU is remotely located at a customer premises or at a multiplex test facility (MTF) and gains access to the Data Multiplex System (DMS) via a direct distance dialing (DDD) connection to the master data multiplexer (DM). See Fig. 1.

1.02 Whenever this section is reissued, the reason for reissue will be listed in this paragraph.

1.03 The 1800B-L1 RCU (Fig. 2) provides controls, testing, and monitoring functions for the DMS from a remotely located position. Controls are provided to make channel assignments and to activate loopbacks for testing. Indicators are provided which display fault indications, asynchronous channel activity, and the status of the interface leads for any selected asynchronous channel. Other indicators display the channel elements (speed, code, destination for a selected channel, and whether the autobaud feature is provided in that channel).

Note: Before the RCU can assume any control over the DMS, the 1800A-L1 data control unit (LCU) located at the master DM must be in the remote test (RT) mode.

2. PHYSICAL DESCRIPTION

2.01 The 1800B-L1 RCU contains its own built-in power supplies (+5 and ± 12 Vdc) and a fan for cooling purposes. The RCU is 10.6 inches wide, 11.2 inches deep, 3.3 inches high, and weighs approximately 10 pounds.

2.02 The 1800B-L1 RCU will operate in an environment of 40° to 120°F, with a relative humidity of less than 95 percent.

3. FUNCTIONAL DESCRIPTION

3.01 Once the multiplexer system is physically set up (data sets, data service units, transmission facilities, DMs, basic configurations, and synchronous speeds are installed) control, monitoring, testing, and trouble isolation can be accomplished through the 1800B-L1 RCU if the 1800A-L1 LCU is in the RT mode.

3.02 The RCU may be used to change channel element information in accordance with hardware existing at an equipment location.

3.03 The master DM continuously performs an in-service test in each channel by circulating test bits through remote DMs. Failure of this test is indicated by a flashing (1/2 second on—1/2 second

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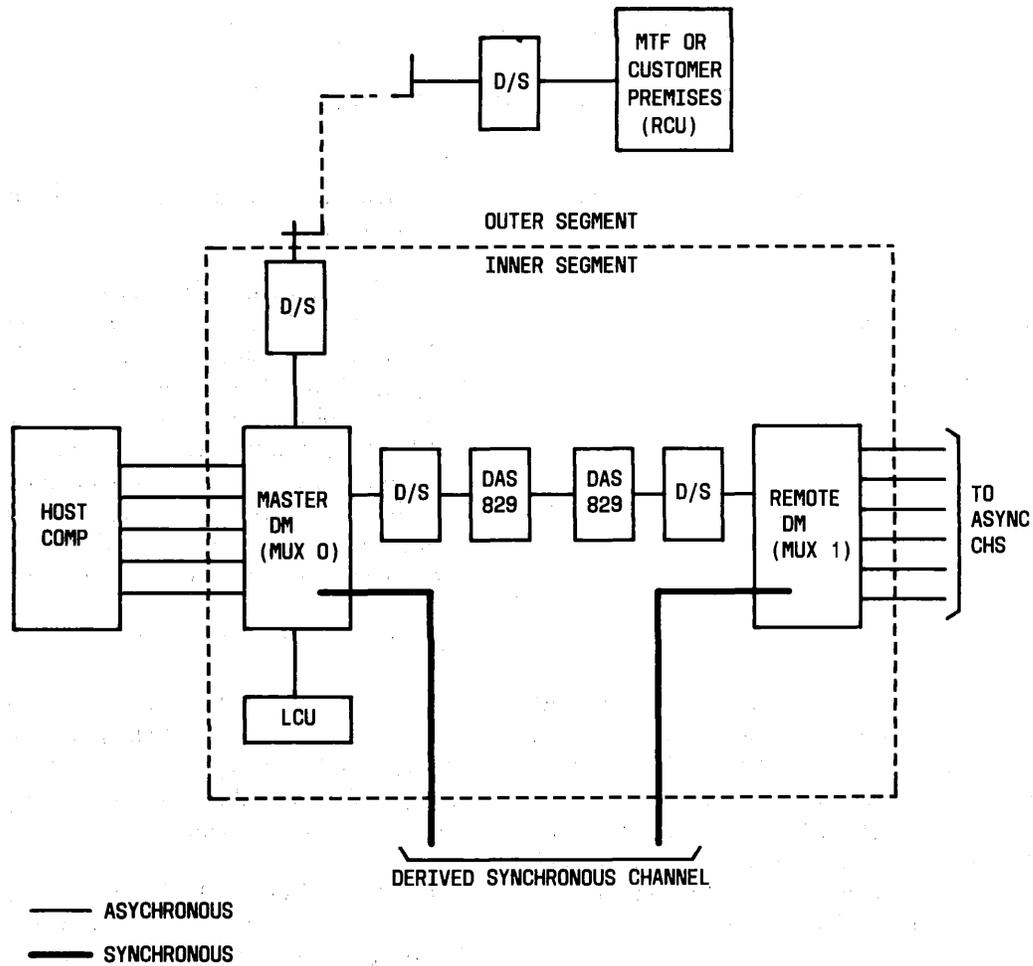


Fig. 1—Typical DMS Network

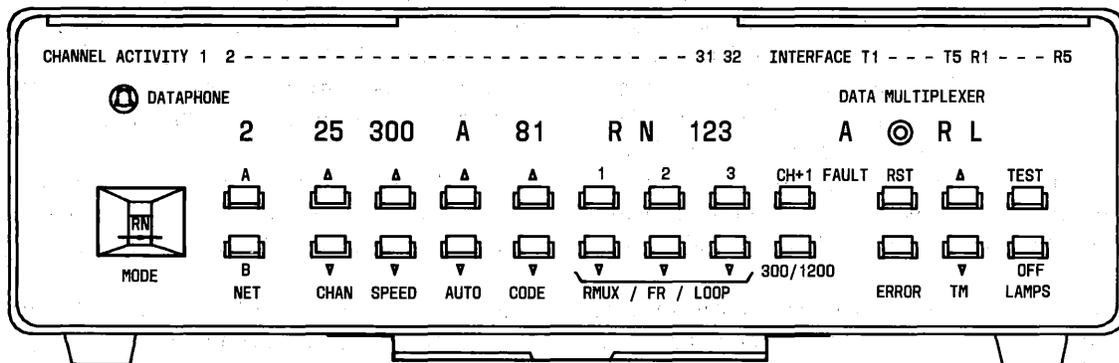


Fig. 2—1800B-LI Data Control Unit (RCU)

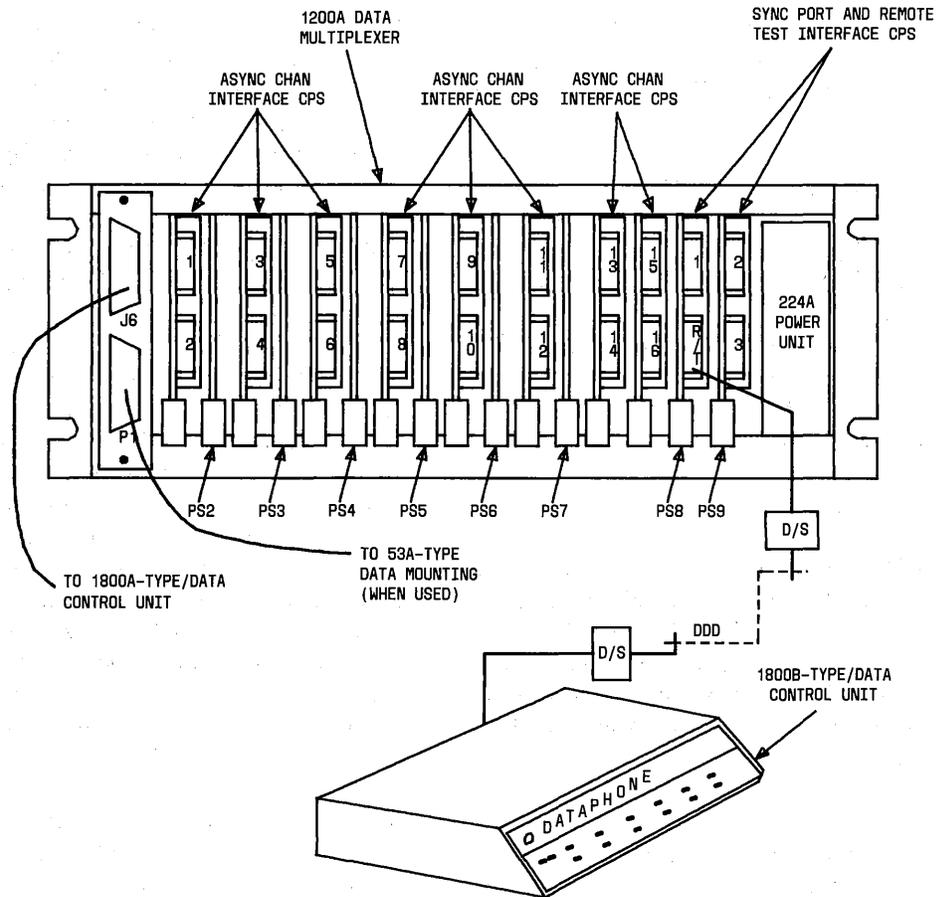


Fig. 3—1200A Type DM and 1800B-LI Data Control Unit

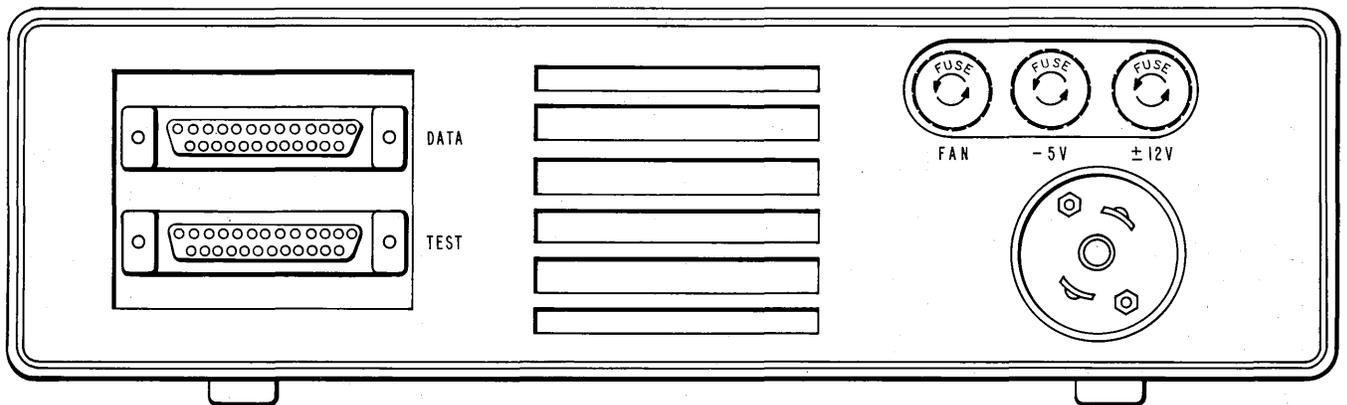


Fig. 4—1800B-LI Data Control Unit (RCU) Rear Panel

off) channel activity lamp on the RCU. The channel activity lamps indicate which channels are active (transmitting data from master DM toward remote DM) by a constant light.

3.04 The MODE switch controls the RCU mode of operation. These modes are run (RN), low speed change (LS), frame change (FR), monitor test (MT) and test (TM). Only the switches required for the selected mode of operation are active as shown in Table A. This feature prevents service or system disruption by the operation of nonrelated switches. The channel activity and interface lamps on the RCU are unaffected by the MODE switch position.

3.05 In the RN mode, the only switches active (other than LAMP TEST) are channel select (CHAN) and associated DS 212A speed select (300/1200) so no changes can be entered in the system. The channel elements are displayed on the RCU along with the state of the interface leads for the selected channel.

3.06 The LS mode is used for entering channel element information. The appropriate asynchronous channel is selected, the speed and code (character structure) are advanced to the correct values, autobaud or no autobaud is entered, and the channel destination (RMUX) is selected.

3.07 If the next channel in sequence requires the same settings, the information can be entered in the LS mode by depressing the repeat previous information channel switch (CH+1). The channel number is automatically advanced by one, and the channel element information is stored.

3.08 In the FR mode, the upper three frame buttons (RMUX/FR/LOOP 1, 2, or 3) are used to generate frame 1, 2, or 3. Depressing one of these buttons causes the master DM to build the corresponding frame and send it to the remote DM. When this procedure is completed, the frame number indicator above the button should go off. The procedure is repeated for each frame required. If the synchronous line capacity is exceeded within a frame, if no asynchronous channels are assigned to a frame, or if an attempt is made to assign only asynchronous channels with zero speed to a synchronous line, the frame number indicator will flash. Depressing the lower button turns off the indicator and signals the microprocessor in the master DM to stop attempting to build a frame.

3.09 In the MT mode, the RCU provides monitoring and testing capabilities that are primarily involved with testing and adjusting terminal equipment. The MT mode allows test equipment connected to the RCU test connector (Fig. 4) to perform in-service monitoring of data on an individual asynchronous channel, to perform out-of-service

TABLE A

RCU SWITCH OPERATION

MODE IDENTIFICATION	MODE	NET	CHAN	SPEED	AUTO	CODE	RMUX/FR/LOOP			CH+1	300/1200	RST ERROR	TM	TEST LAMPS
							1	2	3					
RUN MODE	RN	—	X	—	—	—	—	—	—	—	X	—	—	X
LOW SPEED CHANGE	LS	—	X	X	X	X	X	X	X	X	—	—	—	X
FRAME CHANGE	FR	X	X	—	—	—	X	X	X	—	—	—	—	X
MONITOR TEST	MT	—	—	—	—	—	—	—	—	—	—	—	X	X
TEST MODE	TM	—	X	—	—	—	X	X	X	—	—	—	X	X

X — switch active

terminal testing of a terminal connected to an asynchronous channel, and to perform out-of-service loopback testing on an asynchronous channel. In the MT mode, monitoring and testing results are displayed at external test equipment connected to the RCU. Display information at the RCU is not updated and what is shown is the last display information received before entering the MT mode.

3.10 In the TM mode, various asynchronous and synchronous channel loopback tests can be initiated. In each test, a fixed data word is generated in the master DM and inserted in the selected asynchronous channel, looped at the appropriate point, and the received word is compared to the transmitted word by the master DM. On entering each test, the error lamp is forced on for a few seconds and then turned off if the test passes. If the test fails, the ERROR lamp (located above RST button) turns on and the alphabetic characters indicating the test flashes on and off. If the test passes, the flashing of the alphabetic characters can be stopped by depressing the RST button.

3.11 The configuration (NET) buttons select one of the two transmission configuration (network layout) options (Fig. 5) that are installed in the DM.

3.12 The channel (CHAN) buttons select one of the asynchronous channels (up to the maximum of 32 channels) for monitoring, testing, or changing channel element information.

3.13 The speed (SPEED) buttons select one of the allowable channel speeds (0, 75, 110, 134.5, 150, 300, 600, and 1200) in bits per second (bps) to be entered into the selected channel. Channel speed 75 is also used for 74.2 bps. When a speed is selected, the DM selects the standard character structure code (information/stop bit code) for that speed.

3.14 The autobaud (AUTO) buttons enable or remove this optional feature from the selected channel (the autobaud feature permits use of a variety of terminal operating speeds in the same channel).

3.15 The code (CODE) buttons select the character structure code (information/stop bit code). They are used when a nonstandard code is to be used with the selected channel speed. Care must

be taken that a nonstandard code does not lead to a higher than acceptable character rate.

3.16 The destination (RMUX/FR/LOOP) buttons have a multiple use depending upon the position of the MODE switch (3.04). In the LS mode, the destination buttons are used to enter the frame number or remote multiplexer (RMUX) that the displayed channel is assigned. In the FR mode, the destination buttons are used to instruct the controller to build new frames (FR) (assign time slots to the asynchronous channels in the synchronous data stream) from the asynchronous channel information. In the TM mode, the destination buttons initiate various synchronous channel loopbacks (LOOP) in combination with TM button positions.

3.17 The CH+1 button (upper) allows the channel signal elements of the next channel to be entered quickly if they are the same as the previous channel. This button only functions in the LS mode. The lower button (300/1200) located under CH+1 is used to determine the speed of operation (300 or 1200 bps) of the data set 212A connected to the RCU. The 300/1200 button is operational only in the RN mode.

3.18 The test mode (TM) buttons select a particular test to be implemented. The reset (RST) ERROR button (upper ERROR button) allows a test error to be cleared. The lower ERROR button is presently nonfunctional.

3.19 The LAMPS TEST button lights all displays on the RCU. The LAMPS OFF button turns off all displays except the fault (FAULT) and MODE displays.

3.20 The FAULT display flashes if there is a synchronous fault in the system.

3.21 The CHANNEL ACTIVITY displays light the asynchronous channel number for a minimum of approximately 3 seconds whenever data is being transmitted from master toward remote DM and goes off whenever data is interrupted for approximately 3 seconds.

3.22 The INTERFACE display indicates the status of the control leads of the displayed channel number.

4. OPERATION

4.01 The RCU (Fig. 2) will be used by the MTF or the customer at a remote location to control the DMS. Alphanumeric readouts are provided to assist the customer in determining status of each button on the RCU.

4.02 There are eight basic configurations available for the network (Fig. 5). NET A button selects the first and NET B button selects the second of two possible network configuration options installed in the master DM. There are limitations on switching between the network configurations. Only NET options 1&5, 1&6, or 1&7 may be used as NET A and NET B when dual NET options are considered on installation. If the customer does not anticipate switching between the two options, the desired option is installed for both buttons making the choice irrelevant. The selected option is displayed above the NET buttons. Additional equipment arrangements as subsets of the basic configurations are also shown in Fig. 5.

Note: The configurations shown in Fig. 5 are typical network arrangements with maximum synchronous line speeds and asynchronous channel capacities. The synchronous line speeds and asynchronous channel capacities could be different from the ones shown depending on the environment in which the network is used.

4.03 The asynchronous channel number (1 through 32 displayed above the CHAN buttons) is increased or decreased one count by momentarily depressing the upper or lower CHAN button, respectively. The count goes up to 32 and increasing one count from channel 32 produces channel number 1. Decreasing the count from channel 1 produces channel number 32. If the CHAN button is held for more than 1 second, an internal clock automatically increases or decreases at the rate of approximately two counts per second.

4.04 The speed of the selected channel (displayed above the SPEED buttons) is increased or decreased one count by momentarily depressing the upper or lower button, respectively. The allowable speeds are 0, 75, 110, 134.5 (displayed 134), 150, 300, 600, and 1200 (displayed 1.2) bps in the order shown. The 0 speed is used to busy-out a channel. Speed 75 may also be used for 74.2 bps. As the speed is entered, the standard

character structure code for that speed is also automatically entered and displayed above the CODE buttons. The standard code for 150, 300, 600, and 1200 speeds is an 8-information bit, 1-stop bit code (displayed 81). The standard code for 134.5 speed is a 7-information bit, 1-stop bit code (displayed 71). The code for 110 speed is an 8-information bit, 2-stop bit code (displayed 82). The code for 75 speed is a 5-information bit, 1.5-stop bit code (displayed 52). At 0 speed, the code is irrelevant, but 51 is displayed.

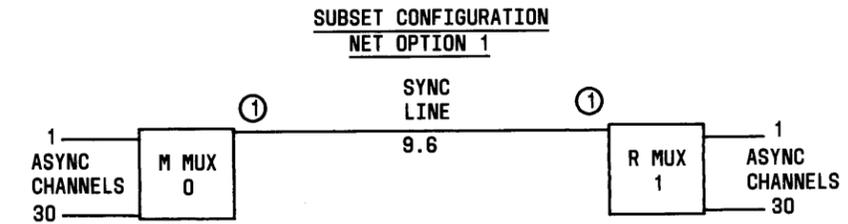
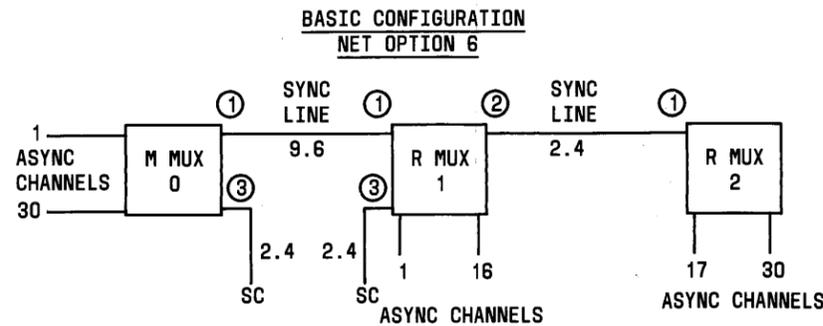
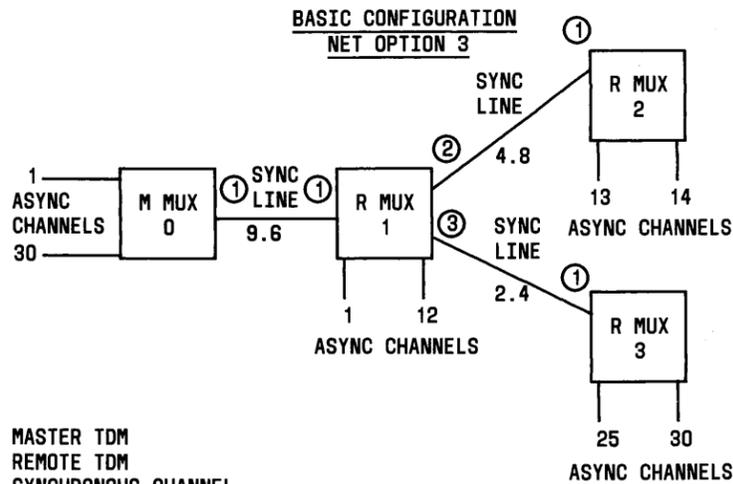
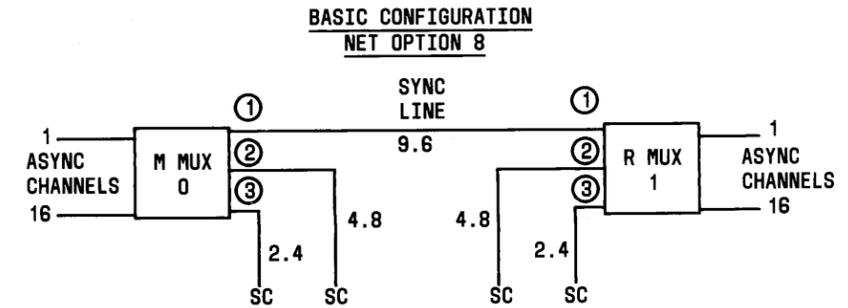
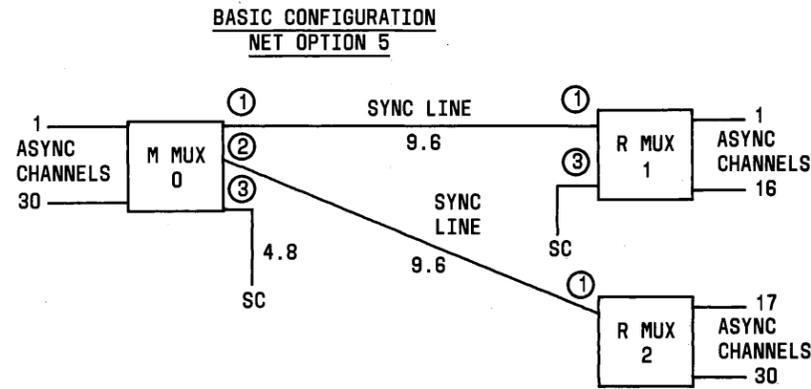
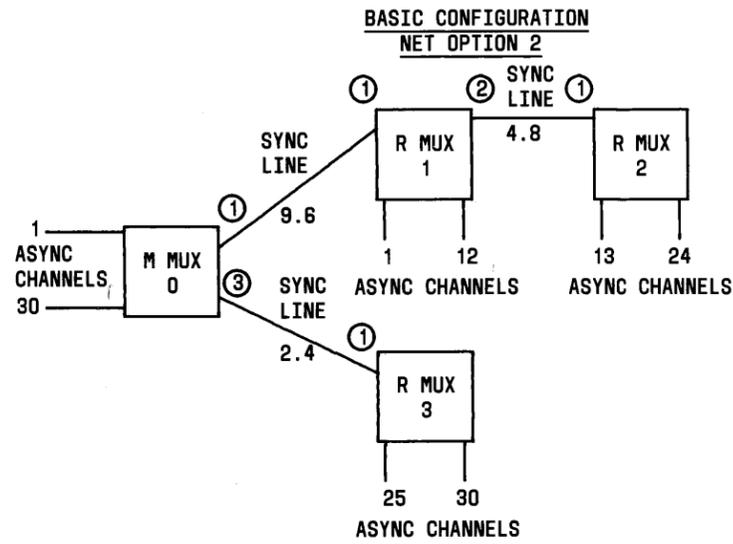
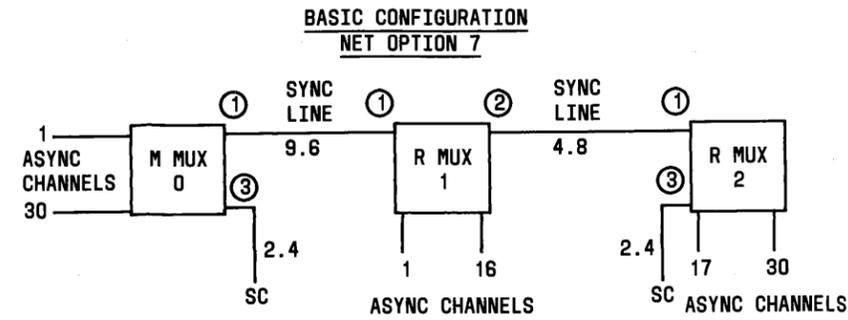
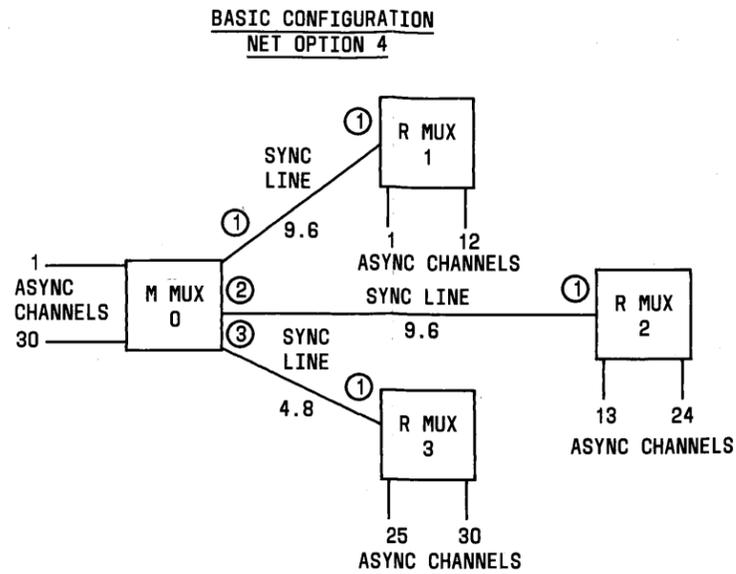
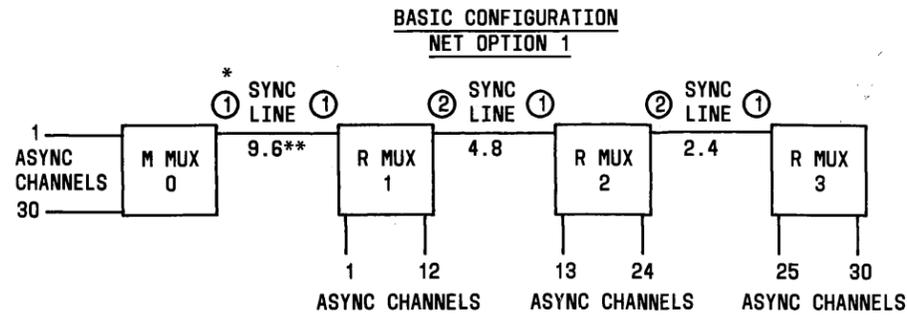
4.05 The selected channel can be conditioned as an autobaud channel in the DM by depressing the upper AUTO button. The letter A (displayed above the AUTO buttons) indicates that the information has been entered. The lower AUTO button is depressed to remove the autobaud condition previously entered. An autobaud condition can only be entered if the speed setting is 300 or 1200 bps. (The 1200-bps speed setting is not functional with autobaud at this time). Depressing the upper AUTO button will have no effect at any other speed. If a nonstandard code is entered at a speed of 300 or 1200 bps, depressing the AUTO button will cause the code display to change to 81.

4.06 If the transmission scheme for the selected channel requires a nonstandard code, the code can be selected and entered by momentarily depressing the upper or lower CODE button. The code display will be increased (upper button) or decreased (lower button) one count each time the button is depressed. The codes displayed are 51, 52, 61, 62, 71, 72, 81, 82, in the order shown. The first digit is the number of information bits and the second, the number of stop bits in the code.



Care must be taken that a nonstandard code does not lead to a higher than acceptable character rate. Asynchronous channel characters are sent from multiplexer to multiplexer at a rate 11.1 percent greater than the nominal character rate of the channel. If certain codes are used at a given bit rate, the nominal character rate will be exceeded by more than 11.1 percent and data characters will be lost.

4.07 In the LS mode, the RMUX/FR/LOOP buttons are used to enter the remote DM destination



M MUX = MASTER TDM
R MUX = REMOTE TDM
SC = SYNCHRONOUS CHANNEL
* = SYNCHRONOUS PORT NUMBER
** = SYNCHRONOUS LINE SPEED

Fig. 5—Network Configurations (Sheet 1 of 2)

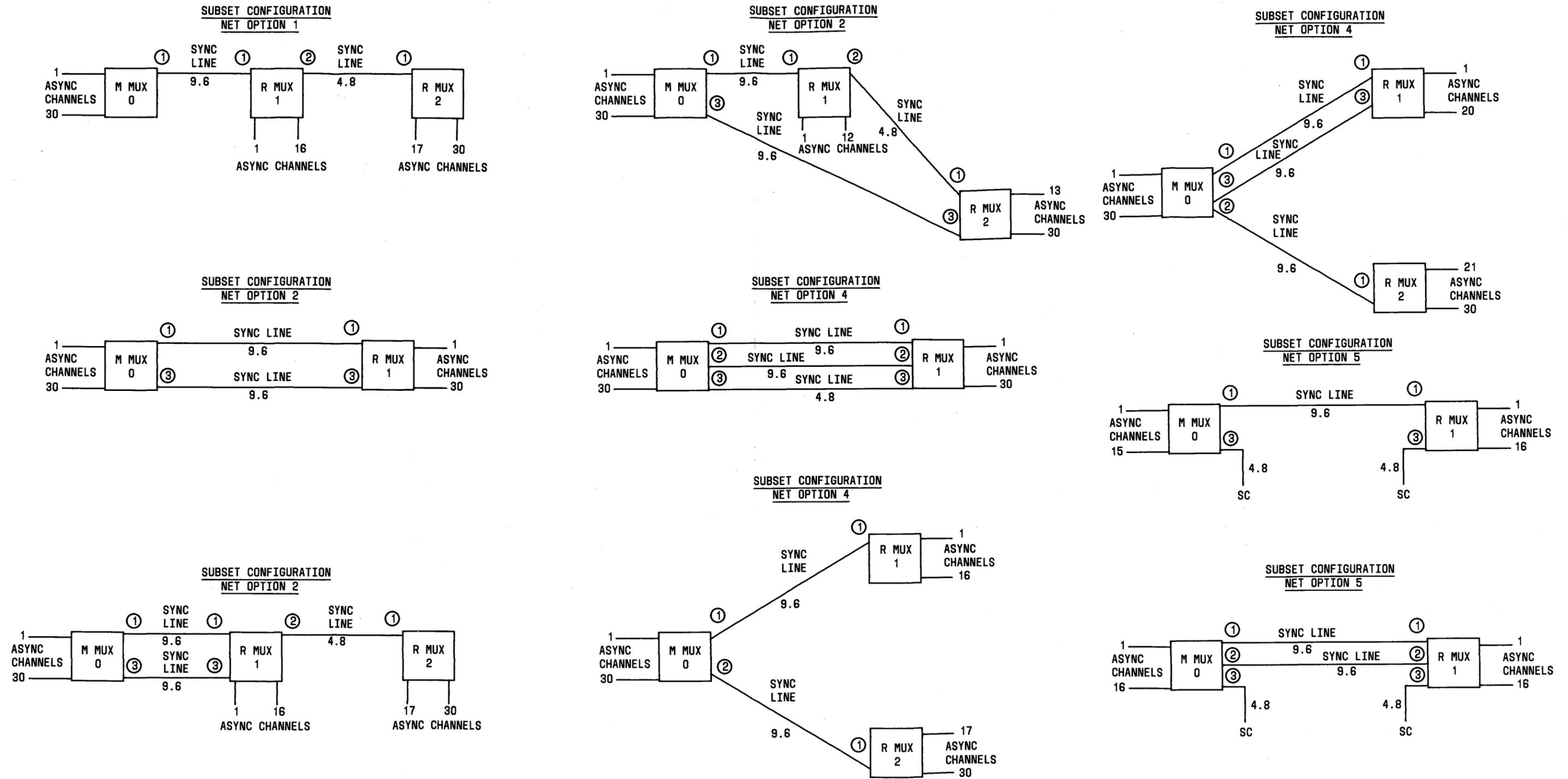


Fig. 5—Network Configurations (Sheet 2 of 2)

(RMUX) that the selected channel is assigned. The number is entered by depressing the appropriate upper buttons and the corresponding display is lighted above button position 3. Depressing the appropriate lower buttons removes the previously entered destination.

4.08 In the FR mode, the upper RMUX/FR/LOOP buttons are used to build new frames (assign time slots to the asynchronous channels in the synchronous data stream) from the asynchronous channel information entered in the LS mode. For example, in generating a new frame to remote multiplexer 1, upper button 1 is depressed and 1 is displayed above button 3. The 1 remains displayed for the period necessary to assign time slots and transmit to multiplexer 1. After transmission to the remote multiplexer, the lamp goes off. The entire process takes only a few seconds. If the frame cannot be built (the sum of the asynchronous and derived synchronous data rates are too high for the speed assigned to the synchronous line), the displayed 1 flashes. The operator must remove (set to 0 speed) or lower the speed of the asynchronous channels assigned to frame 1 or increase the synchronous speed. If synchronous line speed is increased, the operator must know that the synchronous data sets are compatible with required synchronous line speed. In addition, the port circuit card option associated with the data set must be changed as required. In addition to the occurrence of a flashing condition when the total asynchronous speed is too high, a flashing condition also occurs if the total asynchronous speed is too low. For example, if an attempt is made to build a frame in which there are no asynchronous channels with nonzero speeds assigned to the synchronous line, a flashing condition occurs.

4.09 In the TM mode, the RMUX/FR/LOOP buttons initiate various synchronous port loopbacks in combination with TM button positions. Depressing the upper button 1 RMUX/FR/LOOP initiates a loopback of synchronous port 1. If the TM test position is RL, a loop at the master multiplexer output is effected. If the TM test position is RA, a loop on the line side of the data set at the master DM is initiated. If the TM test position is RB, a digital loop at the data set at port 1 to multiplexer 1 is effected. The RA and RB loops are only effected if the data sets or data service units involved are capable of responding to the interface signals from the multiplexer. See Fig. 6 for the loopback to each position. In each

case an asynchronous channel in frame 1 must be selected if a loopback test as well as the loopback is to be done.

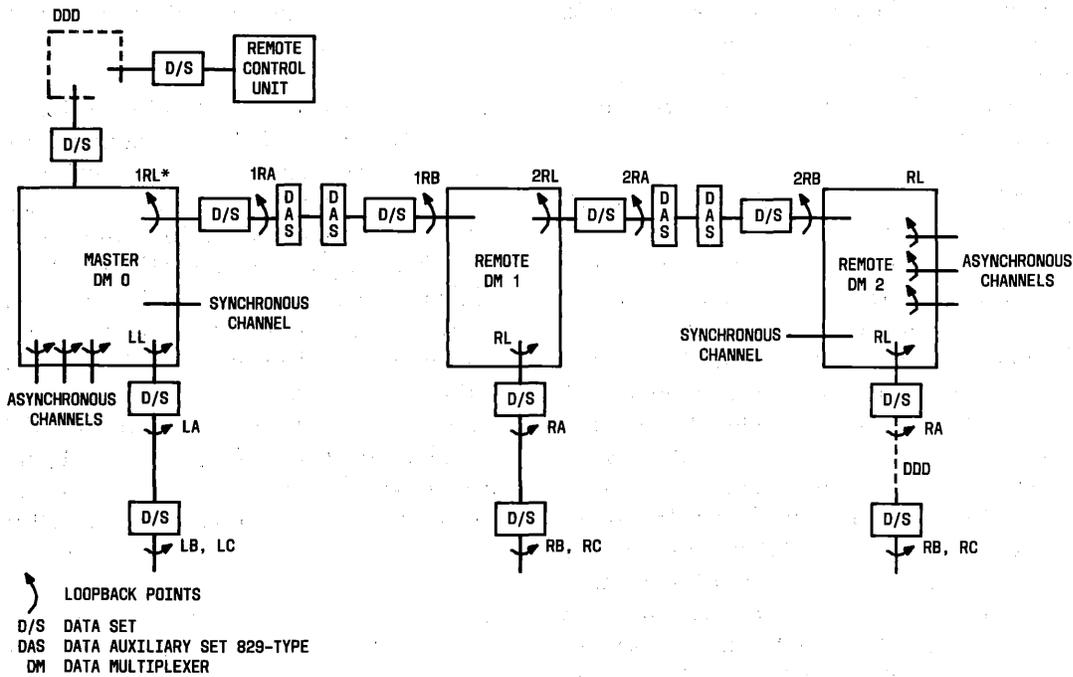
4.10 Depressing the CH+1 button allows input to the next higher channel to be entered quickly. The CH+1 button functions only in the LS mode. The CH+1 button may be used if the next higher channel has the same channel elements (autobaud, speed, code, destination) as the channel displayed on the panel. The channel number is increased 1 and the remainder of the display is unchanged indicating that the previous channel data has been stored in the newly selected channel. The 300/1200 button is used to determine the speed of operation (300 or 1200 bps) of the data set between the RCU and the master DM and must be set prior to initiating the call to the master DM.

4.11 A single alphabet character (A through N) is lighted at the FAULT display to indicate a synchronous line failure in the system. These failures are out of sync (OOS), carrier fail (CF) conditions in either direction of transmission of any of the three synchronous links, or an equalizer mode which affects signal quality (SQ) in either direction of transmission on synchronous line 1. Figure 7 defines the various fault codes.

4.12 When a test is being conducted in the TM mode (identified by a 2-letter display above the TM button), the test selected is increased or decreased one position by momentarily depressing the upper or lower TM button, respectively. The test positions are: blank (no test), LL, LA, LB, LC, RL, RA, RB, RC, and RX, in that order. The first letter of the display refers to the local (master) or remote DM. When the second letter is an L, an internal multiplexer loop is automatically implemented. When the second letter is an A, B, or C, an external equipment loop is implemented.

Note: Test position RX is displayed but is presently not used in RCU operation.

4.13 A channel can be selected either before or after going to the TEST (TM) mode. When the MODE switch is moved to TEST mode (TM) position, the no-test state (blank TM display) is automatically set. The channel to be tested must be selected before depressing the TM button to enter a test state.



NOTE: MOST EXISTING BELL SYSTEM DATA SETS DO NOT PERMIT ACTIVATION OF LOOPBACKS THROUGH THE INTERFACE. HOWEVER, WHEN DATA SETS ARE DESIGNED TO PROVIDE INTERFACE LOOPBACKS, THE TDM WILL PROVIDE THE NEEDED CONTROL SIGNALS.

* THE 1 IN THE 1RL DESIGNATION INDICATES THAT THIS IS A LOOPBACK ON SYNCHRONOUS LINE 1 TO DESTINATION 1 (REMOTE TDM 1).

Fig. 6—DMS Loopback Points



Operator must use care in selecting channel in TEST mode. If test state is entered (ie, LL, LA, LB, LC, RL, RA, RB, RC or RX), an operating asynchronous channel may inadvertently be tested and interfere with customer service.

Advancing to test position LL produces the local internal loopback of the channel at the master DM. The local channel is placed in a loop condition by the command control which inserts a remote loopback bit on the control word to the interface. A fixed data test word is periodically transmitted to the interface, looped back, received at the interface, and compared with the test word transmitted. If the data test word received is identical to the test word transmitted, no action is taken. If not, the lamp over the RST button is flashed and the LL characters over the test button are flashed (1/2 second on—1/2 second off) until the RST button is depressed. While the test is being performed,

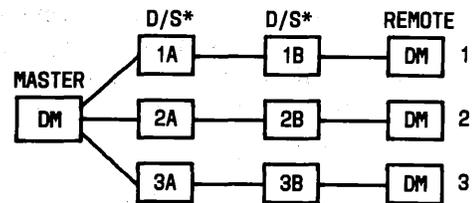
a control word signifying a busy channel is sent to the remote DM.

4.14 In positions LA, LB, and LC, the procedure is identical except a different control word is transmitted to the master DM local interface. If data sets are provided between the master DM and the customer-provided equipment (CPE) and are properly equipped, they respond to the control function to cause digital loopback of the data set at the CPE (LB or LC), or an analog loopback of the data set at the master DM (LA). Position LC is similar to LB except that 3 seconds of space followed by the test word are transmitted through the local interface. See Fig. 6 for the loopbacks at each position.

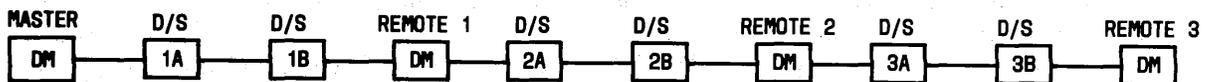
4.15 The RL, RA, RB, and RC are the same type loopback tests to a remote DM as LL, LA, LB, and LC loopback tests are to a master DM. The appropriate test and control words are transmitted to the remote DM asynchronous channel

DMS FAULT CODES		
CODE	DATA SET POSITION	FAULT ID
A	1A	SQ*
B	1A	CF**
C	1A	OOS***
D	1B	SQ
E	1B	CF
F	1B	OOS
G	2A	CF
H	2A	OOS
I	2B	CF
J	2B	OOS
K	3A	CF
L	3A	OOS
M	3B	CF
N	3B	OOS

*SQ = SIGNAL QUALITY RETRAIN
 **CF = CARRIER FAIL
 ***OOS = OUT OF SYNC



EXAMPLE ARRANGEMENT - NETWORK OPTION 4



EXAMPLE ARRANGEMENT - NETWORK OPTION 1

Fig. 7—DMS Fault Codes and Examples of Data Set Positions in Typical Equipment Arrangements

interface and the channel busy word is transmitted to the master DM asynchronous channel interface.

4.16 When a test is being conducted in the MT mode (identified by a 2-letter display above the TM button), the test selected is increased or decreased one position by momentarily depressing the upper or lower TM button, respectively. The test positions in the MT mode are: ML, MR, AL, AR, TL and TR, in that order.

Note: In the MT mode the CHAN button on the RCU is inoperative. Therefore, when going to the MT mode the channel to be tested must be selected before switching to the MT mode. In addition, if the channel selected is an unassigned channel and test AL, AR, TL, or TR is selected, the RCU will lock in the MT mode. To unlock the RCU, the LCU at the master DM must reassume control of the DMS by switching to a mode other than RT and then switching back to the RT mode, returning control to the RCU. If the test chosen in the MT mode on an unassigned

channel is ML or MR, the locked condition will not occur.

4.17 When the display above the TM button is ML (monitor local), the data to the local asynchronous terminal (at DM 0) is monitored and sent to the RCU and then to an external terminal connected to the RCU test connector. Asynchronous transmission between the terminals is unaffected. If the display above the TM button is MR (monitor remote) the data to a remote asynchronous terminal (at a remote DM) is monitored and sent to the RCU for external display. Again asynchronous transmission is unaffected.

4.18 In test position AL (active local), a local terminal (at DM 0) is replaced by an external terminal connected to the RCU test connector. This external terminal then communicates normally with a remote terminal at a remote DM. If the test position is AR (active remote), a terminal at a remote DM is replaced by an external terminal connected to the RCU test connector that communicates normally with the terminal at DM 0.

4.19 When the display above the TM button is TL (test local), the asynchronous interface at DM 0 is put into a loopback and external equipment at the RCU tests the loop. If the test position is TR (test remote), the asynchronous interface at a remote DM is put into a loopback and external equipment at the RCU tests the loop. The TL loopback occurs at LL and the TR loopback occurs at RL. See Fig. 6.



In the MT mode, the display above the TM button on the RCU will not indicate errors because test results are displayed at the external test equipment. The display showing the test in progress will remain lighted constantly once RST is pushed after selecting the MT test.

4.20 Depressing the LAMPS TEST button lights all displays and all segments of the alphanumeric characters. Depressing the LAMPS OFF button turns off all display lamps except the MODE indicator and, if flashing, the FAULT indicator.

4.21 The CHANNEL ACTIVITY indicators light constantly whenever data is being transmitted on the associated asynchronous channel from master DM to remote DM or if there is no channel card in the master DM for the assigned channel. If the channel is inactive or unassigned, the lamp is off. If the recirculating test bit for the channel fails, the indicator flashes (1/2 second on—1/2 second off) until a good test bit is received. Continuous flashing of a group of CHANNEL ACTIVITY indicators accompanies a system fault.

4.22 The ten INTERFACE indicators show lead status of the selected channel. The T1 through T5 indicators show the actual states of terminators in the selected asynchronous channel interface at the master DM and the intended states of drivers at the remote DM. The R1 through R5 indicators show actual states of the terminators in the selected asynchronous channel interface at the remote DM and intended states of drivers at the master DM.

4.23 Table B shows the relationships between interface lamps and EIA Standard RS-232-C interface pins. For example, when a terminal at the master DM enables the data terminal ready (CD) lead, it is detected by the terminator on Pin 20 in the master DM. The master DM generates

a control character which causes indicator T2 to light, and transmits the control character to the remote DM, which causes the driver on Pin 6 to turn on. The cable that connects the remote DM to a data set connects Pin 6 in the DM to Pin 20 (data terminal ready) in the data set. When the data set turns on data set ready (CC) lead, an "on" condition is placed on Pin 6 in the data set interface. The cable that connects the data set to the remote DM connects Pin 6 in the data set to Pin 20 in the DM. The terminator in the DM interface detects the DSR "on" condition and sends a control character to the master DM. When the master DM receives the control character, indicator R2 is lighted, and the driver on Pin 6 in the master DM is turned on. The other pairings of lamps and interface pins operate similarly.

5. REFERENCES

5.01 For additional information relating to the 1800B-L1 data control unit (RCU), refer to the following.

NUMBER	TITLE
SD-&CD-1D265-01	1200A-Type Data Multiplexer
EL4445	Data Multiplex System—Description
EL4446	Data Multiplex System—Equipment Description, Ordering and Pricing Information
SECTION	TITLE
590-000-120	DATAPHONE® Multiplex Service—Data Multiplex System—Using 1200A-Type Data Multiplexer—Reference Guide
590-104-100	Data Multiplex System—Using 1200A-Type Data Multiplexer—Description
590-104-101	1200A-Type Data Multiplexer—Description and Operation
590-104-103	1800A-L1 Data Control Unit (LCU)—Description and Operation

SECTION	TITLE	SECTION	TITLE
590-104-104	Data Multiplex System—Using 1200A-Type Data Multiplexer—Station Arrangements	682-300-015	Data Multiplex System—Plant Assignments
666-615-100	Data Multiplex System—Using 1200A-Type Data Multiplexer—Control Center—Description and Operation	880-101-100	DMS Transmission Objectives and System Application Engineering Considerations
666-615-101	Data Multiplex System—Using 1200A-Type Data Multiplexer—CSTC and MTF Procedures	880-101-190	Data Multiplex System—Engineering and Implementation Methods System
		999-100-161	Data Multiplex System—How to Operate Manual

TABLE B

RELATIONSHIPS BETWEEN INTERFACE INDICATORS AND EIA INTERFACE PINS

INTERFACE INDICATORS	MASTER TDM (TERMINATOR) PIN NOS.	REMOTE TDM (DRIVER) PIN NOS.	REMOTE TDM (TERMINATOR) PIN NOS.	MASTER TDM (DRIVER) PIN NOS.
T1 T2 T3 T4 T5	4 (CA) 20 (CD) 25 (CN)* 11 (LL)* 19 (RL)*	8 (CF) 6 (CC) 5 (CB) 22 (CE) 13 (TM)*	NA	NA
R1 R2 R3 R4 R5	NA	NA	4 (CA) 20 (CD) 25 (CN)* 11 (LL)* 19 (RL)*	8 (CF) 6 (CC) 5 (CB) 22 (CE) 13 (TM)*

* Non-EIA Designations

CN = Terminal Busy

LL = Local Loopback

RL = Remote Loopback

TM = Test Mode

NA = Not Applicable