

## REGISTRATION INTERFACE

### SELECTION AND GENERAL INFORMATION

#### 1. GENERAL

**1.01** This section provides information for the identification and selection of interface apparatus required to provide standard Registration Program jacks under the Federal Communications Commission (FCC) Registration Program. The FCC Registration Program covers registered terminal equipment, systems, and protective circuitry including the following types of equipment: telephones, ancillary, data, PBX, key telephone systems (KTSs), multifunction, and protective circuitry. The registered equipment can be either telephone company or customer-provided equipment.

**Note:** Telephone company- or customer-provided data equipment connected to the network via the interfaces in this section must have a nonadjustable signal power level no greater than  $-9$  dBm. See Section 590-101-103 for connection of other data devices.

**1.02** This section is reissued for a major revision of this section. Since this reissue is a general revision, no revision arrows have been used to denote significant indicate changes.

**1.03** The FCC Registration Program permits the direct electrical connection to the telecommunications network of certain telephone, ancillary, and data equipment (telephone company- or customer-provided equipment) which meet FCC registration standards (registered) or the type which has previously been connected to the network (grandfathered). There is a distinct difference of connection for registered terminal equipment and grandfathered equipment as authorized by Part 68 of the FCC Registration Program. Identification and connection of registered and grandfathered equipment and systems are described in the following paragraphs.

**1.04** Registered terminal equipment and systems, whether telephone company or customer provided, must be directly connected to the telecommu-

nications network through telephone company-provided standard jacks as specified in, or authorized by, Part 68, with three exceptions. Connections through standard jacks are not required for the following:

- (a) Registered telephone company- or customer-provided equipment or systems located in hazardous or inaccessible locations
- (b) Registered telephone company- or customer-provided equipment or systems for which a specific waiver has been granted by the FCC
- (c) Registered telephone company-provided and installed bells or ringers.

**1.05** The FCC Registered equipment will have the FCC Registration number attached to a visible surface of the equipment. The registration number will consist of 14 alphanumeric characters made up as follows:

- (a) Three alphanumeric characters that identify the grantee of the registration.
- (b) Three alphanumeric characters that identify the manufacturer of the device.
- (c) Five numerals that make the registration number unique.
- (d) Two alphabetical characters that will identify the type of registered equipment. For systems, the second character will identify that type of premises wiring protection.
- (e) A single alphabetical character that identifies the type of network signaling (ie, tone type or dial pulse), if any, employed by the device.
- (f) A typical registration number will look like AS593M-70230-TE-T.

**1.06** The ringer equivalence number may follow the registration number or be displayed elsewhere on the equipment as follows.

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- (a) A typical example of the ringer equivalence being displayed after the registration number would be AS593M-70230-TE-T-REN 1.5A.
- (b) A typical example of the ringer equivalence being displayed elsewhere on the equipment would be REN 1.5A or ringer equivalence number 1.5A.

**1.07** Grandfathered terminal equipment and systems, whether telephone company or customer provided, may be directly connected to the telecommunications network through telephone company-provided standard jacks and nonstandard jacks (4-prong, 8-prong, etc) or as otherwise determined by the telephone company (hardwiring, etc).

**1.08** Bell System Practices covering the standard jack interfaces under the FCC Registration Program are as follows:

- Section 463-400-110 — Adapter Arrangements — RJA1X, RJA2X, and RJA3X
- Section 463-400-120 — RJ11C, RJ11W, RJ12C, RJ12W, RJ13C, RJ13W, RJ17C, RJ18C, RJ19C, RJ1DC — Bridged Single Line Tip and Ring Arrangements
- Section 463-400-121 — Bridged Single Line Weatherproof Tip and Ring Arrangements — RJ15C
- Section 463-400-130 — Uniform Service Order Codes — RJ16X, RJ31X, RJ32X, RJ33X, RJ34X, RJ35X, RJ36X, RJ37X, and RJ38X — Series Single Line Tip and Ring Arrangements
- Section 463-400-140 — Uniform Service Order Codes — RJ14C and RJ14W — Bridged 2-Line Tip and Ring Arrangements
- Section 463-400-141 — RJ21X, RJ22X, RJ23X, RJ24X, RJ2DX, RJ2EX, RJ2FX, RJ2GX, and RJ2HX — Bridged Multiple Tip and Ring Arrangements
- Section 463-400-142 — RJ25C — Bridged 3-Line Tip and Ring Arrangements
- Section 463-400-150 — RJ71C — Series Multiple Tip and Ring Arrangements.

**1.09** The apparatus required to provide standard jack interfaces used under the FCC Registration Program are covered in the following sections.

- Adapters — Section 461-200-102
- Connector Cables — Section 461-200-101
- Telephone Sets — Modular Type — Section 503-100-100
- Jacks and Plugs — Section 461-630-100
- 625-, 630-, and 635-Type Connecting Blocks — Section 461-610-100
- 66M3-50R (MD) and 66M4-50R (MD) Connecting Blocks — Section 461-604-105
- 700-Series, Interface Facilities — Section 461-604-106
- 74-Type Connecting Blocks — Section 461-606-100.

## 2. DESCRIPTION

**2.01** Table A provides Uniform Service Order Codes (USOCs), equipment used, technical references, Bell System Practice numbers, description, and typical equipment to be connected.

## 3. INSTALLATION

**3.01** Each standard Registration Program jack requires a specific wiring arrangement. See Table A for reference to the Bell System Practice applicable which includes complete descriptive information and wiring diagrams of each standard Registration Program jack. Wiring diagrams of jacks, adapters, or ribbon connectors used will designate the contacts by number. The numbering arrangement for modular jacks and adapters is established by looking into the jack with the release clip opening at the bottom, counting the contacts from left-to-right. Numbering will be on the basis of the maximum number of contact positions although all positions of the jack may not be equipped. Unused contacts are reserved for telephone company use and are handled according to local instructions. Multiple lines connected to ribbon-type connectors should be terminated as determined by the customer and shown on the service order. All circuits should be identified either on a label or designation strip.



**To assure that proper interfaces are furnished, each USO-coded termination (standard jack) MUST BE wired according to the Bell System Practice covering that USOC.**

**3.02** Concurrent with the expansion of the FCC

Registration Program to include certain private line services, a policy of allowing intermixing of USOCs in some standard jacks under certain rules has been adopted. The USOCs that can be intermixed are limited to RJ11C, RJ14C, RJ25C, RJ21X, RJ2DX, RJ2EX, RJ2FX, RJ2GX, and RJ2HX. The rules governing intermixing are:

- (a) Intermixing will only be allowed for lines for which the lead structure is clearly defined, eg, T, R, E, M.
- (b) Intermixing will only be allowed in jacks for which the lead structure can be accommodated.
- (c) When a line position is assigned in a jack and the circuit uses less than its full allocation of leads for the line position, the remaining contacts cannot be used since the lead structure of the jack would be changed. For detailed information on applying the intermix option, refer to the Bell System Practice covering the specific standard Registration Program jack.

**3.03** All wiring required for connection of standard

Registration Program jacks in these Bell System Practices is to be furnished and installed by the telephone company. Registered equipment must be modular plug-ended or ribbon connector ended and connected to the telephone company network only through the telephone company-provided standard Registration Program jack. Under the FCC program, the network includes the switched network and certain private line services.

**3.04** The interface equipment should be located as close as feasible to the customer key or PBX common equipment. In all cases, an attempt should be made to locate the interface within 25 feet of the customer equipment. In those cases where this is not practical or reasonable, the placement of the final telephone company interface should be equal to the location the telephone company would select if it were providing the systems in question. It should be a site that is readily accessible to the telephone company installation or repair technician and the customer. Where possible and agreeable with the customer, locate the interface jack as near as possible (approximately 12 inches) to an electrical outlet.

**3.05** Surface-mounted connecting blocks should be mounted with the modular jack facing down-

ward if the connecting block is at a sufficient height to permit a plug to be inserted with ease.

**Note:** It is recommended that wherever possible, connecting blocks be mounted 12 inches or more above the floor. In areas of high corrosion, it is also recommended the 625S connecting block be used. The increased height also makes for easier customer plug orientation.

As a second choice, the jack should face to either side. **Do not** mount a connecting block with the jack facing up — this allows contaminants to enter the jack more easily. A minimum clearance of 3 inches is required directly in front of the modular jack entry to allow for connection and disconnection of equipment, including the possible use of adapters.

**3.06** Each installation of a standard jack(s) should be tested for dial tone, audible noise, ringback, proper tip and ring polarity, and A lead control if applicable. Series type jacks should be tested for proper mechanical contact closure to verify that telephone company-provided equipment connected on the field side of the series connection will operate properly with or without the registered equipment connected to the standard jack. With RJ71C, it will be necessary to manually connect the furnished bridging adapter to the 66M4-50R connecting block (MD) to test continuity with the registered equipment disconnected.

**Note:** The telephone company is not responsible if registered customer-provided equipment fails to maintain continuity through a series connection, thus causing any equipment beyond the series jack to malfunction.

After the standard Registration Program jack has been properly tested and found to be in working order, advise the customer that the type of jack ordered is installed and working properly. If the registered customer-provided equipment device is readily available and can be quickly and conveniently connected, request the customer to connect the device(s) and verify to their satisfaction that the jack and their equipment work properly. If a problem with the customer-provided equipment, other than ringing is apparent, the customer should be advised to disconnect the registered equipment, verify with the manufacturer or supplier whether the correct standard jack has been ordered, and to follow the manufacturer recommended repair procedures.

**Note:** The total number of telephone company- and customer-provided equipment ringers

bridged across the central office or PBX line must not exceed the limitations outlined in Section 500-114-100 for individual line, capacitor-coupled ringers. If the ringer limitation is exceeded, the customer can do one or a combination of the following:

- (a) Arrange to have the ringer(s) in the customer-provided equipment disconnected if possible, or arrange to obtain a similar device with a lesser ringer equivalence. This is not to be done by telephone company personnel.
- (b) Request the ringer(s) in the telephone company equipment be disconnected.
- (c) Cancel the existing service order.

#### INSTALLATION AND MAINTENANCE RESPONSIBILITIES

**3.07** Service orders requiring jacks will be issued with the appropriate jack USOC on the order, as determined by the telephone company negotiator and the customer.

**3.08** As previously noted, all telephone company-provided registered terminal equipment and communications systems must be connected to the network via standard jacks. In order to assure proper billing, the installer must report actual and correct jack installations.

**3.09** Installation and Maintenance will be responsible for positive reporting which includes the following:

- (a) Removing jack information from the order when it is not provided and installed
- (b) Adding jack information if appropriate
- (c) Change type of jack(s) (USOC) if appropriate
- (d) Changing quantity of jack(s) ordered if appropriate.

#### 4. MAINTENANCE

***Danger: Telephone company employees must be sure that commercially powered customer-provided equipment is disconnected from power and from the telephone company jack before working***

#### ***on a standard interface or its associated inside wiring.***

**4.01** The telephone company is responsible for providing standard interface as described in Sections 463-400-100 through 463-400-150. The telephone company has no responsibility for customer-provided equipment devices connected to the network via these interfaces. The customer is responsible for the repair of any customer-provided equipment. No attempt should be made to install, test, modify, or repair customer-owned and maintained equipment.

**4.02** When in the judgment of repair personnel the trouble is located in or caused by the customer-provided equipment, Maintenance of Service Charge Billing should be initiated as required and as outlined in Section 660-101-312 — Maintenance of Service Charge on Services With Customer-Provided Equipment (CPE) and Section 660-101-318 — Tariff and Registration Violation Notice Procedures.

#### MAINTENANCE OF SERVICE CHARGE — RESPONSIBILITIES OF PLANT REPAIR TECHNICIAN

**4.03** The maintenance of service charge provides for billing when we have dispatched a repair technician and the trouble locates in the customer-owned equipment in the following manner:

- (a) Under no circumstances should the repair technician make negative comments regarding the quality of the customer-owned equipment.
- (b) The plant repair technician will notify the customer that they may be billed in each instance where trouble locates in, or is caused by, or results from customer-provided equipment.
- (c) It is not the responsibility of the plant repair technician to discuss with the customer the reason for the existence of the maintenance of service charge. Questions regarding the rationale of the maintenance of service charge should be referred to the Business Office.

#### WHEN A MAINTENANCE OF SERVICE CHARGE APPLIES

**4.04** The maintenance of service charge applies when a trouble report has been received, or a service difficulty noted, a visit has been made, and any one or more of the following apply:

- (a) The trouble report of service difficulty resulted from the use of authorized or unautho-

rized customer-provided equipment such as the following:

- Improper dialing from a customer-provided equipment device
- Customer-provided equipment which gave an erroneous off-hook condition
- Failure of commercial ac power, power plug removed, or circuit breaker operated when only the customer-provided equipment was affected
- Failure to disconnect because of trouble in the customer-provided equipment
- Improper operation of the customer-provided equipment
- Improper methods or programs used by customer regarding the customer-provided equipment
- Failure or malfunction of customer-provided equipment
- Improper attachment of customer-provided equipment to telephone company facilities.

(b) The trouble report or service difficulty resulted from failure of a customer-owned adapter.

**4.05** Improper use of authorized customer-provided terminal equipment by the customer which results in a trouble report should be assigned Disposition Code 12. The maintenance of service charge will apply if a premises visit was made and the trouble was not located in telephone company-provided equipment and/or facilities.

**4.06** Demand dispatch is when a line with customer-provided equipment tests or verifies okay

(no trouble indication) and discussion with the customer reveals no telephone company trouble, the trouble report shall not be dispatched unless the customer or vendor insist upon a repair visit. If the customer or vendor insist upon a repair visit, they should be advised that the maintenance of service charge will apply if no trouble is found in telephone company-provided equipment and/or facilities when tested at the demark point at the time of the visit.

## 5. TARIFF VIOLATIONS

**5.01** Tariff violation notice procedures in Section 660-101-318 (issued March 1976) provides for the preparation of a notice (Form E-6670) whenever any telephone company employee observes a tariff violation and a formal follow-up is warranted. Tariff violation notices are not prepared for cases identified during unauthorized equipment testing programs.

### WHEN A TARIFF VIOLATION NOTICE APPLIES

**5.02** A tariff violation notice, Form E-6670, should be prepared whenever a tariff violation has been observed. Examples of when Form E-6670 should be prepared include, but are not limited to, the following cases:

- (a) All trouble reports which resulted from the use of unauthorized customer-provided equipment, trouble reports closed to disposition Code 13
- (b) When an installation or maintenance premises visit is made and equipment is observed to be connected in violation of the tariffs
- (c) Whenever unauthorized equipment is detected or observed on either a test or premises visit.

**TABLE A**  
**GENERAL INFORMATION STANDARD REGISTRATION JACKS**

USOC	EQUIPMENT USE	DESCRIPTION	TYPICAL EQUIPMENT TO BE CONNECTED	SECTION NUMBER	TECHNICAL REFERENCE
RJA1X	225AW Adapter	Adapts a modular plug to a 4-prong jack*	Telephones, Ancillary Devices	463-400-110	PUB 47101
RJA2X	267AW Adapter	Converts one modular jack to two modular jacks*			
RJA3X	224AW Adapter	Adapts a modular plug to a 12-prong jack*			
RJ11C	†	Bridged connection of a single-line tip and ring — surface or flushed mounted		463-400-120	
RJ11W	630A Connecting Block	Same as above except for portable wall-mounted device			
RJ12C	†	Bridged connection of a single-line tip and ring ahead of the line circuit with A lead control — surface or flush mounted			
RJ12W	630A Connecting Block	Same as above except for portable wall-mounted device			
RJ13C	153AM2 and 153BM2	Bridged connection of a single-line tip and ring behind the line circuit with A lead control — surface or flush mounted			
RJ13W	630A Connecting Block	Same as above except for portable wall-mounted device		463-400-140	
RJ14C	†	Bridged connections of 2-line tip and ring — surface or flush mounted			
RJ14W	630A Connecting Block	Same as above except for portable wall-mounted device	463-400-121		
RJ15C	B Weatherproof Female Jack AT-8732	Bridged connection of a single-line weatherproof tip and ring arrangement			
RJ16X	†	Bridged connection of a single-line tip, ring, MI, and MIC leads (used with RJ36X)	-9 dBm (permissive) Data Equipment With MI (Mode Indication) and MIC (Mode Indication Common) Leads	463-400-130	

TABLE A (Contd)

GENERAL INFORMATION STANDARD REGISTRATION JACKS

USOC	EQUIPMENT USE	DESCRIPTION	TYPICAL EQUIPMENT TO BE CONNECTED	SECTION NUMBER	TECHNICAL REFERENCE
RJ17C	625H Connecting Block	Bridged connection of a single-line tip and ring	Special Nonkey Telephone Sets for use in Hospital Critical Care Areas	463-400-120	
RJ18C	74D Connecting Block (MD) or Equivalent and 625S6 Connecting Block	Bridged connection of single-line tip and ring and make-busy MB/MB1 leads	Answering Sets or Other Ancillary Equipment Requiring Make-busy Arrangement		
RJ19C		Bridged connection of single-line tip and ring behind line circuit with A lead control and make-busy MB/MB1 leads			
RJ1DC	625 or 625WP4 Connecting Block	Bridged connection of single-line 4-wire T/R and T1/R1	Terminal Equipment and 4-Wire Exchange Access		
RJ21X	KS-16690, LJ Connector or Equivalent	Bridged connections of the tip and ring of a multiple number of central office or PBX trunks (maximum 25)	Traffic Data Recording Equipment Key and PBX Systems	463-400-141	PUB 47101
RJ22X		Bridged connections of up to 12 central office or PBX trunks with the tip and ring bridged ahead of the line circuit with A lead control	Multiple Ancillary Devices, Telephones		
RJ23X		Same as above except T, R, A, and A1 are bridged behind the line circuit			
RJ24X		Provides same T, R, and A appearances plus A1 of a standard 5-line key telephone set	Telephones		
RJ2DX		Multiple line bridged connections of 4-wire T/R and T1/R1	Terminal Equipment, PBXs, ACDs, and Systems Requiring 4-Wire Exchange Access		

TABLE A (Contd)

## GENERAL INFORMATION STANDARD REGISTRATION JACKS

USOC	EQUIPMENT USE	DESCRIPTION	TYPICAL EQUIPMENT TO BE CONNECTED	SECTION NUMBER	TECHNICAL REFERENCE
RJ2EX	KS-16690, L1 Converter or Equivalent	Multiple 2-wire tie trunks with E and M type I signaling	PBXs and Channel Derivation Devices	463-400-141	
RJ2FX		Multiple 2-wire tie trunks with E and M type II signaling			
RJ2GX		Bridged tie trunks, multiple 4-wire T/R, T1/R1, and E and M type I signaling			
RJ2HX		Bridged tie trunks, multiple 4-wire T/R, T1/R1, and E and M type II signaling			
RJ25C	74D Connecting Block (MD) and 625S6 Connecting Block	Bridged connections of maximum of three lines — tip and ring only	Nonkey Telephone Sets or Ancillary Devices	463-400-142	
RJ31X	635A or 635B Connecting Blocks†	When plugged in, customer-provided equipment is placed in series with tip and ring ahead of all station equipment	Alarm Dialers	463-400-130	
RJ32X		Same as above except customer-provided equipment is connected in series with one station	Series Dialers		
RJ33X		Series tip and ring connection ahead of a KTS line circuit plus bridged A and A1 behind line circuit			
RJ34X		Series tip and ring plus bridged A and A1 behind KTS line circuit			
RJ35X		Provides a series tip and ring connection of all lines appearing in a key telephone set plus bridged A and A1 leads			
RJ36X		Series tip and ring with mode indication behind series connection (used with RJ16X, RJ41S, and RJ45S)			Mode Indication (Exclusion Key) Telephone Set in Series With Data Jack
RJ37X		Bridged connections of 2-line tip and ring with exclusion on line 1	Two-line Telephones With Exclusion on One Line for Use With Data Sets Requiring Telephones With Exclusion Feature		



TABLE A (Contd)

GENERAL INFORMATION STANDARD REGISTRATION JACKS

USOC	EQUIPMENT USE	DESCRIPTION	TYPICAL EQUIPMENT TO BE CONNECTED	SECTION NUMBER	TECHNICAL REFERENCE
RJ38X	635-Type Connecting Block	When an 8-position plug is inserted, customer-provided equipment is placed in series with tip and ring ahead of all station equipment — also has a continuity circuit	Alarm Dialers	463-400-130	PUB 47101
RJ71C	66M4-50R Connecting Block (MD)	When plugged in, customer-provided equipment is placed in series with tip and ring ahead of all station equipment — maximum of 12 lines	Toll Restrictors	463-400-150	

\* The adapters are customer owned in all cases and may be purchased from either the telephone company or an outside supplier.

† For surface-mounted installations, use a 625A, 625S, or 625WP connecting block. For flush-mounted installations, use a 625B or 625FS connecting block. The 625S and 625FS connecting blocks have spring-loaded covers which protect the contacts from contamination. If existing wiring terminates in connector cable equipped with a KS-type connector, use a 153AM2 or 153BM2 adapter.

‡ An 8-position plug must be used to obtain a series circuit.