REGISTRATION INTERFACE

SERIES SINGLE LINE

TIP AND RING ARRANGEMENTS

RJ16X, RJ31X, RJ32X, RJ33X, RJ34X, RJ35X, RJ36X, AND RJ37X

1. GENERAL

1.01 This section provides information on the standard arrangements to be provided under the Federal Communications Commission's (FCC) Registration Program for registered telephone, ancillary, data, and protective circuitry of the type associated with telephone, ancillary, and data customer-provided equipment (CPE).

> ***Note:*** Customer-provided data equipment connected to the network via the jacks in this section must have a fixed signal power level under -9 dBm. See Section 590-101-103 for connection of other data devices.

1.02 This section is reissued to provide information on the 635B connecting block, RJ16X, RJ36X, and RJ37X. Due to extensive changes change arrows have been omitted.

> ***Note:*** The differences between the 635A and 635B are:

1. The 635A removes the short on insertion of a 6 or 8 position plug.

2. The 635B provides a bridged connection with a 6 position plug and a series connection with an 8 position plug.

3. The 635A uses a shorting bar while the 635B uses outrigger contacts.

1.03 The arrangements covered in this section require the installation of a 635-type connecting block. This connecting block is designed to place the CPE or Telephone Company (TELCO)-provided equipment in series with the telephone line and the CPE or TELCO-provided equipment when the plug from the CPE or TELCO-provided equipment is inserted in the modular jack. In this mode, loop continuity must be maintained through the registered equipment. When the CPE or TELCO-provided equipment plug is removed, the circuit is restored between the line and the CPE or TELCO-provided equipment by the shorting bars.

> ***Note:*** In some instances (RJ35X, RJ16X) the telephone company provides an exclusion set which controls a customer-provided data set.

1.04 In all the arrangements, tip and ring of a single line are supplied through the interface. Where the arrangement is used with a key telephone system (KTS), the **A** and **A1** leads are also furnished on a bridged basis.

1.05 All unused leads and terminals are reserved for telephone company use. Disposition of spare leads should be per local instructions. All contact positions of the modular jack used in the 635-type connecting block are equipped with leads. In early production, the leads associated with contacts 2 and 7 were not terminated but were insulated and stored, since there are only six contacts on the connecting block terminal.

> ***Note:*** Circuit incompatibility may occur involving spare leads if a change in service is installed, ie, a line with **A** lead control installed originally would not be compatible with a subsequent installation involving a data set. Whenever service is altered at an installation involving registration Uniform Service Order Codes (USOCs), check that all appearances are properly wired.

1.06 Unless otherwise specifically required by a particular wiring arrangement, access to the required leads can be at any access point. USOC RJ35X must be accessed in the telephone set in order to provide the series tip and ring connection of all lines appearing in the set. Figure 1 provides modification of the more common sets. For the other arrangements, if installed in a large KTS with color-keyed backboards, the auxiliary (yellow) field should be used; otherwise, access at satellite closets, distribution boxes, connecting blocks, etc.

1.07 When necessary to access leads in COM KEY* installations, wire as follows:

*Trademark

(a) COM KEY 718—Tip and ring ahead of the line circuit can be obtained at the incoming CO/PBX line terminations on block 3 using 183B2 adapters. If **T, R, A,** or **A1** are required behind the line circuit, they can be accessed per line at any of the line appearances of the station terminations on blocks 3, 4, or 5. Again use 183B2 adapters. For information on COM KEY 718, refer to Section 518-450-100.

(b) COM KEY 1434—Tip and ring ahead of the line circuit can be accessed at the incoming line terminations on block 7 using 183B2 adapters. **T** and **R** behind the line circuit and **A** and **A1** for a particular line can be accessed at any of the line appearances of the station terminations on blocks 6 through 15 using 183B2 adapters. For information on COM KEY 1434, refer to Section 518-450-102.

(c) COM KEY 2152—Because of insufficient clearance between the connecting blocks and the closed gate, 183B2 adapters cannot be used on the connecting units of COM KEY 2152. To access **T** and **R** ahead of the line circuit, route the incoming CO/PBX line to an external 66-type connecting block, then to block 3 of the 100A1 or 101A1 connecting unit. The 66-type connecting block is then used to provide a multiple of the line. To access **T** and **R** behind the line circuit, use an idle station code termination which must be sacrificed for system use. If no idle station terminations are available, use any station code by running a jumper cable to external 66-type connecting blocks and transferring the station cable to these blocks. The blocks are then used to provide the line appearance multiple. For information on COM KEY 2152, refer to Section 518-450-110.

2. IDENTIFICATION

2.01 ***USOC RJ16X:*** This arrangement in connection with a series jack such as RJ36X provides "mode indication" leads (M1 and M1C) for data sets using the "permissive" mode of transmission (Fig. 2 and 3).

2.02 ***USOC RJ31X:*** This arrangement is wired so that when the CPE is plugged into the 635-type connecting block, the CPE is placed in series with the tip and ring of the line (Fig. 4). When the CPE plug is removed, tip and ring are cut through to the station equipment. ***The 635-type connecting block must be wired in the circuit, ahead of ALL station equipment, to prevent false operation of the registered device and to cut off ALL station equipment from the line.*** Typical usage is an alarm dialer.

2.03 ***USOC RJ32X:*** This arrangement (Fig. 5) also provides a series tip and ring connection through the 635-type connecting block but is used where the CPE is connected in series with a single station, such as an automatic dialer.

2.04 ***USOC RJ33X:*** Provides a series connection of the tip and ring of a KTS line ahead of the line circuit because the registered equipment requires CO/PBX ringing and a bridged connection of **A** and **A1** from behind the line circuit. It provides the busy feature at other stations in the same KTS. (Fig. 6). Tip and ring are the only leads opened when the CPE plug is inserted in the 635-type connecting block. Typical usage would be for customer-provided automatic dialers or call restrictors. Access to the required leads can be anywhere leads are available, but tip and ring must be ahead of the line circuit.

2.05 ***USOC RJ34X:*** This arrangement provides a series tip and ring connection and a bridged **A** and **A1** to the CPE. All leads are connected behind the line circuit (Fig. 7). Typical usage is for automatic dialers and call restrictors.

2.06 ***USOC RJ35X:*** Provides a series tip and ring connection to whatever line has been selected in a key telephone set plus a bridged **A** and **A1**. The arrangement requires that the set

wiring be modified as shown in Fig. 1 to put the CPE in series with the **T** and **R** multiple from the key(s) and the **T** and **R** going to the speech network. Connections between the 635-type connecting block and the telephone set terminals can be made using a D6AA cord.

2.07 ***USOC RJ36X:*** This arrangement provides a connection for a telephone set equipped with an exclusion key where the telephone line is also to be used with a registered data set. The arrangement provides a series connection to the tip and ring, plus mode indication leads M1 and M1C. The exclusion key can be used to transfer the telephone line between the data set and the telephone set. This arrangement will be associated with a telephone company provided data jack (Fig. 8).

2.08 ***USOC RJ37X:*** This arrangement provides for the connection of two lines. The tip and ring of both lines are bridged at the jack which provides the ability to exclude one line. The telephone company will wire the jack in the sequence designated by the customer. Typical usage is for two line telephones with exclusion on one line for use with data sets requiring telephones with the exclusion feature (Fig. 9).

3. MAINTENANCE

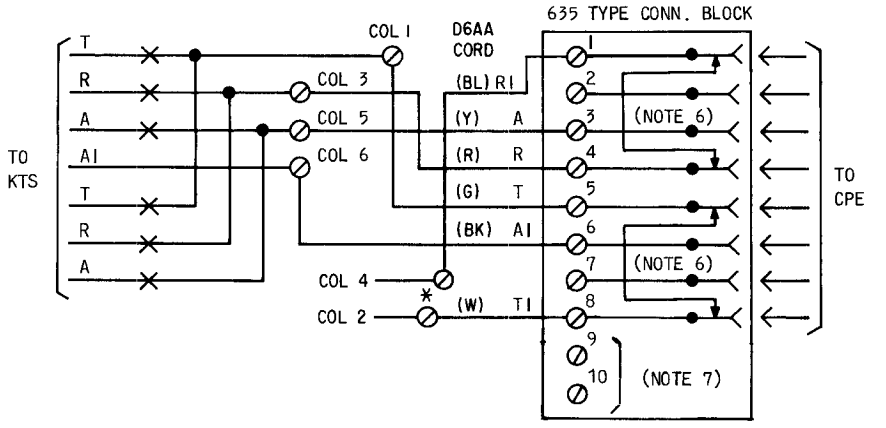
3.01 Maintenance of the wiring arrangements covered in this section is limited to:

- Verification of the telephone company wiring and equipment
- Assurance that the required leads are supplied in the interface used for CPE connection.

No attempt should be made to test, modify, or repair customer-owned and maintained equipment.

3.02 When in the judgment of repair personnel the trouble is located in or caused by the CPE, the Repair Service Bureau should be notified so that proper Maintenance of Service Charge Billing can be initiated as required and as outlined in the following:

- Section 660-101-312—Maintenance of Service Charge on Services With Customer-Provided Equipment (CPE)
- Section 660-101-318—Tariff and Registration Violation Notice Procedures.



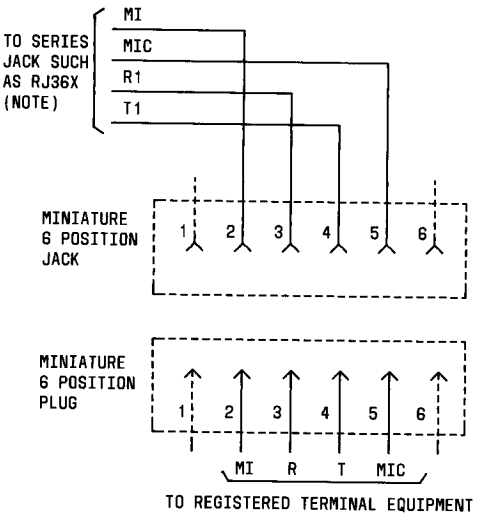
NOTE: IN EARLY PRODUCTION LEADS 2 AND 7 WERE NOT TERMINATED.

TELEPHONE SET CODE	COLUMN 1 T	COLUMN 2 T1	COLUMN 3 R	COLUMN 4 R1	COLUMN 5 A	COLUMN 6 A1
565GK	F	BL (DIAL)	N	G (L SW)	M	1B
565HK/LK			9			
2565GK	L2	G (DIAL)	N	G (L SW)		
2565HK/LK			9			
630D/631D	F	BL (DIAL)	2	G	5	1
630DA/631DA			13	(L SW)	7	8
636C/637D			2	BL-W	5	1
636CA/637CA			9	(FLASH)	7	8
2630D/2631D	4	G (DIAL)	2	G	5	1
2630DA/2631DA	12		13	(L SW)	7	8
2636C/2637D	4		2	BL-W	5	1
2636CA/2637DA	12		9	(FLASH)	7	8
851-TYPE	F	BL (DIAL)	13	G (L SW)	9	4
2851-TYPE	20	G (DIAL)				
830/831-TYPE	F	BL (DIAL)	6	G (L SW)	22	10
2830/2831-TYPE	8	G (DIAL)				
832/833-TYPE	F	BL (DIAL)			15	
2832/2833-TYPE		G (DIAL)				
634D/635D	F	BL (DIAL)	12	G(L SW)	5	1
634DA/635DA	F	BL (DIAL)	13	G(L SW)	56	10
2634D/2635D	4	G (DIAL)	2	G(L SW)	5	1
2634DA/2635DA	L2	G (DIAL)	13	G(L SW)	56	10

MODIFY SETS AS FOLLOWS:

1. DISCONNECT COLUMN 2 LEAD FROM COLUMN 1 TERMINAL. CONNECT TO T1 LEAD FROM JACK USING D-161488 CONN. OR SPARE TERMINAL.
2. CONNECT T LEAD FROM JACK TO COLUMN 1 TERMINAL.
3. DISCONNECT COLUMN 4. LEAD FROM COLUMN 3 TERMINAL. CONNECT TO R1 LEAD FROM JACK USING D-161488 CONN. OR SPARE TERMINAL.
4. CONNECT R LEAD FROM JACK TO COLUMN 3 TERMINAL.
5. CONNECT A AND A1 LEADS TO TERMINALS IN COLUMNS 5 AND 6 RESPECTIVELY.
6. SHORTING BARS OPEN CIRCUITS BETWEEN 1-4 AND 5-8 WHEN CPE PLUG IS INSERTED IN JACK.
7. SPARE TERMINALS.

Fig. 1—Connections for USOC RJ35X



NOTE:
MI AND MIC LEADS ARE TYPICALLY WIRED TO AN RJ36X SERIES JACK WHICH CAN BE USED TO CONNECT AN EXCLUSION KEY TELEPHONE SET AHEAD OF THE DATA EQUIPMENT.

Fig. 2—Connections for USOC RJ16X

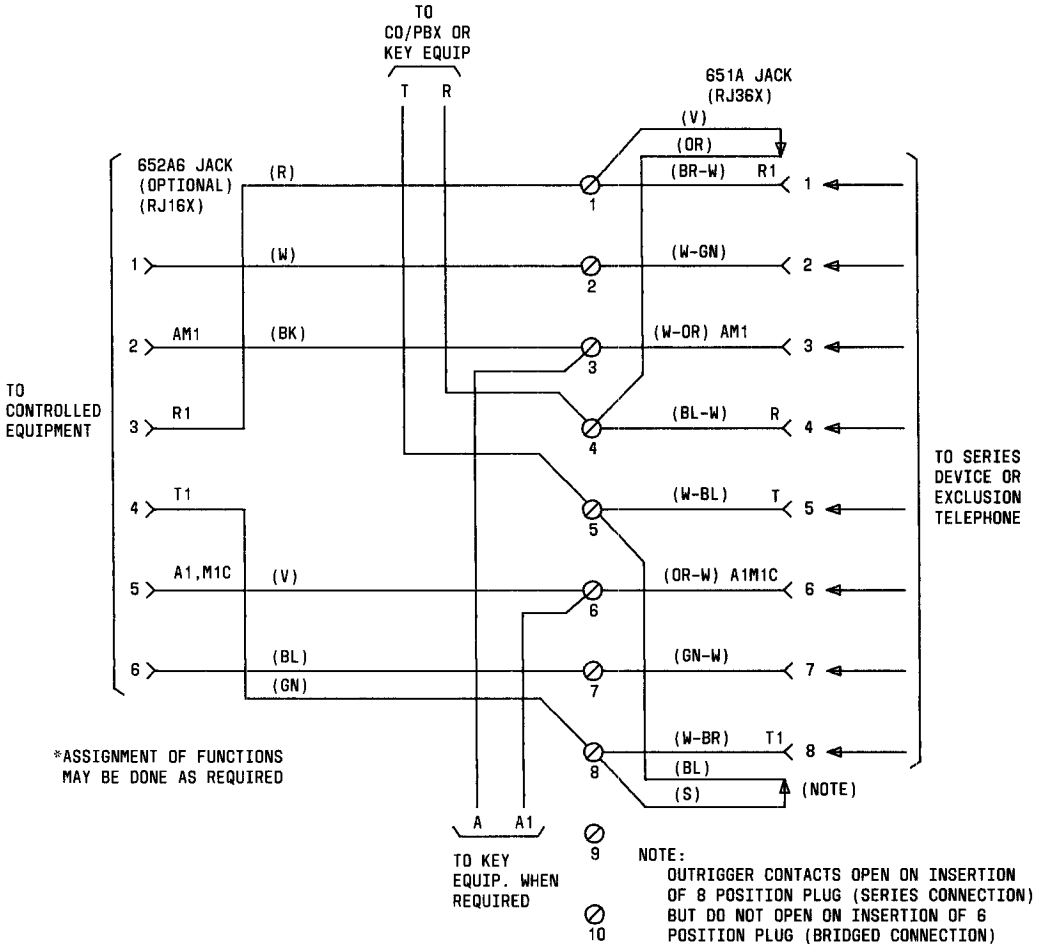


Fig. 3—Schematic Diagram, 635B Connecting (625A6 Jack for Controlled Station, Mounted in 635B Connecting Block Cover or Externally Mounted (as required)

NOTES:

1. SHORTING BARS OPEN CIRCUITS BETWEEN 1-4 AND 5-8 WHEN CPE PLUG IS INSERTED IN JACK.

2. IN EARLY PRODUCTION LEADS 2 AND 7 WERE NOT TERMINATED.

3. **SPARE TERMINALS**

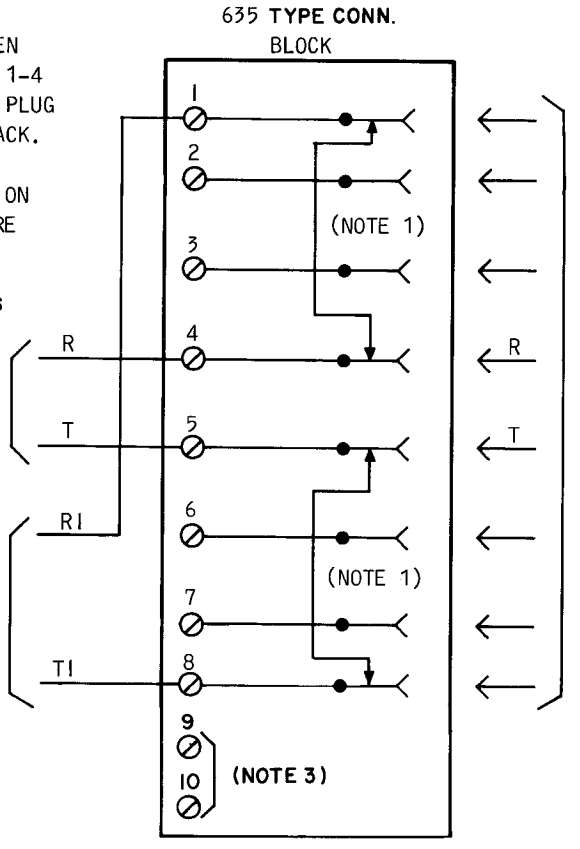


Fig. 4—Connections for USOC RJ31X

NOTES:

1. SHORTING BARS OPEN CIRCUITS BETWEEN 1-4 AND 5-8 WHEN CPE PLUG IS INSERTED IN JACK.

2. IN EARLY PRODUCTION LEADS 2 AND 7 WERE NOT TERMINATED.

3. **SPARE TERMINALS**

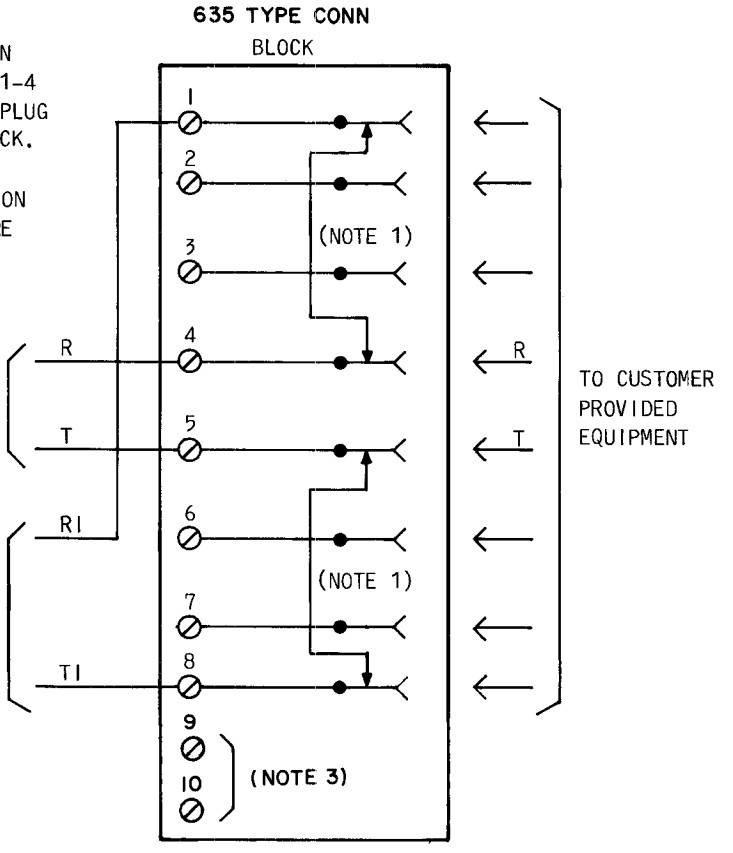
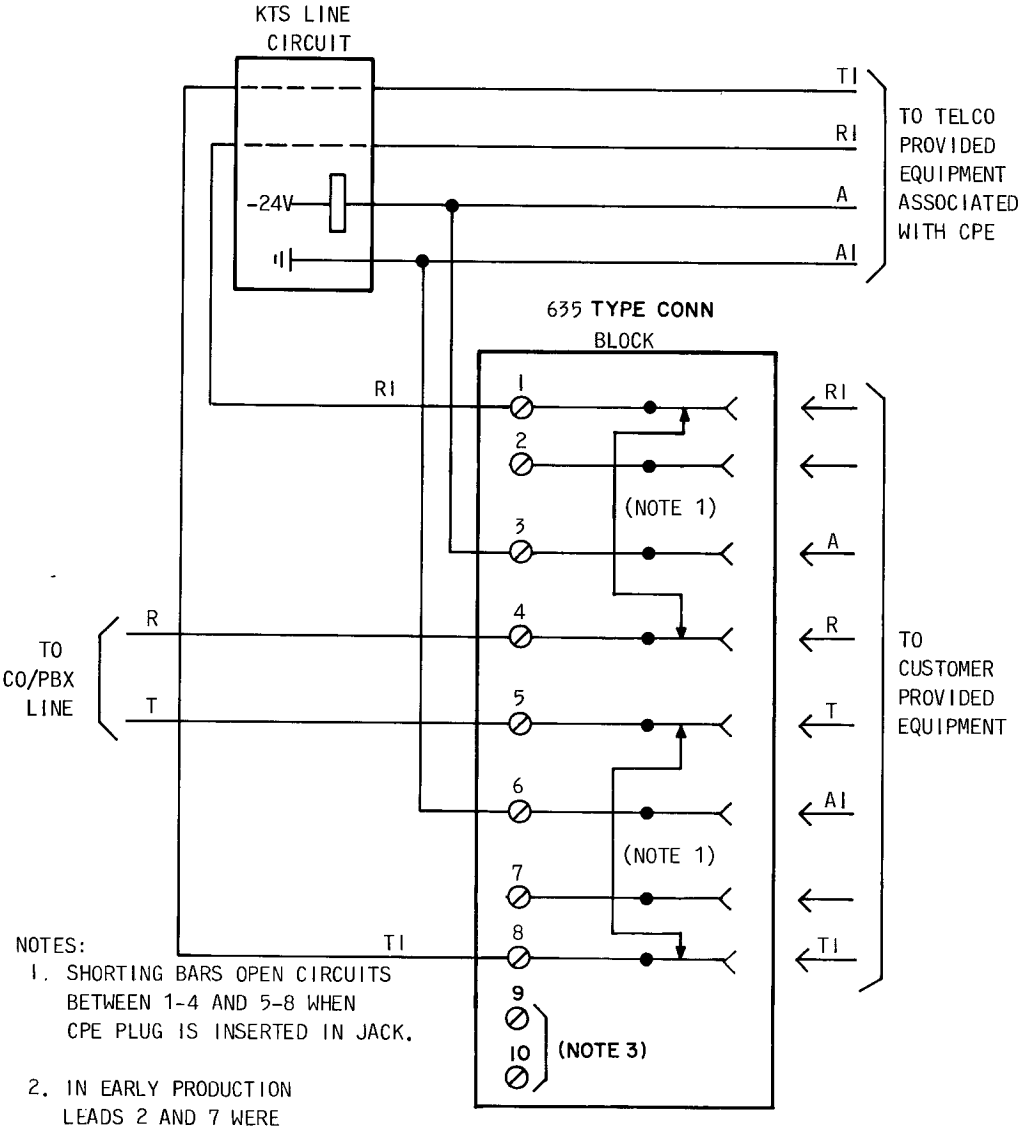


Fig. 5—Connectons for USOC RJ32X



NOTES:

1. SHORTING BARS OPEN CIRCUITS BETWEEN 1-4 AND 5-8 WHEN CPE PLUG IS INSERTED IN JACK.

2. IN EARLY PRODUCTION LEADS 2 AND 7 WERE NOT TERMINATED.

3. SPARE TERMINALS

Fig. 6—Connections for USOC RJ33X

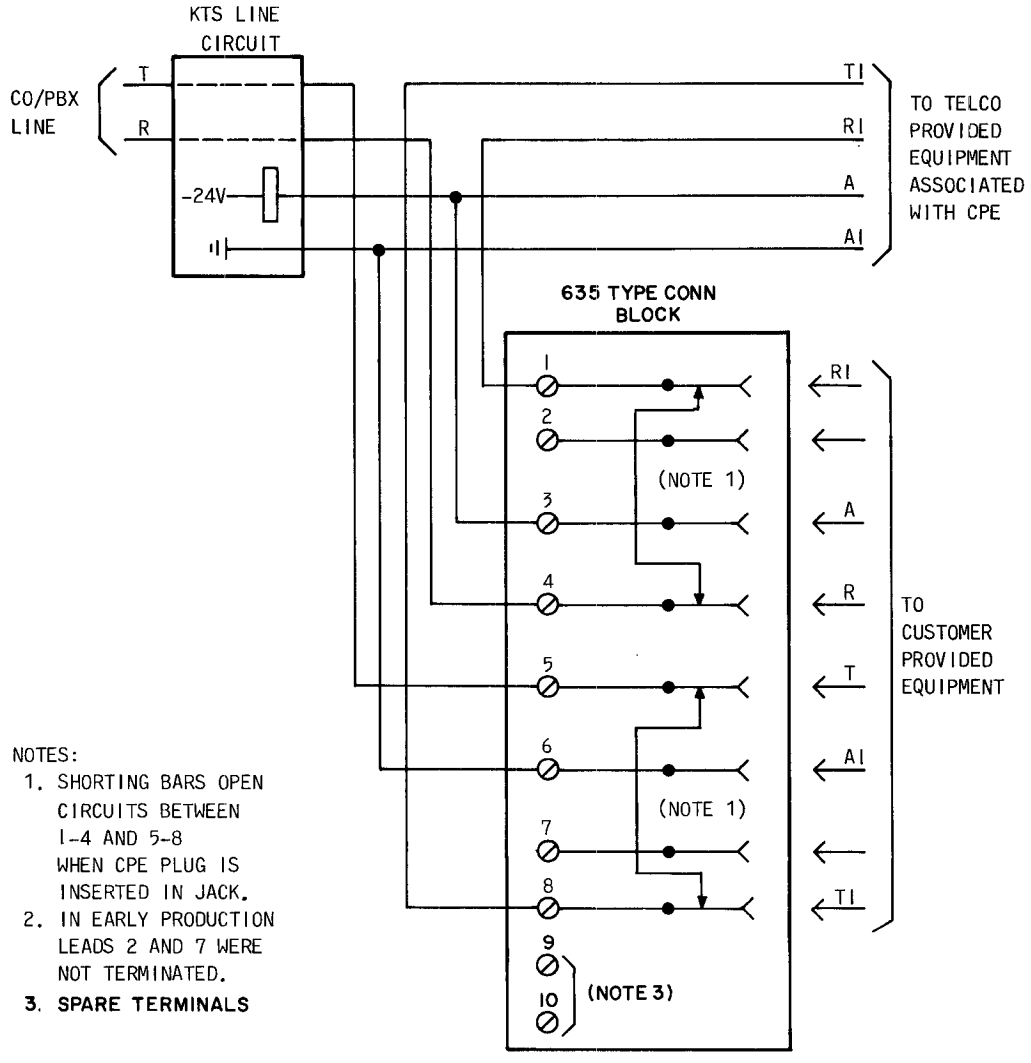
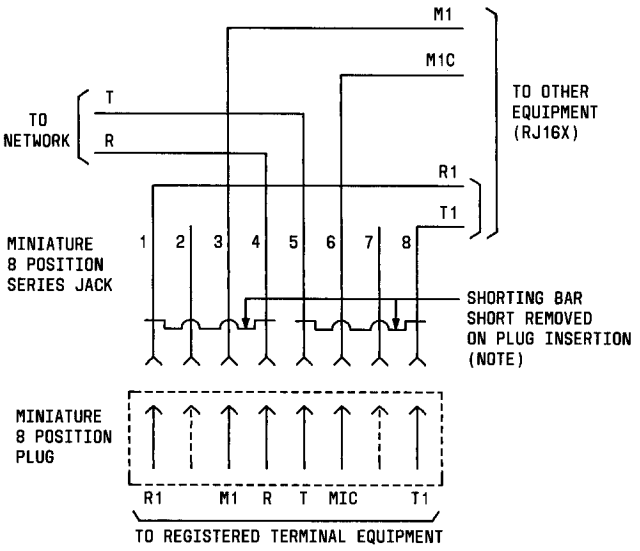


Fig. 7—Connections for USOC RJ34X



NOTE: THE DIFFERENCE BETWEEN THE 635A AND 635B ARE
1. THE 635A REMOVES THE SHORT ON INSERTION OF A 6 OR 8 POSITION PLUG.
2. THE 635B PROVIDES A BRIDGED CONNECTION WITH A 6 POSITION PLUG AND A SERIES CONNECTION WITH AN 8 POSTTION PLUG.

Fig. 8—Connections for USOC RJ36X

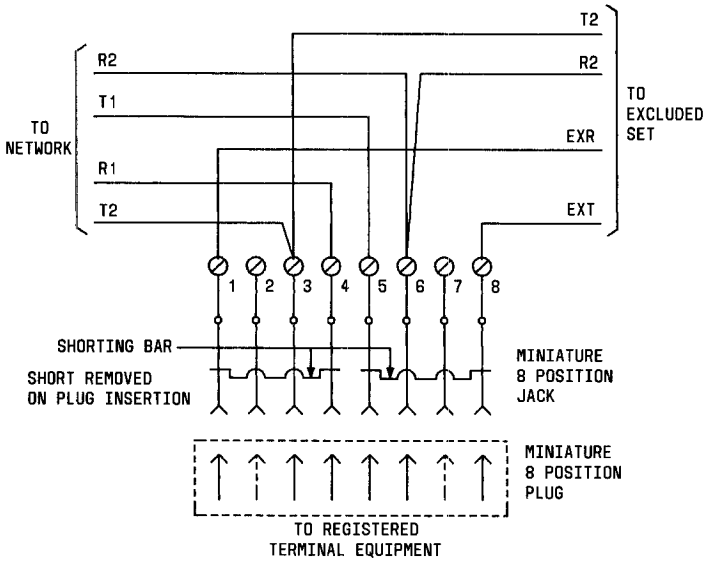


Fig. 9—Connections for USOC RJ37X