REGISTRATION INTERFACE
BRIDGED MULTIPLE
TIP AND RING ARRANGEMENTS
RJ21X, RJ22X, RJ23X, AND RJ24X

1. GENERAL

1.01 This section provides information on the standard wiring arrangements to be provided under the Federal Communications Commission's (FCC) Registration Program for registered telephone, ancillary, data, telephone, and protective circuitry of the type associated with ancillary and data customer-provided equipment (CPE). This section covers multiple (more than three lines) connections. For information on 2-line interface connections, see Section 463-400-140. For information on 3-line interface connections, see Section 463-400-142.

> ***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 add connections for RJ21X, RJ22X, RJ23X, or RJ24X using a 66M3-50R connecting block.

1.03 Arrangements RJ21X, RJ22X, RJ23X, and RJ24X use a 50-pin miniature ribbon connector (female) to provide a bridged tip and ring connection of several telephone lines. ▶The connections are furnished through a connector such as the KS-16690 connector or equivalent, as part of an A25B connector cable. A 66M3-50R connecting block which is equipped with a connector wired to a 66-type connecting block, can also be used (Fig. 6).◀ Where key telephone systems (KTSs) are involved, the A and A1 leads may also be supplied. The plug (male) in the registered CPE must be a compatible 50-pin miniature ribbon connector.

1.04 Figure 1 is provided as an aid in establishing the position and numbering in the connector. The lead to pin assignments differs for each arrangement, requiring care be taken that the jack be wired per Fig. 2 through 6. Interfaces RJ21X, RJ22X, and RJ23X are to have the designated lines ***consecutively*** wired into the jack in the ***sequence*** specified by the customer, starting with the first position and not skipping any positions.

1.05 In some of the arrangements, only tip and ring are to be furnished to the CPE. Disposition of the other leads should be per local instructions.

> ***Note:*** Circuit incompatibilty may occur involving the spare leads if a change of service is installed, ie, RJ21X, if installed originally, would not be compatible with a subsequent installation of RJ22X. Whenever service is altered at a location 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. If installed in a large key system 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:

(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

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at any of the line appearances of the station terminations on blocks 3, 4, or 5. 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 block. 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 RJ21X:*** This arrangement provides a bridged connection of the tip and ring of a multiple number of CO or PBX trunks to the CPE. The connection is furnished through a female ribbon connector, such as the KS-16690 connector or equivalent, as part of an A25B connector cable. Up to 25 trunks or lines can be furnished (Fig. 2 and 6). Bridging to the tip and ring may be at various locations. Typical usage for RJ21X would be for connection of registered traffic data recording equipment furnished by the customer.

2.02 ***USOC RJ22X:*** Provides up to 12 CO/PBX circuits to the CPE where the tip and ring must be bridged ahead of the line circuit and A lead control is required. Leads furnished to the CPE on a per line basis are T, R, A, and A1 using a KS-16690 connector or equivalent (Fig. 3 and 6). Access to leads will probably be at the KTS to permit connecting tip and ring ahead of the line circuit and A and A1 behind line circuit. Primary use of arrangement will be to provide for connection of a number of CPE ancillary devices, requiring A lead control.

2.03 ***USOC RJ23X:*** This arrangement is similar to RJ22X except the tip and ring, as well as A and A1, are connected behind the line circuit. Up to 12 circuits are connected using the KS-16690 connector or equivalent (Fig. 4 and 6).

2.04 ***USOC RJ24X:*** Provides the same T, R, and A appearances plus A1 as a standard 5-line key telephone set to the CPE (Fig. 5 and 6). The L and LG appearances must be omitted to be in conformance with tariffs. Connection to the CPE is through a KS-16690 connector or equivalent. All connections are bridged behind the line circuit.

> ***Note:*** Some multibutton key sets are terminated in other than the standard wiring arrangement. When accessing the leads for this arrangement, care must be taken that the desired leads will appear on the connector as required.

3. MAINTENANCE

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

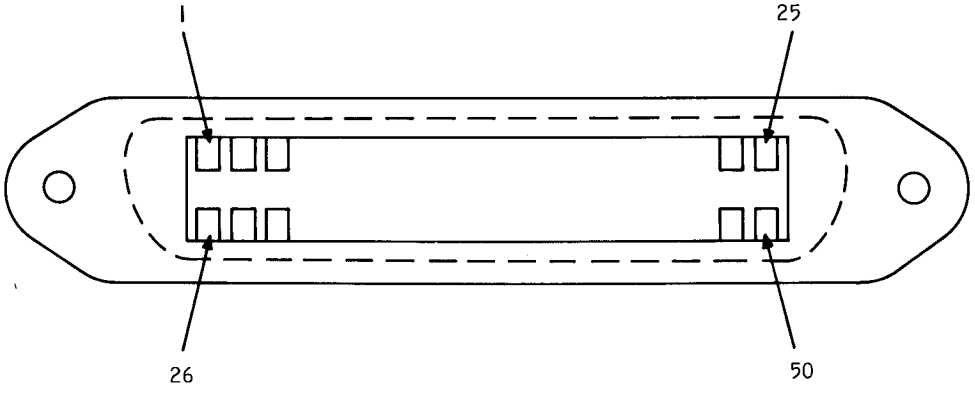
- Verification of the telephone company wiring and equipment
- Assurance that the required leads are supplied in the interface used for CPE connection.

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

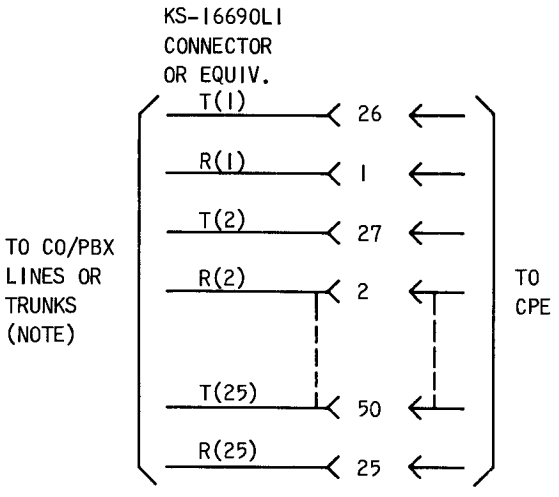
can be initiated as required and as outlined in the following:

- 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:
CONNECTOR VIEWED FROM WIRING SIDE

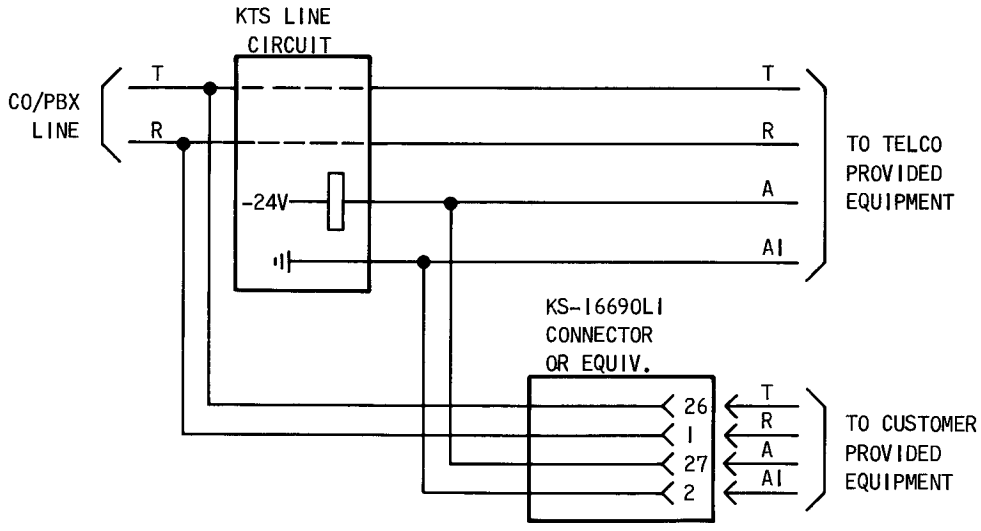
Fig. 1—Location of Contacts in KS-16690 Connector



NOTE:
CONNECT CIRCUITS
AS REQUIRED

CKT	LEAD	PIN	CKT	LEAD	PIN
1	T R	26 1	14	T R	39 14
2	T R	27 2	15	T R	40 15
3	T R	28 3	16	T R	41 16
4	T R	29 4	17	T R	42 17
5	T R	30 5	18	T R	43 18
6	T R	31 6	19	T R	44 19
7	T R	32 7	20	T R	45 20
8	T R	33 8	21	T R	46 21
9	T R	34 9	22	T R	47 22
10	T R	35 10	23	T R	48 23
11	T R	36 11	24	T R	49 24
12	T R	37 12	25	T R	50 25
13	T R	38 13			

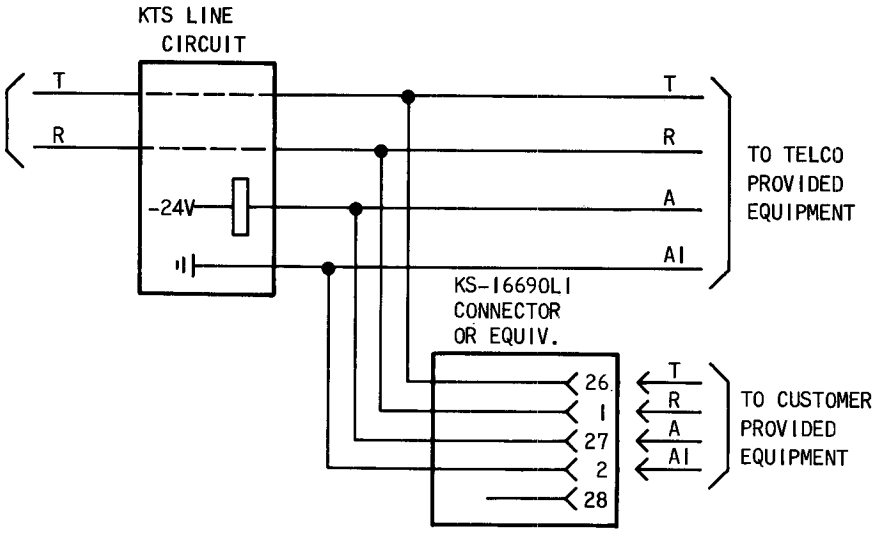
Fig. 2—Connections for USOC RJ21X—Multiple Bridged Tip and Ring



CKT	LEAD	PIN	CKT	LEAD	PIN
1	T	26	7	A	39
	R	1		AI	14
	A	27	8	T	40
	AI	2		R	15
2	T	28		A	41
	R	3		AI	16
	A	29	9	T	42
	AI	4		R	17
3	T	30		A	43
	R	5		AI	18
	A	31	10	T	44
	AI	6		R	19
4	T	32		A	45
	R	7		AI	20
	A	33	11	T	46
	AI	8		R	21
5	T	34		A	47
	R	9		AI	22
	A	35	12	T	48
	AI	10		R	23
6	T	36		A	49
	R	11		AI	24
	A	37			50
	AI	12			25
7	T	38			
	R	13			

NOTE:
CONNECT CIRCUITS AS REQUIRED. ONLY 1ST CIRCUIT SHOWN CONNECTED

Fig. 3—Connections for USOC RJ22X—Multiple Bridged Tip and Ring Ahead of Line Circuit With "A" Lead Control



CKT	LEAD	PIN	CKT	LEAD	PIN
1	T R A AI	26 1 27 2	7	A AI	39 14
2	T R A AI	28 3 29 4	8	T R A AI	40 15 41 16
3	T R A AI	30 5 31 6	9	T R A AI	42 17 43 18
4	T R A AI	32 7 33 8	10	T R A AI	44 19 45 20
5	T R A AI	34 9 35 10	11	T R A AI	46 21 47 22
6	T R A AI	36 11 37 12	12	T R A AI	48 23 49 24
7	T R	38 13			50 25

NOTE:
CONNECT CIRCUITS AS REQUIRED. ONLY 1ST CIRCUIT SHOWN CONNECTED.

Fig. 4—Connections for USOC RJ23X—Multiple Bridged Tip and Ring Behind Line Circuit With "A" Lead Control

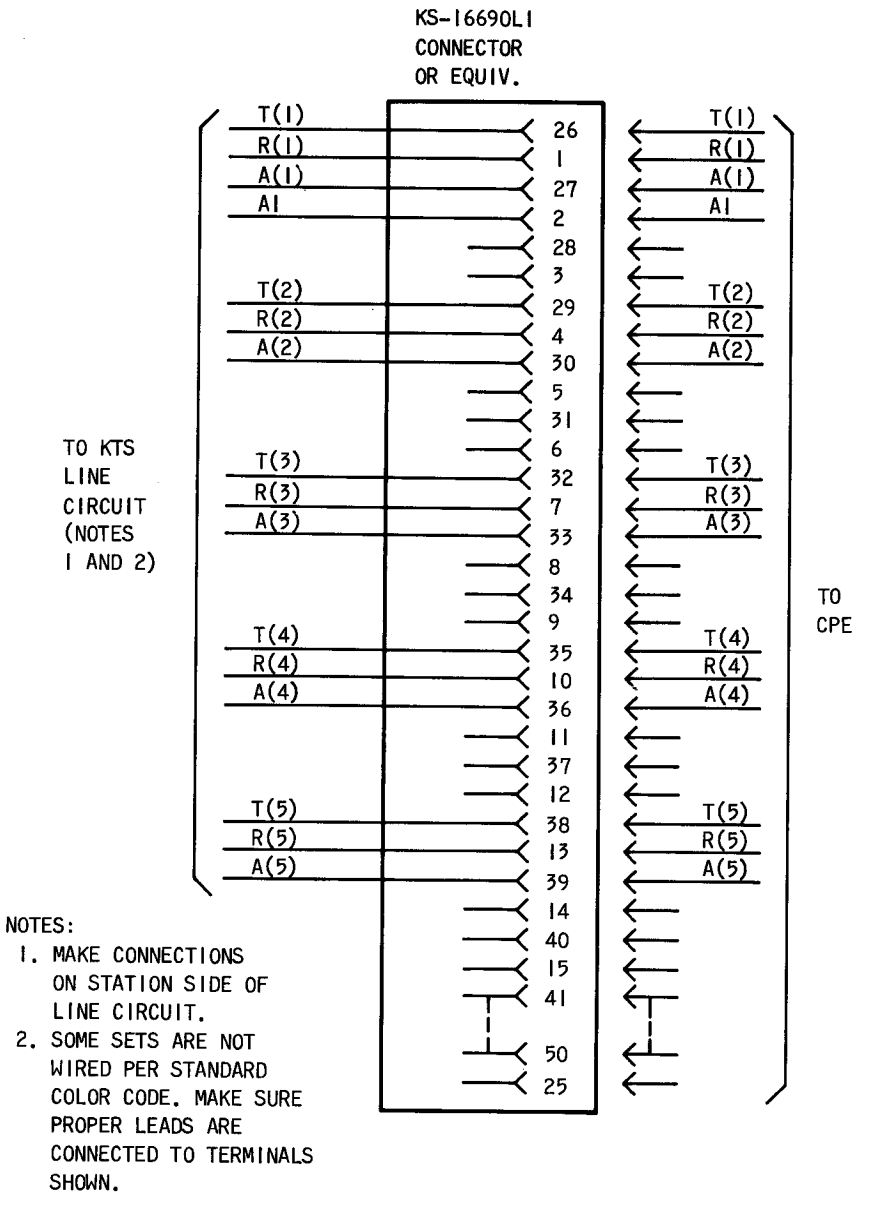
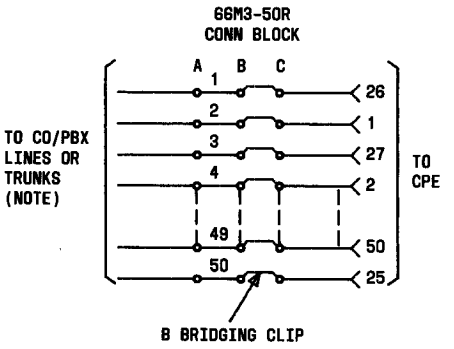


Fig. 5—Connections for USOC RJ24X—Multiple Bridged Tip and Ring With "A" Lead Control, Standard Appearance



66M3-50R CONN. BLOCK		RJ21X		RJ22X		RJ23X		RJ24X	
CLIP	CONN. TERM.	CIR-CUIT	LEAD DESIG	CIR-CUIT	LEAD DESIG	CIR-CUIT	LEAD DESIG	CIR-CUIT	LEAD DESIG
1	26	1	T	1	T	1	T	1	T
2	1		R		R		R		R
3	27	2	T		A		A		A
4	2		R		A1		A1		A1
5	28	3	T	2	T	2	T		
6	3		R		R		R		
7	29	4	T		A		A	2	T
8	4		R		A1		A1		R
9	30	5	T	3	T	3	T		A
10	5		R		R		R		
11	31	6	T		A		A		
12	6		R		A1		A1		
13	32	7	T	4	T	4	T	3	T
14	7		R		R		R		R
15	33	8	T		A		A		A
16	8		R		A1		A1		
17	34	9	T	5	T	5	T		
18	9		R		R		R		
19	35	10	T		A		A	4	T
20	10		R		A1		A1		R
21	36	11	T	6	T	6	T		A
22	11		R		R		R		
23	37	12	T		A		A		
24	12		R		A1		A1		

Fig. 6—Connections for RJ21X, RJ22X, RJ23X, and RJ24X Using 66M3-50R Connecting Block (Sheet 1 of 2)

66M3-50R CONN. BLOCK		RJ21X		RJ22X		RJ23X		RJ24X	
CLIP	CONN. TERM.	CIR-CUIT	LEAD DESIG	CIR-CUIT	LEAD DESIG	CIR-CUIT	LEAD DESIG	CIR-CUIT	LEAD DESIG
25	38	13	T	7	T	7	T	5	T
26	13		R		R		R		R
27	39	14	T		A		A		A
28	14		R		A1		A1		
29	40	15	T	8	T	8	T		
30	15		R		R		R		
31	41	16	T		A		A		
32	16		R		A1		A1		
33	42	17	T	9	T	9	T		
34	17		R		R		R		
35	43	18	T		A		A		
36	18		R		A1		A1		
37	44	19	T	10	T	10	T		
38	19		R		R		R		
39	45	20	T		A		A		
40	20		R		A1		A1		
41	46	21	T	11	T	11	T		
42	21		R		R		R		
43	47	22	T		A		A		
44	22		R		A1		A1		
45	48	23	T	12	T	12	T		
46	23		R		R		R		
47	49	24	T		A		A		
48	24		R		A1		A1		
49	50	25	T						
50	25		R						

NOTE:

CONNECT CIRCUITS AS REQUIRED

Fig. 6—Connections for RJ21X, RJ22X, RJ23X, and RJ24X Using 66M3-50R Connecting Block (Sheet 2 of 2)