# Section F Standard Jacks Associated with Systems

Standard Network Interface Jacks: Overview

#### General

This section provides current standard network-interface jacks that have been adopted by the FCC. These jacks connect customer-premises registered terminal equipment and customer-owned premises wiring (COPW) to the telephone network. This section also includes the standard-interface jack that connects terminal equipment to voiceband-analog private-line service (Category II).

When installing new services, or when altering service at an installation involving registration jacks, vendors should check to see that all network wiring is properly terminated. The system manufacturer should identify the proper jack to be requested.

Note: Jacks used as network interfaces will not be bridged. Standard network-interface jacks may vary by Ameritech Company.

## Summary of Standard Jacks

USOC	Description	Page #
RJ1DC	Single-line, 4-wire T/R and T1/R1 bridged connection, 6-position hardware	3-78
RJ11C/W	Single-line, 2-wire T/R bridged connection, 6-position hardware	3-79
RJ14C/W	Two-line, 2-wire T/R, T(MR)/R(MR), T(OPS)/R(OPS) bridged connection, 6-position hardware	3-80
RJ14X	Two-line, 2-wire T1/R1, and T2/R2 with sliding cover bridged connection, 6-position hardware	3-81
RJ15C	Single-line, 2-wire T/R, weatherproof bridged connection, 3-position hardware	3-82
RJ16X	Single-line, 2-wire T/R and MI/MIC, mode indication bridged connection, 6-position hardware	3-83
RJ17C	Single-line, 2-wire T/R (complies with National Electric Code [NEC] Article 517) bridged connection, 6-position hardware	3-84
RJ18C/W	Single-line, 2-wire T/R with make-busy leads bridged connection, 6-position hardware	3-85
RJ2DX	Up to 12 lines, 4-wire T/R and T1/R1 bridged connections, 50-position hardware	3-86

Summary of Standard Jacks (continued)

usoc	Description	Page #
RJ2EX	Up to 12 Tie Trunks, 2-wire T/R, E&M Type I bridged connections, 50-position hardware	3-87
RJ2FX	Up to 8 Tie Trunks, 2-wire T/R, E&M SG/SB, Type II bridged connections, 50-position hardware	3-88
RJ2GX	Up to 8 Tie Trunks, 4-wire T/R, T1/R1, E&M Type I bridged connections, 50-position hardware	3-89
RJ2HX	Up to 6 Tie Trunks, 4-wire T/R, T1/R1, E&M SG/SB Type II bridged connections, 50-position hardware	3-90
RJ2MB	Up to 12 lines 2-wire T/R, with make-busy leads bridged connections, 50-position hardware	3-91
RJ21X	Up to 25 lines, 2-wire T/R bridged connections, 50-position hardware	3-92
RJ25C	Up to 3 lines, 2-wire T/R, T(MR)/R(MR), or T(OPS)/R(OPS) bridged connections, 6-position hardware	3-93
RJ26X	Up to 8 lines, 2-wire T/R, FLL or programmed data bridged connections, 50-position hardware	3-94
RJ27X	Up to 8 lines, 2-wire T/R, programmed data bridged connections, 50-position hardware	3-95

Summary of Standard Jacks (continued)

usoc	Description	Page #
RJ31M	Up to 8 lines, multiple-mounting arrangement bridged connections, 8-position hardware	3-96
RJ31X	Single-line, 2-wire T/R ahead of all station equipment series connections, 8-position with shorting bars hardware	3-97
RJ38X	Single-line, 2-wire T/R ahead of all station equipment series connections, 8-position with continuity-circuit hardware	3-98
RJ4MB	Single-line, 2-wire T/R MB/MB1, PR/PC with make-busy bridged connections, 8-position, keyed and programmed hardware	3-99
RJ41M	Up to 8 multiple installations of FLL or programmed bridged connections, 8-position, keyed and programmed hardware	3-100
RJ41S	Single-line 2-wire T/R, FLL or programmed data bridged connections, 8-position, keyed hardware	3-101
RJ45M	Up to 8 multiple installations of programmed data bridged connections, 8-position, keyed hardware	3-102
RJ45S	Single-line 2-wire T/R, PR/PC programmed data bridged connections, 8-position, keyed hardware	3-104

#### Summary of Standard Jacks (continued)

USOC	Description	Page #
RJ48C	Single-line, 4-wire T/R, T1/R1; 1.544 Mbps bridged connections, 50-position hardware	3-105
RJ48H	Up to 2 lines, 4-wire T/R, T1/R1; 1.544 Mbps bridged connections, 50-position hardware	3-106
RJ48M	Up to 8 lines, 4-wire T/r, T1/R1; 1.544 Mbps bridged connections, 50-position hardware	3-107
RJ48S	One or two-line, T/R or T/R, T1/R1; LADC/subrate bridged connections, 8-position, keyed hardware	3-108
RJ48T	Up to 25 (2-wire) or 12 (4-wire), T/R or T/R, T1/R1; LADC/subrate bridged connections, 50-position hardware	3-109
RJ48X	Single-line, 4-wire T/R, T1/R1; 1.544 Mbps bridged connections, 8-position with shorting bars hardware	3-110
RJ61X	Up to 4 lines, T/R bridged connections, 8-position hardware	3-111
RJ71C	Up to 25 lines, T/R series connections, 50-position hardware	3-112 & 113
JM8	Single Private Line, 2/4-wire T/R; T/R, T1/R1, TEK/TEK, non-registered service, 8-position, keyed; w/wo loopback hardware	3-114

## **Exhibits of Standard Network Interface Jacks**

Exhibit: RJ1DC

#### Single-Line Bridged 4-Wire T/R and T1/R1

Electrical Network Connection:

Single-line bridged 4-wire T/R and T1/R1

Universal Service Order Code:

RJIDC

Mechanical Arrangement:

Miniature 6-position jack

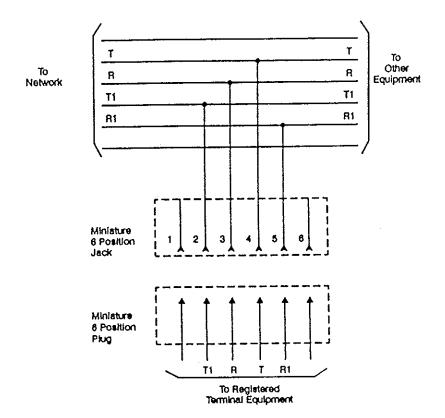
Typical Usage:

Terminal equipment and systems requiring 4-wire exchange access

Wiring Diagram:

T/R — Customer transmits to network

T1/R1 — Customer receives from network



## Exhibit: RJ11C/W

#### Single-Line Bridged T/R

**Electrical Network Connection:** 

Single-line bridged T/R only

Universal Service Order Code:

RJ11C/W

Mechanical Arrangement:

Miniature 6-position jack

Typical Usage:

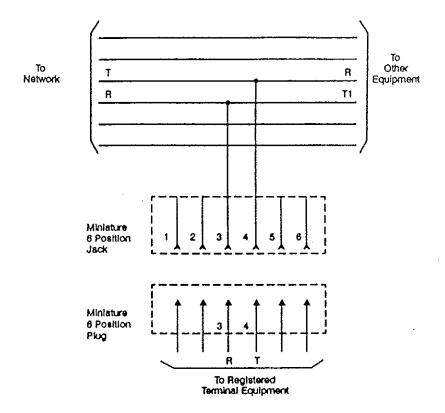
Single-line non-key telephone, ancillary devices

PBXs and key telephone systems

and similar systems

#### Wiring Diagram:

e - 2., 11



## Exhibit: RJ14C/W

#### Two-Line Bridged T/R, T(MR)/R(MR), T(A1), or T(OPS)/R(OPS)

**Electrical Network Connection:** 

Two-line bridged T/R

Universal Service Order Code:

RJ14C/W

Mechanical Arrangement:

Miniature 6-position jack

Typical Usage:

Two-line non-key telephone sets and ancillary devices, including message registration, automatic identification

outward dialing, and off-premises station

Wiring Diagram:

The telephone company will wire the lines to the jack in the

sequence designated by the customer.

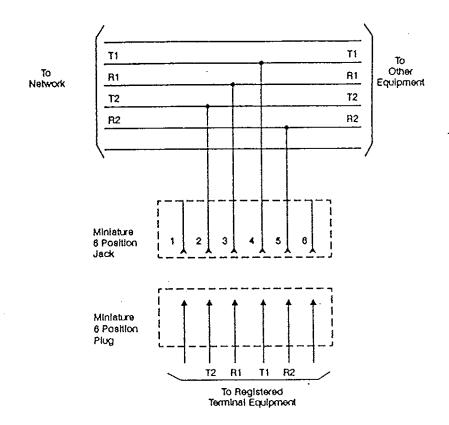


Exhibit: RJ14X

#### Two-Line T1/R1, T2/R2 with Sliding Cover

**Electrical Network Connection:** 

Two-line T/R

Universal Service Order Code:

RJ14X

Mechanical Arrangement:

Miniature 6-position modular jack with a sliding cover to

facilitate testing each line

Typical Usage:

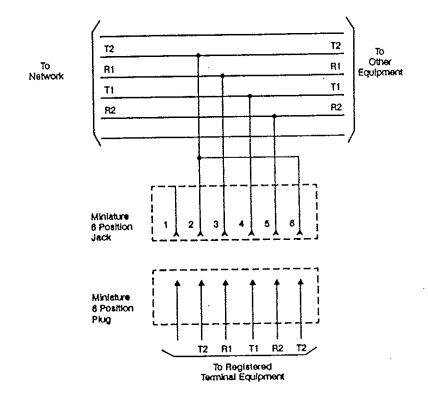
Connection of two exchange access lines with the provision for testing each line with a standard single-line telephone

-

Wiring Diagram:

The exchange carrier will wire the lines to the connector in

the sequence designated by the customer.



#### Exhibit: RJ15C

#### Single-Line Bridged T/R Weatherproof

Electrical Network Connection:

Single-line bridged T/R

Universal Service Order Code:

RJ15C

Mechanical Arrangement:

3-position weatherproof jack

Typical Usage:

Providing telephone service to boats

in marinas

Wiring Diagram:

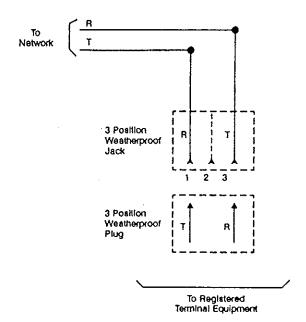


Exhibit: RJ16X

## Bridged T/R with Mode Indication Signal: 6-Position Jack

**Electrical Network Connection:** 

Single-line bridged T/R with mode indication to a series connection ahead of the bridged connection. Conductors 1

and 6 are reserved for telephone company use.

Universal Service Order Code:

RJ16X

Mechanical Usage:

Miniature 6-position jack

Typical Usage:

-9dbm ("permissive") data equipment with Mode Indicator

(MI) and Mode Indication Common (MIC) leads

Wiring Diagram:

MI and MIC leads are typically wired to an RJ36X series

jack that can be used to connect an exclusion key telephone

set ahead of data equipment.

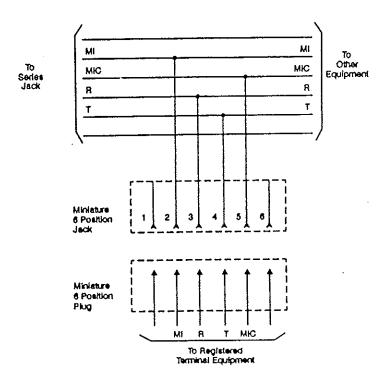


Exhibit: RJ17C

#### Bridged T/R for Single-Line Terminal Equipment That also Complies to 1978 NEC, Article 517; 6-Position Jack

**Electrical Network Connection:** 

Single-line bridged T/R leads. Positions 2, 3, 4, and 5 are

not equipped with contacts.

Universal Service Order Code:

RJ17C

Mechanical Arrangement:

Miniature 6-position jack

Typical Usage:

Special non-key telephone set or certain hospital ancillary equipment in hospital critical care areas. Use is restricted to devices that comply with Article 517 of the 1978

National Electrical Code.

Wiring Diagram Note:

Equipment must comply with Article 517 of the National

Electrical Code.

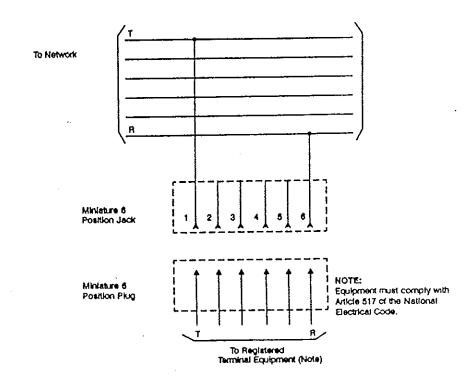


Exhibit: RJ18C/W

#### Single-Line Bridged T/R with Make Busy

**Electrical Network Connection:** 

Single-line non-key telephone and ancillary devices

connected directly to central office lines, where a make-

busy requirement is needed.

Universal Service Order Code:

RJ18C/W

Mechanical Arrangement:

Miniature 6-position jack

Typical Usage:

Single-line non-key telephone and ancillary devices connected directly to central office lines, where a make

busy requirement is needed.

Wiring Diagram:

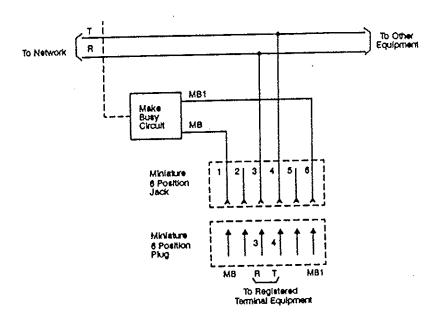


Exhibit: RJ2DX

#### Up to 12 Bridged 4-Wire T/R and T1/R1 Exchange Lines

**Electrical Network Connection:** 

Multiple-line bridged 4-wire T/R and T1/R1, and

intermixable services, as indicated below

Universal Service Order Code:

RJ2DX

Mechanical Arrangement:

Miniature 50-position ribbon connector

Typical Usage:

Terminal equipment and systems requiring 4-wire exchange access — typically PBX, ACD, and so forth

Wiring Diagram:

T/R — Customer transmit to network

T1/R1 — Customer receive from network

When the jack is ordered, the customer must specify the sequence in which the central office lines are to be

less than all the leads associated

with the position.

connected to the jack.

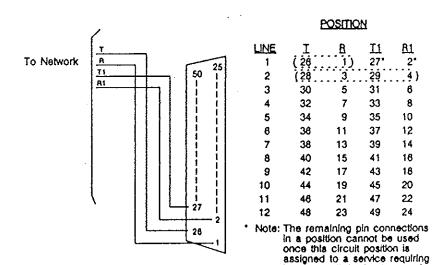


Exhibit: RJ2EX

#### Up to 12 Bridged Tie Trunks, 2-Wire T/R, E&M Type I Signaling

**Electrical Network Connection:** 

Multiple 2-wire tie trunks with E&M Type I signaling, and

intermixable services, as indicated below.

Universal Service Order Code:

RJ2EX

Mechanical Arrangement:

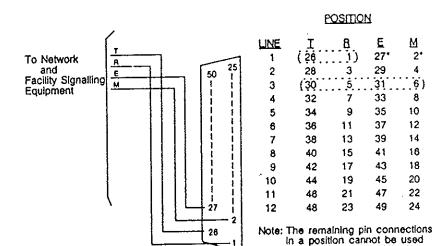
Miniature 50-position ribbon jack

Typical Usage:

PBXs, channel-derivation devices and similar systems

Wiring Diagram:

When the jack is ordered, the customer must specify the sequence that the lines are to be connected to the jack.



Continued on next page

once this circuit position is assigned to a service requiring less than all the leads associated

with the position.

Exhibit: RJ2FX

## Up to 8 Bridged Tie Trunks, 2-Wire T/R, E&M Type II Signaling

**Electrical Network Connection:** 

Multiple 2-Wire tie trunks with E&M Type II signaling

and intermixable services, as indicated below

Universal Service Order Code:

RJ2FX

Mechanical Arrangement:

Miniature 50-position ribbon jack

PBXs, channel-derivation devices

Typical Usage:

and similar systems

Wiring Diagram:

When the jack is ordered, the customer must specify the sequence in which the lines are to be connected to the jack.

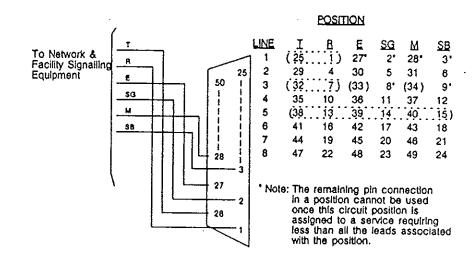


Exhibit: RJ2GX

#### Up to 8 Bridged Tie Trunks, 4-Wire T/R, And T1/R1 E&M Type I Signaling

**Electrical Network Connection:** 

Multiple 4-wire tie trunks with E&M Type I signaling and

intermixable services, as indicated below

Universal Service Order Code:

RJ2GX

Mechanical Arrangement:

Miniature 50-position ribbon jack

Typical Usage:

PBXs, channel-derivation devices and similar systems

Wiring Diagram:

T/R — Customer Transmit to Network

T1/R1 — Customer Receive from Network

When the jack is ordered, the customer must specify the sequence in which the lines are to be connected to the jack.

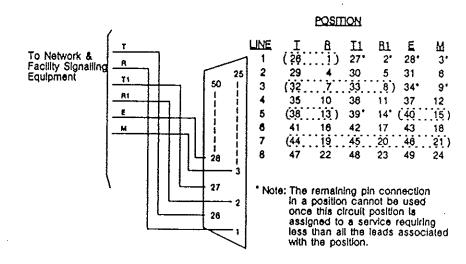


Exhibit: RJ2HX

## Up to 6 Tie Trunks, 4-Wire T/R, And T1/R1 E&M Type II Signaling

**Electrical Network Connection:** 

Multiple 4-wire tie trunks with E&M Type II signaling

and intermixable services, as indicated below

Universal Service Order Code:

RJ2HX

Mechanical Arrangement:

Miniature 50-position ribbon jack

Typical Usage:

PBXs, channel-derivation devices and similar systems

Wiring Diagram Note:

When the jack is ordered, the customer must specify the sequence in which the lines are to be connected to the jack.

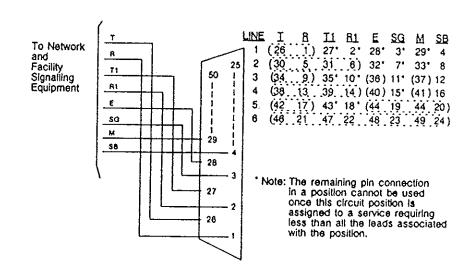


Exhibit: RJ2MB

## Bridged Multiple-Line 50-Position T/R With Make-Busy Arrangements

Electrical Network Connection:

Multiple-line bridge T/R with MB/MB1 leads for make-

busy indication

Universal Service Order Code:

RJ2MB

Mechanical Arrangement:

Miniature 50-position ribbon jack

Typical Usage:

Two 12-non-key telephone and ancillary devices connected

directly to central office lines where a make-busy

requirement is needed

#### Wiring Diagram:

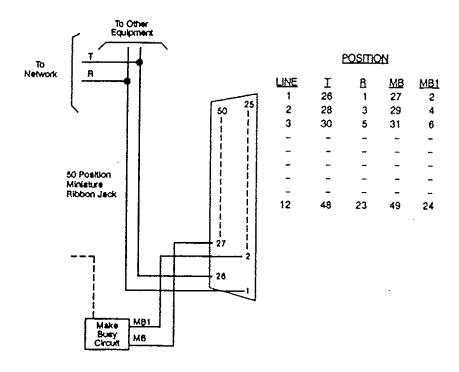


Exhibit: RJ21X

## Multiple-Line Bridged Configurations-(1) Up to 25 Bridged T/R

**Electrical Network Connection:** 

Multiple-line bridged T/R

Universal Service Order Code:

RJ21X

Mechanical Arrangement:

Miniature 50-position ribbon jack

Typical Usage:

Traffic data recording systems, PBXs and key telephone

systems

Wiring Diagram:

When the jack is ordered, the customer must specify the sequence in which the lines are to be connected to the jack. The telephone company will wire these lines to the jack, as

shown below, without skipping any positions.

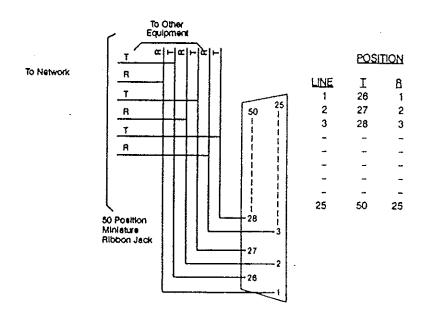


Exhibit: RJ25C

Bridged T/R, T(MR)R(MR, T(A1)/R(A1), or T(QPS)/R(QPS) for up to 3 Lines; 6-Position Jack

**Electrical Network Connection:** 

Up to 3 lines bridged T/R

Universal Service Order Code:

RJ25C

Mechanical Arrangement:

Miniature 6-position jack

Typical Usage:

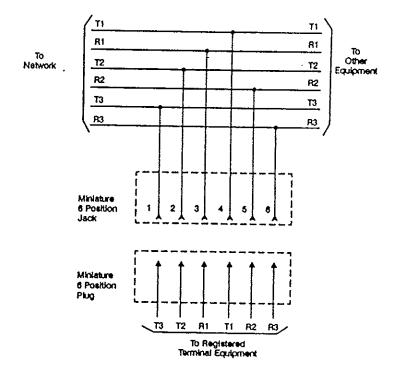
Three-line non-key telephone sets and ancillary devices,

including message registration, AIOD, and OPS

Wiring Diagram:

The telephone company will wire the lines to the jack in the

sequence designated by the customer.



## Exhibit: RRJ26X

### Bridged T/R; 50-Position Ribbon Jack-Universal

**Electrical Network Connection:** 

Single- or multiple-line bridged T/R

Universal Service Order Code:

RJ26X

Mechanical Arrangement:

Miniature 50-position ribbon jack

Typical Usage:

Universal jack for fixed loss-loop (FLL) or programmed

(P) types of data equipment

Wiring Diagram:

When the jack is ordered, the customer must specify the number of and sequence of central office lines to be connected to the jack. The telephone company will wire these lines to the jack in accordance with the table below,

without skipping any positions.

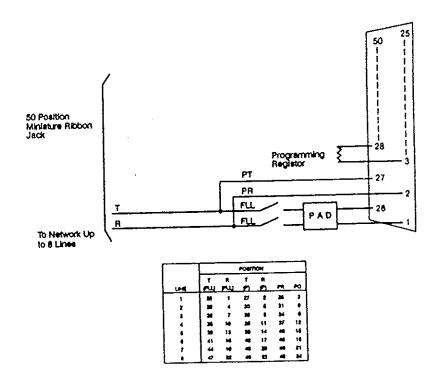


Exhibit: RJ27X

#### Bridged T/R; 50-Position Ribbon Jack-Programmed

Electrical Network Connection: Single- or multiple-line bridged T/R

Universal Service Order Code:

RJ27X

Mechanical Arrangement:

Miniature 50-position ribbon jack

Typical Usage:

Programmed jack for programmed (P) types of data

equipment

Wiring Diagram:

When the jack is ordered, the customer must specify the number of and sequence of central office lines to be connected to the jack. The telephone company will wire these lines to the jack in accordance with the table below,

without skipping any positions.

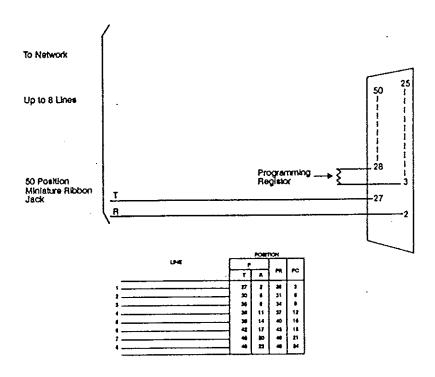


Exhibit: RJ31M

Multiple-Line Series Configurations
Up to 8 Position Jacks

**Electrical Network Connection:** 

Universal Service Order Code:

RJ31M

Mechanical Arrangement:

Multiple 8-position series jacks

Typical Usage:

Multiple-series alarm-reporting devices

Wiring Diagram:

Multiple-series jacks in this category consist of multiple arrangements of RJ31X or RJ38X, in a multiple-mounting arrangement. Such multiple arrangements may be ordered

as a unit under the USOC RJ31M.

See pages 3-91 and 3-92 for wire diagram

Exhibit: RJ31X

## Series Configuration T/R Ahead of all Station Equipment

Electrical Network Connection:

Series T/R ahead of all station equipment - conductors 2,

3, 6, and 7 reserved for telephone company use

Universal Service Order Code:

RJ31X

Mechanical Arrangement:

Miniature 8-position series jack

Typical Usage:

Alarm reporting devices

Wiring Diagram:

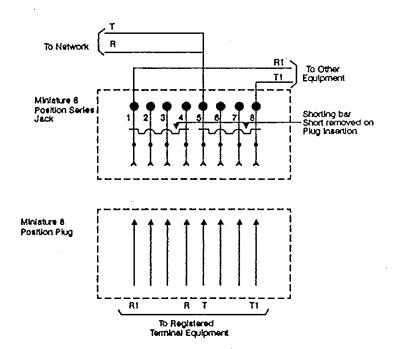


Exhibit: RJ38X

## Series Single-Line T/R with Continuity Circuit

**Electrical Network Connection:** 

Series T/R ahead of all station equipment with continuity

circuit

Universal Service Order Code:

RJ38X

Mechanical Arrangement:

Miniature 8-position series jack

Alarm reporting devices

Typical Usage:

and similar systems

Wiring Diagram Note:

Add strap between terminals 2 and 7

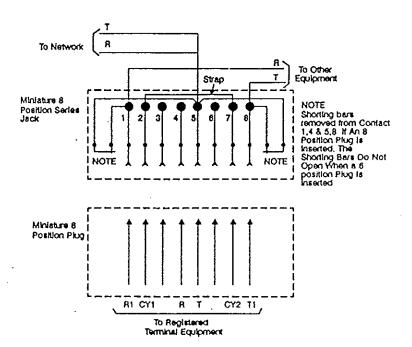


Exhibit: RJ4MB

Single-Line Data with Make Busy, Keyed & Programmed

**Electrical Network Connection:** 

T/R

Universal Service Order Code:

**RJ4MB** 

**Mechanical Arrangement:** 

Miniature 8-position keyed modular jack equipped with

make-busy leads

Typical Usage:

Connection of exchange access lines to programmed data

terminal equipment, equipped with make-busy leads

Wiring Diagram:

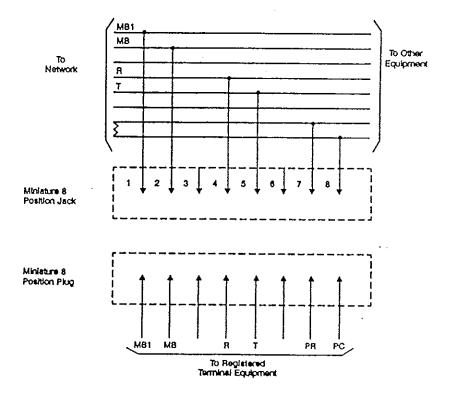


Exhibit: RJ41M

Multiple Bridged T/R; 8-Position Keyed Data Jack - Universal

**Electrical Network Connection:** 

Multiple-line bridged T/R

Universal Service Order Code:

RJ41M

Mechanical Arrangement:

Up to 8 miniature, 8-position keyed jacks in multiplemounting arrangement (this USOC is implemented with the

mounting arrangement (this OSOC is implemented 103A apparatus mounting)

Typical Usage:

Multiple installations of fixed loss loop or programmed

types of data equipment

Wiring Diagram:

Multiple arrangements of RJ41S

See page 3-95 for wire diagram

Exhibit: RJ41S

### Bridged T/R; 8-Position Keyed Data Jack - Universal

**Electrical Network Connection:** 

Single-line bridged T/R

Universal Service Order Code:

RJ41S

Mechanical Arrangement:

Single-miniature 8-position keyed jack for surface

mounting

Typical Usage:

Universal jack for fixed loss-loop (FLL) or programmed

(P) types of data equipment

Wiring Diagram:

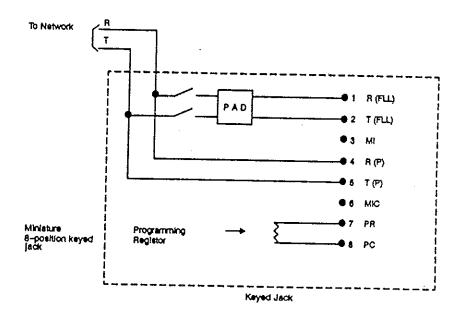


Exhibit: RJ45M

Multiple-Bridged T/R; 8-Position Keyed Data Jack - Programmed

Electrical Network Connection:

Multiple-line bridged T/R

Universal Service Order Code:

RJ45M

Mechanical Arrangement:

Up to 8 miniature 8-position keyed jacks in multiple-

mounting arrangement

Typical Usage:

Multiple installations of programmed types of data equipment (this USOC is implemented with the 103A

apparatus mounting)

Wiring Diagram:

Multiple arrangement of RJ45S

See page 3-97 for wire diagram

Exhibit: RJ45S

#### Bridged T/R; 8-Position Keyed Data Jack - Programmed

**Electrical Network Connection:** 

Single-line bridged T/R

Universal Service Order Code:

RJ45S

**Mechanical Arrangement:** 

Single-miniature 8-position keyed jack for surface

mounting

Typical Usage:

Programmed data equipment

Wiring Diagram:

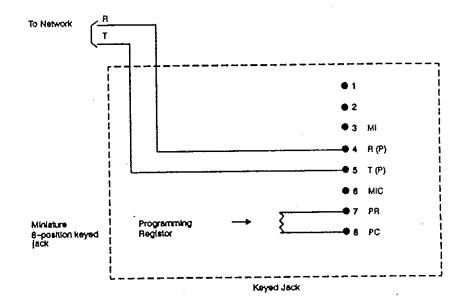


Exhibit: RJ48C

T/R: T1 R1; 8-Position Jack

**Electrical Network Connection:** 

T/R and T1/R1

Universal Service Order Code:

RJ48C

**Mechanical Arrangement:** 

Miniature 8-position modular jack

Typical Usage:

Connecting to 1.544 Mbps digital service

Wiring Diagram:

T/R --- Customer transmit to network

T1/R1 — Customer receive from network

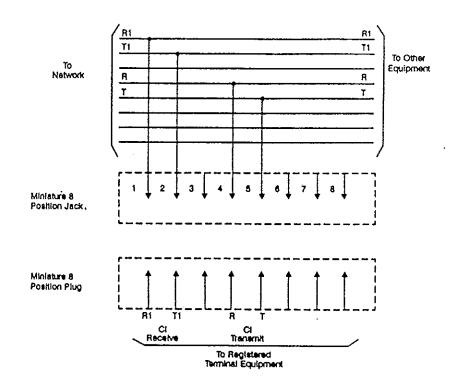


Exhibit: RJ48H

#### T/R and T1/R1; 50-Position Miniature Ribbon Jack

Electrical Network Connection:

Twelve 4-wire circuits; T/R and T1/R1

**Universal Service Order Code:** 

RJ48H

Mechanical Arrangement:

Miniature 50-position ribbon jack

Typical Usage:

Connecting to twelve 1.544 Mbps digital lines

Wiring Diagram: T/R — Customer transmit to network
T1/R1 — Customer receive from network

The telephone company will wire lines to the connector in

the sequence designated by the customer.

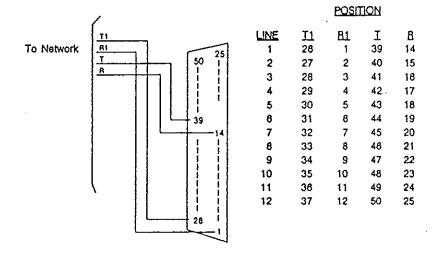


Exhibit: RJ48M

### T/R and T1/R1; 50-Position Miniature Ribbon Jack

**Electrical Network Connection:** 

Eight 4-wire circuits; T/R and T1/R1

Universal Service Order Code:

RJ48M

Mechanical Arrangement:

Miniature 50-position ribbon jack

Typical Usage:

Connecting to eight 1.544 Mbps digital lines

Wiring Diagram:

T/R — Customer transmit to network

T1/R1 — Customer receive from network

The telephone company will wire lines to the connector in

the sequence designated by the customer.

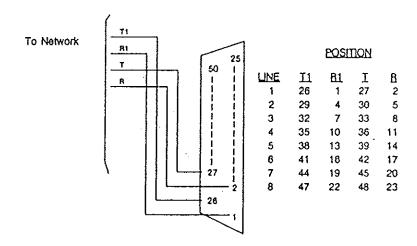


Exhibit: RJ48S

T/R: T1 R1; 8-Position Keyed Jack

Electrical Network Connection:

One- or two-line T/R or T/R, T1 R1

Universal Service Order Code:

RJ48S

**Mechanical Arrangement:** 

Miniature 8-position keyed jack

Typical Usage:

Local-area data channels/subrate digital services

Wiring Diagram:

T/R — Customer transmit to network
T1/R1 — Customer receive from network

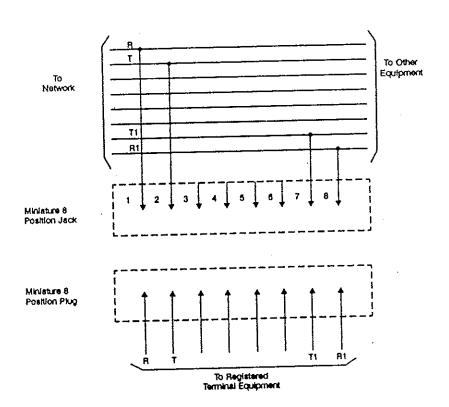


Exhibit: RJ48T

T/R: T1/R1; 50-Position Jack

**Electrical Network Connection:** 

25 T/R or 12 T/R, T1 R1

Universal Service Order Code:

RJ48T

Mechanical Arrangement:

Miniature 50-position ribbon jack

Typical Usage:

Local-area data channels or subrate digital services

Wiring Diagram:

T/R — Customer transmit to network

T1/R1 — Customer receive from network

The telephone company will wire lines to the connector in

the customer's designated sequence.

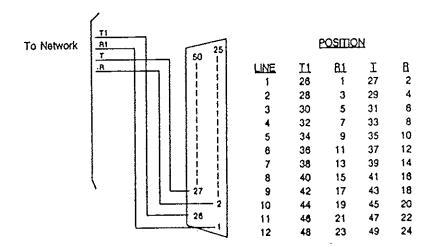


Exhibit: RJ48X

T/R and T1/R1; 8-Position Jack with Shorting Bars

Electrical Network Connection: T/R and T1/R1

Universal Service Order Code: RJ48X

Mechanical Arrangement:

Miniature 8-position modular jack with shorting bars

Typical Usage:

Connecting to 1.544 Mbps digital lines

Wiring Diagram:

Short removed upon insertion of plug
T/R — Customer transmit to network
T1/R1 — Customer receive from network

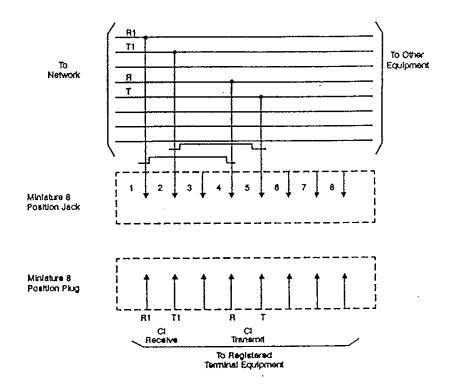


Exhibit: RJ61X

#### Bridged T/R for up to 4 Lines; 8-Position Jack

**Electrical Network Connection:** 

Up to 4 lines bridge T/R

Universal Service Order Code:

RJ61X

Mechanical Arrangement:

Miniature 8-position jack with shorting bars

Typical Usage:

Four-line non-key telephone sets, ancillary devices and key

telephone systems

Wiring Diagram:

The telephone company will wire the lines in the

customer-designated sequence.

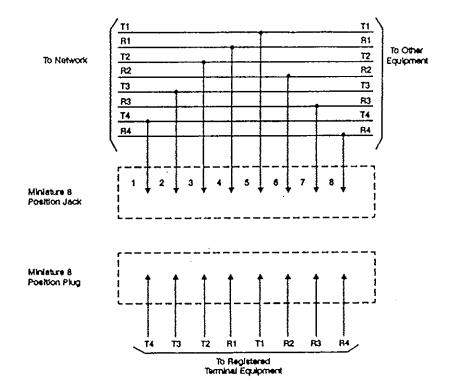


Exhibit: RJ71C

#### Series Multiple T/R; 50-Position Ribbon Jack

Electrical Network Connection: Mi

Multiple-line series T/R

Universal Service Order Code:

RJ71C

Mechanical Arrangement:

Miniature 50-position ribbon jack

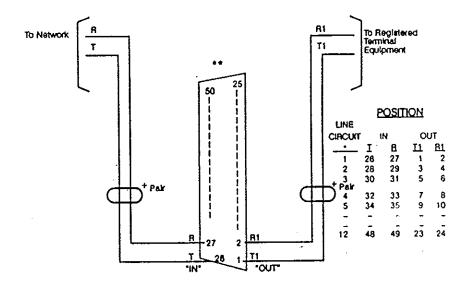
Typical Usage:

Series devices such as toll restrictors, connected to multiple

lines

Wiring Diagram:

When the jack is ordered, the customer must specify the sequence in which the lines are to be connected to the jack.



- A manual bridging plug is also provided but not shown here. The bridging plug is inserted by the customer when the registered series equipment is removed. Please note that an automatic restoral arrangement is under development and will eliminate the need for the bridging plug.
- This cable is not terminated in the conventional manner, (i.e. pair on 26/1, etc) pair one "IN" is 26 & 27 and pair one "OUT" is 1 & 2.

Exhibit: RJ71C

