

COMMUNICATIONS DISPLAY CDBU805 BUFFER MODULE

FOR 2541 BUFFER/INTERFACE SETS

INSTALLATION

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1.02 The buffer module is factory assembled and tested for correct operation prior to customer delivery. Generally it comes installed as part of the 2541 Series Buffer Set having a six button control panel arrangement, but it can be shipped separately for field installation.

1.03 For checkout procedures, refer to the buffer/interface set documentation in the respective 578-141-200.

2. UNPACKING

2.01 Before beginning to unpack the buffer module from its shipping container, observe any special instructions or caution labels that may be attached to container. Then proceed as follows.

(1) Open top end of shipping container and remove the four molded plastic corner protectors.

(2) Grasp the module metal frame and lift the module out from the container. Remove any tape or corrugated cardboard used to hold the module circuit cards into their receptacles.

(3) Remove the muslin bag tied to the module frame. It should contain mounting hardware, TP147307 programming straps, a TP335600 connector assembly for connecting of customer furnished cabling from the receive-only device to the buffer, and cabling to install the module.

3. VISUAL CHECKOUT

3.01 Visually inspect the buffer module for damaged parts, loose circuit cards, broken wires, or bent terminals which might cause a shorted condition. Repair any of these conditions before continuing.

1. GENERAL

1.01 This section provides the installation procedures and operation checkout for Teletype Corporation's CDBU805 buffer module used in the 2541 Buffer/Interface Set.

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3.02 Using a copy of 9474 wiring diagram sheet 12, which lists the various CDBU805 module circuit card arrangements, or the identification information given in Part 5 of this section, verify that the module code plate stamped arrangement coding agrees with the given listing. Also check that each circuit card is inserted into its proper receptacle position using the listing on sheet 12 and the circuit card location chart on sheet 2 of the 9474 wiring diagram.

4. INSTALLATION INTO BUFFER SET

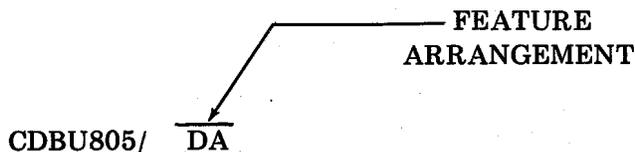
CAUTION: ALL AC POWER TO THE BUFFER SET MUST BE OFF BEFORE ATTEMPTING INSTALLATION.

4.01 The procedure for installing the CDBU805 buffer module into the 2541 Buffer/Interface Set is as follows. Additional information and detailed illustrations for understanding this procedure can be found in Section 578-140-700. The buffer set parts illustrations in Section 578-140-800 also shows assembly information to aid installation of the module into the buffer set.

- (1) Release the two top cover latches located on the left and right sides of the buffer cabinet. Pivot the cover open to the vertical position.
- (2) Assemble the handle and latch assembly and module bottom plate assembly to the module frame according to the parts views provided in Section 578-140-800.
- (3) Assemble the module to the module shelf using the two clamp brackets and mounting screws that are furnished.
- (4) Remove the rear panel from the buffer set by loosening the two bumper type studs from the set rear panel. Using a screwdriver, turn the two 1/4-turn fasteners counterclockwise and lift the rear panel from the buffer. This will permit routing station cords from the buffer to peripheral equipment.
- (5) Connect cord connectors to module (secure with screws) as shown in the respective station arrangement (Figure 3), program CDBU805 (6.01), and replace buffer set back panel and condition buffer set for operation.

5. BUFFER MODULE IDENTIFICATION

5.01 Attached to each buffer module is an identification plate marked with the module unit code. The two alphabet letters following the unit code identify the module operation arrangement and respective factory installed programming and program wires.



5.02 Refer to the factory code identification chart in Figure 1 for module feature and factory programming information.

6. BUFFER MODULE PROGRAMMING

6.01 The following information is provided for programming module operation and for verification that factory programmed options are present in the module.

6.02 A circuit card location chart is provided in Figure 2. The circuit cards in Figure 2 are shown as they would be viewed from the wired side of the module frame.

IN/OUT CONTROLS

6.03 When the CDBU805 buffer module is used with the CDIF814 station controller interface module, the TP322515 (MC515) in/out controls circuit card assembly in location XZA315 should be programmed for ETX character detection. Selection of the character detection is accomplished by placing the option screw into either A, B, or C positions on the card.

- A - EOT
- B - ETX
- C - FF

EXTERNAL CONTROL

6.04 Remove the interface terminator circuit card MC969 from buffer module position XZA317 and program it for option B. Programming is accomplished by placing the program screw into either A or B positions. For more information, refer to TP322969 (MC969) circuit description (CD) provided in the wiring diagram package.

DESCRIPTION	FEATURE ARRANGEMENT					
	DA	DB	DC	DD	DE	DF
CDBU805/ →						
2000 Character Memory (XZA116, 117, 118)	Yes	Yes	Yes	Yes	Yes	Yes
Expanded Memory (Additional 2000 Character) (XZA113, 114, 115)	No	Yes	No	Yes	No	Yes
150 Baud Signal to M37 Teletypewriter (MC961-XZC308)	Yes	Yes	No	No	No	No
110 Baud Signal to M35 Teletypewriter (MC977-XZC308)	No	No	No	No	Yes	Yes
1200 Baud Signal to DATASPEED INKTRONIC Printer (MC977-XZC308)	No	No	Yes	Yes	No	No
Factory Installed Wiring and Options (See Table, "Buffer Module Options" for option function)	1.a. 2. 5. 6.	1.a. 2. 5. 7.	1.a. 3.b. 5. 6.	1.a. 3.b. 5. 7.	1.b. 3.a. 5. 6.	1.b. 3.a. 5. 7.

Figure 1 - Factory Code Identification Chart

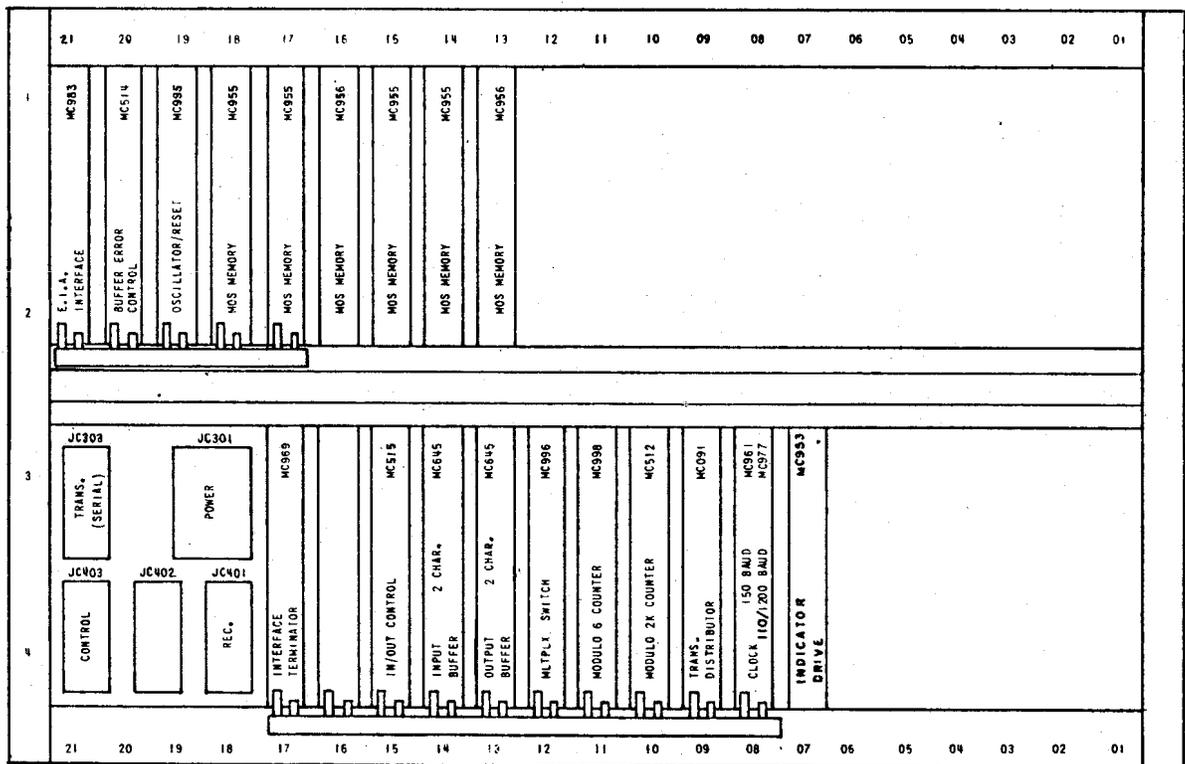


Figure 2 - CDBU805 Circuit Card Location Chart (Wired Side)

TABLE
BUFFER MODULE OPTIONS

OPTION	OPTION FUNCTION	CIRCUIT CARD	LOCATION	TO ENABLE OPTION	NOTES
1.a.	10-Unit Code Output to Model 37 or DATA-SPEED INKTRONIC Printer	Connector	XZC309	Install TP147307 strap from pin 26 to pin 36.	
or					
b.	11-Unit Code Output to Model 35 Teletypewriter	Connector	XZC309	Install TP147307 strap from pin 27 to pin 36.	
2.	150 Baud Signal to Model 37 RO Teletypewriter	MC961	XZC308	Install TP147307 strap from pin 13 to XZC309, pin 20.	
3.a.	110 Baud Signal to Model 35 RO Teletypewriter	MC977	XZC308	Install TP147307 strap from pin 12 to XZC309, pin 20.	
or					
b.	1200 Baud Signal to DATASPEED INKTRONIC Printer	MC977	XZC308	Install TP147307 strap from pin 2 to XZC309, pin 20.	
4.	Operation Without Data Set and Motor Control	Connectors		Install the following TP147307 and TP343650 wire straps: XZC121-4 to XZC121-3 XZC316-34 to XZC120-28 XZC121-15 to XZC121-19 XZC120-24 to XZC315-20	See 6.09
5.	Operation Without Data Set But With Motor Control	Connectors		Install the following TP147307 and TP343650 wire straps: XZC121-4 to XZC121-7 XZC316-34 to XZC315-20 XZC316-19 to XZC120-24 XZC120-28 to XZC120-36	See 6.15

TABLE
 BUFFER MODULE OPTIONS (Continued)

OPTION	OPTION FUNCTION	CIRCUIT CARD	LOCATION	TO ENABLE OPTION	NOTES
6.	2000 Character Memory Storage	MC955 MC955 MC956	XZA118 XZA117 XZA116	Install TP147307 wire straps per Chart 1	
7.	4000 Character Memory Storage	MC956 MC955 MC955	XZA113 XZA114 XZA115		

CHART 2

WIRING FOR
 4000 CHARACTER BUFFER STORAGE
 (See Table — Option No. 7)

CHART 1

WIRING FOR
 2000 CHARACTER BUFFER STORAGE
 (See Table — Option No. 6)

Install TP147307 wire straps between the following circuit card terminals:

FROM	TO
XZC118-29	XZC118-3
XZC118-30	XZC118-4
XZC118-31	XZC118-5
XZC117-29	XZC117-3
XZC117-30	XZC117-4
XZC117-31	XZC117-5
XZC116-29	XZC116-3
XZC116-30	XZC116-4

Install TP147307 wire straps between the following circuit card terminals:

FROM	TO
XZC118-29	XZC118-7
XZC118-30	XZC118-8
XZC118-31	XZC118-9
XZC117-29	XZC117-7
XZC117-30	XZC117-8
XZC117-31	XZC117-9
XZC116-29	XZC116-7
XZC116-30	XZC116-8
XZC115-29	XZC115-3
XZC115-30	XZC115-4
XZC115-31	XZC115-5
XZC114-29	XZC114-3
XZC114-30	XZC114-4
XZC114-31	XZC114-5
XZC113-29	XZC113-3
XZC113-30	XZC113-4

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MODULO 6 COUNTER

6.05 The TP322998 (MC998) modulo 6 counter in buffer module position XZA311 has six option screws that provide for resetting the counter circuitry. Remove the circuit card from XZA311 and program it according to the character storage capacity of the buffer (6.06). If additional information is required, refer to Figure 1 or TP322998 circuit description (CD) and schematic diagram (SD) provided in the wiring diagram package.

6.06 Place the six program screws into X, Y, and Z of the read counter, and into X*, Y*, and Z* of the write counter in order to program the modulo counter for the desired buffer character storage capacity.

Buffer Capacity		2K	4K
Read Counter	X	0	1
	Y	1	0
	Z	1	1
Write Counter	X*	0	1
	Y*	1	0
	Z*	1	1

Example: If the buffer character storage capacity is 2000 characters (2K), place the six screws provided with the circuit card into positions X0, Y1, Z1, X*0, Y*1, and Z*1. After completing programming, replace the circuit card into position XZA311.

TRANSMITTING DISTRIBUTOR

6.07 The TP322091 (MC091) transmitting distributor does not require any programming. However, the circuit card should be removed from module position XZA309 and checked to make certain that the option screw is removed from position A. The option screw is used in position A only when a 7.5 unit code is generated. When installed it causes a 1/2-unit time-out delay on the last bit sent from the distributor and therefore is not required for this installation.

OPERATION WITHOUT DATA SET — WITH OR WITHOUT MOTOR CONTROL

6.08 The MC983 circuit card in the buffer module, that provides an EIA (Electronic Industries Association) signal to the RO device, is designed to interface a data set. In

the equipment arrangement shown in Figure 3, a data set is not used between the buffer module and RO device. Therefore, options 4 and 5 (6.09 and 6.15) listed in the buffer module option table consist of wire straps that bypass data set controls and provide for operation of the device either with or without motor controls.

Operation Without Data Set and Motor Control — Option 4 in Table

6.09 All buffer module arrangements shown in Figure 1 are factory programmed for G option (9474 wiring diagram) before factory shipment. With G option enabled and C option disabled, the condition of the RO device is not checked prior to message receipt by the buffer module storage circuitry.

6.10 If no message data is stored in the buffer memory, the buffer selectable signal to the station controller device is forced on by a factory installed program strap.

6.11 Upon receipt of selectable from the buffer, the station controller device, if it detects an incoming message, returns a receive message signal to the buffer at pin A1 of JC401 connector. Upon receipt of receive message, the buffer generates a ready signal on pin A2 of JC401 back to the station controller. With message control signaling completed, the buffer receives the incoming data using receive character available and receive next character signaling at pins B10 and A10 of JC401 connector.

6.12 After a message containing a message ending character is stored into the buffer memory, the buffer waits for receive data acknowledge (RDA) at JC403 pin B4 from the station controller. If RDA is received, the buffer releases the stored data to the RO device, if it is ready.

6.13 The buffer checks the readiness of the RO device by generating a request-to-send at pin A4 of JC303 through the customer installed cable (50 feet maximum length for EIA signaling) to the RO. Receipt of this signal at the RO causes it to return a clear-to-send to the buffer, if it is ready to receive. The message is then released from the buffer to the RO.

6.14 After the buffer detects the end of the message (ending character) its logic is reset and its selectable comes on again to the station controller.

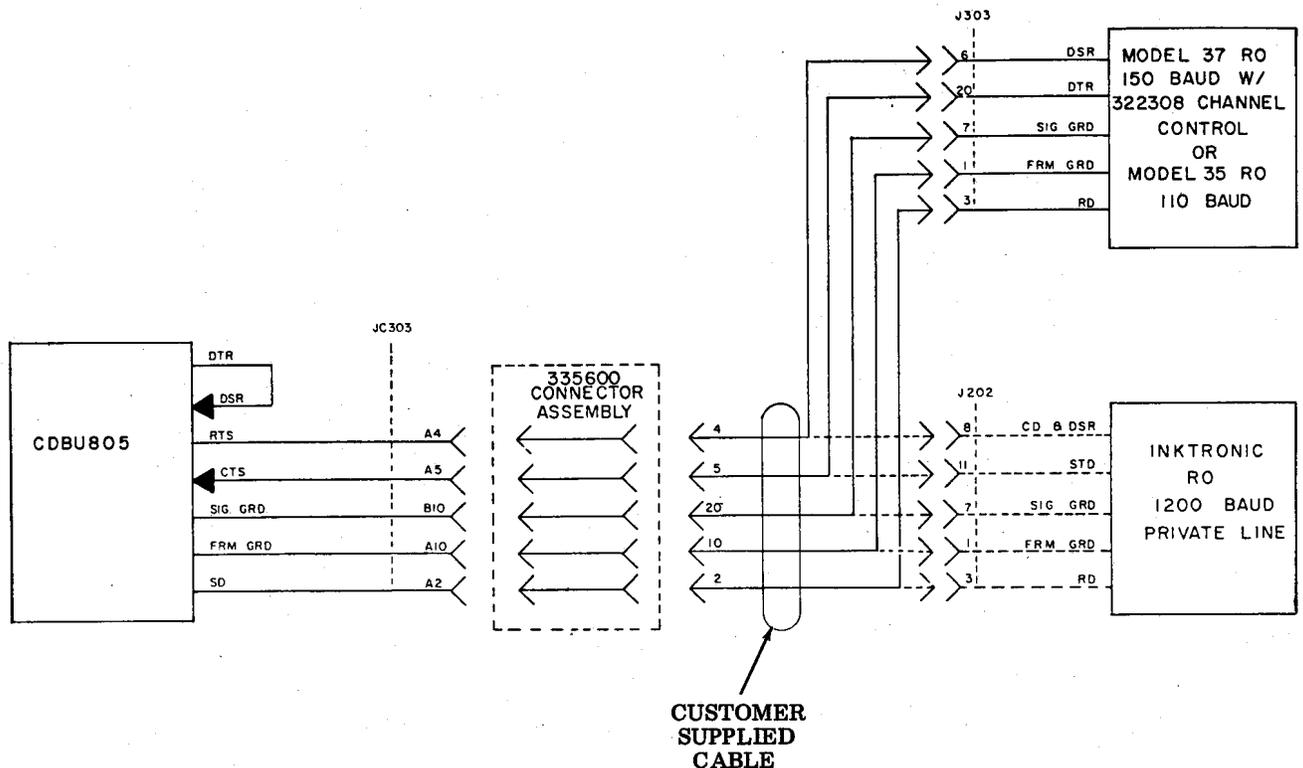


Figure 3 - Customer Wired Cable to Model 35, 37, or DATASPEED INKTRONIC Teletypewriter

Operation Without Data Set and With Motor Control — Option 5 in Table

6.15 With C wiring option enabled and G option disabled (9474 wiring diagram), the buffer module selectable signal to the station controller is under control of the RO device. The effect is that the station controller will send a negative acknowledgement answer-back response to the remote sender if the RO connected to the buffer is not ready when an incoming message address is decoded. Therefore, a local alarm condition at the RO, such as low paper, or a motor off condition keeps ready off at buffer connector JC303 pin 5. If the RO is ready, a positive answer-back (ACK) will be returned to the remote sender. Then the buffer will accept an incoming message.

6.16 With ready signal off from the RO, the buffer turns off selectable to the station controller indicating it cannot accept any incoming data. If the RO ready is restored, the buffer selectable turns on.

RO DEVICE

A. Model 35

6.17 If a 35 teletypewriter is used with the buffer module, it should have an EIA interface as described in 6.26. If the teletypewriter motor is to turn off following an idle line, it is the responsibility of the customer to make certain that the teletypewriter ready (clear-to-send) to the buffer is held off long enough for the teletypewriter motors to reach operating speed. However, if motor controls are not used and the teletypewriter motors are always on during business hours, motor start considerations need not be of any concern. Interface wiring and connection information should be made using wiring diagrams supplied with the teletypewriter.

B. Model 37

6.18 For installation of the Model 37 RO Teletypewriter, refer to the applicable wiring options listed for private-line-applications on 8366 wiring diagram supplied with the teletypewriter.

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6.19 Program the teletypewriter for option 11 (B) on 8366 wiring diagram. A description of this wiring option may be found in 8775 circuit description (CD). Other programming options are at the discretion of the customer.

6.20 For installing customer cabling (50 feet maximum for EIA signals) to the teletypewriter and the buffer module, refer to Figure 3 in this section and 8356 wiring diagram that is supplied with the teletypewriter.

6.21 With (B) option installed as instructed in 6.19 and the buffer module programmed for G option (6.09), the buffer will accept incoming data from the station controller as described in 6.09 through 6.13, but it will not release the message to the RO until its motors have turned on and reached operating speed (1.5-second delay on M37).

C. DATASPEED INKTRONIC

6.22 The INKTRONIC printer used as an RO device can be wired to the buffer module as shown in Figure 3 using customer cabling and the TP335600 connector assembly furnished with the buffer module.

6.23 Cable wiring to the INKTRONIC DAIF serial interface module connector J202 can be accomplished using 1044 schematic diagram (SD) sheet B-1.

6.24 Program the interface logic for wiring option PLA. Reference INKTRONIC optional wiring list on 1047 schematic diagram (SD) sheets D1 and D2 supplied with the set.

6.25 With the set wired for option PLA and the buffer module wired for G option (6.09), the set will turn on on receipt of receive message from the buffer module and return a ready (clear to send) to the buffer if it has sufficient paper supply, no local compartment doors are open (interlocks closed), and if the local power supply for the set is on.

CABLING

6.26 Interconnection of the RO (receive-only) device to the JC303 connector on the buffer module is accomplished using customer provided cabling and a TP335600 connector assembly supplied with the module. Signaling to the RO device is according to Electronics Industries Association (EIA) Standard RS-232-C; therefore, interconnecting cable length should not exceed fifty feet in length. Figure 3 provides a schematic wiring diagram for connecting the customer supplied cable.