

INSTRUCTIONS FOR INSTALLING THE 199610** SEND-RECEIVE
TERMINAL MODIFICATION KIT FOR TYPE 2 HIGH SPEED TAPE
SYSTEMS

1. GENERAL

1.01 The 199610** send-receive terminal modification kit will provide send-
receive service from a single data set for a station consisting of a
high speed sender and high speed receiver. The modification kit can be used
with either VS217 and VS220, and with either a 202A, B, C, or D Data Set.

1.02 The 199610** modification kit, designed for use with discrete calling
transmitter accessories, may be used in 2-wire or 4-wire applications.
It supersedes the 146532 transmit-receive terminal modification kit.

1.03 The 199620 Y cable assembly and rotary switch connect the sender, the
receiver, and the data set. The switch is used to select the desired
terminal or terminals to be connected to the data set and to select the
desired mode of the data set. The rotary switch and the data set mount in the
high speed sender terminal. The four positions of the rotary switch are:

SEND	Manual or Unattended Transmitting
RECEIVE	Manual or Unattended Receiving
SEND-RECEIVE	Unattended Transmitting or Receiving
TEST	Terminal Testing (2-wire transmission) Manual or Unattended Transmitting and Receiving (4-wire transmission)

1.04 A local control feature (not provided with the modification kit) is
available by using the 326713 local control cable assembly adapter.
The 326714 identification plate and the 146531 faceplate are also necessary
to identify the switch position. The local control cable will allow
transmission between the sender and receiver; ie, the generation of local
tapes, without engaging the on-line condition of the data set. The data set
power supply (+17.5 v) is used to supply positive voltages to the control
leads and, therefore, the data set must be connected to an ac power source.

1.05 The 199610** modification kit consists of:

- 1 146534** Panel blank
- 1 199620 Y cable assembly
- 1 199630** Front panel

1.06 For parts ordering information, refer to Teletype Parts Bulletin
1176B.

2. INSTALLATION (Figures 1 to 4)

2.01 Sender Terminal

(a) Remove and discard the 145967 front panel. (If 326713 local control cable adapter is used, remove the 145907 panel and install the toggle switch in the spare hole next to the reader push-button. Install the 145907 panel.) Install the new 199630 front panel furnished with the modification kit.

Note: Remove resistor R2001 and strap A (yellow wire) when sender terminals are equipped with a 199551 protected unattended transmitter modification kit. Refer to 7024WD.

(b) Remove the rear panel of the cabinet. Bring the SEND-RECEIVE rotary switch associated with the 199620 Y cable assembly to the front of the cabinet by routing the cable of the switch along the right hand side of the data set. Mount the SEND-RECEIVE rotary switch to the 199630 front panel. Align the shaft of the rotary switch so that the flat of the shaft in the counterclockwise position is opposite the switch position designation SEND. Mount the 148157 knob.

(c) Remove the data set cable connector. Plug the data set connector DS of the 199620 Y cable assembly into the data set.

(d) Mount the sender terminal connector ST of the 199620 Y cable assembly into the slot provided on the dust shield shown in Figure 1. Mount the connector using the locknuts assembled to the ST connector. Plug the data set cable connector into connector ST.

(e) Remove the ac power cord from the cable hole located at the bottom (rear) of the cabinet. Push the receiver terminal connector RT through the hole going out of the cabinet, then replace the power cord. Replace the rear panel of the cabinet. Refer to Figure 1. It may be necessary to remove cable clamp from RT connector to get the connector through the cable hole.

2.02 Receive Terminal

(a) Remove and discard the 145967 front panel. Remove the 145907 control panel by pulling it away from the cabinet and lifting up. Remove the grounding strap from the dust shield. Remove the identification plates, lights, and switches from the control panel. Discard the panel. Assemble the removed components to the new 146534 blank panel furnished with the modification kit. Connect the grounding strap and complete the installation of the blank panel.

(b) Remove the rear panel of the cabinet. Remove the ac power cord from the cable hole located at the bottom (rear) of the cabinet. Push the receiver terminal connector RT of the 199620 Y cable assembly through the hole going into the cabinet, then replace the power cord. It may be necessary to remove cable clamps from RT connector to get the connector through the cable hole. Mount the connector RT into the slot provided on the dust shield shown in Figure 1. Mount the connector using the locknuts assembled to the RT connector. Plug the data set cable connector into connector RT. Replace the rear panel of the cabinet.

3. THEORY OF OPERATION

3.01 The 199620 Y cable assembly is used to connect a sender and a receiver together to a common Type 202A, B, C, or D Data Set. The cable assembly contains the SEND-RECEIVE (S-R) switch, two optional resistors, and two optional straps.

3.02 The SEND-RECEIVER (S-R) switch is a four position rotary switch. The position designations are SEND, RECEIVE, SEND-RECEIVE, and TEST clockwise respectively.

(a) In the SEND position, the terminal will allow manual or unattended send only operation. In this position the sender terminal is operated by the data set ready lead. The data set send data, request to send, ready, and data terminal ready leads are controlled by the sender terminal. The request to send lead is controlled by the sender terminal interface lead 4, request to send (A/M). This interface lead is used when the sender terminal is operated in the unattended (automatic) or manual modes.

(b) In the RECEIVE position, the terminal will allow manual or unattended receive only operation. In this position, the receiver terminal is operated by the data set ready lead. The data set send data, request to send, ready, and data terminal ready leads are controlled by the receiver terminal.

(c) In the SEND-RECEIVE position, the terminal will allow unattended send or receive (half-duplex) operation. In this position, the sender and the receiver terminals are operated by the data set ready lead. The send data and request to send leads are controlled by the sender terminal. The ready and data terminal ready leads are controlled by the receiver terminal.

(1) The request to send lead is controlled by the sender terminals interface lead 14, request to send (A). This interface lead is used when the sender terminal is operated in the unattended (automatic) mode.

(2) A data set with a contact interface for automatic answering will automatically answer a call if terminals 20 and 21 of the receiver terminal connector RT are connected together. (The AUTO button of the data set must be depressed also.) After a call has been answered by a data set, it is necessary for terminals 20 and 21 to remain connected on the receiver terminal connector RT and for terminals 19 and 20 to be connected together on the sender terminal connector ST. This will prevent the data set from dropping a call. At end of transmission, the sender terminal must open the connection between 20 and 21 of the sender terminal connector ST in order to automatically drop a call.

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(d) In the TEST position, the terminal will allow terminal testing (2-wire transmission), or manual or unattended send and receive (full duplex) operation (4-wire transmission). In this position, the sender and the receiver terminals are operated by the data set ready lead. The send data and request to send leads are controlled by the sender terminal. The ready and data terminal ready leads are controlled by the receiver terminal. The request to send lead is controlled by the sender terminal interface lead 4, request to send (A/M). This interface lead can only be used when a sender terminal permanently applies a request to send signal.

3.03 With optional local control (Paragraph 1.04) in the LOCAL position, with rotary switch in SEND position, the send data lead is opened at the data set and tied to the receive data lead. The carrier detect and reverse channel receive leads are opened at the data set and a positive voltage is applied to both leads to simulate the reverse channel and carrier detent functions.

3.04 The receive data, clear to send, signal ground, and ring indicator leads are connected to both sender and receiver terminal connectors ST and RT respectively. The carrier detect and reverse channel receive and release are leads connected to the sender terminal connector ST. Because the release lead is connected to the sender terminal only, an automatic disconnect can only be initiated by a sender terminal. The data set reverse channel send lead is connected to the receive terminal connector RT.

3.05 Two optional resistors are provided. They terminate on the SEND-RECEIVE (S-R) switch and are connected to the data set +17.5 volt lead. Resistor R2001 is used to supply a permanent request to send when the SEND-RECEIVE (S-R) switch is in the SEND or TEST positions. This resistor is not necessary and must be removed when the sender terminal is equipped with the 199551 discrete calling transmitter modification. R2002 is used to supply a permanent reverse channel send and is intended to be optionally removed in the future.

3.06 Two optional straps are provided. They terminate on the SEND-RECEIVE (S-R) switch and are used to provide appropriate receiver terminal blinds. Strap A is used to connect the data set carrier detect lead to the receiver terminal connector RT. This strap must be removed when the sender terminal is equipped with the 199551 discrete calling transmitter modification. Strap B is used to connect the sender interface lead 13, blind, to the receiver terminal interface lead 8, carrier detect. This strap is intended to be optionally removed in the future.

3.07 Operation Procedure

(a) Two-wire transmission (Local switch in OFF position)

(1) Manual Operation: Select either the SEND or the RECEIVE position before or after depressing the DATA button on the data set. It is necessary for the terminals to be in the manual mode of operation.

(2) Unattended Operation: Select either the SEND, the RECEIVE, or the SEND-RECEIVE position before depressing the AUTO button on the data set. It is necessary for the terminals to be in the unattended (AUTO) mode of operation.

(3) Terminal Testing: Select the test position before depressing the DATA button on the data set and then engage the reader to transmit. The receiver will monitor the sender terminals transmission under proper data set operation. It is necessary for the terminals to be in the manual mode of operation.

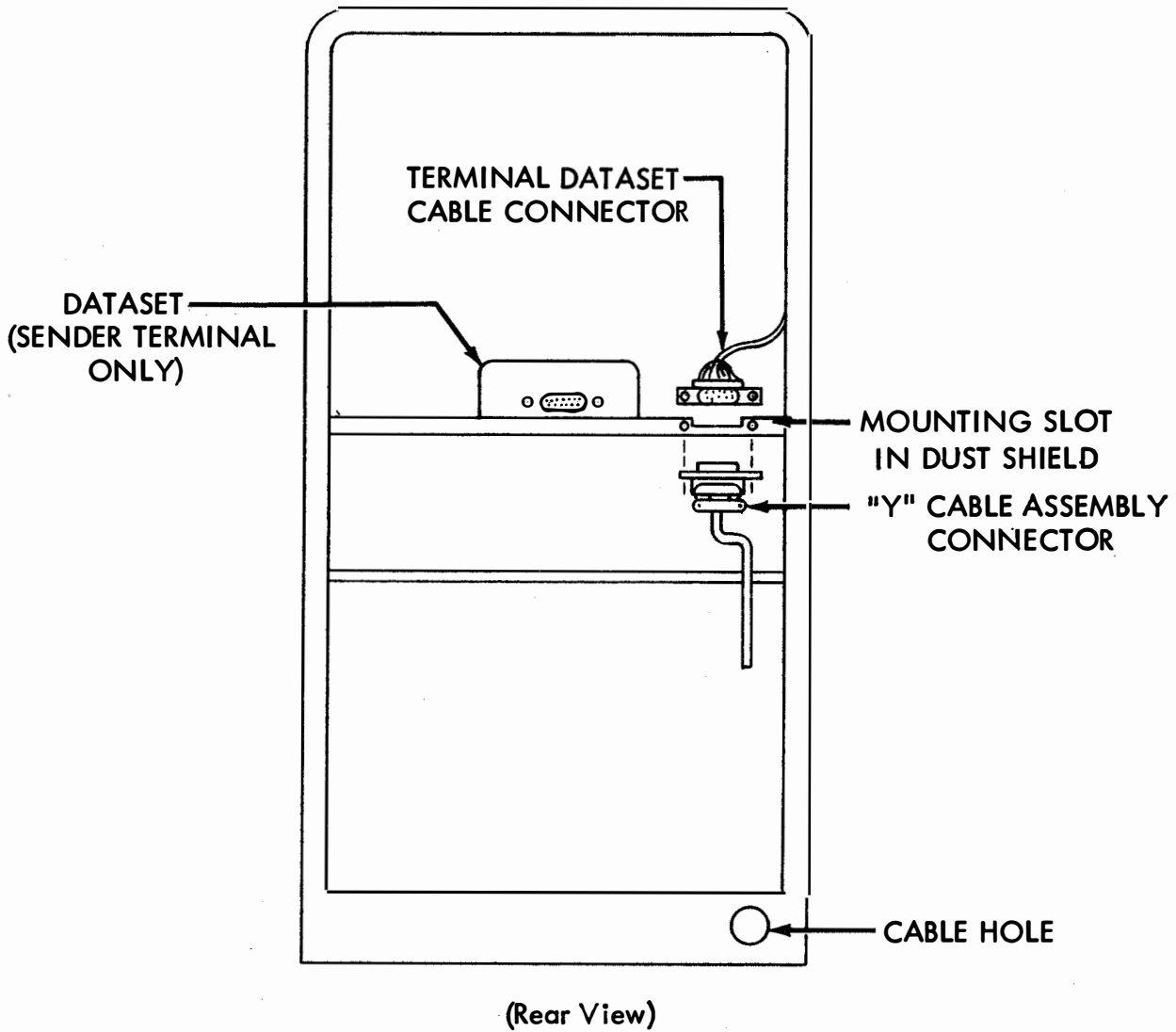
(4) For optional local operation (the 326713 local control adapter is required) depress the punch and reader buttons on the receiver and sender respectively. Place local switch to LOCAL on position and automatic switch the MANUAL position. The rotary switch should be in the SEND position to prevent loss of incoming calls. Operate reader by putting bat handle switch in the RUN position.

(b) Four-wire transmission. (Optional local switch OFF)

(1) Manual Operation: Select the TEST position before depressing the DATA button on the data set. It is necessary for the terminals to be in the manual mode of operation.

(2) Unattended Operation: Select the TEST position before depressing the AUTO button on the data set. It is necessary for the terminals to be in the unattended (AUTO) mode of operation.

3.08 To test the modification kit, it will be necessary for the data test center to call send-receive terminal and check the terminal operations in its various possible modes of operation.



199620 Y CABLE ASSEMBLY MOUNTING

FIGURE 1

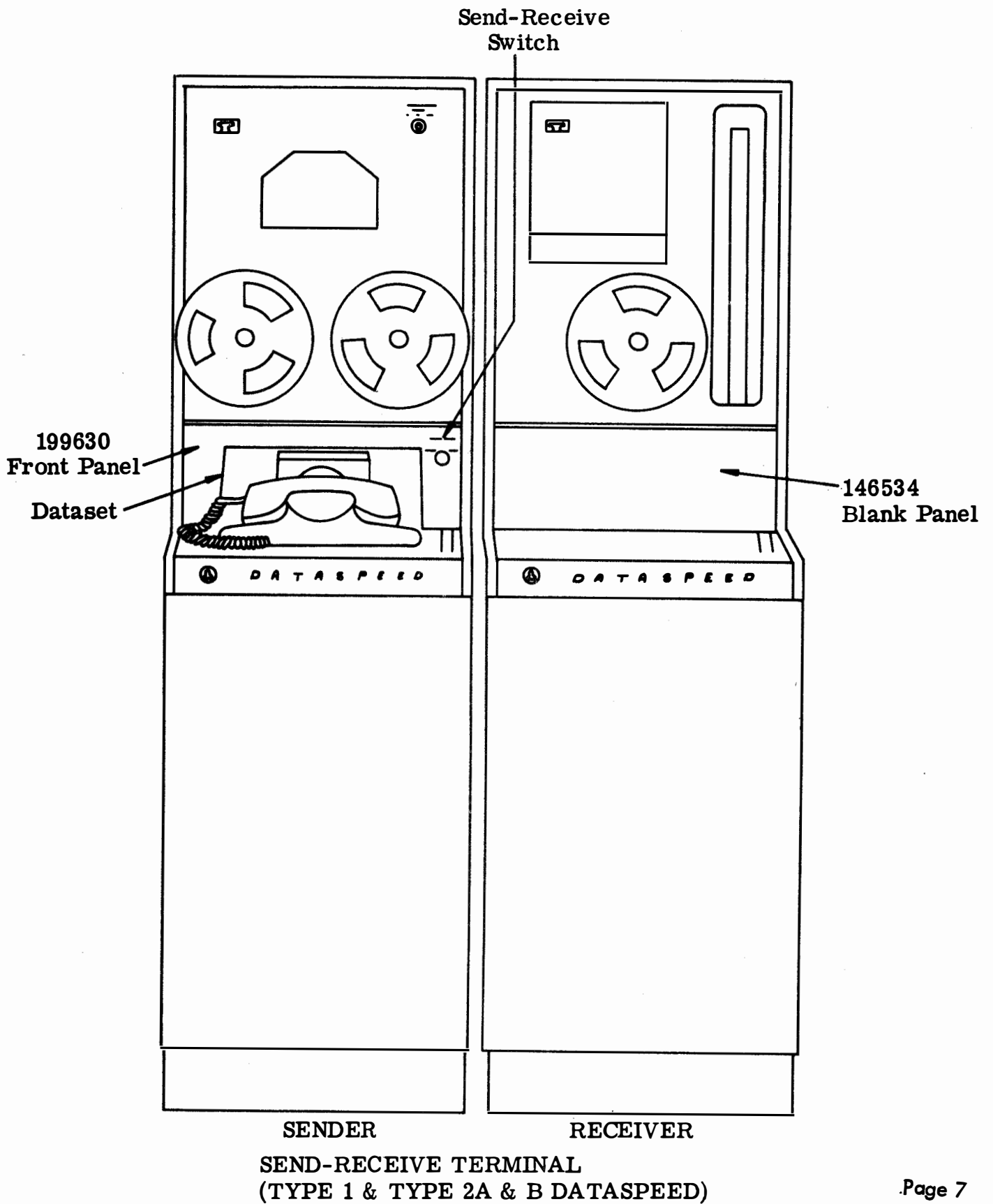
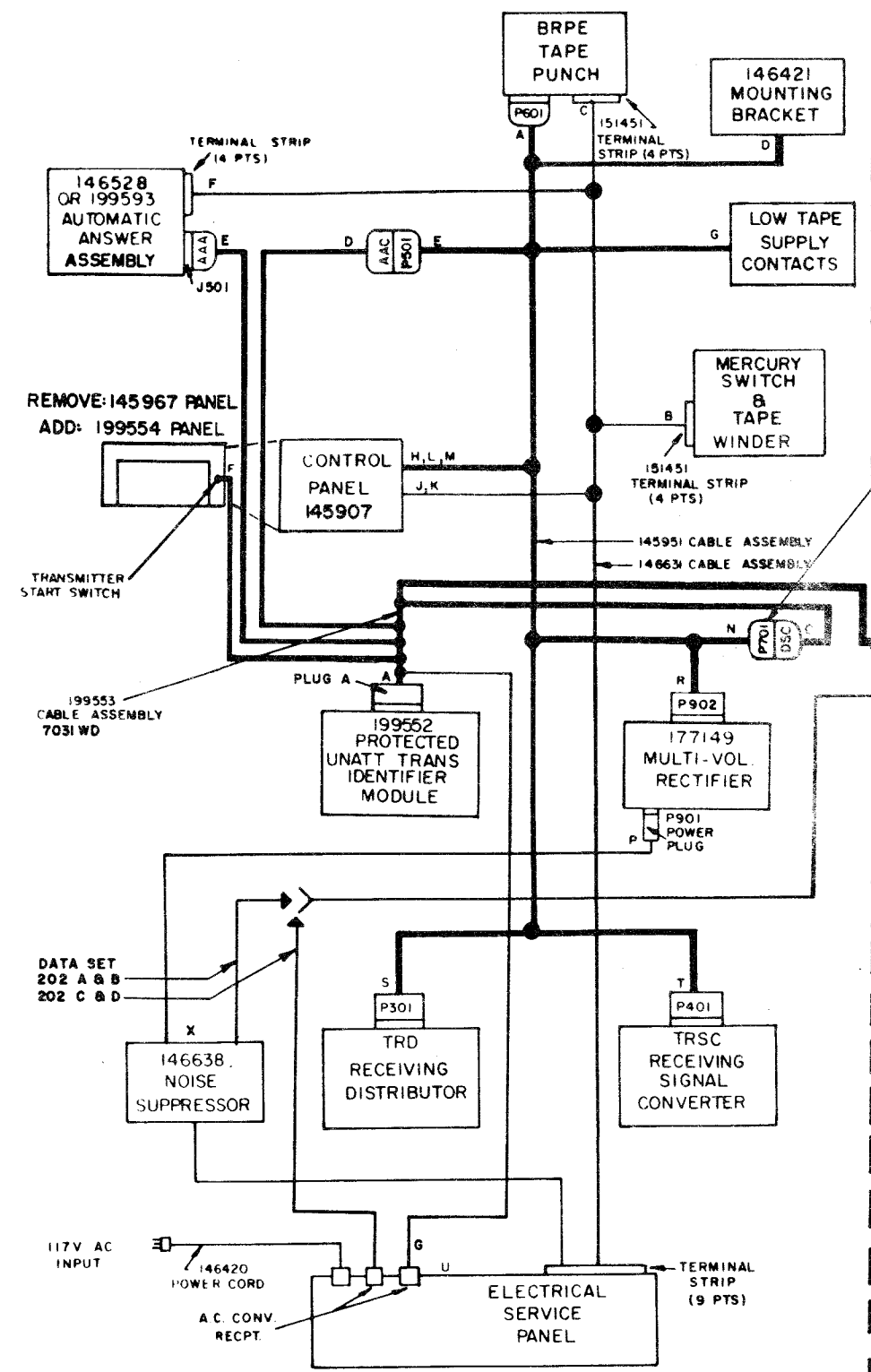


FIGURE 2





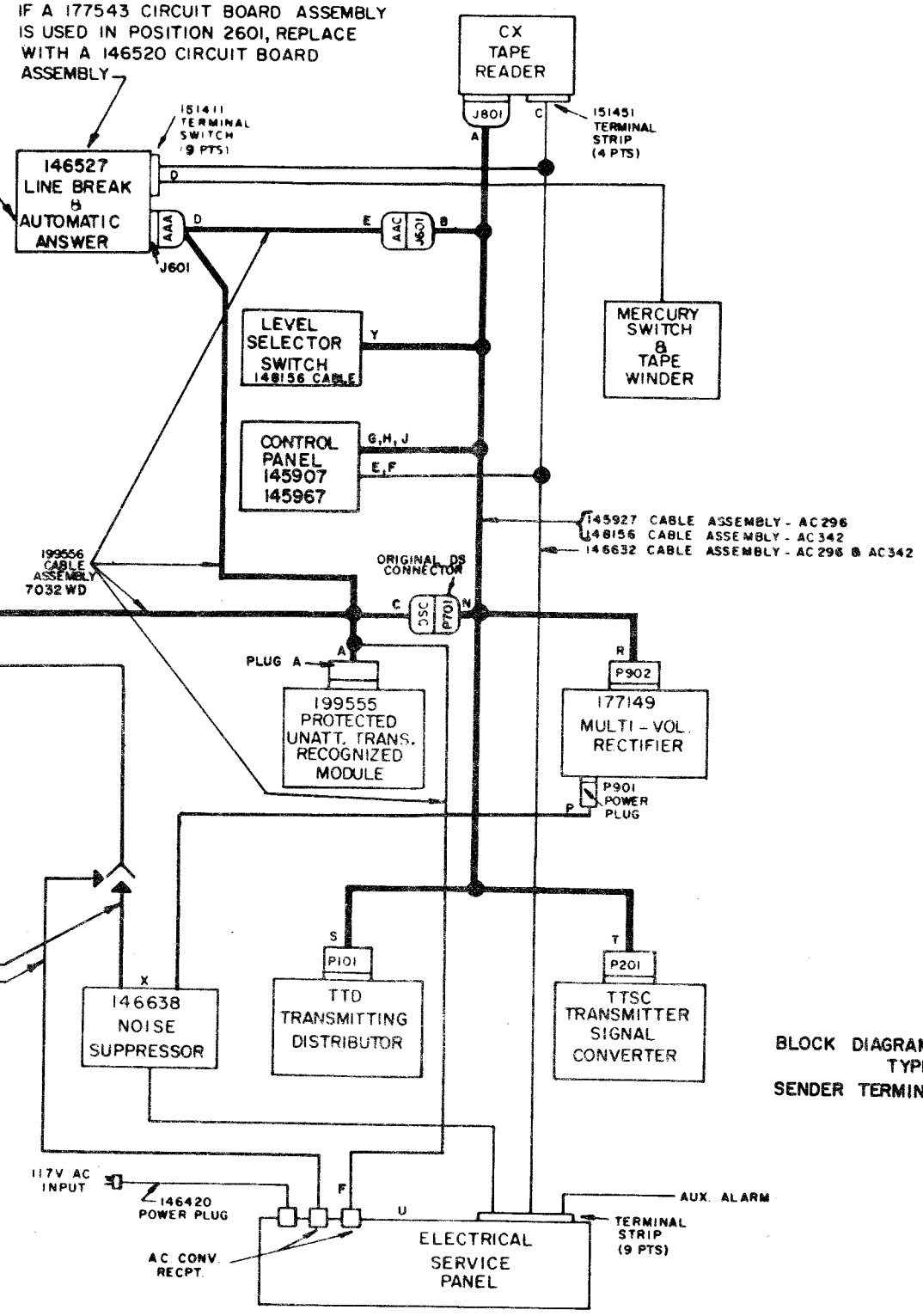
199550 PROTECTED UNATTENDED TRANSMITTER MOD. KIT
 TYPE 1B & 2B RECEIVER

AC 297 - TYPE 1B
 AC 297 - TYPE 2B

NOTES

1. 148161 MOD. KIT - INTERIM UNATTENDED ANSWER (EC543) NO REVERSE CHANNEL
2. REVERSE CHANNEL - EC520
3. 315900 MOD. KIT - REVERSE CHANNEL DETECTION DELAY.

IF 199593 AUTOMATIC ANSWER ASSEMBLY IS INSTALLED, CONNECT AND TAPE W-G & O-G LEADS TOGETHER. IF O-G WIRE IS NOT AVAILABLE AT P701, IT IS ALREADY TIED DIRECTLY TO +8V AT P902 AND NO ADDITIONAL CONNECTION IS NECESSARY.

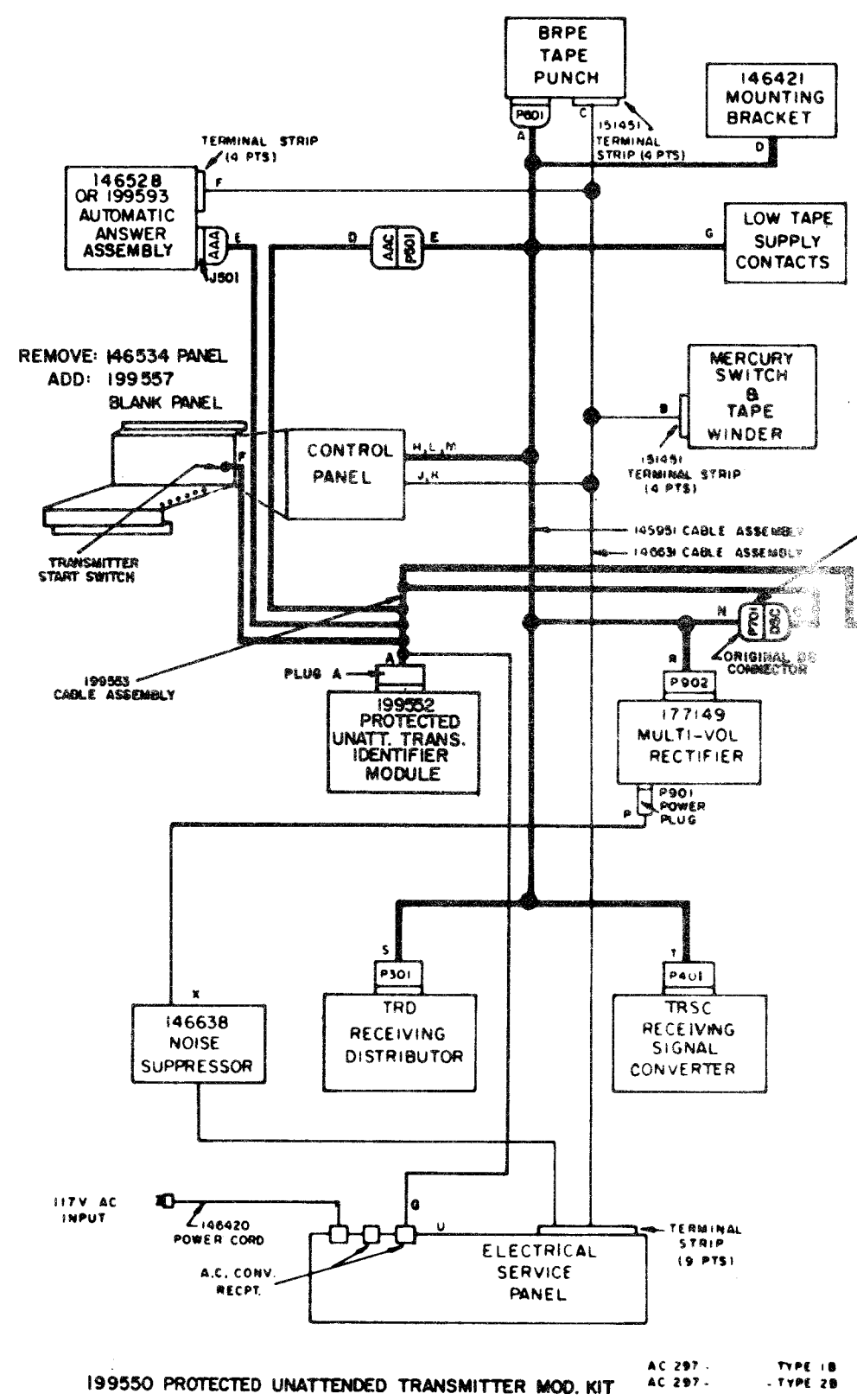


199551 DISCRETE CALLING TRANSMITTER MOD. KIT
 TYPE 1A & 2A SENDER

AC296 - TYPE 1A
 AC342 - TYPE 2A

FIGURE 3

BLOCK DIAGRAM
 TYPE 1 & TYPE 2
 SENDER TERMINAL

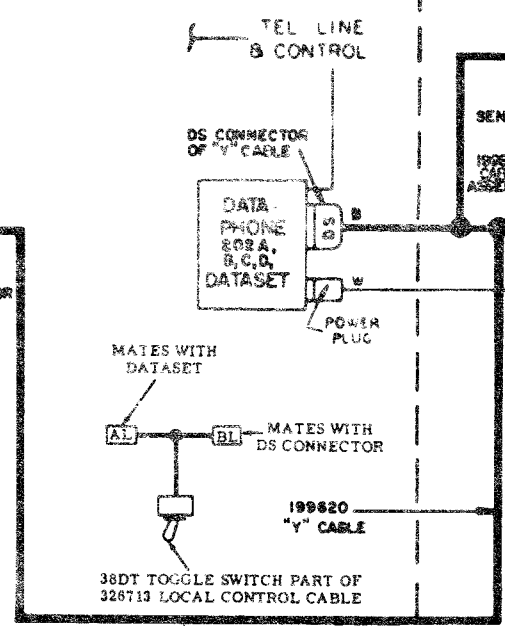


199550 PROTECTED UNATTENDED TRANSMITTER MOD. KIT AC 297 - TYPE 1B AC 297 - TYPE 2B

TYPE 1B & 2B RECEIVER

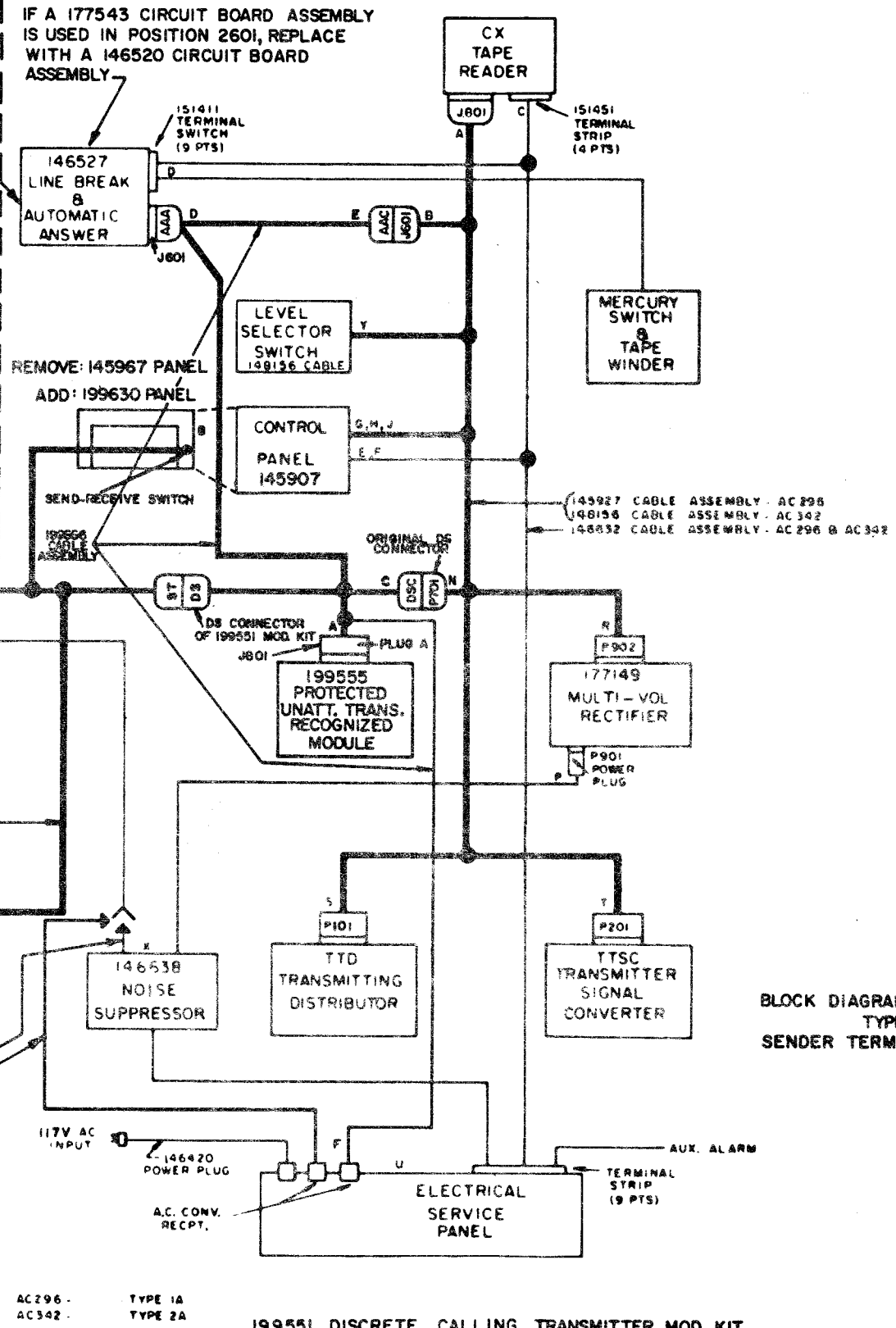
- NOTES:
1. 148161 MOD. KIT - INTERIM UNATTENDED ANSWER (EC543) NO REVERSE CHANNEL
 2. REVERSE CHANNEL - EC620
 3. 315900 MOD. KIT - REVERSE CHANNEL DETECTION DELAY.

IF 199593 AUTOMATIC ANSWER ASSEMBLY IS INSTALLED, CONNECT AND TAPE W-G & O-G LEADS TOGETHER. IF O-G WIRE IS NOT AVAILABLE AT P701, IT IS ALREADY TIED DIRECTLY TO +6V AT P902 AND NO ADDITIONAL CONNECTION IS NECESSARY.



NOTE: IN SENDER TERMINAL REMOVE RESISTOR R2001 AND STRAP A (YELLOW WIRE).

199610 SEND-RECEIVE TERMINAL MODIFICATION KIT



AC 296 - TYPE 1A AC 342 - TYPE 2A 199551 DISCRETE CALLING TRANSMITTER MOD. KIT

TYPE 1A & 2A SENDER
FIGURE 4

BLOCK DIAGRAM
TYPE 1 & TYPE 2
SENDER TERMINAL