

# Intercity Services Handbook

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**AT&T Long Lines**  
**Marketing Department**

**Issued March, 1978**

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## **DESIGN DESCRIPTION — NOTICE!**

### **THE INTERCITY SERVICES HANDBOOK IS INTENDED TO BE A QUICK REFERENCE GUIDE FOR BELL SYSTEM FIELD SALESPERSONS ONLY.**

- This Handbook *may not* be used for final cost quotations for even the most simple service or equipment.
- This Handbook is advisory in nature and should be used for quick look-up only.
- This Handbook is *not* to be used as a replacement for its sources [F.C.C. Tariffs, I.S.M. (Intercity Services Manual), Etc.]
- This Handbook *may* be provided by Bell System Salesmen to their customers as a general information guide only, and they must be advised of its limitations.

**CAUTION:** This Handbook is a severe condensation of various other documents (F.C.C. Tariffs, ISM, etc). It does not have the scope, depth or authority of any of its sources. Certain information in the Handbook is incomplete, and covers only the highlights of various selected services. These highlights do not, in each and every case, include all items necessary to provide a complete service and consequently any attempt to price-out a service relying upon the information in this Handbook may result in a sizeable error.

## **RATE APPLICATION**

**ALL RATES CONTAINED HEREIN** are from various F.C.C. Tariffs. They do not necessarily cover the full cost of a complete service. Exact rate quotations should be referred to the appropriate tariff, after the complete service configuration is determined from the other source documents.

## **REQUEST FOR COMMENTS**

**EVERY EFFORT WILL BE MADE** to design this guide for practical use in the field. Any comments or suggestions concerning any feature of the ISH will be welcomed and should be directed to:

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Long Lines Department  
Staff Supervisor - ISH  
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Bedminster, New Jersey 07921  
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201-234-7451  
For Distribution Call:  
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**Rate information is not  
complete. Use TARIFFS  
for customer quotations.**

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OF THE  
AMERICAN TELEPHONE AND TELEGRAPH COMPANY  
LONG LINES DEPARTMENT**

**1**

<b>TITLE OF TARIFF</b>	<b>TARIFF F.C.C. NUMBER</b>
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**SALES OFFICE TERRITORIES**

<b>AREA &amp; STATE</b>	<b>RESPONSIBLE L.L. SALES OFFICE</b>	<b>TELEPHONE # ASSISTANCE</b>	
<b>CENTRAL</b>			
Illinois	Chicago	312-855-4711	
	East Moline	309-755-5061	
	Morton Grove	312-967-1656	
	Oak Park	312-848-9401	
	Peoria	309-673-0970	
Indiana	Schaumburg	312-884-4774	
	Chicago	312-885-4861	
	Indianapolis	317-265-2289	
Michigan	Dearborn	313-274-8018	
	Detroit	313-871-9960	
	Southfield	313-559-8154	
Ohio	Wyoming	616-538-7450	
	Akron	216-384-3314	
	Cincinnati	513-352-7181	
	Cleveland	216-822-2831	
	Columbus	614-460-5800	
	Hamilton	513-533-4362	
	Toledo	419-247-5494	
Wisconsin	La Crosse	608-785-0250	
	Milwaukee	414-393-7788	
<b>EASTERN</b>			
Delaware	Philadelphia	215-592-3794	
	Wilmington	302-575-1066	
District of Columbia	Washington	202-457-4005	
	Maryland	Annapolis	301-268-7603
Pennsylvania	Washington	202-457-4005	
	Bethlehem	215-694-7990	
	Philadelphia	215-592-3794	
	Pittsburgh	412-644-7010	
Virginia	Washington	202-457-4005	
West Virginia	Washington	202-457-4005	
<b>MIDWESTERN</b>			
Arkansas	St. Louis	314-247-4471	
	Iowa	Des Moines	515-281-6154
	Kansas	Kansas City	816-391-2653
		Minneapolis	612-344-6792
	Missouri	Grandview	816-331-5005
		Kansas City	816-391-3162
		St. Louis	314-247-4471
	Nebraska	Omaha	402-422-2365
	North Dakota	Omaha	402-422-2365
	Oklahoma	Dallas	214-745-2143
Oklahoma City		405-236-6502	
South Dakota	Omaha	402-422-2926	
Texas	Dallas	214-745-2143	
	Houston	713-654-4915	
	San Antonio	512-828-6227	

**SALES OFFICE TERRITORIES (Cont'd)**

<b>AREA &amp; STATE</b>	<b>RESPONSIBLE L.L. SALES OFFICE</b>	<b>TELEPHONE # ASSISTANCE</b>
<b>NEW YORK CITY</b>		
Bronx, Brooklyn, Manhattan, Queens, Richmond (Staten Island)	Northern Division	212-334-5413
	Southern Division	212-334-5346
	Press Program & TV	212-334-3563 212-334-3012
<b>NORTHEASTERN</b>		
Connecticut	Hartford	203-527-6373+264
	New Haven	203-771-3438
Maine	Stamford	203-357-8411
	Boston	617-743-5813
Massachusetts	Boston	617-743-5813
New Hampshire	Boston	617-743-5813
New Jersey	Camden	609-541-4335
	Newark	201-733-2084
	Albany	518-471-3545
	Rochester	716-262-6320
	Syracuse	315-471-3163
New York (Excl. NYC)	White Plains	914-320-2096
	Boston	617-743-5813
Rhode Island	Boston	617-743-5813
Vermont	Boston	617-743-5813
<b>SOUTHERN</b>		
Alabama	Atlanta	404-529-6824
	Birmingham	205-321-2312
Florida	Jacksonville	904-353-8815
	Miami	305-592-8105
	Orlando	305-849-9950
Georgia	Atlanta	404-529-6824
Kentucky	Louisville	502-584-2411
Louisiana	New Orleans	504-455-3344
	Shreveport	318-221-0478
	Jackson	601-969-1737
Mississippi	New Orleans	504-455-3344
North Carolina	Charlotte	704-373-3279
South Carolina	Columbia	803-779-4400
	Memphis	901-529-2100
Tennessee	Nashville	615-327-2210

**Rate information is not  
complete. Use TARIFFS  
for customer quotations.**

**SALES OFFICE TERRITORIES (Cont'd)**

<b>AREA &amp; STATE</b>	<b>RESPONSIBLE L.L. SALES OFFICE</b>	<b>TELEPHONE# ASSISTANCE</b>
<b>WESTERN</b>		
Arizona	Phoenix	602-263-1059
California	Los Angeles	213-629-5292 +22
	Oakland	415-645-7689
	Orange	714-542-6783
	Sacramento	916-452-8317
	San Francisco	415-442-2718
	Sunnyvale	408-735-1371
Colorado	Denver	303-624-7113
	Englewood	303-398-1790
Idaho	Boise	208-385-2681
Montana	Denver	303-624-7113
Nevada	San Francisco	415-442-2718
New Mexico	Phoenix	602-263-1059
Oregon	Portland	503-243-2622
Utah	Denver	303-624-7113
Washington	Renton	206-226-9406
	Seattle	206-345-7832
	Tacoma	206-597-5638
Wyoming	Denver	303-624-7113
<b>GOVERNMENT</b>		
Arizona	Sierra Vista	602-458-7200
Colorado	Colorado Springs	303-636-4555
D.C.	Washington	202-457-3570
Illinois	Belleville	618-234-9315
Maryland	Fort Ritchie	202-457-3009
Nebraska	Omaha	402-422-2926
Virginia	Norfolk	804-622-7009

**TABLE OF TERMINOLOGY (See Note)**

The following is a list of terminology used by Tariff F.C.C. 260 in referring to various types of channels offered by Long Lines for private line interstate communications:

**1**

**SERIES 1000**

- Type 1001** - Up to 30 bauds for remote metering, supervisory control and miscellaneous signaling.
- Type 1002** - Up to 55 bauds for teletypewriter, teletypesetter, data or remote metering, supervisory control and miscellaneous signaling, or up to 45 bauds for Morse.
- Type 1003** - Up to 55 bauds for remote operation of radiotelegraph.
- Type 1005** - Up to 75 bauds for teletypewriter, teletypesetter, data or remote metering, etc.
- Type 1006** - Up to 150 bauds for teletypewriter, data or remote metering, etc.
- Type 1007, 1008, 1012, 1024, 1048** - Overseas Channels (San Francisco-Honolulu)

**SERIES 2000**

- Type 2001** - Voice
- Type 2002** - Remote operation of Mobile Radiotelephone
- Type 2003** - Remote operation of Mobile Radiotelegraph
- Type 2004** - Remote operation of high frequency radio system for Office of Civil Defense
- Type 2006** - Foreign Exchange
- Type 2007** - Secure Communication with T-3 conditioning.
- Type 2008** - Secure Communication with G-1 conditioning.
- Type 2009** - Secure Communication with G-2 conditioning.
- Type 2010** - Secure Communication with G-3 conditioning.

Note: Consult Tariff for complete application.



**TABLE OF TERMINOLOGY (Cont.)**

**SERIES 3000**

**Type 3001** - Remote Metering, Supervisory Control and Miscellaneous Signaling.

**Type 3002** - Data Transmission.

**SERIES 4000**

**Type 4001** - Type 5 Data Transmission.

**Type 4002** - Telephoto (Schedule 2).

**SERIES 5000**

**(1) Base Capacity**

Type 5700 - Maximum Equivalent Voice Grade Channels, 60.

Type 5800 - Maximum Equivalent Voice Grade Channels, 240.

**(2) Terminating Arrangements** (See Tariff 260 for complete description)

**Service Terminals-** For use as a Wideband Channel.

Type - 5701, 5703, 5706, 5708, 5751, 5753

**Service Terminals** - For use as individual channels of a lesser capacity or on individual channel extensions.

**Channels of Lesser Capacity**

**Individual Channel Extensions**

**VOICE**

5201  
5202  
5203  
5204  
5206  
5301

5021  
5022  
5023  
5024  
5026  
5031

**TELETYPEWRITER**

5101  
5102  
5103  
5105  
5106

NONE  
NONE  
NONE  
NONE  
NONE

**TABLE OF TERMINOLOGY (Cont.)**

**Channels of Lesser Capacity                      Individual Channel Extensions**

5402	<b><u>TELEPHOTOGRAPH</u></b>	NONE
------	------------------------------	------

	<b><u>DATA</u></b>	
5302		5032
5401		NONE

The above Service Terminals (for channels of a lesser capacity) are assigned "Type" numbers by dropping the second digit of the regular Type and adding a 5 as the first digit.

The above Service Terminals (for individual channel extensions) are assigned "Type" numbers by dropping the second and third digits of the regular type and adding a 5 and 0 as the first two digits.

**EXAMPLE**

<b>Series</b>	<b>Regular Type</b>	<b>Equivalent 5000 Series Type</b>	<b>Individual Channel Extensions</b>
1000	1001	5101	NONE
2000	2001	5201	5021
3000	3002	5302	5032

**TABLE OF TERMINOLOGY (Cont.)**

**SERIES 6000**

- Type 6001** — Audio Transmission Services Part-time - Approx. 300 to 2500 Hertz. Limited distance.
- Type 6002** — Audio Transmission Services Part-time - Approx. 200 to 3500 Hertz. Limited distance.
- Type 6003** — Audio Transmission Service, Full-time - Approx. 200 to 3500 Hertz. Limited distance.
- Type 6004** — Audio Transmission Service, Part-time - Approx. 100 to 5000 Hertz.
- Type 6005** — Audio Transmission Service, Full-time - Approx. 100 to 5000 Hertz.
- Type 6006** — Audio Transmission Service, Part-time - Approx. 50 to 8000 Hertz.
- Type 6007** — Audio Transmission Service, Full-time - Approx. 50 to 8000 Hertz.
- Type 6008** — Audio Transmission Service, Part-time - Approx. 50 to 15,000 Hertz.
- Type 6009** — Audio Transmission Service, Full-time - Approx. 50 to 15,000 Hertz.

**TABLE OF TERMINOLOGY (Cont.)**

**SERIES 7000**

**Type 7001** — Television Transmission — Full-time and Part-time

**Type 7003** — Local Distribution System — ETV — Full-time — Premise to Premise

**Type 7004** — Interexchange System — Full-time — Premise to Premise

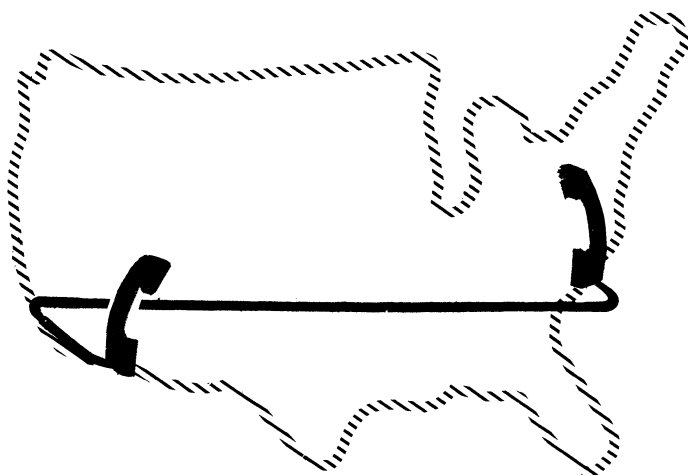
**SERIES 8000**

**Type 8800** — Channels of approximately 48 kHz for use as wideband data channels. (See Section 4 for details)

**SERIES 10000**

**Type 10001** — Entrance Facilities to extend customer provided communications system to a premises of the customer.

# **PRIVATE LINE TELEPHONE SERVICE**



**A DIRECT AND PRIVATE TELEPHONE LINE CONNECTING TWO OR MORE LOCATIONS-ACROSS TOWN OR ACROSS THE NATION. RAPID, VERSATILE COMMUNICATIONS SERVICE AVAILABLE 24 HOURS A DAY, 7 DAYS A WEEK, AT A FLAT MONTHLY CHARGE.**

**SERVICE FEATURES**

- PRIVATE LINE TELEPHONE SERVICE PROVIDES FULL TIME, DEDICATED, VOICE GRADE SERVICE CONNECTING TWO OR MORE LOCATIONS.
  
- NUMEROUS SIGNALING, SELECTING, RINGING, CONTROL AND SWITCHING ARRANGEMENTS ARE AVAILABLE AND LISTED IN THIS SECTION.
  
- USING THESE ARRANGEMENTS, SERVICE CAN BE ENGINEERED TO PROVIDE TWO-POINT, MULTIPOINT, AND CHANNEL SWITCHING, FOR VOICE OR DATA TRANSMISSION. ARRANGEMENTS ARE ALSO AVAILABLE TO PROVIDE ALTERNATE VOICE- DATA OR VOICE-TELETYPEWRITER SERVICE.
  
- VOICE GRADE CIRCUITS AND THEIR MANY OPTIONS GIVE PRIVATE LINE TELEPHONE SERVICE THE FLEXIBILITY TO MEET MANY BUSINESS COMMUNICATIONS NEEDS.
  
- FOREIGN EXCHANGE SERVICE IS ALSO AVAILABLE TO GIVE A USER FLAT RATE ACCESS TO OTHER CITIES, OR OTHER CITIES TO HIM.
  
- COMPLETE DETAILS ARE AVAILABLE IN PLTP OR THE INTERCITY SERVICES MANUAL.

**SCHEDULES I, II AND III CHANNELS  
TARIFF F.C.C. NOS. 260 & 264, ISM PLTP 1, DATA 2**

**Interexchange Mileage Rates**

Multi-schedule private line rate schedules apply to series 2000, Type 2001 through 2006, and series 3000 voice-grade channels. There are three rate schedules (schedules I, II and III) which apply between each pair of customer service points (rate centers) on an airline mileage basis.

Rate centers are grouped into two categories, A and B. Category A rate centers are listed in Tariff F.C.C. No. 260. All other rate centers are category B and are listed in Tariff F.C.C. No. 264.

Schedule I rates apply to a channel between two category A rate centers.

Schedule II rates apply to a channel between a category A rate center and a category B rate center.

Schedule III rates apply to channels between two category B rate centers.

The multi-schedule private line service offering is composed of two basic rate elements: interexchange channels and station terminals. A station terminal charge applies at each customer service point on an interexchange channel.

**RATE ITEMS**

<b><u>Station Terminals</u></b>	<b><u>Monthly Charge</u></b>
Voice and Data Main Station Terminals	\$25.00
Additional Station Terminal - Data	25.00
Additional Station Terminal - Voice	
Separate Local Facility	25.00
Bridged On Customer's Premises	5.00
Additional Station Terminal	
Transfer Arrangement	5.00
Installation Charge	\$54.15

**RATE ITEMS (Cont'd)**

**Interexchange Channels**

**Schedule I**

<u>Mileage</u>	<u>Charge</u>		
1	\$ 51.00		
2- 14	\$ 51.00	+	\$1.80 for each mile over 1 mile
15	\$ 76.20		
16- 24	\$ 76.20	+	\$1.50 for each mile over 15 miles
25	\$ 91.20		
26- 39	\$ 91.20	+	\$1.12 for each mile over 25 miles
40	\$108.00		
41- 59	\$108.00	+	\$1.12 for each mile over 40 miles
60	\$130.40		
61- 79	\$130.40	+	\$1.12 for each mile over 60 miles
80	\$152.80		
81- 99	\$152.80	+	\$1.12 for each mile over 80 miles
100	\$175.20		
101-999	\$175.20	+	\$.66 for each mile over 100 miles
1000	\$769.20		
over 1000	\$769.20	+	\$.40 for each mile over 1000 miles

Where one rate center is an international boundary point, charge is as determined above minus \$25.00.

**Schedule II**

<u>Mileage</u>	<u>Charge</u>		
1	\$ 52.00		
2- 14	\$ 52.00	+	\$3.30 for each mile over 1 mile
15	\$ 98.20		
16- 24	\$ 98.20	+	\$3.10 for each mile over 15 miles
25	\$129.20		
26- 39	\$129.20	+	\$2.00 for each mile over 25 miles
40	\$159.20		
41- 59	\$159.20	+	\$1.35 for each mile over 40 miles
60	\$186.20		
61- 79	\$186.20	+	\$1.35 for each mile over 60 miles
80	\$213.20		
81- 99	\$213.20	+	\$1.35 for each mile over 80 miles
100	\$240.20		
101-999	\$240.20	+	\$.66 for each mile over 100 miles
1000	\$834.20		
over 1000	\$834.20	+	\$.40 for each mile over 1000 miles

Where one rate center is an international boundary point, charge is as determined above minus \$25.00.

**Schedule III**

<u>Mileage</u>	<u>Charge</u>		
1	\$ 53.00		
2- 14	\$ 53.00	+	\$4.40 for each mile over 1 mile
15	\$114.60		
16- 24	\$114.60	+	\$3.80 for each mile over 15 miles
25	\$152.60		
26- 39	\$152.60	+	\$2.80 for each mile over 25 miles
40	\$194.60		
41- 59	\$194.60	+	\$2.10 for each mile over 40 miles
60	\$236.60		
61- 79	\$236.60	+	\$1.60 for each mile over 60 miles
80	\$268.60		
81- 99	\$268.60	+	\$1.35 for each mile over 80 miles
100	\$295.60		
101-999	\$295.60	+	\$.68 for each mile over 100 miles
1000	\$907.60		
over 1000	\$907.60	+	\$.40 for each mile over 1000 miles

Where one rate center is an international boundary point, charge is as determined above minus \$25.00.



	Installation	Monthly	USOC
<b>Key Signaling Arrangements</b>			
The charges for service utilizing a Type 2001 or similar type channel contemplate the provision of signaling arrangements to permit the customer to signal stations on a service			
Automatically on two-point services only or manually by key			
Key activated arrangement to generate from one to six tone signals by operation of any one of a maximum of six keys	27.10	13.55	40Y
Selective operation - receiving stations arranged to recognize and respond to predetermined signals - for both manual and automatic operation			
Per station, or predetermined group of stations (maximum 10 stations) within an exchange, equipped to receive a given signal - includes signal control arrangement when required	None	9.75	W5U
<b>One Number Dialer</b>			
To automatically transmit a pre-programmed number with up to a maximum of 14 digits. (Requires the use of a single push-button non-locking key)			
First 43A automatic one number dialer	37.90	6.50	1ND
<b>Automatic Signaling Arrangement</b>			
An arrangement to permit through key signaling when a channel arranged for two-way automatic signaling is connected to a channel arranged for key signaling.			
per service point arranged	16.20	9.75	27F
<b>Dial Arrangements</b>			
Arrangement to permit the transmission of dial or TOUCH-TONE signals, on a two point private line, between stations suitably equipped to transmit and/or receive dial or TOUCH-TONE signals			
per service point	None	5.40	27E
Where facility conditions permit multi-point services may be arranged for transmission of dial signals only on a non-selective basis, per service point	None	5.40	27C
Arrangement to permit the transmission of dial or TOUCH-TONE signals on a two point private line when one point terminates in an instrumentality or other device suitably equipped to transmit and/or receive dial or TOUCH-TONE signals and the other point terminates in a switching center of a Switched Circuit Automatic Network, or a Common Control Switching Arrangement.			
per service point where the instrumentality or other device is located	None	5.40	8FS

**SECTION 2**  
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**Rate information is not complete. Use TARIFFS for customer quotations.**

	Installation	Monthly	USOC
Dial Selector Signaling and Switching (Cont'd)			
Charges are not applicable for the dial arrangements listed above, when furnished at a service point equipped with an Interexchange Channel Switching Arrangement			
Two-Tone Dial Equipment to signal individual stations or groups of stations, or to control specified types of switching arrangements			
First such station on a premises	40.60	23.80	EF4
Two-Tone Dial Equipment for receiving dial signals (includes receiving selectors capable of performing a maximum of eight functions)			
First such station on a premises	40.60	17.30	GV4
SS-1 Dial Selector Signalling			
SS-1 Dial Equipment to signal individual stations or group of stations or to control specified types of switching arrangements.			
For dialing signals outward on one service, from one premises	54.15	10.80	KY4
For use on a service in an exchange when any station in the same exchange is equipped to dial signals outward and receive key signals	None	5.40	LL4
SS-1 Dial Equipment for receiving dial signals (includes receiving selector capable of performing a maximum of nine functions)			
For receiving dial signals at one premises, from one service	54.15	16.20	LM4
SS-1 Dial Equipment for each premises on a service equipped for dialing and receiving dial signals	108.00	21.65	LX4
Arrangement to prevent non-selected stations from connecting to a service if service is in use (includes override feature which requires the furnishing of a push-to-talk Key)			
First station so arranged on a premises	16.20	4.90	JDH

	Installation	Monthly	USOC
IXC Switching			
Key Controlled Interexchange Channel Switching Arrangements			
These arrangements are provided on Telephone Company premises and include key control. The following charges apply at each switching point where the arrangements are provided			
For two-point or multi-point services to permit one interconnection involving no more than two private lines Per private line arranged	None	5.40	29A
NOTE: When more than 3 of the above arrangements are employed in establishing a connection transmission over such connection is not represented as being satisfactory.			
For two-point services (and, where facility conditions permit, for multi-point services) to permit one interconnection involving more than two private lines or to permit more than one interconnection.			
Where not more than 2 arrangements are employed in establishing a given connection			
For one interconnection involving from 3 to 21 lines in any combination			
Basic arrangement (for 3 lines)	None	32.50	29B
For each additional line	None	10.80	29C

**SECTION 2**  
**PAGE 8**

**Rate information is not complete. Use TARIFFS for customer quotations.**

	Installation	Monthly	USOC
Service Terminal and Station Terminal Switching			
A key controlled switching and transfer arrangement is provided in association with two main stations in the same exchange connected to a private line by station terminals or service terminals to permit a main station to connect or disconnect the other main station or transfer the service between the stations, provided a station of the customer remains connected to the private line. per arrangement	None	2.75	28S
Arrangement To Permit Connection With O.C.C. Facilities			
Arrangement to permit a private line or foreign exchange service furnished by the Telephone Company and terminated in a Centrex, PBX or station switching arrangement to be connected with facilities furnished by an Other Common Carrier, when such connection is made to meet the customer's interstate communications requirement. (See Note Below) per arrangement on a private line	None	5.40	XNA
per arrangement on a foreign exchange service	None	None	XXF
Arrangement described above when furnished at a location where such a Telephone Company private line is equipped with an Arrangement to Permit Connection With Another Telephone Company-Provided Private Line Services (USOC XPL or XPX)	None	None	XNR
Arrangement To Permit Connection With Telephone Company-Provided Private Line Services			
Arrangement to permit a private line or foreign exchange service furnished by the Telephone Company and terminated in a Centrex, PBX or station switching arrangement to be connected with private line services furnished by the Telephone Company, when such connection is made to meet the customer's interstate communications requirement (See Note Below) per arrangement on a private line	None	5.40	XPL
per arrangement on a foreign exchange service	None	None	XXG
Arrangement described above when furnished at a location where such a private line is equipped with an interexchange Channel Switching Arrangement	None	None	XPX

NOTE: When more than 3 connections (4 private line services) involving arrangements (USOC XPL or XPX) are employed in establishing a connection utilizing a Telephone Company furnished Centrex, PBX or station switching arrangements, or when arrangements (USOC XXF or XXG) are employed in establishing a connection, transmission over said connection is not represented as being satisfactory.

#### Foreign Exchange Service

Foreign Exchange is a economical means of expanding a customer's market by providing "toll free" telephone access to potential clients in a city that is distant or foreign to his home office location. This is accomplished by extending a telephone exchange from a company's "home office" to another city. The interexchange facility is provided in accordance with F.C.C. Tariff 260.

The exchange service in the distant city is provided and billed for by the serving telephone company in that exchange. The standard telephone termination at the customer's home office is included in the basic Foreign Exchange service.

The customer's "home office" is considered to be the station telephone company territory. Any additional equipment required by the customer (e.g., data set or an additional telephone extension) is billed by the station telephone company.

#### Benefits

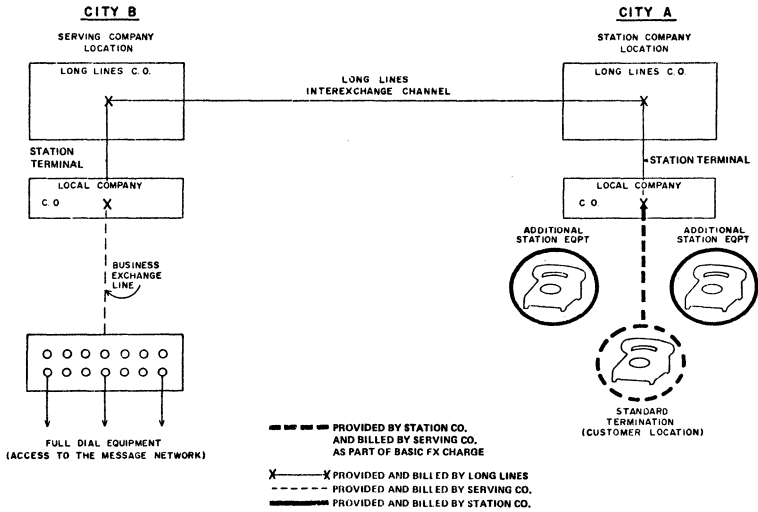
Foreign Exchange gives a customer representation in a potential market area without the expense of operating a branch office in that particular area.

It is an efficient and economical means of expanding market coverage to distant cities.

Refer to I.S.M. PLTP-1 and SAM 800 for ordering procedures and proper codes.

**Rate information is not complete. Use TARIFFS for customer quotations.**

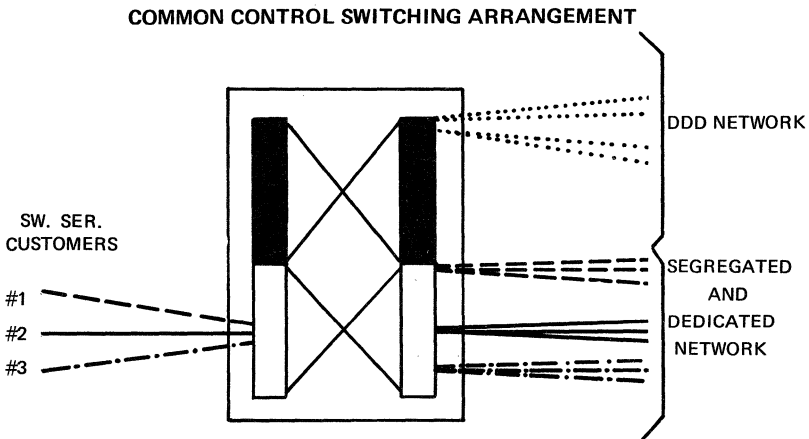
TWO POINT FOREIGN EXCHANGE SERVICE



**COMMON CONTROL SWITCHING ARRANGEMENT  
(CCSA)  
I.S.M., — PLTP-7**

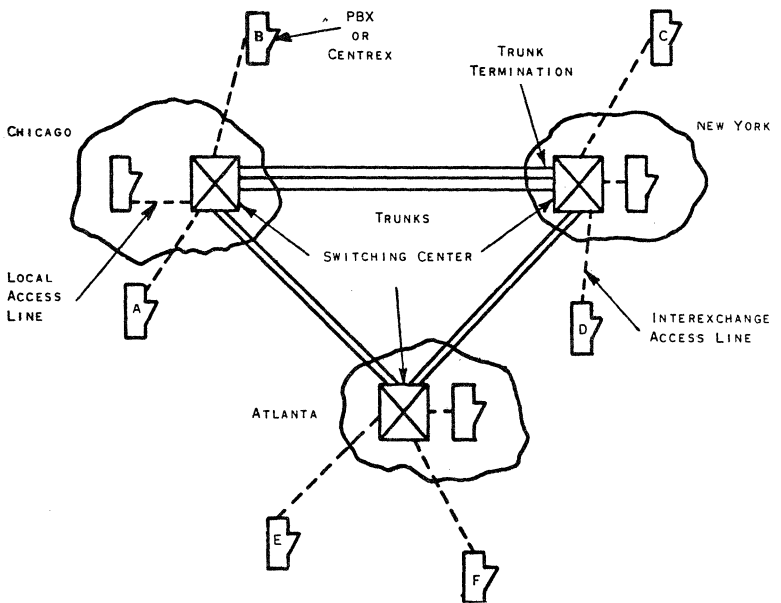
**Switched service networks**, such as a **CCSA** network, are designed for customers having extensive private-line communications requirements. By means of common central office equipment in No. 5 crossbar or #1 ESS offices, dial switching of the private line in the customer's network is accomplished. The customer is provided with his own network arrangement whereby all stations associated with the network may dial each other regardless of location and without using exchange and toll facilities. Off network access via local, foreign exchange, and/or WATS lines may also be provided.

The **CCSA** not only utilizes equipment that is shared with regular message service but also shares equipment that is used by other private line customers having a switching requirement in the same locality. The following figure illustrates shared usage of a cross-bar switching machine.



**CCSA (Cont.)**

This diagram illustrates a CCSA Network involving three switching centers.



**Trunk lines** (Series 2000, 5000, etc.) terminate in Telephone Company #5 crossbar or #1 ESS switching centers. Customer locations in the same exchange as the switching office and customer locations in exchanges foreign to the switching office are connected to the switching equipment by access lines.

**A local access line** connects the customer's stations to the switching equipment in the former and an interexchange access line connects the switching center to facilities which terminate in the customer's stations in the latter.



**Common Control Switching Arrangements**

	<b>Installation</b>	<b>Monthly</b>	<b>USOC</b>
<p>Arrangements on Telephone Company premises provided to interconnect channels for private line telephone service (Type 2001) and alternate private line telephone date (alternate send and receive only, Type 3002 channel) service. Use of the common control switching equipment for this arrangement is shared with other service offerings or customers. This arrangement may be ordered only at exchanges in which customer premises are connected to the service.</p>			
<p>Switching arrangement to permit the inter-connection of channels terminated in common control switching equipment. The following charges apply only at the switching center.</p>			
<p>Per interexchange access line terminated in this switching arrangement (from a customer station)</p>	None	37.90	9E9
<p>Per local access line terminated or its equivalent service in this switching arrangement (including the facilities required from a customer station located in the exchange in which the switching arrangement is ordered)</p>	54.15	37.90	9F9
<p>Per trunk line terminated in this switching arrangement (from another Common Control Switching Arrangement)</p>	None	45.45	9G9
<p>Selective Routing Arrangements - to permit a private line network employing a common Control Switching Arrangement to automatically interconnect channels for private line telephone service with central offices for access to exchange and toll service.</p>			
<p>Per switching office arranged to permit selective routing within a numbering plan area over local or foreign exchange lines, up to and including three numbering plan areas</p>	None	184.00	S52
<p>Arrangement for termination of communications systems (utilizing Central Office Connecting Facilities) provided by Other Common Carrier in a Common Control Switching Arrangement</p>			
<p>Per Other Common Carrier Access Line terminated in this switching arrangement from a customer station.</p>	None	37.90	XXB

	<b>Installation</b>	<b>Monthly</b>	<b>USOC</b>
Common Control Switching Arrangements (Cont'd) Per Other Common Carrier Trunk Line terminated in this switching arrangement from another Common Control Switching Arrangement.	None	45.45	XXD
Rates and Charges to accommodate connections to Common Control Switching Arrangements involving Other Common Carrier services which utilize satellite facilities or are directly connected to a communications channel which utilizes satellite facilities. Modification of the Common Control Switching Arrangement, for the first termination to increase the guard time interval at that Common Control Switching Arrangement, per switching arrangement, per customer order.	None	603.00	XM1
Modification of the same Common Control Switching Arrangement for each additional termination to increase the guard time interval at that Common Control Switching Arrangement as part of the same customer order.	None	61.80	XM2

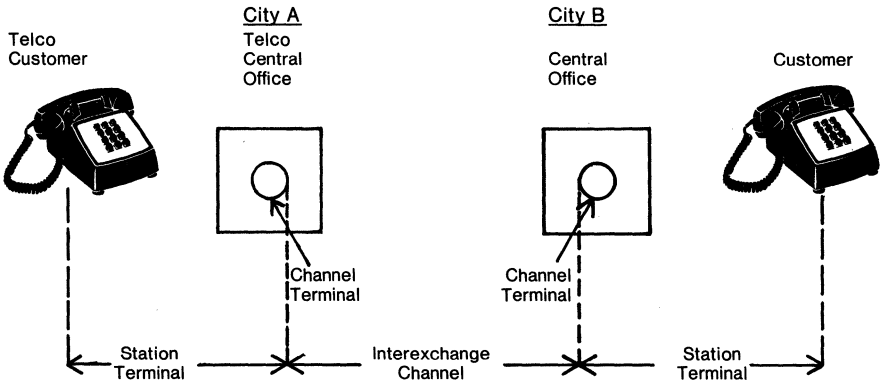


**Rate information is not complete. Use TARIFFS for customer quotations.**

**Private Line Voice Service**

Private Line Voice Service involved the furnishing of interexchange channels, channel terminals and station terminals to enable the customer to communicate continuously by telephone between specified locations.

**Two-Point Voice Service**



A station terminal may include a standard telephone termination or connection to a PBX or key equipment.

Type 2001 channels are used for Private Line voice service. Multi-schedule Private Line rate schedules and regulations per Tariff 260 are applicable for pricing this service. Category A rate centers are listed in Tariff F.C.C. No. 260. All other rate centers are category B and are listed in Tariff F.C.C. No. 264.

**Alternate Use**

Long Lines offers private line service to permit the customer to use such service for different types of transmission on an alternate use basis. The customer may switch from one type of operation to another but only one type of operation can be used at one time except as otherwise provided in F.C.C. Tariff 260 Para. 2.25.

The following are some examples of various channels that are available for Alternate Use Arrangements;

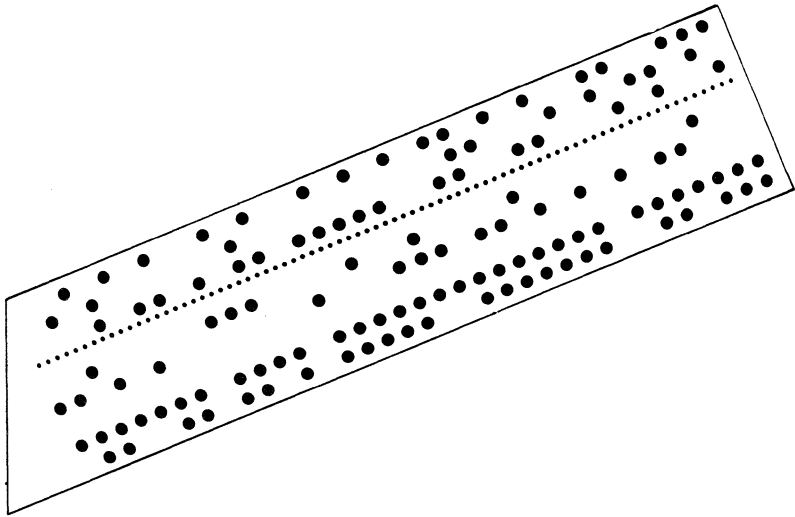
Type 2001 can be used for voice private line service alternately with Foreign Exchange service. (Foreign Exchange operation is available only between two points on the private line service)  
Type 2001 channels can be used alternately for Voice and Teletypewriter up to 150 Bauds.

Type 3002 channels can be used for alternate use of Voice Band Data.

Refer to F.C.C. Tariff 260 and I.S.M. ALTN-1, ALTN-4 for the proper U.S.O.C.'s and ordering procedures.

# **PRIVATE LINE TELETYPEWRITER SERVICE**

**3**



**A DIRECT, FAST AND EFFICIENT WAY TO TIE BUSINESS OPERATIONS  
TOGETHER WITH WRITTEN COMMUNICATIONS**

**PRIVATE LINE TELETYPEWRITER SERVICE**

- PRIVATE LINE TELETYPEWRITER SERVICE, USING A VARIETY OF TERMINAL EQUIPMENT, GIVES A BUSINESS UNLIMITED TWO-WAY WRITTEN "CONVERSATION" FOR A FIXED MONTHLY CHARGE.
  
- IT LETS YOU SEND AND RECEIVE TYPEWRITTEN MESSAGES WITH SELECTED LOCATIONS, ANYWHERE IN THE NATION. RESERVED FOR A CUSTOMER'S EXCLUSIVE USE, IT IS AVAILABLE 24 HOURS A DAY — ALL WEEK LONG.
  
- MESSAGES MAY BE TRANSMITTED AT UP TO 150 WORDS PER MINUTE, USING KEYBOARD OPTIONS DESIGNED TO MEET A USER'S SPECIFIC BUSINESS REQUIREMENTS.
  
- REGULAR TYPISTS CAN BE EASILY TRAINED TO OPERATE THE TELETYPEWRITERS. BUSINESS FORMS MAY BE USED FOR ORDERS, REPORTS AND OTHER BUSINESS FUNCTIONS.
  
- ONE-WAY SERVICE OR SIMULTANEOUS TWO-WAY SERVICE, MANUAL OR AUTOMATIC OPERATION, CARBON COPIES, PUNCHED PAPER TAPE INPUT AND OUTPUT, ARE BUT A FEW OF THE OPTIONS THAT WILL AID A BUSINESS IN GATHERING DATA FOR MAKING TIMELY MANAGEMENT DECISIONS.

**SERIES 1000 CHANNELS**

F.C.C. TARIFF 260, I.S.M. TTDG-2

See Section 1, General, for services covered by each channel type included in this Series.

**INTEREXCHANGE MILEAGE RATES**

	<b>Rate Per Mile Per Month</b>				Each Add'l Mile
	First 100	Next 150	Next 250	Next 500	
<b>Type 1001 thru 1005</b>	\$1.25	\$1.00	\$.60	\$.40	\$.25
<b>Type 1006</b>	1.55	1.25	.80	.50	.30

**3**

**CHANNEL TERMINALS**

<b>Type 1001 thru 1006</b> - per channel Terminal	<b>Monthly Charge</b> \$30.00
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**STATION TERMINALS**

<b>for the first station in an exchange</b>	Installation	<b>Per Station Terminal Per Month</b>	
		Half Duplex	Duplex
Type 1001 thru 1003	\$52.55	\$40.00	\$44.00
Type 1005	52.55	40.00	44.00
Type 1006	52.55	60.00	66.00

**for each add'l station, same  
service, same exchange**

Type 1001 thru 1003	52.55	25.00	27.50
Type 1005	52.55	25.00	27.50
Type 1006	52.55	40.00	44.00



**Rate information is not complete. Use TARIFFS for customer quotations.**

**STATION ARRANGEMENT CHARGE**

Type 5106 (150 baud service)

**Per Station Per Month**

Station Arrangement \$14.45

Required for each station on a Type 5106 channel, except:

- (a) No charge for additional stations, in same building as main station.
- (b) No charge, other than for one station, applies for additional stations located in another building on the same premises as the main station.

**STATION EQUIPMENT UP TO 75 BAUDS**

	Equipment	45/55 baud		75 baud		Ø Inst.*
		Monthly	Spare	Monthly	Spare	
28	ASR-Single Contact - Fixed Head	\$ 130.00	\$97.45	\$141.00	\$106.00	\$54.15
28	ASR-Multi Contact - Fixed Head	141.00	105.00	151.00	113.00	54.15
28	ASR-Multi Contact - Pivoted Head	146.00	-	157.00	-	54.15
28	ASR-Multi Contact - Fixed and Pivoted Head	151.00	-	163.00	-	54.15
28	KSR (Floor mtd or wall mtd)	72.50	54.15	80.10	60.60	54.15
28	RO (Floor mtd or wall mtd)	66.00	49.80	72.50	54.15	54.15
28	ROTR (Recvg. only-Typing Reperf)	54.15	46.15	59.55	44.40	54.15
28	KTR (Keyboard-Typing Reperf)	70.35	53.05	77.90	58.45	54.15
28	RT (Reperforator Transmitter)	113.00	85.55	125.00	93.10	54.15

ISM Section TTGD-8

- \* No installation charge on spare and optional equipment when installed at same time as service machine with which it is associated.
- Ø See Tariff F.C.C. 260, for application of move charges.

**STATION EQUIPMENT, OVER 75 BAUD**

<b>EQUIPMENT</b>	<b>Monthly</b>	<b>Spare</b>	<b>Inst.*</b>
<b>110 BAUD</b>			
33 ASR-Friction Feed	\$ 68.20	\$ 50.90	\$ 54.15
33 ASR-Sprocket Feed	71.45	54.15	54.15
33 KSR-Friction Feed	54.15	41.15	54.15
33 KSR-Sprocket Feed	57.35	43.30	54.15
33 RO-Friction Feed	50.90	37.90	54.15
33 RO-Sprocket Feed	54.15	41.15	54.15
The 33 Line of Equipment is for use on services where the maximum usage does not exceed 300 hours in a six month period.			
35 ASR-Friction Feed	\$141.00	\$106.00	\$ 54.15
35 ASR-Sprocket Feed	146.00	108.00	54.15
Optional TRPERF	11.90	-	54.15
35 KSR-Friction Feed	80.10	60.60	54.15
35 KSR-Sprocket Feed	85.55	64.95	54.15
35 RO-Friction Feed	72.50	54.15	54.15
35 RO-Sprocket Feed	77.90	58.45	54.15
35 ATR-Single Gate	42.25	31.40	54.15
35 ROTR	59.55	44.40	54.15
35 Typing Perforator	47.65	35.75	54.15
Selector Equipment			
Basic	9.75	-	54.15
Ea. Selective function	1.35	-	10.80
Automatic Station Selection			
<b>8A System</b>			
Line Controller			
With intercept	238.00	-	216.00
Without intercept	200.00	-	216.00
Station Control Unit #	37.90	-	54.15

\* No installation charge on spare equipment, optional equipment and selector equipment when installed at the same time as service machine with which associated.

# See ISM for additional requirements.

**Rate information is not complete. Use TARIFFS for customer quotations.**

**STATION EQUIPMENT, OVER 75 BAUD**

<b>EQUIPMENT</b>	<b>Monthly</b>	<b>Spare</b>	<b>Inst.*</b>
<b>150 BAUD</b>			
37 ASR Friction Feed ♂	\$195.00	\$146.00	\$ 54.15
37 KSR Friction Feed ♂	130.00	97.45	54.15
37 RO Friction Feed ♂	113.00	85.55	54.15
37 ROTR	84.45	-	54.15
37 Typing Reperator (ICW ASR)	10.30	-	27.10
ON Line Set & Clear HT-VT	6.75	-	10.80
Telco Adj. HT-VT-FF	4.35	-	21.65
<b>110 &amp; 150 BAUD</b>			
Outlying Station Control Unit			
85A	43.30	-	54.15
86B	56.30	-	54.15

\* No installation charge on spare equipment and selector equipment when installed at the same time as service machine with which associated.

♂ When any of this equipment is arranged for Sprocket Feed, either "On Line Set & Clear of HT & VT or Telco Adj. HT-VT & FF" is required.

**TELETYPEWRITER SWITCHING & SELECTIVE CALLING SYSTEMS  
VOLUMES & 3**

**5-LEVEL SYSTEMS**

- 83A1** — Manual half-duplex multipoint line incorporating 28 type equipment and stunt box selection. It can operate at 45, 55 or 75 baud.
- 83B** — Automatic half-duplex multipoint line incorporating sequential polling, automatic pick-up of traffic, circuit and station assurance and optional push-bottom addressing. It can operate at 45, 55 or 75 baud and utilizes 28 type equipment.
- FINAC** — (Fast Inter-line Non-printing Activate Control)  
Automatic full-duplex multipoint line designed especially for financial customers. It incorporates such features as sequential polling and automatic pick-up of traffic. It utilizes 28 type equipment at 45, 55 or 75 baud.

**8-LEVEL SYSTEMS**

- 8A** — The 8A System uses Model 35 teletypewriter equipment and is the 8 level Model 28 83B3 System. The 8 A System operates only at 100 W.P.M. the 8A System utilizes the ASCII 8/11 code. This system allows for automatic transmission and/or keyboard transmission. Like the 83B3 system, it is half duplex, multipoint and incorporates sequential polling, circuit and station assurance. The 8A line may be controlled by either a CPE computer switcher/processor or a Bell System line controller. The line controller is available with or without intercept capability. This system utilizes a 150 baud interexchange channel.
- 8B** — The 8B service utilizes 8 level Model 35 teletypewriter equipment and is a full duplex operation with Bell System equipped outlying stations under the control of a CPE computer switcher/processor. Currently there is no Bell System full duplex line controller which could be used as a control or master station. However, the controlling CPE device must be programmed to conform with the operational specifications of the Bell System's 8B outlying station control unit. The 8B service may be considered as the 8 level equivalent of the 5 level Model 28 81D1 full duplex line and outlying stations minus the 81D1 switching center. A 150 baud interexchange channel is utilized.
- 85A** — **The 85A Data Selective Calling Service** consists of a customer provided computer switcher and a number of stations, all connected to the same line or number of lines. Traffic is handled on both an intraline and interline basis via store and forward operation. The code used is ASCII, 11 bits for 100 WPM (110 baud) or 10 bits for 150 WPM (150 baud). It operates in a half duplex mode using model 33, 35 or 37 Teletypewriters. No mix of speed can be accommodated on a given line.

**TELETYPEWRITER SWITCHING & SELECTIVE CALLING SYSTEMS — 8-LEVEL (Cont.)**

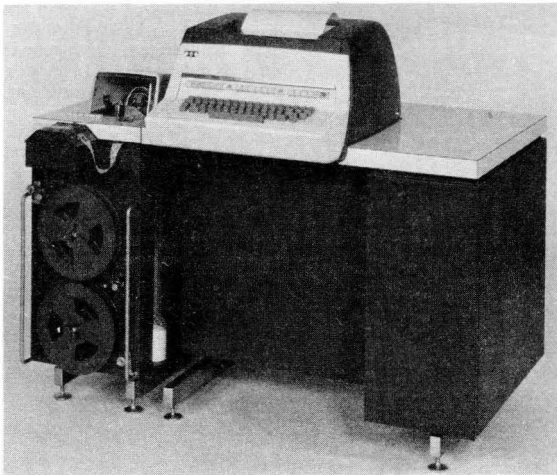
- 86A** — **The 86A Data Selective Calling Service** is similar to the 85A in operation but has additional features. The 86A Stations are designed for Half Duplex operation and are used for services where there is a mixture of Half Duplex and Full Duplex lines operating from a given computer switcher.
- 86B** — **The 86B Data Selective Calling Service** consists of a customer provided computer switcher and a number of stations all on a given line or number of lines. It operates in a Full Duplex mode at speeds of 110 baud or 150 baud using model 33,35 or 37 Teletypewriters. In order to maximize the use of the lines etc, transmission to or from the switcher can be stopped to permit a station to be picked up or called in to receive a message. As in the 85A and 86A, no mix of speed or teletypewriters is permitted on the same line.

**9131 STATION CONTROLLER (DJQ)**

This service offering will operate with Model 33 and Model 35 station equipment. Use of the 9131 allows any station on a private line circuit to call any other station by contending for the circuit and signing in when it is idle. Automatic polling is not provided, so there is no requirement for a line control station.

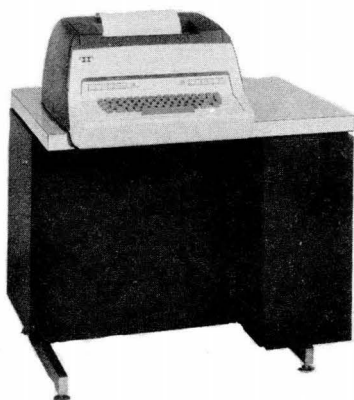
Features include:

- Call-In-Code (Station Code) with answerback
- Broadcast Code
- Motor Control
- Status Indicator Lamps

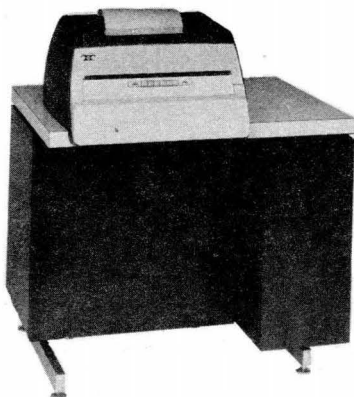


- Model:** No. 37 ASR Automatic Send and Receive  
**Size:** Height 36-1/4 inches, Width 44-1/4 inches, Depth 27-1/4 inches  
**Weight:** Approximately 340 pounds  
**Power:** 115 AC  $\pm$  10%, 60 Hz  $\pm$  .45 Hz  
**Platen:** Friction Feed — 8-1/2 inches, Sprocket Feed 9-1/2 inches  
**Spacing:** 10 Characters per inch, 6 lines per inch, Single or Double  
Optional: Full reverse, 1/2 forward and reverse line feed.  
**Keyboard:** 4-row, similar to typewriter  
**Other Features:** On Line set and clear of V-H Tabs  
Telco Adj. V-H Tabs and FF  
Two color printing  
Front and rear paper feed and accumulating shelf  
Expanded character set, 7 or 8 row.

Rate information is not  
complete. Use TARIFFS  
for customer quotations.

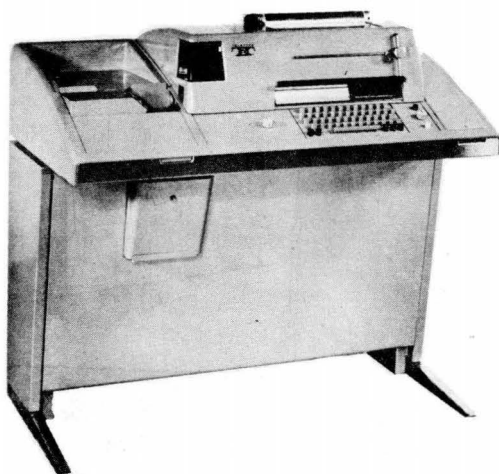


**Model:** No. 37 KSR Automatic  
Send and Receive  
**Size:** Height 36-1/4 inches  
Width 22-1/2 or 32-1/2  
inches  
Depth 27-1/2 inches  
**Weight:** Approx. 200 Pounds  
**Power:** 115 volts AC  $\pm 10\%$   
60 cps  $\pm .45$  Hz  
**Platen:** 8-1/2 or 9-1/2 inches  
10 Char per inch  
6 lines per inch  
**Spacing:** Single or Double  
**Keyboard:** 4 Row, Similar to  
Typewriter.

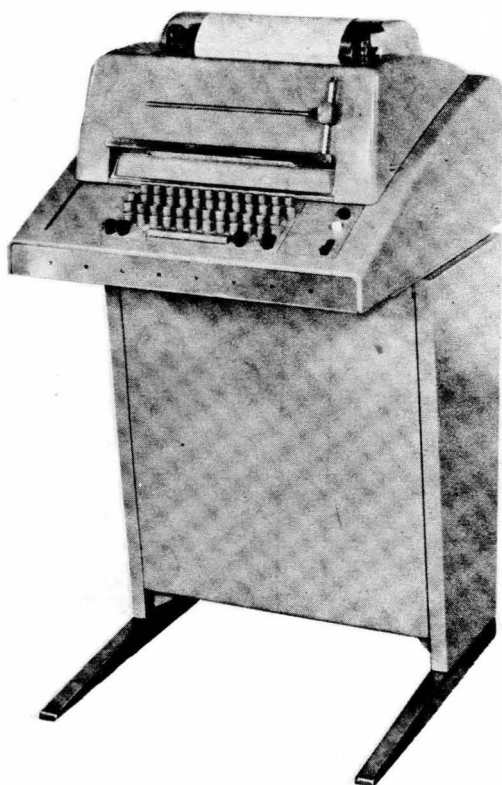


**Model:** No. 37 RO Receive Only  
**Size:** Height 36-1/4 inches  
Width 22-1/2 or 32-1/2 inches  
Depth 24-1/2 inches  
**Weight:** Approx. 200 pounds  
**Power:** 115 volts AC  $\pm 10\%$   
60 cps  $\pm .45$  Hz  
**Platen:** 8-1/2 or 9-1/2 inches  
10 Char per inch  
6 lines per inch  
**Spacing:** Single or Double

**Model:** No. 35 ASR Automatic  
Send and Receive  
**Size:** Height 38.5 inches  
Width 40 inches  
Depth 24 inches  
**Weight:** Approx. 225 pounds  
**Power:** 115 volts AC  $\pm$  10%  
60 cps  $\pm$  .5 Hz  
**Platen:** 8-1/2 inches  
10 Char per inch  
75 Char per line  
6 lines per inch  
**Spacing:** Single or Double  
**Keyboard:** 4 Row ASCII



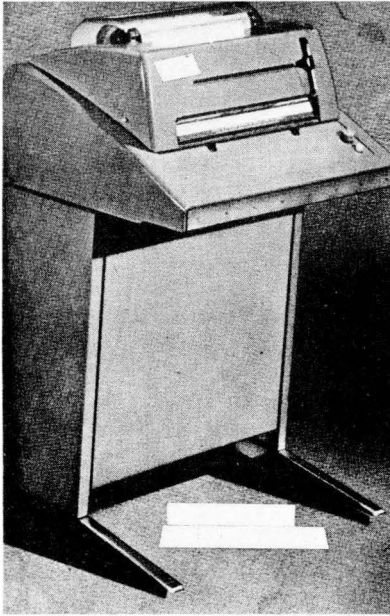
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**Model:** No. 35 KSR Automatic  
Send and Receive  
**Size:** Height 38.5 inches  
Width 20 inches  
Depth 24 inches  
**Power:** 115 volts AC  $\pm$  10%  
60 cps  $\pm$  .5 Hz  
**Platen:** 8-1/2 inches  
10 Char per inch  
75 Char per line  
6 lines per inch  
**Spacing:** Single or Double  
**Keyboard:** 4 Row ASCII

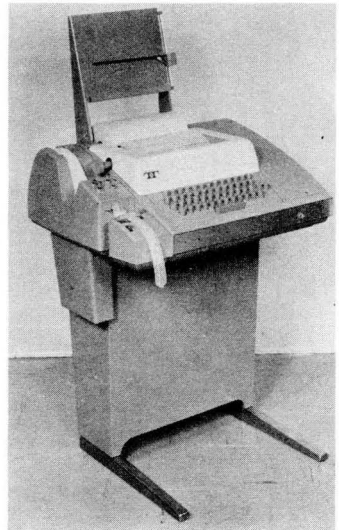


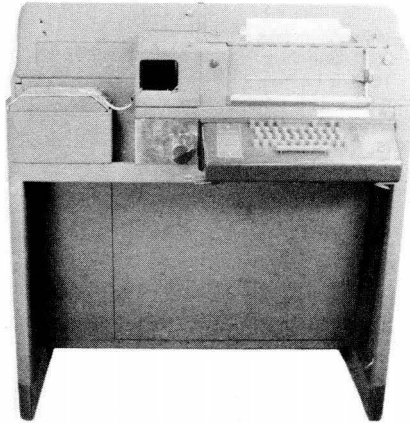
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complete. Use TARIFFS  
for customer quotations.



**Model:** No. 35 RO  
Receive Only  
**Size:** Height 38.5 inches  
Width 20 inches  
Depth 24 inches  
**Weight:** Approx. 130 pounds  
**Power:** 115 volts AC  $\pm 10\%$ ,  
60 cps  $\pm .5$  cps  
**Spacing:** Single or Double

**Model:** No. 33ASR  
Automatic Send-Receive  
**Size:** Height 33 inches  
Width 22 inches  
Depth 18 inches  
**Weight:** Approx. 56 pounds  
**Power:** 115 Volts AC  $\pm 10\%$   
60 cps  $\pm .5$  Hz  
**Spacing:** Single or Double



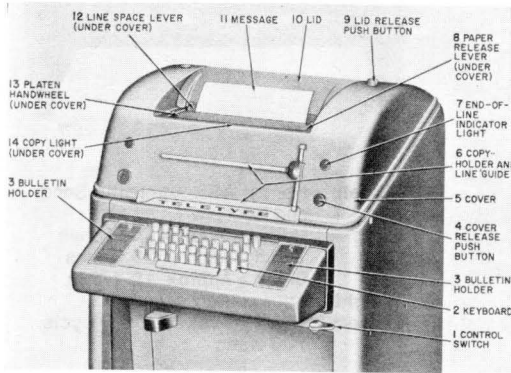


**3**

- Model:** No. 28 ASR Automatic Send and Receive  
**Size:** Height - Approx. 39 inches  
Width - Approx. 36 inches  
Depth - Approx. 18-1/2 in.  
**Weight:** Approx. 260 pounds  
**Power:** 110-120 volts A.C. 60 cycle  
100 watts

Rate information is not complete. Use TARIFFS for customer quotations.

- Model:** No. 28 KSR - Keyboard Send and Receive  
**Size:** Height - 40-1/2 inches  
Width - 20-1/2 inches  
Depth - 18-1/2 inches  
**Weight:** Approximately 125 pounds  
**Power:** 110-120 volts A.C. 60 cycle  
100 watts  
**Model:** 28 RO - Page teletypewriter (same as above less keyboard)

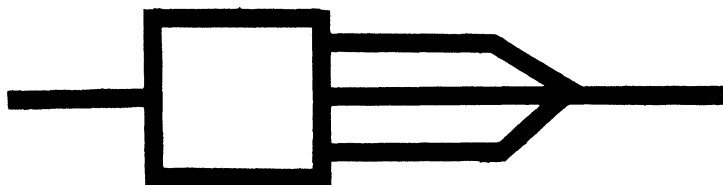


**Miscellaneous Characteristics, ISM Section TTGD-1, 7**

Left Margin	3/4 inch
Right Margin	1/2 inch
Characters per line	72
Characters per line	10 (normal type)
Lines per inch	6

# **DATA COMMUNICATIONS SERVICES**

**4**



**BELL SYSTEM DATA COMMUNICATIONS SERVICES ARE DESIGNED TO  
SPEED BUSINESS INFORMATION TO AND FROM DATA PROCESSING  
CENTERS — QUICKLY, AND WITH ACCURACY AND SECURITY AT  
REASONABLE COSTS**

## **DATA COMMUNICATIONS SERVICE**

**THE BUSINESS COMMUNICATIONS NETWORK THAT SPANS THE NATION-THE TELEPHONE**—pick it up and the most remote corner of the country is only a fraction of a second away from the sound of your voice.

You use it every day in your business to exchange information, to implement decisions, to keep up with developments far from your office.

Telephone service is a vast communications network that puts you in instant touch with places it would take hours — days — to reach by any other means.

This network is being used to carry high volumes of business data as quickly as it carries your voice. Through Bell System Data Communications, business machines are talking across a thousand miles as easily as they do from one end of a room to the other.

And they are talking at speeds up to 12000 words per minute (9600 bits per second) — when voice grade private lines are used with Bell System data sets and special channel conditioning. Speeds up to 250,000 bits per second can be obtained through the use of series 5000 and 8000 private line channels.

Even moderate-speed communications equipment can send a complete store inventory across the country in a matter of minutes — a list that would take hours to read over the phone, days to ship by conventional means.

But Bell System Data Communications means much more than moving data quickly and economically. New areas of management control are opened up when distance no longer stands between fact and decision — when time no longer separates action from reaction. For Data Communications puts a business in touch with itself. It enables a business to respond quickly — to change . . . to growth . . . to new opportunities.

**MULTI-SUPPLIER SERVICES  
S.A.M. SECTION 307**

**SALES RESPONSIBILITIES**

- Advise the customer of rates and regulations as they apply to the network
  - Review the maintenance of service charge
  - Explain the minimum protection criteria
- Assist the customer in the design of the multi-supplier network
- Review customer responsibilities
  - Sectionalizing trouble to either CPE or Telco facilities and/or equipment
  - Overall system design
  - Ordering and specifying the type of channel and the DATAPHONE Data Sets (where requested), for operation with data processing equipment provided by the customer, authorized user or joint user.
  - Controlling implementation by each supplier

**ENGINEERING REQUIREMENTS**

Where channels and/or equipment are being provided by the Telephone Company for inter-connection with customer provided equipment (CPE) it is necessary to obtain the information required as specified in the Multi-Supplier Services Questionnaire form DM 135. This information is necessary for the engineer's circuit design considerations and for evaluating the equipment's use over Telephone Company facilities. The information may also be used by the Data Technical Support Team if problems are encountered with the network.

**PRE-SALE COUNSELING**

Salesperson ordering new data services should consult with the Area Data Specialist and their Communication Systems Rep. (CSR) prior to issuing orders for new multi-supplier assemblies. Exceptions to this requirement are additions to existing multi-point circuits and orders identical to successful applications already in service.

**TROUBLE REPORTING**

If the customer established a centralized trouble analysis and reporting location that has the capability of sectionalizing troubles to either CPE or TELCO facilities and/or equipment, then STC's should accept toll free trouble reports from the customer's centralized location when such trouble reports are sectionalized to an individual circuit. Sales should review the network with District Operations Managers involved and have them designate the STC's responsible for receiving the toll free reports.

**MULTI-SUPPLIER SERVICES  
QUESTIONNAIRE (DM135)**

This form should be filled out on all new multi-supplier networks and updated on changes to existing multi-supplier networks. When complete, this form contains the information required on the USO. The form should be filed in the Customer Identification File.

**GLOSSARY OF TERMS USED IN DATA TRANSMISSION SYSTEMS**

- Access, Sequential** — A computer technique in which the items of information stored become available only in a one-after-the-other sequence, whether or not all of the information or only some of it is desired.
- Access, Random** — A computer technique in which the next location from which data are to be obtained is in no way dependent on the location of the previously obtained data.
- Access Time** — The time interval between the instant at which data is called for from a storage device and the instant at which delivery is completed, i.e., the read time; or, the time interval between the instant at which data are to be stored and the instant at which storage is completed, i.e., the write time.
- AM** — Amplitude Modulation, a method of transmission whereby the signal wave voltage is impressed upon a carrier wave of higher frequency so that the amplitude of the carrier wave is varied proportionately with the amplitude of the signal wave.
- Analog** — As opposed to digital, signals which make use of electrical analogies (e.g. varying voltages, frequencies, etc.) to produce a signal of a continuous nature rather than a pulse nature.
- Asynchronous** — A property of transmission where speed of operation is not fixed or related to any frequency utilized in the system. It may operate within given speed limits.
- Attenuation** — The difference between transmitted and received power due to transmission loss through equipment, lines or other communication devices.
- Bandwidth** — That spectra of frequencies assigned to a channel or system.
- Batch Processing** — Collection of data over a period of time to be sorted and processed as a group during a particular machine run.
- Baud** — A unit of signaling speed
- Baud Rate** — The speed in bauds expressing the number of signal elements (or units) per second. A signal element is that unit of a signal which occupies the shortest transmission time in a signaling code. In ASCII, for example, a signal element is 9.09 milliseconds in length; the baud rate is the total number of these units of 9.09 ms duration that can occur in 1 second, i.e.,  $1,000 \div 9.09$  equals 110 bauds.

**GLOSSARY OF TERMS (Cont'd)**

- Binary** — Pertains to a characteristic or property involving a selection, choice or condition in which there are two possibilities. It pertains also to a number system with a base of two (rather than 10, as with the decimal system).
- Bit** — A contraction of binary digit. The bit is a unit of information content equal to one binary decision, or the designation of one of two possible and equally likely values (current, no current).
- Bit Rate** — The number of units of information in a given time interval (commonly expressed in seconds).

Bit rates and baud rates are not always equivalent. Baud refers to a signal rate. A bit refers to a unit of information. When a signal element "contains" or "represents" or "carries" 1 bit or 1 binary decision then the baud rate and the bit rate is equivalent. This is the case with ASCII where one signal element (9.09 ms) "carries" one binary decision (1 bit — current or no current). Therefore, the two rates are equivalent: 110 bauds per second and/or 110 bits per second. It follows that where more than 1 binary decision occurs within the duration of a signal element, the bit rate would be higher than the baud rate.

- b.p.s.** — bits per second (sometimes written bps)
- Buffer** — A storage device used to compensate for a difference in rate of flow of data when transmitting data from one device to another.
- Byte** — A sequence of adjacent binary digits operated upon as a unit and usually shorter than a word.
- Carrier** — A transmission system where a signal wave is impressed upon a carrier wave by changing or "modulating" one of its characteristics.
- Channel** — A subdivision of a transmission facility which is one of a smaller bandwidth than the original basic facility.
- Channel Capacity** — Term which expresses the maximum number of bits per second which can be carried by a channel.

**Computer:**

- Asynchronous** — Each event or the performance of each operation starts as a result of a signal generated by the completion of the previous event or operation, or by the availability of the parts of the computer required for the next event or operation.
- Synchronous** — Each event or the performance of each operation starts as a result of a signal generated by a clock.
- Digital** — A computer that solves problems by operating on discrete data representing variables by performing arithmetic and logical processes on these data.



**GLOSSARY OF TERMS (Cont'd)**

**Computer: (Cont'd)**

- Fixed Program** — A computer in which the sequence of instructions are permanently stored or wired in, perform automatically, and are not subject to change either by the computer or the programmer except by rewiring.
- Stored Program** — A digital computer that, under control of its own instructions can synthesize, alter, and store instructions as though they were data and can subsequently execute these new instructions.
- Data-Phone®** — A Service Mark and a Trade Mark of the Bell System. As the former, it indicates the use of the Bell System message network for the transmission of data and as the latter it identifies the branch of data sets designed and manufactured for DATA-PHONE service.
- Delay Distortion** — Distortion resulting from non-uniform speed of transmission of the various frequency components of a signal through a transmission medium.
- Demodulator** — Electronic equipment which converts the tone or frequency input from the line into a form acceptable to the business machine.
- Digital** — As opposed to analog, signals made up of pulses of discrete duration, amplitude, etc.
- Duplex** — A channel or circuit providing simultaneous transmission in both directions.
- Echo** — A portion of the transmitted signal returned from the distant point to the transmitting source with sufficient time delay to be received as interference.
- Echo Suppressor** — A device used on a voice grade circuit to suppress the effects of an echo as described above.
- Facsimile** — Graphic material transmitted by optical scanning methods using analog type signals.
- Flow Chart** — A graphic representation of the major steps of work in process.
- FM** — Frequency Modulation, a method of transmission whereby the frequency of the carrier wave is changed to correspond to similar changes in the signal wave.
- Frequency** — The repetition rate of a periodically recurring waveform, commonly stated in cycles, kilo-cycles or mega-cycles.
- Frequency Shift** — System of operation whereby the carrier frequency is shifted up and down from a mean value in accordance with a two-condition signal.
- Half-duplex** — Term used to describe the condition existing when signals may be alternately transmitted in two directions over the same circuit.
- Kilo** — A prefix meaning one thousand. (e.g. 2.4 Kilobits = 2,400 bits)
- Mega** — A prefix meaning one million (e.g. 1.544 Megabits = 1,544,000 bits)

**GLOSSARY OF TERMS (Cont'd)**

- Millisecond** — One thousandth of a second, abbreviated ms.
- Microsecond** — One millionth of a second.
- Modem** — A contraction formed from the words "modulator" and "demodulator" to describe electronic equipment having both of these capabilities.
- Modulator** — Electronic equipment which converts the binary output of the business machine into an analog tone or frequency for transmission on the line.
- Multiplex** — The process which enables simultaneous transmission of several messages on the same circuit by the modulation of carrier waves.
- Nanosecond** — One billionth of a second. Synonymous with millimicrosecond.
- Parallel Transmission** — Method of transmission in which each bit of a character is sent simultaneously on separate circuits or channels rather than one after another as in serial transmission.
- Parity Bit** — A binary digit appended to an array of bits to make the sum of all the bits always odd or always even. This allows a form of error detection.
- PM** — Phase Modulation, a method of transmission whereby the angle of phase of the carrier wave is varied in accordance with the signal.
- Serial Transmission** — Method of transmission in which each bit of a character is sent sequentially on a single circuit or channel rather than simultaneously as in parallel transmission.
- Synchronous** — A property of transmission where speed of operation is fixed and related to the system involved.
- Switching:**
- Line** — The technique whereby a connection is made between the calling circuit and the called circuit prior to the start of a communication.
- Message** — A technique whereby a message is received from the calling circuit, held until the proper outgoing circuit is available and then retransmitted on the called circuit.
- Store and Forward** — A message is accepted from the sender whenever he offers it, held in a physical store, and forwarded to the receiver whenever he is able to accept it.
- Tape**
- Chaddled** — Fully punched holes.
- Chadless** — Partially punches holes.
- Wideband** — A term usually applied to facilities or circuits whose bandwidths are greater than that required for one voice channel.

**DATAPHONE DIGITAL SERVICE**

**1. DESCRIPTION**

**1.01 SERVICE DESCRIPTION**

**DATAPHONE®** Digital Service provides interstate private line digital communications between major metropolitan areas as filed in Tariff F.C.C. No. 267. It offers two-way simultaneous (duplex) transmission of digital signals at synchronous speeds of 2.4, 4.8, 9.6 and 56 Kbps employing end-to-end digital technology. Both two-station and multi-station service are available.

The offering of DATAPHONE Digital Service is for service 24 hours a day, 7 days a week, with a minimum billing period of one (1) month except that the minimum service period of three months applies to certain items of station equipment.

**Performance and Benefits**

DATAPHONE Digital Service is designed as an end-to-end service offering from business machine interface to business machine interface. DATAPHONE Digital Service uses the same transmission mode as the customer's machine-digital.

Digital transmission means that data travels between the customers terminals using the same language as is used within his terminal. This is the digital language of pulses.

As digital bit streams form the basis of our communications links, the business machine data no longer needs to be converted into an analog form for transmission.

The major advantage in using digital techniques for transmission is that noise and distortion are no longer amplified as in analog transmission. Rather than amplify the digital signal, the signal is regenerated at regular intervals, thus reconstructing new, clean pulses to continue along their way to the customer business machine.

The digital network provides improved performance and reliability because it features digital channels designed for the technical requirements of data transmission. It offers high reliability through automatic protection switching, in service performance monitoring and rapid one man end-to-end testing.

DATAPHONE Digital Service is guaranteed to provide an average performance exceeding 99.5% error-free seconds for operation at all speeds. When DATAPHONE Digital Service is operating at an error performance level which is unsatisfactory to the customer or user and it is determined by the telephone company that the error performance level is below 99.5%, the period of substandard performance will be considered as an interruption and a credit allowance will be made in accordance with the provision of Tariffs F.C.C. No. 267.

## **1.02 DEFINITIONS**

### **Channel Service Unit (CSU)**

When the customer elects to provide his own equipment to perform the functions of the DSU, the telephone company provides a CSU as part of the Digital Access Line to provide network protection and remote loop back testing capability.

### **Data Service Unit (DSU)**

A DSU is provided at a customer premises to perform such function as:

- Proper coding and decoding of signals.
- Time Recovery.
- Synchronous sampling
- Formatting.
- Generation and recognition of control signals.

### **Digital Station Terminal**

Denotes a path for digital transmission furnished within the Serving Area of a digital city between the Principal Telephone Company Central Office and the customer's or user's premises.

### **Digital City**

Denotes a city in which a Principal Telephone Company Central Office is located and serves a specific geographic area for DATAPHONE Digital service.

### **Digital City Rate Center**

The term "Digital City Rate Center" for DATAPHONE Digital Service is a specified geographical location in a Digital city from which mileage measurements are determined for the application of channel and Digital Access Line Mileage rates.

### **Digital City Serving Area**

Denotes a specific geographic area served in and around a Digital City.

### **Principal Telephone Company Central Office**

Denotes the central office in a Digital City to which Digital Access Lines in a specific geographic area are routed and where access is provided to such lines and associated equipment for testing purposes.

## **CONNECTION OF OTHER SERVICES**

- (A) DATAPHONE Digital Service may be connected at the customers premises to:
- (a) Type 3002, 5302, 5032 and 8302 channels for transmission speeds of 2.4, 4.8 and 9.6 kbps.
  - (b) Type 5701, 5756, 8801 and 8856 for transmission at 56 kbps.
  - (c) Local and toll central office lines and WATS access lines subject to regulations set forth in Tariffs on file with Local Regulatory bodies, and this Company's Tariff F.C.C. Nos. 259

and 263. The function of Network Control signalling shall be performed by equipment installed, furnished and maintained by the Telephone Company.

- (d) Communications systems provided by the customer or other suppliers.
- (e) Some customer provided equipment both synchronous and asynchronous below 2.4 Kbps can directly interface the Data Service Unit (DSU), possibly through modification of the Data Terminal Equipment (DTE). Sub 2.4 Kbps asynchronous data terminals, with an EIA-RS 232-C (Type E) interface can directly interface with the DSU through the use of blind sampling which does not require any additional equipment. Blind sampling produces distortion that is related to the ratio (in percent) of the sampled data rate to the DDS rate (e.g., operation of a 300 b/s terminal into a 2.4Kb/s DDS channel would result in a ratio of  $300 \div 2400 \times 100 = 12.5\%$ ). A ratio of up to 25% is expected to provide good DTE — error performance, but the customers DTE supplier is responsible for accommodating the distortion. Also, some software changes may be required at the customers terminal.

All connections specified in (a) thru (e) must be made at the customer's premises and by means of equipment provided by the customer.

(B) DATAPHONE Digital Service may be connected at a Principal Telephone Company Central Office to a private line service as follows to:

- (1) A Type 3002, Type 5032 or Type 8302 channel by means of an Analog/Digital Adaptor.
- (2) A wideband channel utilizing the appropriate Type 5756 or Type 8856 service terminals.

When a DATAPHONE Digital Service is connected to a private line service as described in (1) and (2) above the performance guarantee specified in 2.2.1 preceding will apply for transmission between digital stations only.

**2. GENERAL**

**2.01 DATAPHONE® Digital Service is provided between Digital Cities under the rates and regulations of Tariff F.C.C. No. 267.**

Service is provided between the following Digital Cities under the rates and regulations of Tariff F.C.C. No. 267:

Atlanta, Ga.	Miami, Fl.
Baltimore, Md.	Milwaukee, Wi.
Boston, Mass.	Minneapolis, Mi.
Chicago, Ill.	New Haven, Ct.
Cleveland, Oh.	Newark, N.J.
Dallas, Tx.	New York, N.Y.
Denver, Co.	Philadelphia, Pa.
Detroit, Mi.	Pittsburgh, Pa.
Hartford, Ct.	Portland, Or.
Houston, Tx.	St. Louis, Mo.
Kansas City, Mo.	San Francisco, Ca.
Los Angeles, Ca.	Washington, D.C.

**2.02 Area codes and central office codes designating the specific areas of all the Digital Cities to which service is available are contained in Tariff F.C.C. No. 267. Generally the customer's area and NNX code of his local telephone service can be used to determine DATAPHONE Digital Service availability in his location.**

**3. DATA SERVICE UNIT**

**3.01** When ordering DATAPHONE Digital Service, customer specified options are required for either the Data Service Unit or the Channel Service Unit. Following is the option table for the DSU and CSU for 2.4, 4.8, 9.6 and 56 Kbps service.

**CUSTOMER OPTIONS FOR THE  
DSU AND CSU**

DECISION	OPTION	DESIGNATION	
		DSU	CSU
A	1. Continuous request to send	YS	NA*
	2. Switched request to send	YT	NA*
B	3. Signal ground to frame ground	YK	YK
	4. Signal ground disconnected from frame ground	YL	YL
C #	5. Loop-back switch and indicator lamps on front	XN	NA*
	6. Loop-back switch and indicator lamps on rear	XM	NA*

\* Not applicable

# For single station or stacked multiple station installations, either decision C5 or C6 may be chosen. For multiple station installations using the 48A data mounting, decision C6 must always be provided.

Note: Use table below to determine the proper Digital Station Terminal USOC Suffix

**UNIVERSAL SUFFIX TABLE  
BSP 590-000-100**

USOC SUFFIX	A	B	C	D	E	F
01	1	3	5	7	9	11
02	2	3	5	7	9	11
03	1	4	5	7	9	11
04	2	4	5	7	9	11
05	1	3	6	7	9	11
06	2	3	6	7	9	11
07	1	4	6	7	9	11
08	2	4	6	7	9	11

Use of Universal Suffix Table to Encode the USOC Suffix

**TO ENCODE**

1. As the choice is made for each decision (A, B, etc.) for the USOC involved, make a note of the option number, eg.,
 

(a)	A-2 B-3 C-6 D-7 E-9 F-12	(b)	A-1 B-3 C-5
-----	---	-----	-------------------
  
2. At the top of the Universal USOC Suffix Table, find the letter for the decision under which the last choice of option was made; eg. in 1. (a) above, the last choice of option was made under decision F, and in 1. (b) it was made under decision C.
  
3. Under the decision letter selected in 2. and working down from the top, find the first appearance of the option numeral selected. Moving to the left one column, move down to the numeral that corresponds to the next letter decision (a reverse alphabetical order). The numeral being selected should always lie on the same line or on a lower line than the previous numeral selected. This process is continued to column A. The USOC suffix applicable to the various choices made is found in the number column immediately to the left of the A option number; eg. in 1. (a) above, the USOC suffix is 38, in 1. (b) it is 01.

**SECTION 4  
PART 2, PAGE 6**

**Rate information is not complete. Use TARIFFS for customer quotations.**

**SERVICE FOR TRANSMISSION SPEED OF 2.4, 4.8, 9.6 or 56 Kbps**

**4.01 GENERAL**

The rates and charges specified in this section apply for all services involving Digital City Serving Areas within Bell Company serving territories and also for services involving Digital City Serving Areas within non-Bell Company serving territories to the extent specified in Tariff F.C.C. No 267.

**4.02 CHANNELS BETWEEN DIGITAL CITIES**

The rates set forth below apply for each two-point channel section furnished between Digital City Rate Centers listed in Tariff F.C.C. No 267.

**For Transmission Speed of 2.4, 4.8 or 9.6 Kbps**

Per airline mile, per month

<u>Mileage</u>	<u>Charge</u>		
1	\$ 51.00		
2-14	\$ 51.00	+ \$1.80 for each mile over	1 mile
15	\$ 76.20		
16-24	\$ 76.20	+ \$1.50 for each mile over	15 miles
25	\$ 91.20		
26-99	\$ 91.20	+ \$1.12 for each mile over	25 miles
100	\$175.20		
101-999	\$175.20	+ \$ .66 for each mile over	100 miles
1000	\$769.20		
over 1000	\$769.20	+ \$ .40 for each mile over	1000 miles

**The following lists USOC's for Channels**

2.4 Kbps	1L7EW
4.8 Kbps	1L7FW
9.6 Kbps	1L7GW

**For Transmission Speed of 56 Kbps**

Per airline mile, per month (USOC 1L7HW)

<u>Mileage</u>	<u>Charge</u>		
1	\$ 255.00		
2-14	\$ 255.00	+ \$9.00 for each mile over	1 mile
15	\$ 381.00		
16-24	\$ 381.00	+ \$7.50 for each mile over	15 miles
25	\$ 456.00		
26-99	\$ 456.00	+ \$5.60 for each mile over	25 miles
100	\$ 876.00		
101-999	\$ 876.00	+ \$3.30 for each mile over	100 miles
1000	\$3846.00		
over 1000	\$3846.00	+ \$2.00 for each mile over	1000 miles



**4.03 DIGITAL STATION TERMINALS IN DIGITAL CITY SERVING AREAS**

The rates set forth below apply for Digital Station Terminals terminated at stations in Digital City Serving Areas.

The following rates apply for each Digital Station Terminal where the DSU is furnished by the Telephone Company.

<u>For Transmission Speeds of:</u>	<u>Monthly Charge</u>	<u>Non-Recurring Charge</u>	<u>USOC</u>
2.4 Kbps	\$ 84.55	\$128.75	DF1
4.8 Kbps	\$160.00	\$128.75	DF5
9.6 Kbps	\$281.33	\$128.75	DF8
56 Kbps	\$650.00	\$180.75	DF9

The following rates apply for each Digital Station Terminal where the DSU or equivalent is furnished by the customer or user.

<u>For Transmission Speeds of:</u>	<u>Monthly Charge</u>	<u>Non-Recurring Charge</u>	<u>USOC</u>
2.4 Kbps	\$ 69.10	\$103.00	DJC
4.8 Kbps	\$144.55	\$103.00	DJF
9.6 Kbps	\$265.88	\$103.00	DJG
56 Kbps	\$629.40	\$155.0	DJH

**4**

The following rates apply for each Digital Station Terminal which is terminated at a Principal Telephone Company Central Office for the purpose of connecting to an analog/digital adaptor furnished under Tariff F.C.C. No. 260.

<u>For Transmission Speeds of:</u>	<u>Monthly Charge</u>	<u>Non-Recurring Charge</u>	<u>USOC</u>
2.4 Kbps	\$ 25.00	\$103.00	DFE
4.8 Kbps	\$ 25.00	\$103.00	DFG
9.6 Kbps	\$ 32.33	\$103.00	DFM
56 Kbps	\$125.00	\$155.00	DFP

**Move Charges**

When a Digital Station Terminal is moved to a new location on the same premises, one half the non-recurring charge applies.

When a Digital Station Terminal is moved to a new location on a different premises, the non-recurring charge applies.

**4.04 MAINTENANCE OF SERVICE CHARGE**

Maintenance visit charge.

Each visit - \$25.75

**SECTION 4  
PART 2, PAGE 8**

**Rate information is not  
complete. Use TARIFFS  
for customer quotations.**

**5. DIGITAL ACCESS LINE PROTECTION ARRANGEMENT (DALPA)**

**5.01 DESCRIPTION**

Each Digital Access Line Protection Arrangement protects the DAL's of up to four working circuits operating at the same transmission speed. The DALPA will provide protection on *only* the loop cable pairs (baseband portion) of the DAL's connected to it. The customer can select and automatically transfer both ends of the loop cable pairs on a working circuit over to the protection pairs with this arrangement.

**5.02 RATES**

	<b>Monthly Charge</b>	<b>Non-recurring Charge</b>	<b>USOC</b>
DALPA			
for speeds of 2.4, 4.8, or 9.6 Kbps —per arrangement	\$195.00	\$400.00	D4J
for speeds of 56 Kbps —per arrangement	240.00	400.00	D4R

DAL's added to an arrangement subsequent to its initial installation will be subject to a non-recurring charge of \$60.00 per DAL.

**6. SPLIT STREAM UNIT (SSU)**

**6.01 DESCRIPTION**

The Split Stream Unit is a multiplexor which can be utilized with DATAPHONE Digital Service operating at 2.4, 4.8 or 9.6 KBPS. The Split Stream Unit will create up to four synchronous DATA Bit Streams to provide DATA service in various speed combinations ranging from 600 to 9600 BPS depending on the operating speed of the line.

It is similar to the Type 209 DATA set in that the customer or user can select various combinations of DATA speeds up to the maximum capability of the line. However, unlike the Type 209 DATA set the first multiplexed channel cannot be extended since it does not operate at full speed (up to 10 BPS of the first channel are utilized to keep the units in sync).

**6.02 RATES**

	Charges		USOC
	Monthly	Non-Recurring	
<p>For use with a DATAPHONE Digital Service operating at 2.4, 4.8 or 9.6 KBPS to create up to four synchronous DATA bit streams and provide DATA service in various combinations of sub-multiples of the operating speed of the DATAPHONE® Digital Service. Requires the use of two split stream units and a DATAPHONE® Digital Service equipped with equipment provided by the telephone company as described in 2.2.4 (B) (2) of Tariff F.C.C. No. 267</p>			
—per unit	\$110.00	\$150.00	DH6

**7. ANALOG/DIGITAL CONNECTIONS**

**7.01 DESCRIPTION**

Analog/Digital Adaptors provide for the connection at a Principal Telephone Company Central Office of Type 3002, 5032, 5302 or 8302 channels and DATAPHONE Digital Services operating at 2.4, 4.8 or 9.6 KBPS. Each such channel connected to a DATAPHONE Digital Service requires an Analog/Digital Adaptor.

Note: No Analog/Digital Adaptor is required for service at 56KBPS because the required equipment is provided as part of the 56 KBPS Service Terminal provided at the Principal Telephone Company Central Office. Type 5758 or 8856 Service Terminal - USOC VTA)

A Type/Digital Access Line (USOC DDB, DDE, DDF or DDG) is required to serve stations which are located at the Principal Telephone Company Central Office for the purpose of connecting to private line services furnished under Tariff F.C.C. No. 260. This applies to all speeds.

Circuit Arrangements (See Arrangements 1-3)

The Analog/Digital Adaptor makes possible the combination of two separate services:

1. A complete analog circuit designed according to existing rules for analog circuits and
2. A complete DDS circuit.

The A/D Adaptor provides interface compatibility for control signals and retiming for data signals.

**SECTION 4  
PART 2, PAGE 10**

**Rate information is not complete. Use TARIFFS for customer quotations.**

**7.02 RATES**

	<b>Monthly</b>	<b>Charges Installation</b>	<b>USOC</b>
<b>Analog/Digital Adaptor</b>			
Furnished by the Telephone Company at a Principal Telephone Company Central Office to provide for the connection, as specified in 2.6.4 of a private line service and a DATAPHONE Digital Service operating at a transmission speed of 2.4, 4.8 or 9.6 Kilobits per second.			
Per adaptor providing connection to a DATAPHONE Digital Service operating at 2.4 Kilobits per second	\$150.00	None	DDH
Per adaptor providing connection to a DATAPHONE Digital Service operating at 4.8 Kilobits per second	\$190.00	None	DDK
Per adaptor providing connection to a DATAPHONE Digital Service operating at 9.6 Kilobits per second. (Requires a channel equipped with High Performance Data Conditioning-Type D1 or D2 as specified in 3.4)	\$300.00	None	DDM

**8. MISCELLANEOUS EQUIPMENT**

	<b>Mo. CHG</b>	<b>USOC</b>
— Multiple Access Interface Unit	\$34.00	D4A
— Duoplexor	\$240.00	DH9
— Data Terminal Switch	\$11.00	D2E
— Other Terminal Equipment		
— The type 33 and 35 teletypewriters will operate on 2.4 KBPS service using D9Q interface converter and the technique of blind sampling.		
— The synchronous DATASPEED® 40 will operate at 2.4 and 4.8 KBPS with standard EIA interface.		

#### DATA SERVICE UNITS

**Data Rate** — 2400, 4800 or 9600 bits per second

**Interface Signal Requirements** — EIA RS-232-C

**Principal Operating Mode** — Duplex

**Data Terminal Connector** — 25-pin (CINCH, CANNON or equivalent Type DB-19604-432 plug with DB-51226-1 hood).

**Control Functions** — Request — TO — Send/Clear — TO — Send delay:

8 ± 0.4 ms at 2400 b/s

4 ± 0.2 ms at 4800 b/s

2 ± 0.1 ms at 9600 b/s

**Dimensions** — Approximately 11½" wide, 10½" deep, 4" high.

**AC power** — 105-129V, 60 ± 3Hz, approximately 15 watts.

**Weight** — Approximately 10 lbs.

For more information, refer to Bell System Data Communications Technical Reference, "Digital Data System — Data Service Unit Interface Specifications" (PUB 41450).



**DATA SERVICE UNIT**

**Data Rate** — 56,000 bits per second

**Interface Signal Requirements** — Timing and data signals.  
Balanced CCITT  
Recommendation V.35  
Control signals: EIA RS-232-C

**Principal Operating Mode** — Duplex (Halfplex and one-way operation also possible).

**Data Terminal Connector** — 34-pin (Winchester type MRA-34P-JCT 6-H8 plug or equivalent).

**Control Functions** — Request-to — Send/Clear — to — Send delay:  
.4 ± .02 ms

**Dimensions** — Approximately 11½" wide, 10½" deep, 4" high

**AC Power** — 105 — 129V, 60 ± 3Hz, approximately 15 watts

**Weight** — Approximately 10 lbs.

For more information, refer to Bell System Data Communications Technical Reference, "Digital Data System — Data Service Unit Interface Specifications" (PUB 41450).



**DATASPEED® 40**

The DATASPEED 40 Terminal provides facilities for entering, storing, displaying, editing, printing, and sending and receiving data in a communications system. This terminal provides high speed, (1050 or 1200 baud) quiet operation, low maintenance, modular design, and modern and versatile styling.

Data is displayed on a cathode ray tube (CRT) where it can be easily changed by means of simple editing controls. Individual characters and lines of characters can be displayed, replaced, deleted, or inserted with ease and efficiency. Data is prepared prior to transmission; therefore transmissions are fast and accurate. Fast because data proceeds at maximum terminal speed and accurate because data is seen in its entirety and edited before it is sent.

Features and Benefits of DATASPEED 40

- Batch Communications — Provides terminal to computer communications with delayed responses to single or multi-messages.
- Rapid Input-Output — Provides faster exchange of information and decreases line usage by providing 1050 or 1200 BPS transmission.
- Big Screen w/Tube Tilt — Large screen provides easy viewing. Reduces glare from nearby lighting by providing tube tilt backwards or forwards.
- Brightness Control-Large Print — Provides a character size which is 35% larger than a standard printout size and it's refreshed 60 times per second to provide flicker free viewing. The character intensity can be increased or decreased for easier viewing.
- Large Vocabulary — Provides the full 96ASCII character set plus 31 controls on a 24 line screen with an 80 character line capacity.
- Easy Editing — Accuracy of copy can be verified and corrected prior to transmission with ease and efficiency.
- Parity Error Indication — Provides the ability to spot errors quickly and make immediate corrections.
- Scrolling — Provides the ability to view 24 consecutive lines at a time, from anywhere in the 48 or 72 line storage.
- Built in Diagnostics — Modular design, circuit cards, and intrinsic test procedures enable maintenance forces to isolate and clear service difficulties quickly.

Optional Features

- 48 or 72 Line Data Storage — Provides increased capacity to the display memory.
- Additional Editing Features (Provided as a group)

- \*Tabbing — Tabs can be set or cleared on any line without affecting the previous line.
  - \*Highlighting — Highlighting certain information can be used to pass instructions from one terminal to another and for ready reference.
  - \*Protected Format — Protected data will remain after other data is cleared. This provides the advantage of preprinted forms or master tapes.
  - \*Substitute Character on Parity Error — Increases editing efficiency, substitute characters stand out.
- \*These Features are provided as a group when "Additional Editing Features" are ordered.
- Printer Features — Standard 10 Characters per Inch and 6 or 3 Lines per Inch — Operator Selectable. Existing forms or paper stock can be utilized.
  - Printing Method Unique — Provides high speed operation without losing character clarity.
  - Choice of character Set — Full 94ASCII set of characters or 63 character monospace set.
  - Rapid Printout Rate — Provides high speed printout of approximately 314 or 220 Lines per minute.
  - Automatic New Line — Prevents loss of characters from pile-up if "New Line" function is not transmitted or distorted.
  - Data Stacking — Prevents loss of data when a line is too short by reformatting data into a line length sufficient to permit the printer to go to a new line and still keep up with the input.
  - Automatic Paper Feed on Disconnect or ETX — Saves the sender the time and trouble of typing line feeds at the end of a message. Assures proper number of line feeds.
  - Two Line Buffer — Prevents lag in printing by storing receive data in one buffer while the other is printing.
  - Test Character Generator — Permits testing printer mechanism line by line.
  - Parity Check on Roll Call and Message Waiting Alarm — Permits post message recall for message accuracy and audible alarm to call operator when message waiting and terminal is in non-receive mode.

Description:

There are four possible station configurations equipped with pedestal.

1. Keyboard Display (KD)
2. Keyboard Display, and Printer under Display (KDP)
3. Receive Only Printer (ROP)
4. Keyboard Display and Adjacent (on the same pedestal) Printer (KDP)

Components

**Keyboard:** manual data preparation is greatly simplified by providing an uncomplicated operator console. Data entry key, editing keys, and data communications keys are clearly separated from one another for ease and efficiency.



**Display Device:** This is a Cathode Ray Tube capable of displaying 24 lines of 80 characters each. A tube tilt helps reduce glare from nearby lighting and a brightness control gives the operator the ability to increase or decrease the character intensity. Options available in the Display Device are Scrolling, Tabbing, Highlighting, Protected Format and Increased Memory Capacity to 48 or 72 lines.

**Printer:** The DATASPEED 40 printer module prints characters by means of individual type pallets on a revolving belt. This method provides high speed printing without loss of character clarity. Printing is standard 10 character per inch and 6 or 3 lines per inch. The full ASCII printer prints approximately 220 lines per minute while monospace ASCII provides approximately 314 lines per minute.

**Pedestal:** The station arrangements require pedestals which provide AC distribution plus mounting facilities for the Selective Calling Station Controller. The 202 Data Set may be mounted in or on pedestal.

**Keyboard Display — KD (4TC):** Consists of a Display Device, Operator Console and Controller. A pedestal is provided to mount the Selective Calling Station Arrangement (DJO). The Data Set 202 may be mounted in or on the pedestal. The Display Terminal and/or the data set are normally associated with the pedestal although it is possible to mount them up to 50 cable feet from the pedestal and Selective Calling Station Arrangement. This arrangement will provide half-duplex operation with sending from and receiving on the Display Device.

**Keyboard, Display and Printer (KDP):** consists of a Display Device, Operator Console, Printer, and Controller. The printer is mounted below the display device to form a compact arrangement (4TF). Some applications may make it desirable to split the printer away from the display device. In these cases the printer is mounted to the right of the display terminal (4TH). These arrangements (4TF and 4TH) will provide a Selective Calling Station with sending from and receiving on the display device with or without hard copy. The printer may receive on line while the KD portion is in the local mode preparing a message for sending. The KD may also send local to the printer. This arrangement provides half-duplex send and receive operation. Station

operates half-duplex. Circuit (System) may be arranged for simultaneous pick-up and delivery from different stations.

**Receive Only Printer (4TG) (ROP):** consists of a Printer, Controller and Key and Lamp Strip. In this arrangement both the Printer, Controller, and selective calling station (DJO) are mounted in the pedestal. A 1000 character buffer is available as an optional feature with the ROP.

**Additional Station Arrangements:** The four basic station arrangements may be combined to form additional system configurations. **Keyboard Display (4TC) with a Receive Only Printer (4TG):** In order to provide this arrangement a circuit card TP410770 (4TJ) is required. The physical arrangement is a combination of a separately ordered KD and ROP. The single selective calling station arrangement (DJO) and data set are associated with the KD. Since the connection between the ROP and KD is EIA, RS232C, the two terminals can be no more than 50 feet apart. This arrangement provides selective calling stations with sending from and receiving on the display device with or without hard copy. The printer may receive on line while the KD is in the local mode preparing a message for transmission (the KD cannot receive traffic). The KD may also send local to the printer. This arrangement is used in half-duplex operations.

**NOTE:** This arrangement is the equivalent of a KDP configuration except when the ROP is equipped with the optional 1000 character buffer. In this case, short lines will not be a consideration. Any difference in terminal input speed and printing speed are handled by the buffer.

**Keyboard Display (4TC) and Receive Only Printer (4TG):** In this full duplex arrangement the KD and ROP share the interface of the Selective Calling Station Arrangement (DJO) through the use of a "Y" cable. The ROP can be on line receiving while the KD can be local or sending on line. There can be no print local or print on line copy of the text sent from the display. A 1000 character buffer may be optionally provided on the ROP.

**Keyboard Display and Printer (4TF or 4TH) with a Receive Only Printer (4TG):** This full-duplex arrangement (KDP & ROP) is the same as the KD and ROP arrangement except that the KDP unit on the send side will provide a hard copy of data transmitted from the display terminal.

**Optional Features**

**Expanded Storage Capacity for KD and KDP (4T1 — 4T2):** The basic storage capacity of the Display Terminal is 24 lines of 80 characters each. This capacity may be optionally increased to 48 lines (4T1) or 72 lines (4T2).

**Arrangement to Provide Additional Editing Features:**

The additional editing features provided are:

1. Protected Format
2. Horizontal Tabulation
3. Highlighting
4. Substitute Character on Parity Error
5. Message Preparation Alarm

Three codes are assigned to this arrangement, one for each type of line capacity storage.

- 24 line — 4T3
- 48 line — 4T4
- 72 line — 4T5

When a selective calling station arrangement (DJO) is ordered, one of the above arrangements must be provided. This is due to both the Additional Editing Features and the Selective Calling Arrangements using a common terminal controller.

**Character Storage (4T9):** This arrangement permits storage of 1000 characters for the Page Printer. This feature of the ROP is used to handle random short lines and thus reduce the necessity of data stacking.

**Selective Calling Station Arrangement (DJO):**The DATASPEED 40 Selective Calling Arrangement is used in store and forward operations. A customer provided communications processor is required to provide line control functions and store and forward capability. All transmission is to and from the processor. No provision is made for terminals to communicate with each other directly.

**Features of the Selective Calling Station Arrangement:**

1. The terminal operates noiselessly when responding to line control signals.
2. Motor control permits the printer motor to be off until selected to receive.
3. A signal regenerator that provides less than 5% send distortion and reception of signals with up to 45% distortion.
4. Transmission at 1200 bps or 1050 bps.
5. Half duplex or full duplex operation.
6. Unique response to stations TSC or CDC.

**Control Procedures:** Stations respond as senders when the processor polls them with their Transmitter Start Code (TSC). If the station has traffic to send it responds with the message; otherwise it will respond with a no traffic response. The line controller selects a receiver by transmitting the receiver's Call Directing Code (CDC) and waits for an answer back. All control characters should be even parity and in all cases, characters which could be readily generated by a hit on the signal line (such as NULL, DEL), should not be used.

**Transmitter Start Codes (TSC):** TSC's are comprised of two characters, the first character preferably being DC3 and the second from columns 2 thru 7 of the ASCII code chart.

**Call Directing Code (CDC):** Consists of two programmable characters from columns 2 thru 7 of the ASCII code chart followed optionally by Delete (DEL). Even though the Selective Calling Station Arrangement (DJO) may optionally recognize a single character CDC, it is not recommended.

**Responses to TSC and CDC**

1. If a station has traffic to send, it responds with that traffic when it recognizes its TSC.
2. If the station has no traffic to send but is Ready to Receive, the station responds with a two programmable character alpha sequence (AB BC etc.) Although the CDC had not been sent, the Communications Processor has been informed that the outlying station is ready to receive.
3. If a message is to be sent to an outlying station and the station is ready to receive, the same response as in two (2) above is sent when the station receives its CDC.
4. The sequence « (double reverse slash) or other repeated character is a Not Ready to Receive response to a CDC. It may be optionally sent as the No Traffic — Not Ready to Receive response to a TSC. When used in this manner the processor is aware the station cannot receive although the station's CDC has not been sent.

**Start of Text (STX):** On receipt of STX, all selected stations begin copying and every station, selected or not, stops monitoring for its CDC and TSC.

**End of Transmission (EOT):** This code is sent by the station as the last character in the transmission and it turns the station off. EOT is sent by the processor after each message to free the receivers that were called in and to place all stations in a select mode so they can monitor the line for CDC and TSC

**Delete (DEL):** Sent by processor after a line break to allow all stations to get back in synchronism with the signal line. It is also sent after the CDC for time fill purposes.

**Not Ready to Receive — Ready to Transmit:** A unique programmable character sent twice (\*\*recommended) may be sent in response to a CDC if the station can not receive but has a message ready to transmit. This alerts the processor to the situation it will react according to system protocol.

**Interrupt Code:** When recognized by the outlying station it will cause a sender to stop and blind selected receivers. Stations not selected will be put in the select mode. It is used in full duplex systems to stop a sender so that a receiver may be called in. This feature assures maximum use of full duplex facilities. The character used for interrupt is optional but should be a control character.

**Polling:** Stations are polled sequentially with a two character TSC generated by the line controller. The processor controls all polling functions in accordance with its program. It is recommended that the processor be capable of reduced polling of light traffic stations to increase system efficiency. The processor may poll continuously while the system is on or it may enter into rest periods from time to time if there are periods of slack volume.

**Sending:** Messages are sent to the processor prefaced by a variable heading containing destination information. If the message is to be forwarded, this information may be the actual CDC of the destination or if the system programming permits, descriptive sequences which could be converted by the processor into a CDC or CDC's.

**Receiving:** Each station can detect two CDC's each of which may be the individual group or broadcast type. When a group or broadcast type CDC is used, only one station on the circuit should be programmed to respond. This will prevent garbling.

**Simultaneous:** The processor, while receiving a message, may interrupt this message and select another station as a receiver. Transmission of the interrupt character by the processor stops the sending station. The processor then sends the CDC of the station it wishes to send to. Upon receipt of the proper response, the processor will start sending. When the STX character is detected, the station that was originally sending will resume transmitting.

**SECTION 4  
PART 3, PAGE 6**

**Rate information is not  
complete. Use TARIFFS  
for customer quotations.**

**Transmission Interrupt:** Should the data received at the processor contain parity errors or be improperly formatted, the processor may elect to send a line break. This condition will be detected by the outlying station controller (DJO) and force the station into the receive mode. At this time, the processor should generate that station's CDC and send STX followed by an alarm message and ended with EOT which will put that station into the local mode.

**DATASPEED® 40 — ASYNCHRONOUS**

<b>Tariff Item</b>	<b>Install</b>	<b>Charges Monthly</b>	<b>USOC</b>
F.C.C. No. 260, Page 179.2			
For use on Type 2001 and 3002 Channels (DATASPEED Equipment)			
DATASPEED 40 Data Communications Terminal Equipment 8-level Sending and/or Receiving Equipment suitable for transmission at speeds of 1050 or 1200 words per minute			
Combined sending and receiving, includes 24 x 80 character display and storage, basic editing features Keyboard Display with Pedestal (KD)	\$175.00	\$139.00	4TC
Combined sending and receiving, includes 24 x 80 character display and storage, basic editing features, friction feed line-at-a-time impact printer - Keyboard Display and Printer under Display with Pedestal (KDP)	\$201.00	\$211.00	4TF
- Keyboard Display and Adjacent Printer with Pedestal (KDP)	\$201.00	\$211.00	4TH
Arrangement for use with KD or KDP to permit expanded storage			
- for a total of 48 x 80 characters	\$ 41.20φ	\$ 10.30	4T1
- for a total of 72 x 80 characters	\$ 41.20φ	\$ 20.60	4T2
Arrangements for use with KD or KDP to provide additional editing features, includes protected format, substitute character, message preparation alarm, horizontal tabulation and high-lighting, for sets equipped with			
- 24 x 80 characters storage	\$103.00φ	\$ 18.55	4T3
- 48 x 80 characters storage	\$103.00φ	\$ 21.65	4T4
- 72 x 80 characters storage	\$103.00φ	\$ 24.70	4T5
(One of the above arrangements must be provided when Selective Calling Station Arrangement (USOC-DJO) is used.)			
Receive Only Printer with Pedestal, friction feed, line-at-a-time, impact printer (ROP)	\$149.00	\$129.00	4TG
Arrangement to permit 1000 character storage for Receive Only Printer	\$103.00φ	\$ 10.30	4T9
Arrangement to connect a KD to a Wide Platen Printer or an ROP (required only where connection is made directly to KD)	\$155.00φ	\$ 7.20	4TJ

φ See 4.1 of Tariff for application.

**SECTION 4  
PART 3, PAGE 8**

**Rate information is not  
complete. Use TARIFFS  
for customer quotations.**

<b>TARIFF ITEM (Cont'd)</b> F.C.C. No. 260, Page 179.2	<b>Install</b>	<b>Charges Monthly</b>	<b>USOC</b>
<b>Selective Calling Station Arrangement</b> Responds to signals sent from a customer-provided line controller for the control of DATASPEED 40 <b>Data Communications Terminal Equipment</b> * (When installed subsequent to the initial installation of the DATASPEED 40 Data Communications Terminal Equipment with which it is associated, an additional charge, equal to the installation charge of the DATASPEED 40 Data Communications Terminal Equipment, will apply)	None*	\$ 61.80	DJO
Individual Receiver Selection for use with a KD or ROP	\$100.00	\$ 33.00	DJX
Third call directing code recognition	\$ 41.20 $\phi$	\$ 3.10	DJB
Message waiting alarm and parity check on roll call (for use with Selective Calling Station Arrangement)	\$ 41.20	\$ 5.15	DJ8
<b>Item selector for use with an ROP</b> Responds to two types of alpha/numeric codes to permit an ROP to receive signals from the line at 1200 words per minute. - For each subsequent code change	\$361.00 \$391.00	\$108.00	4TS
$\phi$ See 4.1 of tariff for application.			

**DATASPEED® 40 — MISCELLANEOUS EQUIPMENT  
(Asynchronous or Synchronous)**

Tariff Item	Charges		USOC
	Install	Monthly	
F.C.C. No. 260, Page 180-1 F.C.C. No. 267, Page 27.1			
For use with DATASPEED 40			
Data Communications Terminal Equipment			
Tractor feed feature for use with a Printer, ROP or KDP	None*	\$ 23.70	4TL
* (When installed subsequent to the initial installation of the Printer, ROP or KDP, an additional charge equal to the installation charge of the Printer, ROP or KDP will apply).			
Additional pedestal	\$ 41.20φ	\$ 7.20	4TM
Paper accumulating rack	\$ 41.20φ	\$ 1.30	4TN
Paper winder	\$ 41.20φ	\$ 6.70	4T7
Copy holder	\$ 41.20φ	\$ 2.85	4T8
Arrangement to permit a Printer, ROP or KDP to accommodate grade B, 16 pound, 3 ply rolled paper with 8 or 10 pound carbon paper interleaved and single copy fanfold paper	\$ 40.00φ	\$ 10.00	4PP
Wide Platen Printer Provides 132 columns of printing with tractor feed. (Required a KD (USOC-4TC) and connect arrangement (USOC-4TJ) or a Device Cluster Controller or a Mini-Cluster Controller).	\$165.00	\$175.00	4ST

φ See 4.1 of Tariff for application.

**SYNCHRONOUS DATASPEED® 40/4**

Synchronous DATASPEED 40/4 terminals interface with 201 or 208 type data sets on 4 wire voice grade channels or with appropriate DSU's on 2400 or 4800 bps DATAPHONE Digital Service. Synchronous transmission may be either of the ASCII or Extended Binary Coded Decimal Interchange Code (EBCDIC), depending upon the customer's requirements.

Application of the asynchronous model of the DATASPEED® 40 was in an environment most suited for teletypewriter application and a multiplicity of features and options were available. The synchronous model however, is directed toward that segment of the market having existing software suitable for a specific environment and so has only six (6) options available. The options concern station terminal numbering, type of alarm signal, highlight field intensity, control of abort procedure and numeric field override. **No further options are available.** For example, even the select and poll codes are fixed.

A series of controllers has been added which include functions of the display logic model in addition to synchronous line control and clustering capabilities. These controllers interact with a line control unit (LCU). The LCU controls one or more private lines; each line contains one or more Station Cluster Controllers (SCC's), each of which shall support one or more Device Cluster Controllers (DCC's), each of which support one or more Keyboard/Display or Printer devices. "Mini" controllers (MCC's) combining the function of the SCC and DCC in one unit may also be used. Communications on the line are entirely controlled by the LCU by polling and selection; no station-to-station message transfer can occur.

**Controllers —**

Three controllers are available; a Station Cluster Controller (SCC) a Device Cluster Controller (DCC) and a Mini-Cluster Controller (MCC).

- Station Cluster Controller (SCC) USOC's 4TT and 4TU — The SCC handles polling and selection requests from the remote LCU and generates appropriate responses. It also controls formatting of data from the Device Cluster Controller (DCC) with which it is associated and performs error checking functions.

USOC 4TT permits control of the first four DCC's, USOC 4TU permits control of two additional DCC's. Therefore, each SCC can interface up to 6 DCC's, each of which can be located up to 2000 cable feet from the SCC.

The SCC provides an EIA RS-232C data set interface and is compatible with Western Electric 201 and 208 series Data Sets or equivalent devices.

- Device Cluster Controller (DCC) USOC's 4TV and 4TW — The DCC provides control and interfaces ports for devices (KD's or Printers) and interfaces with a Station Cluster Controller.

USOC 4TV permits control of up to a maximum of two devices; USOC 4TW permits control of four additional devices.

Note: Tariff wording allows ordering a KD and a printer on a DCC without ordering USOC 4TW. It also allows ordering more than two printers (up to 5) on a given DCC. These arrangements are not recommended without conveying to the customer two limitations which result:

- Local Copy feature is not available on the printer if a 4TW is not ordered in the first instance. Local Copy feature will be available only on a maximum of two printers on any DCC arrangement and on only one printer if only one KD is provided on a DCC.
- Local testing of all components of the printer will not be available to the attendant for a printer provided on a DCC without 4TW or on any printers beyond the second one on a DCC.

Keyboard/Displays can be located up to 100 cable feet and Printers up to 2000 cable feet from the DCC or MCC.

- Mini-Cluster Controller (MCC) USOC's 4TX and 4TY — The Mini-Cluster Controller provides an economical single terminal arrangement by combining the functions of the Station Controller and Device Controller into one controller.

USOC 4TX permits control of one KD and up to one printer; USOC 4TY permits control of either one additional KD or one additional printer.



Possible MCC device configurations are a keyboard-display, a keyboard-display with a printer, or two keyboard-displays with a printer. The MCC must be treated as a SCC-DCC combination to the communications line regardless of the terminal configuration selected. Keyboard-displays can be located up to 100 cable feet from the controller; the printer can be located up to 2000 cable feet from the controller. The MCC provides an EIA RS-232C data set interface and is compatible with Western Electric 201 and 208 series data sets or equivalent devices.

- Additional Pedestal
- Every SCC, DCC and MCC requires a separately ordered pedestal (USOC 4TM++). The pedestal top may be used for mounting a KD or Printer as desired. See USOC 4TM++ for available pedestal arrangements.

Information concerning controller numbering, identification on service orders, optioning, ASCII modification and cable length specification are covered in the "CODE APPLICATION" of the appropriate ISM section.

**Devices —**

The Synchronous DATASPEED 40/4 Device can be physically arranged to accommodate a large variety of application configurations. Distance limitations from device to controller may require the ordering of additional controllers.

Technically it is possible to put thirty six devices at one location and thirty two locations on one circuit. In actual practice however, the average location will probably be about eight to ten devices and total locations per circuit will be much less than thirty two.

- Keyboard/Display (KD) USOCs 4TO++, 4TP++

Upper/Lower case USOC 4TQ++

A KD is a device containing both a keyboard (also known as the Operator Console) and Display monitor (unit with CRT tube). The KD may be attached to the controller cabinet (attached - USOC 4TO++) or mounted separately (free-standing - USOC 4TP++)

Data entered on the monitor may be unformatted or formatted into fields defined by the LCU. Possible field choices include : protected or unprotected, numeric or alphanumeric, high or normal intensity, nondisplayed; or any combination thereof. Fields designated as protected by the remote LCU are inaccessible to the terminal operator.

The basic KD (4TO++, 4TP++) is provided with mono-case characters in either EBCDIC or ASCII. USOC 4TQ++ provides Upper/Lower Case characters in either EBCDIC or ASCII; 4TQ++ may be ordered for either the 4TO++ or 4TP++ KD.

An internal numeric cluster keyboard may be ordered with DATASPEED 40/4 service as an optional keyboard arrangement. As described in the aforementioned GL, the new arrangement will facilitate the entry of numeric information; it generates only an EBCDIC, monospace character set.

- Printer (USOC 4TR++)

Hard copy is provided by the printer. USOC 4TR++ is an 80 column line-at-a-time friction feed model, available with monospace or upper/lower case characters in either EBCDIC or ASCII.

Tractor feed may be ordered by using USOC 4TLXD with USOC 4TR++.

**Note:** There will be no printer under a KD. All printers will function as just another device off the controller with the logic contained in the controller.

**SECTION 4  
PART 3, PAGE 12**

**Rate information is not complete. Use TARIFFS for customer quotations.**

**Synchronous DATASPEED® 40/4**

<b>TARIFF ITEM</b>	<b>Install.</b>	<b>Charges Monthly</b>	<b>USOC</b>
F.C.C. No. 260, Page 179.3 For use on 2001 and 3002 Channels			
F.C.C. No. 267, Page 27.1 Suitable for use with services operating at transmission speeds of 2.4 or 4.8 KBPS.			
DATASPEED 40 Data Communication Terminal Equipment 8-Level Sending and/or Receiving Equipment suitable for transmission at speeds of 2400 or 4800 bits per second.			
Keyboard Display (KD) Combined sending and receiving			
Display with cabinet mounted keyboard attached	\$ 50.00	\$ 68.00	4TO
Display with free standing keyboard	50.00	68.00	4TP
Upper/Lower Case	40.00φ	3.00	4TQ
Printer			
Friction Feed	50.00	102.00	4TR
Station Cluster Controller Responds to signals sent from a customer provided line controller. To control up to a maximum of six Device Cluster Controllers (USOC 4TV) (Requires USOC 4TM)			
Control of first four Device Cluster Controllers	100.00	180.00	4TT
Control of two additional Device Cluster Controllers	40.00φ	20.00	4TU
Device Cluster Controller Responds to signals from a Station Cluster Controller to control up to a maximum of 4 KD's (USOC 4TO or 4TP) or 5 Printers (USOC 4TR) consisting of any combination of 6 total devices. (Requires USOC 4TM and at least one 4TO or 4TP)			
Up to a maximum of 2 devices	100.00	157.00	4TV
4 additional devices	40.00φ	33.00	4TW
Mini-Cluster Controller Provides direct device control in response to signals sent from a customer-provided line controller. (Requires USOC 4TM and at least one 4TO or 4TP)			
1 KD and up to 1 Printer	100.00	185.00	4TX
1 additional KD or 1 additional Printer	40.00φ	21.00	4TY

φ - See Tariff for application

**DATA TRANSMISSION  
(Narrow & Voice Band)  
F.C.C. TARIFF 260, ISM. TTGD-2, DATA-2 AND PLTP-2**

**TYPES OF DATA CHANNELS**

**SERIES 1000:** Series 1000 are unconditioned channels capable of transmitting direct current mark-space or binary signals at rates up to 150 bauds. These channels are not suitable for the transmission of alternating current tones; they are furnished for half-duplex or duplex operation on a two-point or multi-point basis. The transmission characteristics and various types of services furnished within this series are:

**ISM TTGD-2**

- Type 1001** — Transmission up to 30 bauds for remote metering, supervisory control and miscellaneous signaling purposes.
- Type 1002** — Transmission up to 55 bauds for teletypewriter, teletypesetter, data or remote metering, supervisory control and miscellaneous signaling purposes, or transmission up to 45 bauds for Morse.
- Type 1003** — Transmission up to 55 bauds for remote operation of radiotelegraph.
- Type 1005** — Transmission up to 75 bauds for teletypewriter, teletypesetter, data or remote metering, supervisory control and miscellaneous signaling purposes.
- Type 1006** — Transmission up to 150 bauds for teletypewriter, data or remote metering, supervisory control and miscellaneous signaling purposes.

**SERIES 3000:** Series 3000 are channels of voice grade furnished for remote metering, supervisory control, miscellaneous signaling purposes and data transmission. They are furnished for half-duplex or duplex operation on two point or multi-point service. Rates are the same for both HDX & Dux service. Series 3000 channels are furnished under two basic types - 3001 & 3002.

**ISM DATA-2**

- Type 3001** — Approximate bandwidth of 300-3000 Hertz. These channels are provided for such purposes as indicating readings of meters at distant locations, operating switches which in turn perform some desired operation or operating special signaling devices of the customer.
- Type 3002** — HiLo channels with an approximate bandwidth of 300-3000 Hertz, furnished for transmission of voice band data and facsimile signals. Alternate voice use of 3002 channels is permitted.

**SERIES 4000:** Conditioned channels with a bandwidth not exceeding 4000 Hertz furnished for Schedule 5 data transmission or transmission of telephotograph (facsimile) material. These channels are not suitable for transmission of direct current pulses. Channels are furnished for half-duplex or duplex operation. The transmission characteristics and various types of services furnished within this series are as follows:

**ISM PLTP-2**

- Type 4001** — Approximate bandwidth of 300-3000 Hertz. Furnished for Schedule 5 (three level) data transmission at rates of 1300 and 1600 bits per second and at a normal error rate of not more than 1 in 100,000 bits. The channels are specially conditioned and maintained with regard to steady and impulse noise, envelope delay characteristics and net loss.
- Type 4002** — For telephotograph transmission — specially adapted for the transmission of picture material between the frequencies of approximately 1200 and approximately 2600 Hertz.

**DATA SETS — PRIVATE LINE SERVICE  
TARIFF F.C.C. NO. 260  
ISM SECTION DATA-3**

**100 SERIES — UP TO 300 BPS**

Service	USOC	Customer Options	Mo.	Instal.
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Private Line:  
Suitable for conditioning  
signals at rates up to 300  
bits per second in  
sequence.

Type 108-Combined  
Sending and Receiving:  
— For Two Point and  
Multi-point Broadcast  
Services

DVS

- |   |  |
|---|--|
| A | 1. Carrier Squelch upon carrier fail.                        |
|   | 2. No Carrier Squelch upon carrier fail.                     |
| B | 3. Mark transmitted to terminal upon carrier fail.           |
|   | 4. Space transmitted to terminal upon carrier fail.          |
| C | 5. Copy in Test Mode.  |
|   | 6. No copy in Test Mode.                                     |
| D | 7. Clear to Send (CB) connected to Receive Supervision (RS). |
|   | 8. Clear to Send (CB) connected to Request to Send (CA).     |
| E | 9. Ground Wire (GRD) connected to Signal Ground.             |
|   | 10. Ground Wire (GRD) not connected to Signal Ground (SG).   |
| F | 11. 2-wire — 20 mA. Current Interface.                       |
|   | 12. 3 or 4 wire 20 mA. Current Interface.                    |

\$11.90      \$21.65

NOTE 1: The above option table is for Data Sets 108 F, G, H & J. For Data Sets 108 D & E Decision D is as follows.

- |   |   |
|---|---|
| D | 7. Local copy of outgoing traffic.                                      |
|   | 8. No local copy of outgoing traffic. Decisions E & F are not required. |

NOTE 2: Data Sets 108 F & G can be used on a multipoint polling circuit only when polling is accomplished from one point. Refer to the I.S.M.

Type 103 Combined  
Sending and Receiving  
— For Two Point and  
Multi-Point Services

DP3

- |   |                                       |
|---|---------------------------------------|
| A | 1. Mode controlled by terminal        |
|   | 2. Mode not controlled by terminal    |
| B | 3. Permanent answer mode operation    |
|   | 4. Permanent originate mode operation |

21.65      27.10

NOTE 1: Data Set 103F is MD/NO. Reference USOC DVS for Multi-Point Private Line Service in the I.S.M.

DYV

Options to be determined locally.

21.65      27.10

NOTE 1: Data Set 103B is MD/NO and no usable substitutes are provided.

**SECTION 4  
PART 5, PAGE 2**

**Rate information is not  
complete. Use TARIFFS  
for customer quotations.**

**100 SERIES — UP TO 300 BPS (Cont'd)**

<b>Service</b>	<b>USOC</b>	<b>Customer Options</b>	<b>Mo.</b>	<b>Instal.</b>
	DQC	<ul style="list-style-type: none"> <li>A 1. With Auto Calling Unit</li> <li>2. Without Auto Calling Unit</li> <li>B 3. Auto ANS - Permanently Wired</li> <li>4. Auto ANS - Key Controlled</li> <li>C 5. Terminal will respond to disconnect</li> <li>6. Terminal will not respond to disconnect</li> <li>7. Terminal initiates disconnect</li> <li>D 8. Terminal will not initiate disconnect</li> <li>9. Mark Hold</li> <li>E 10. Space Hold</li> </ul>	21.65	27.10
		NOTE 1: Data Set 103A is MD/NO and will be replaced by Data Set 103J under USOC DNO.		
	DQL	<ul style="list-style-type: none"> <li>A 1. Rotary Dial</li> <li>2. Touch Tone Dial</li> <li>B 3. With Card Dialer</li> <li>4. Without Card Dialer</li> <li>C 5. Loss of CXR Disconnect</li> <li>6. No Loss of CXR Disconnect</li> <li>7. Send Space Disconnect</li> <li>8. No Send Space Disconnect</li> <li>9. Receive Space Disconnect</li> <li>E 10. No Receive Space Disconnect</li> <li>F 11. Auto ANS - Permanent</li> <li>12. Auto ANS - Selectable</li> </ul>	21.65	27.10
		NOTE 1: Data Set 103A is MD/NO and will be replaced by Data Set 103J under USOC DNO		
(Requires the use of Multiple Data Set Arrangement USOC UHM or UHS)	DTC	<ul style="list-style-type: none"> <li>A 1. ANS Mode Indication OFF</li> <li>2. ANS Mode Indication ON</li> <li>B 3. ANS Control Separate</li> <li>4. ANS Control Combined</li> <li>C 5. No Send Disconnect</li> <li>6. Send Disconnect (3 sec. spacing)</li> <li>7. Loss of CXR Disconnect</li> <li>D 8. No Loss of CXR Disconnect</li> <li>9. Space Disconnect</li> <li>E 10. No Space Disconnect</li> <li>F 11. Long Space Disconnect</li> <li>12. Short Space Disconnect</li> </ul>	20.55	21.65
		NOTE 1: If Decision E is 9 make Decision F. If Decision E is 10 make no further Decisions.		
		NOTE 2: Data Set 103E is MD/NO and will be replaced by Data Set 103J under USOC DNM and associated multiple mounting arrangements USOC MDE. Refer to the I.S.M.		

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**SECTION 4  
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**100 SERIES — IP TO 300 BPS (Cont'd)**

Service	USOC	Customer Options	Mo.	Instal.
Multiple Data Set Arrangement includes common equipment for a maximum of 40 Data Sets. — For initial 20 Data Sets. — For additional 20 Data Sets	UHM UHS		46.55 18.40	75.75 64.95 0
The above Data Sets (DTC) and Multiple Data Set Arrangement require cabinet mounting (USOC D4C).				0 - See Tariff for appli- cation

**200 SERIES**

2000 BPS - Send & Receive with internal timing. E/W Data Auxiliary Set (DAS) for Data Phone Service & alternate voice PL.	DFS++	A 1. EIA Interface 2. Contact Interface B 3. Alternate Voice 4. w/o Alternate Voice C 5. With new sync 6. w/o new sync D 7. 2 wire (decision E not required) 8. 4 wire (decision E required) E 9. 4 wire Private Line (Continuous CXR) 10. 4 wire Private Line (CXR controlled by Request-to-Send or Multiparty)	59.55	81.20
2000 BPS — Send & Receive with external timing.	DNA++	(Same as DFS Preceding)	59.55	81.20
2400 BPS — Send & Receive with internal timing. E/W DAS for alternate voice.	DGS++	(Same as DFS Preceding)	59.55	81.20
2400 BPS — Send & Receive - int or ext. timing	24M++	Use DFS options & specify int. or ext. timing	59.55	81.20
2400 BPS — Multiple Mounted	2ME++	—		
2400 BPS — Send & Receive - int. or ext. timing. Switched Network	24V++	A 1. Transmitter Timing - Internal 2. Transmitter Timing - External B 3. Automatic Answer not provided or provided under control of RDY and DTR 4. Automatic Answer controlled by DTR only C 5. Ring Indicator on EIA Interface Pin 22 6. Ring Indicator contact closure on EIA Interface Pins 22 and 23 D 7. Continuous Receiver Bit Clock - IN 8. Continuous Receiver Bit Clock - OUT E 9. EIA Interface Pin 18 initiates Local Analog Loopback 10. EIA Interface Pin 18 provides Receive Symbol Clock F 11. Signal ground connected to frame ground 12. Signal ground not connected to frame ground	59.55	81.20

**SECTION 4  
PART 5, PAGE 4**

**Rate information is not complete. Use TARIFFS for customer quotations.**

**200 SERIES (Cont'd)**

Service	USOC	Customer Options	Mo.	Instal.
2400 BPS — Send & Receive with external timing	DNS + +	(Same as DFS Preceding)	59.55	81.20

Private Line:  
Suitable for conditioning signals at rates up to 1200 BPS in sequence.

Type 202S — Combined Sending and Receiving, Manual Operation

— With Reverse Channel	13G (DRF) (DRL)	A 1. Local copy on primary channel 2. No local copy on primary channel (Note 4)	38.15	54.15
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NOTE: USOC DRF and DRL provided this service using Data Set 202C which is now (MD). New Services or additions should be ordered under USOC 13G, Data Set 202S.

- B 3. Telephone Company engineered timing options.
- 4. Customer engineered timing options  
Note: If Manual only service, no further options apply.
- 5. Not associated with an Automatic Call Origination Unit.
- C 6. Associated with an Automatic Call Origination Unit.
- 7. Auto ANS Only
- D 8. Auto ANS Key controlled
- 9. Contact Interface (no further decision required)
- E 10. EIA Voltage Interface (go to decision F).
- 11. EIA Voltage Interface RS232C
- F 12. EIA Voltage Interface RS232B

NOTE 1: When ordering USOC 13G the associated handset must be ordered. Also specify Rotary or Touch Tone Dialing.

NOTE 2: Data sets are normally provided with Frame Ground connected to Signal Ground. If the customer desires this connection broken, it should be specified with descriptive remarks on the service order.

NOTE 3: When reverse channel operation is required, a determination must be made at the reverse channel receiving station as to whether the reverse channel is used by the system or terminal before the primary channel is ready for transmission (i.e. clear to send on). This must be specified on the service order as "Reverse Channel Independent," when reverse channel is used before clear to send in ON, or "Reverse Channel Dependent," when reverse channel is used only after clear to send is ON. Normal operation is for the Reverse Channel to be dependent.

NOTE 4: If local copy is desired on the reverse channel describe the requirement with descriptive remarks on the service order.

**200 SERIES (Cont'd)**

<b>Service</b>	<b>USOC</b>	<b>Customer Options</b>	<b>Mo.</b>	<b>Instal.</b>
— Without Reverse Channel	13B (DRA) (DRC)	(Same as 13G Preceding)	32.50	54.15

NOTE: USOC DRA and DRC provided this service using Data Set 202C which is now (MD). New Service or additions should be ordered under USOC 13B, Data Set 202S.

Private Line: Suitable for conditioning signals at rates up to 1800 BPS in sequence

Type 202T — Combined Sending and Receiving, Manual Operation

— With Reverse Channel Single Set Installation, No Tel Set	DRM	<ol style="list-style-type: none"> <li>1. Multipoint (Multi-station) circuit application.</li> <li>2. Point to point (two point) circuit application.</li> <li>3. Two wire operation (4 wire with talk back) (go to Option C (2W)) (Note 3)</li> <li>4. Four wire operation required by customer terminal or system (go to option C (4W))</li> <li>5. Local copy on primary channel (go to option D (2W))</li> <li>6. No local copy on primary channel (go to option D (2W))</li> <li>5. Master station or continuous carrier operation (go to option D (4W))</li> <li>6. Remote station or carrier controlled by Request to Send operation (go to option D (4W))</li> <li>7. No local copy on Reverse Channel or local copy on Reverse Channel not applicable (go to option E)</li> <li>8. Local copy on Reverse Channel (go to option E) (See Note 2)</li> <li>7. Fast Turnaround operation (go to option E)</li> <li>8. Normal turnaround operation (go to option E)</li> <li>9. Telephone Company engineered Customer Options (See ISM DATA-3)</li> <li>10. Customer engineered customer options (See ISM DATA-3)</li> <li>11. Operation at 1200 bps or less</li> <li>12. Operation at more than 1200 bps</li> </ol>	38.15	54.15
	A			
	B			
	C(2W)			
	C(4W)			
	D(2W)			
	D(4W)			
	E			
	F			



**SECTION 4  
PART 5, PAGE 6**

**Rate information is not complete. Use TARIFFS for customer quotations.**

**200 SERIES (Cont'd)**

Service	USOC	Customer Options	Mo.	Instal.
		<p>Note 1: Data sets are normally provided with Frame Ground connected to Signal Ground. If the customer desires this connection broken, it should be specified with descriptive remarks on the service order.</p>		
		<p>Note 2: When reverse channel operation is required, a determination must be made at the reverse channel receiving station as to whether the reverse channel is used by the system or terminal before the primary channel is ready for transmission (i.e., clear to send ON). This must be specified on the service order as "Reverse Channel Independent," when reverse channel is received at a station before clear to send is ON, or "Reverse Channel Dependent," when reverse channel is received at a station only after clear to send is ON. The normal operation is for Reverse Channel to be dependent.</p>		
		<p>Note 3: For Simplex operation continuous carrier will be provided at the transmitting station when specified in descriptive remarks on the service order. In all other cases, selection of B3 will result in switched carrier operation.</p>		
		<p>GENERAL NOTE: Alternate voice operation and switched network (DDD) backup operation are part of the circuit or channel termination and not data set options. Generally these are separately ordered services.</p>		
<p>— With Reverse Channel, Multiple Set Installation</p>	1M9	(Same as DRM Preceding)	37.05	52.55
<p>NOTE: Requires use of Data Mounting Assembly as specified in F.C.C. Tariff 260 Page 180.1, 4.3.4, USOC MOA.</p>				
<p>— Without Reverse Channel, No Tel Set.</p>	DRE	(Same as DRM Preceding)	32.50	54.15
<p>— Dataphone Operation, without Reverse Channel, Single Set Installation.</p>	18K (GHA)	(Same as DRM Preceding)	24.85	54.15
<p>NOTE: USOC GHA provided this service with Data Set 202R which is now (MD). New service or additions should be ordered under USOC 18K. Data Set 202T</p>				

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**SECTION 4  
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**200 SERIES (Cont'd)**

<b>Service</b>	<b>USOC</b>	<b>Customer Options</b>	<b>Mo.</b>	<b>Instal.</b>
—Dataphone Operation, <i>without Reverse Channel, Multiple Set Installation</i>	1M8 (GHB)	(Same as DRM Preceding)	24.85	54.15
NOTE 1: Requires use of Data Mounting Assembly as specified in F.C.C. Tariff 260, Page 180.1, 4.3.4, USOC MOA.				
NOTE 2: USOC GHB provided this service with Data Set 202R which is now (MD). New service or additions should be ordered under USOC 1M8, Data Set 202T.				
Type 202E, Sending Only, with Reverse Channel and Automatic Answer	DUS	(NONE)	15.15	27.10
NOTE: Data Set 202E is now (MD)				
Send & Receive 600, 1200, or 2400 bps with manual speed transfer. For agencies of the Federal Government	DPW + +	<ul style="list-style-type: none"> <li>A 1. Internal timing</li> <li>2. External timing</li> <li>B 3. With DAS 804M-type</li> <li>4. W/O DAS 804M-type</li> <li>C 5. Test Key controlled by interface</li> <li>6. Test Key not controlled by interface</li> </ul>	125.00	812.00
Send & Receive 1200 or 2400 bps with manual speed transfer. For agencies of the Federal Government	DMW + +	<ul style="list-style-type: none"> <li>A 1. Internal timing</li> <li>2. External timing</li> <li>B 3. Continuous CXR</li> <li>4. CXR controlled by request to send</li> <li>C 5. Used as regenerator</li> <li>6. Not used as regenerator</li> </ul>	163.00	1,083.00
Arrangement to maintain synchronization and provide connection to Customer — provided security equipment.	DST		37.90	97.45

**SECTION 4  
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**Rate information is not complete. Use TARIFFS for customer quotations.**

**200 SERIES (Cont'd)**

<b>Service</b>	<b>USOC</b>	<b>Customer Options</b>	<b>Mo.</b>	<b>Instal.</b>
Send & Receive 4800 bps — private line	G48 + +	<p>A 1. Transmitter Internally Timed 2. Transmitter Externally Timed</p> <p>B* 3. Continuous CXR (Note 1) 4. Switched CXR (Note 2)</p> <p>C 5. Switched Request-to-Send 6. Continuous Request-to-Send</p> <p>D 7. 1-Sec Holdover Used (Note 3) 8. 1-Sec Holdover Not Used (Note 4)</p> <p>E 9. New Sync Used (Note 5) 10. New Sync Not Used</p> <p>F 11. Data Set Ready Lead (CC) ON in Analog Loop-Back Test Mode (Note 6) 12. Data Set Ready Lead (CC) OFF in Analog Loop-Back Test Mode</p>	135.00	163.00

\* If decision B4 is made, decision C5 must be selected

Note 1: Continuous carrier should be used for multipoint master stations and all point-to-point stations.

Note 2: Switched carrier must be used for outlying stations on multipoint networks.

Note 3: It is recommended that the 1 - second holdover option be employed when the distant data set is optioned for continuous carrier.

Note 4: Master stations on multipoint networks must have the 1-second holdover disabled (decision D8).

Note 5: The new sync option should be installed if the interval between messages from different transmitters is less than 100 milliseconds and the terminal is equipped to provide the required new sync signal.

Note 6: Data Set 208A-L1A only.

Note 7: The data set may be mounted on a desk or in a Bell System provided equipment cabinet or 19- or 23-inch rack. If the data set is to be mounted in a rack, a D-180467 mounting bracket kit should be ordered separately. This information should appear in the REMARKS column of the service order.

**200 SERIES (Cont'd)**

<b>Service</b>	<b>USOC</b>	<b>Customer Options</b>	<b>Mo.</b>	<b>Instal.</b>
Send & Receive 4800 bps — switched network	S48 + +	A 1. Transmitter Internally Timed 2. Transmitter Externally Timed B 3. Without Telco 801-Type ACU 4. With Telco 801-Type ACU C 5. Data Set Ready Lead (CC) OFF in Analog Loop-Back Test Mode 6. Data Set Ready Lead (CC) ON in Analog Loop-Back Test Mode D 7. Without Automatic Answer 8. With Automatic Answer 9. Desk Mounting E 10. Rack or Cabinet Mounting	135.00	163.00
Combined sending & receiving arrangement capable of transmitting & receiving customer signals in any multiple of 2400 bps and not exceeding 9600 bps	96T + +	A 1. Transmit Timing by Data Set (Transmitter Internally Timed) 2. Transmit Timing by Data Terminal (Transmitter Externally Timed) B 3. Data Set Ready (CC) Interface Lead ON in Analog Loop-Back Mode (DSR ON in Analog Loop Mode) 4. Data Set Ready (CC) Interface Lead OFF in Analog Loop-Back Mode (DSR OFF in Analog Loop Mode) C 5. Transmit Timing Slaved to Receive Timing (Slave IN) 6. Transmit Timing Not Slaved to Receive Timing (Slave OUT) D 7. Elastic Stores IN (Elastic Store Enable 1 in, 2 In, 3 In, and/or 4 In) 8. Elastic Stores OUT (Elastic Store Enable 1 Out, 2 Out, 3 Out and/or 4 Out) E 9. Continuous Carrier (Decision F Required) 10. Switched Carrier (Decision F Not Required) F 11. Switched Request-to-Send (4-Wire Cont Carrier & Auto Retrain) 12. Continuous Request-to-Send (4-Wire Cont RS & Auto Retrain)	249.00	216.00

**GENERAL NOTES:**

1. Signal ground is normally connected to protective ground. If the customer does not desire this connection. It should be specified in the REMARKS section of the service order.
2. Table and rack mounting arrangements are available. The table mounting arrangement is provided unless rack mounting (required brackets) is specified in the REMARKS section of the service order.
3. High Performance Data Conditioning Type D1 must be ordered (QHA).

**SECTION 4  
PART 5, PAGE 10**

**Rate information is not complete. Use TARIFFS for customer quotations.**

**200 SERIES (Cont'd)**

Service	USOC	Customer Options	Mo.	Instal.
Remote Terminal Interface Arrangements for use with Data Set USOC 96T.				
—For extending a 2400 bps interface to a point more than 50 feet from the Type 209 Data Set (96T) and on the same premises as the Type 209 Data Set	J24	At the remote data set continuous carrier will be provided by Customer Service Sales must determine the Request-to-Send to Clear-to-Send delay, either 0 or 7ms, desired by the customer and specify in the SEI portion of the USO.	125.00	163.00
—per arrangement				
—For extending a 4800 bps interface to a point more than 50 feet from the Type 209 Data Set on the same premises as the Type 209 Data Set	J48	<p><b>1. DSR Condition in AL Test Mode</b></p> <p>At the remote data set use either DSR ON or OFF in AL Mode. Sales must determine the condition desired and specify in the SEI portion of the USO.</p>	276.00	271.00
—Per arrangement		<p><b>2. Request-To-Send Option</b></p> <p>At the remote data set, either switched (8ms) or Continuous (0ms) Request-to-Send may be used. Sales must determine the condition desired and specify in the SEI portion of the USO.</p>		
—For extending a 2400 bps interface to a premises other than that on which the Type 209 Data Set is located provided both premises are in the same exchange.	L24	At the far end data set continuous carrier will be provided by Customer Service. Sales must determine the Request-to-Send to Clear-to-Send delay, either 0 or 7ms, desired by the customer and specify in the SEI portion of the USO.	146.00	163.00
—pre arrangement				
—For extending a 4800 bps interface to a premises other than that on which the Type 209 Data Set is located provided both premises are in the same exchange	L48	Same as USOC J48	298.00	271.00
—per arrangement				
—For extending a 2400 bps interface to two or more points each more than 50 feet from, and in the same exchange as, the Type 209 Data Set.				
—basic arrangement for the first two extended pts. per arrangement	E24	None	267.00	250.00

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**SECTION 4  
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**200 SERIES (Cont'd)**

Service	USOC	Customer Options	Mo.	Instal.
Incremental arrangement for each additional extended point added to the basic arrangement. — per arrangement	G24	None	89.60	83.45
— For extending a 4800 bps interface to two or more points each more than 50 feet from, and in the same exchange as, the Type 209 Data Set. — basic arrangement for the first two extended points — per arrangement	A48	None	501.00	501.00
— Incremental arrangement for each additional extended point added to the basic arrangement — per arrangement	B48	None	167.00	167.00

**NOTE: All DATA SETS herein are for Private Line use ONLY.**

**400 SERIES — Up to 20  
Characters/Sec.**

Send only alpha-numeric-with tone answerback. Rotary dial.	DAC	NONE  Note: 1 Data set 401E is MD/NO	7.55	21.65
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**400 SERIES — Up to 75  
Characters/Sec.**

Send only. Without reverse channel. Rotary Dial	DUA ++	A 1. Attended Operation 2. Unattended Operation B 3. With 801 ACU 4. Without 801 ACU	25.95	54.15
Send only. With reverse channel signaling	DYC ++	SAME AS DUA PRECEDING	30.35	54.15
Receive only. Without reverse channel signaling.	DYA ++	A 1. Attended answering 2. Unattended answering B 3. Used with Data Auxiliary Set 4. W/O Data Auxiliary Set C 5. With out-of-service control by customer 6. Without out-of-Service control by customer	57.35	81.20
		Note 1: Data Sets 401A, 401M, 402C and 402D are MD/NO		

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**Rate information is not  
complete. Use TARIFFS  
for customer quotations.**

**DATA SETS — PRIVATE LINE SERVICE (Cont'd)**

**NOTE: All DATA SETS herein listed are for Private Line use ONLY.**

Service	USOC	Customer Options	Mo.	Instal.
<b>600 SERIES — For operation with customer provided Facsimile devices.</b>				
Send and Receive E/W reverse channel	DVC++	<ul style="list-style-type: none"> <li>A 1. With auto. answer</li> <li>2. W/O auto. answer</li> <li>3. With ACU</li> <li>B 4. W/O ACU</li> <li>5. With sync channel</li> <li>C 6. W/O sync channel</li> <li>7. With pre-emphasis</li> <li>D 8. W/O pre-emphasis</li> <li>9. With post emphasis</li> <li>E 10. W/O post emphasis</li> </ul>	40.05	54.15

NOTE: DATA Set 602C is MD/NO

**600 SERIES — For Electrocardiograph Equipment**

Analog Data Transmitter Rotary Dial	DKA++	<ul style="list-style-type: none"> <li>OA — Reverse channel indicator-lamp tone</li> <li>OB — Reverse channel indicator Contact</li> <li>Note: OA or OB is the USOC Suffix.</li> </ul>	17.30	27.10
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NOTE: DATA Set 603A is MD/NO

Analog Data Receiver Touch-Tone	DFC++	<ul style="list-style-type: none"> <li>A 1. With Auto. Answer</li> <li>2. Without Manual Answer</li> </ul>	27.10	54.15
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Note: If A decision is 2, suffix is 02 and no B decision required. If A decision is 1, B decision is required.

- B 3. Auto Answer - Perm Wired
- 4. Auto Answer - Key Controlled

NOTE: DATA Set 603B is MD/NO

Analog Data Transmitter	D5C++	<ul style="list-style-type: none"> <li>1. Signal ground connected to frame ground (USOC Suffix 01)</li> <li>A 2. Signal ground not connected to frame ground, (USOC Suffix 02).</li> </ul>	46.55	54.15
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NOTE: DATA Set 604A is MD/NO

Analog Data Receiver	D6C++	<ul style="list-style-type: none"> <li>1. Signal ground connected to frame ground (USOC Suffix 01).</li> <li>A 2. Signal ground not connected to frame ground (USOC Suffix 02)</li> </ul>	90.95	81.20
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NOTE: DATA Set 604B is MD/NO

**DATA SETS — PRIVATE LINE SERVICE (Cont'd)**

**NOTE: All DATA SETS herein listed are for Private Line use ONLY.**

**800 SERIES — AUTOMATIC CALLING UNITS**

Service	USOC	Customer Options	Mo.	Instal.
Without answer-tone detection (Dial pulse ACU)	DAY + +	A 1. EIA Voltage Interface	32.50	146.00
		2. Contact Interface		
		B 3. Call terminated through ACU after DSS on		
		4. Call terminated through data set after DSS on		
		C 5. ACR timer stopped after DSS on		
		6. ACR timer not stopped after DSS on		
		7. End-of-number signal from customer terminal		
		D 8. No end-of-number signal from customer terminal (See Note)		
		E 9. ACU answer-tone detection (801 A6 only)		
		10. Data set answer-tone detection without EON signal (DAS 801A5 only)		
Note: If D decision is 7, no E decision is required.				
With answer-tone detection (Dial pulse ACU)	DLB + +	SAME AS DAY PRECEDING	32 50	146.00
Without Answer-tone or dial-tone detection (TOUCH-TONE ACU)	DAZ + +	A 1. 2-wire	32.50	146.00
		2. 4-wire		
		B 3. Call terminated through ACU		
		4. Call terminated through data set after DSS ON		
		C 5. ACR Timer stopped after DSS ON		
		6. ACR Timer not stopped after DSS ON		
		7. Line transfer controlled by end of number signal from customer terminal (Note 1)		
		D 8. No end of number signal from customer terminal (See Note)		
		9. Line transfer after ACU answer-tone detection (801 C4 only)		
		E 10. Data set answer-tone detection without EON		
		F 11. Loop start (801 C4 only)		
		12. Ground start		
Note 1: If Decision D is 7, Decision E is 9.				
With answer-tone and dial-tone detection (TOUCH-TONE ACU)	DLC + +	SAME AS DAY PRECEDING	32.50	146.00



**Rate information is not complete. Use TARIFFS for customer quotations.**

**UNIVERSAL SUFFIX TABLE  
BSP 590-000-100**

USOC SUFFIX	A	B	C	D	E	F	USOC SUFFIX	A	B	C	D	E	F
01	1	3	5	7	9	11	33	1	3	5	7	9	12
02	2	3	5	7	9	11	34	2	3	5	7	9	12
03	1	4	5	7	9	11	35	1	4	5	7	9	12
04	2	4	5	7	9	11	36	2	4	5	7	9	12
05	1	3	6	7	9	11	37	1	3	6	7	9	12
06	2	3	6	7	9	11	38	2	3	6	7	9	12
07	1	4	6	7	9	11	39	1	4	6	7	9	12
08	2	4	6	7	9	11	40	2	4	6	7	9	12
09	1	3	5	8	9	11	41	1	3	5	8	9	12
10	2	3	5	8	9	11	42	2	3	5	8	9	12
11	1	4	5	8	9	11	43	1	4	5	8	9	12
12	2	4	5	8	9	11	44	2	4	5	8	9	12
13	1	3	6	8	9	11	45	1	3	6	8	9	12
14	2	3	6	8	9	11	46	2	3	6	8	9	12
15	1	4	6	8	9	11	47	1	4	6	8	9	12
16	2	4	6	8	9	11	48	2	4	6	8	9	12
17	1	3	5	7	10	11	49	1	3	5	7	10	12
18	2	3	5	7	10	11	50	2	3	5	7	10	12
19	1	4	5	7	10	11	51	1	4	5	7	10	12
20	2	4	5	7	10	11	52	2	4	5	7	10	12
21	1	3	6	7	10	11	53	1	3	6	7	10	12
22	2	3	6	7	10	11	54	2	3	6	7	10	12
23	1	4	6	7	10	11	55	1	4	6	7	10	12
24	2	4	6	7	10	11	56	2	4	6	7	10	12
25	1	3	5	8	10	11	57	1	3	5	8	10	12
26	2	3	5	8	10	11	58	2	3	5	8	10	12
27	1	4	5	8	10	11	59	1	4	5	8	10	12
28	2	4	5	8	10	11	60	2	4	5	8	10	12
29	1	3	6	8	10	11	61	1	3	6	8	10	12
30	2	3	6	8	10	11	62	2	3	6	8	10	12
31	1	4	6	8	10	11	63	1	4	6	8	10	12
32	2	4	6	8	10	11	64	2	4	6	8	10	12

**Use of Universal Suffix Table to Encode the USOC Suffix**

**TO ENCODE**

- As the choice for each decision (A, B, etc.) for the USOC involved, make a note of the option number, eg.,
 

(a)	A—2	(b)	A—1
	B—3		B—3
	C—6		C—5
	D—7		
	E—9		
	F—12		
- At the top of the Universal USOC Suffix Table, find the letter for the decision under which the last choice of option was made; eg., in 1. (a) above, the last choice of option was made under decision F, and in 1. (b) it was made under decision C.
- Under the decision letter selected in 2. and working down from the top, find the first appearance of the option numeral selected. Moving to the left one column, move down to the numeral that corresponds to the next letter decision (a reverse alphabetical order). The numeral being selected should always lie on the same line or on a lower line than the previous numeral selected. This process is continued to column A. The USOC suffix applicable to the various choices made is found in the number column immediately to the left of the A option number; eg., in 1. (a) above, the USOC suffix is 38, in 1. (b) it is 01.

**DATA SERVICE — REFERENCES**

This summary of data service reference information was obtained, in part, from BSP 590-000-102, Issue 3. This information provides a rapid cross-reference between USOC, data sets and the associated reference guides. Two types of cross-references are included: an alphabetical listing of USOC codes and a numerical listing of data set codes. The lists give a description of the service offering and general features and functions.

The lists do not specify conditioning information due to the range of variables associated with the requirements and applications of a specific service. However, detailed information on types of conditioning is available in the Data Technical References which are ordered directly from Western Electric, Indiana Publication Center, Indianapolis, Indiana.

The data service reference lists following provide a means of determining the proper reference guide when either the data set or service offering is known.

The alphabetical USOC list in Table A gives the data set type used for a particular USOC and the appropriate reference guide. The numerical lists (Tables B through L) give the data set type, a brief description of the service offerings, general features and the reference guide.

The Symbols ++ and 00 are used throughout this section to indicate the USOC Suffix. If customer option decisions must be made, the Suffix designation will be ++, indicating that the Suffix may be a two-digit number between 01 and 63. If no customer options are available for the Data Service ordered, the Suffix designation will appear as 00.

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PART 5, PAGE 16**

**Rate information is not  
complete. Use TARIFFS  
for customer quotations.**

**ALPHABETICAL LISTING OF USOC**

**TABLE A**

USOC	DATA SET TYPE	REFERENCE GUIDE
CBS++	1001A	590-000-111
CBT++	1001B & D	-000-112
CDT++	1000A	-000-110
DAC00	401E (MD)	-004-100
DAO++	103H (MD)	-001-106
DAS00	401E (MD)	-004-100
DAV++	403D (MD)	-004-106
DAW++	202E (MD)	-002-104
DAX++	403E (MD)	-004-106
DAY++	801A	-008-100
DAZ++	801C	-008-101
DBA++	403D (MD)	-004-106
DBE00	202E (MD)	-002-104
DBF00	401E (MD)	-004-100
DBH00	601A	-006-100
DBK++	401L (MD)	-004-107
DBM00	401E (MD)	-004-100
DBN++	401L (MD)	-004-107
DBP++	113A	-001-108
DBQ++	113A	-001-108
DBS00	601A (MD)	-006-100
DBY00	113A	-001-108
DBZ00	113A	-001-108
DCB++	403E (MD)	-004-106
DCC++	403E (MD)	-004-106
DCQ++	603B (MD)	-006-103
DCS++	403E (MD)	-004-106
DCZ00	603D (MD)	-006-102
DDA++	403E (MD)	-004-106
DDO++	103H (MD)	-001-106
DDQ++	500A	-005-100
DDR00	401H (MD)	-004-102
DDS++	403E (MD)	-004-106
DDV00	401H (MD)	-004-102
DDW++	500A	-005-100
DDX++	500A	-005-100
DDY++	500A	-005-100
DEC++	602C (MD)	-006-101
DEE++	203B (MD)	-002-107
DEF++	203C (MD)	-002-107
DEG++	203A (MD)	-002-107
DEN++	203A (MD)	-002-107
DEO++	103H (MD)	-001-106
DEQ++	—	-002-107
DES++	103G (MD)	-001-105

**TABLE A (Cont)**

USOC	DATA SET TYPE	REFERENCE GUIDE
DEV++	—	590-002-107
DFA++	403D (MD)	-004-106
DFC++	603D (MD)	-006-103
DFE++	203A (MD)	-002-107
DFH++	203B (MD)	-002-107
DFK++	203C (MD)	-002-107
DFL++	203A (MD)	-002-107
DFS++	201A	-002-100
DGA00	601B (MD)	-006-100
DGC00	601B (MD)	-006-100
DGS++	201B	-002-100
DHA++	402C-402D (MD)	-004-104 & 105
DHM++	402C-402D (MD)	-004-104 & 105
DJA++	103G (MD)	-001-105
DKA++	603A (MD)	-006-102
DLA++	603A (MD)	-006-102
DLB++	801A	-008-100
DLC++	801C	-008-101
DMC++	401J (MD)	-004-100
DME++	401J (MD)	-004-100
DMW++	205C (MD)	-002-106
DNA++	201A	-002-100
DNS++	201B	-002-100
DOC++	103H (MD)	-001-106
DPK++	401J (MD)	-004-100
DPW++	205B (MD)	-002-105
DP3++	103F (MD)	-001-104
DQC++	103A (MD)	-001-100
DQL++	103A (MD)	-001-100
DQW00	402D (MD)	-004-105
DRA++	202C (MD)	-002-102
DRC++	202C (MD)	-002-102
DRE++	202T	-002-101
DRF++	202C (MD)	-002-102
DRL++	202C (MD)	-002-102
DRM++	202T	-002-101
DTC++	103E (MD)	-001-103
DUA++	402C (MD)	-004-104
DUC++	402C (MD)	-004-104
DUD++	202E (MD)	-002-104
DUE00	202E (MD)	-002-104
DUL00	202E (MD)	-002-104
DUS00	202E (MD)	-002-104
DVC++	602C (MD)	-006-101
DVL++	602C (MD)	-006-101

MD — Manufactured Discontinued

**INTERCITY  
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**Rate information is not  
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**TABLE A (Cont)**

USOC	DATA SET TYPE	REFERENCE GUIDE
DVS++	108D,E,F,G,H,J	590-001-107
DWC00	202E (MD)	-002-104
DWQ00	202E (MD)	-002-104
DWU00	402A (MD)	-004-104
DXB++	103G (MD)	-001-105
DXM++	103G (MD)	-001-105
DYA++	402D (MD)	-004-105
DYC++	402C (MD)	-004-104
DYL++	402C (MD)	-004-104
DYV++	103B (MD)	-001-101
D5C++	604A (MD)	-006-104
D5R++	604A (MD)	-006-104
D6C++	604B (MD)	-006-105
D6D++	604B (MD)	-006-105
GHA++	202R (MD)	-002-108
GHB++	202R (MD)	-002-108
GHC++	202R (MD)	-002-108
GHE++	202R (MD)	-002-108
GHF++	202R (MD)	-002-108
GHG++	202R (MD)	-002-108
G48++	208A	-002-110
KED++	—	-002-107
KEE++	—	-002-107
KEF++	—	-002-107
KEO++	203A (MD)	-002-107
KEW++	—	-002-107
KEY++	—	-002-107
KEZ++	—	-002-107
KFB++	203C (MD)	-002-107

**TABLE A (Cont)**

USOC	DATA SET TYPE	REFERENCE GUIDE
KFC++	203A (MD)	590-002-107
KF3++	203A (MD)	-002-107
KSJGV	—	-002-107
LAA++	—	-001-109
LAB++	113B	-001-109
LAD00	—	-001-109
LAE00	—	-001-109
LAF00	—	-001-109
LAG00	—	-001-109
LAJ00	—	-001-109
LAK00	—	-001-109
LAL00	—	-001-109
LAN00	—	-001-109
MJJ++	—	-002-100
S48++	208B	-002-110
24V++	201C	-002-100
3EU++	—	-002-107
4QA++	—	-004-109
4QB++	—	-004-109
4RZ++	407A	-004-109
96T++	209A	-002-115
96X++	209A	-002-115
13B	202S	-002-101
13G	202S	-002-101
1M8	202T	-002-101
1M9	202T	-002-101
18K	202T	-002-101
DNO	103J	-001-110
DNM	103J	-001-110

MD — Manufactured Discontinued

**TABLE B  
100 SERIES — SERIAL/SEQUENTIAL OPERATION  
UP TO 300 BITS PER SECOND**

USOC	SERVICE OFFERING	DATA SET TYPE	REMARKS	REFERENCE GUIDE
DQC++	For use with 3-row TTYs and COAM terminals at speeds up to 150 bps	103A (MD)		590-001-100
DQL++	For use with 4-row TTYs and COAM Terminals	103A (MD)		590-001-100
DYV++	For use with private line only	103B (A & M) (MD)		590-001-101
DP3++	For use with 2-wire private line data service only	103F (MD)		590-001-104
DTC++	For multiple installation in cabinets	103E (MD)	Set without housing for COAM terminals in DP service	590-001-103
DES++	For single installations	103G (MD)	Rotary dial	590-001-105
DJA++	For single installations	103G (MD)	Touch-Tone® dial	590-001-105
DXB++	For single installations	103G (MD)	Rotary dial with card dialer	590-001-105
DXM++	For single installations	103G (MD)	Touch-Tone dial with card dialer	590-001-105
DOC++	For single installations — built into terminals or telco-provided Model 37 TTYs	103H (MD)	Rotary dial	590-001-106
DAO++	Same as DOC++	103H (MD)	Touch-Tone dial	590-001-106
DEO++	Same as DOC++	103H (MD)	Rotary dial with card dialer	590-001-106
DDO++	Same as DOC++	103H (MD)	Touch-Tone with card dialer	590-001-106
DVS++	For use with private line data only — 2-wire — 2-point only	108A (MD) 108C (MD) 108D 108E		590-001-107
DBZ00	300 bps — send and receive originate mode only	113A	Rotary dial	590-001-108

**TABLE B (Continued)**  
**100 SERIES — SERIAL/SEQUENTIAL OPERATION  
UP TO 300 BITS PER SECOND**

USOC	SERVICE OFFERING	DATA SET TYPE	REMARKS	REFERENCE GUIDE
DBY00	Same as DBZ00 except dial	113A	Touch-Tone dial	590-001-108
DBP++	Same as DBZ00 — additional capabilities of data lamp — CD lead control	113A	Rotary dial	590-001-108
DBQ++	Same as DBZ00 except dial — additional capabilities of data lamp — CD lead control	113A	Touch-Tone dial	590-001-108
*LAB++	300 bps — send and receive — answer mode only for multiple installation	113B	2-wire DDD	590-001-109
*LAA++	Common equipment for up to 20 DS 113B	§	32A data mounting	590-001-109
*LAL00	Cabinet for up to 20 DS 113B	§	KS-20018-L4	590-001-109
†LAN00	Cabinet for up to 120 DS 113B	§	KS-20093-L1	590-001-109
†LAD00	20 make-busy buttons — rotary dial — surface mounted	§	DAS 804T-L1/2	590-001-109
†LAF00	Same as LAD00 except flush mounted	§	DAS 804T-L1	590-001-109
†LAE00	20 make-busy buttons — Touch-Tone dial — surface mounted	§	DAS 804T-L1A/3	590-001-109
†LAG00	Same as LAE00 except flush mounted	§	DAS 804T-L1A	590-001-109
†LAJ00	Expands DAS 804T-type to handle 40 DS 113B	§	Two 652D4 keys	590-001-109
†LAK00	Expands DAS 804T-type to handle 60 DS 113B	§	Two 652D4 keys	590-001-109
DNO	300 BPS, ASYNC originate and answer with individually housed DATA set, includes DATA aux set with 6 buttons-D.D.D.	103J		590-001-110
DNM	Same as DNO except for multiple mounting — D.D.D.	103J		590-001-110

\* Must be ordered jointly to provide basic service.

† May be ordered in addition to the basic service offering to provide extended service.

§ Used with 113B data station.

**TABLE C  
200 SERIES — SERIAL/SEQUENTIAL/OPERATION**

USOC	SERVICE OFFERING	DATA SET TYPE	REMARKS	REFERENCE GUIDE
DFS ++	2000 bps — send and receive with internal timing using clock in data set	201A	Requires DAS 804A for switched network or DAS 828A-L1/2 for alternate voice on private line	590-002-100
DNA ++	2000 bps — send and receive with external timing using clock in customer-provided equipment	201A	Requires DAS 804A for switched network or DAS 828A-L1/2 for alternate voice on private line	590-002-100
DGS -- +	2400 bps — send and receive with internal timing using data set clock — private line only	201B (MD) 201C	Requires DAS 804A or DAS 828A-L1/2 for alternate voice	590-002-100
DNS ++	2400 bps — send and receive with external timing using customer-provided clock — private line only	201B (MD) 201C	Requires DAS 804A or DAS 828A-L1/2 for alternate voice	590-002-100
24M ++	2400 bps — same as DGS — int. or ext. timing	201C		590-002-101
2ME ++	2400 bps - same as 24M — multiple mounting	201C		590-002-100
24V ++	2400 bps — send and receive — switched network	201C	Requires 565HK or 2565HK tel set for alternate voice	590-002-100
13B	1200 bps, ASYNC, Send & receive without reverse channel D.D.D.	202S		590-002-101
13G	Same as 13B except with reverse channel — D.D.D.	202S		590-002-101
1M8	1800 bps, ASYNC, send and receive, without reverse channel for multiple mounting — P.L.	202T		590-002-101
1M9	Same as 1M8 except with reverse channel — P.L.	202T		590-002-101
18K	1800 bps, ASYNC, Send and receive without reverse channel, single set — P.L.	202T		590-002-101
DRA ++	Up to 1200 bps — send and receive/also used on private line at speeds up to 1800 bps	202C (MD)	Rotary dial	590-002-101

**TABLE C (Continued)**

**200 SERIES — SERIAL/SEQUENTIAL/OPERATION**

USOC	SERVICE OFFERING	DATA SET TYPE	REMARKS	REFERENCE GUIDE
DRF++	Up to 1200 bps — send and receive/also used on private line at speeds up to 1800 bps	202C (MD)	Rotary dial and reverse channel	590-002-101
DRC++	Up to 1200 bps — send and receive/also used on private line at speeds up to 1800 bps	202C (MD)	Touch-Tone dial	590-002-101
DRL++	Up to 1200 bps — send and receive/also used on private line at speeds up to 1800 bps	202C (MD)	Touch-Tone and reverse channel	590-002-101
DRE++	Up to 1200 bps — send and receive/also used on private line at speeds up to 1800 bps	202D (MD)	W/O tel set	590-002-101
DRM++	Up to 1200 bps — send and receive/also used on private line at speeds up to 1800 bps	202D (MD) 202T	W/O tel set with reverse channel	590-002-101
DUD++	Up to 1200 bps send only — EIA interface	202E (MD)	Rotary dial	590-002-101
DUE00	Up to 1200 bps send only — with reverse channel	202E (MD)	Rotary dial	590-002-101
DUL00	Up to 1200 bps send only — with auto answer	202E (MD)	Rotary dial	590-002-101
DUS00	Up to 1200 bps send only — with reverse channel and auto answer	202E (MD)	Rotary dial	590-002-101
DAW++	Up to 600 bps send only — contact interface	202E (MD)	Touch-Tone dial	590-002-101
DBE00	Up to 1200 bps send only with auto answer	202E (MD)	Touch-Tone dial	590-002-101
DWC00	Up to 1200 bps send only with auto answer	202E (MD)	Touch-Tone dial	590-002-101
DWQ00	Up to 1200 bps send only with reverse channel and auto answer	202E (MD)	Touch-Tone dial	590-002-101
GHA++	Up to 1800 bps — send and receive — private line — single installation	202R (MD)	Requires external tel set for alternate voice	590-002-101
GHB++	Up to 1800 bps — send and receive — private line — multiple installation	202R (MD)	Requires external tel set for alternate voice	590-002-101
GHC++	Up to 1200 bps — send and receive — switched network service — single installation	202R (MD)	Rotary dial	590-002-101



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**Rate information is not complete. Use TARIFFS for customer quotations.**

**TABLE C (Continued)  
200 SERIES — SERIAL/SEQUENTIAL/OPERATION**

USOC	SERVICE OFFERING	DATA SET TYPE	REMARKS	REFERENCE GUIDE
GHE++	Same as GHC++ except dial	202R (MD)	Touch-Tone dial	590-002-101
GHF++	Up to 1200 bps — send and receive — switched network service — multiple installation	202R (MD)	Rotary dial	590-002-101
GHG++	Same as GHF++ except dial	202R (MD)	Touch-Tone dial	590-002-101
DPW++	600, 1200, or 2400 bps with manual transfer from one speed to another — for agencies of the Federal Government (private line only)	205B (MD)	4-wire private line — 6-sec holdover	590-002-105
DMW++	1200 or 2400 bps with transfer from one speed to another — for agencies of the Federal Government (private line only)	205C (MD)	4-wire private line or 4-wire switched 6-sec holdover	590-002-106
G48++	4800 bps — send and receive — private line	208A-L1 (MD) 208A-L1A (MD) 208A-L1B	Requires DAS 828A-L1/2 for alternate voice on 4-wire private line	590-002-110
S48++	4800 bps — send and receive — switched network	208B-L1 (MD) 208B-L1A (MD) 208B-L1B	Requires 565HK tel set for alternate voice	590-002-110
96T++	Combined sending and receiving arrangement capable of transmitting and receiving customer signals in any multiple of 2400 bps and not exceeding 9600 bps	209A-L1	May be used only in connection with high performance data conditioning type D1 (USOC-QHA or QHB or QHC)	590-002-115
96X++	Arrangement for connecting each 2400-bps or 4800-bps Dataphone data set at either the remote location or the 9600-bps Dataphone data set location	209A-L1		590-002-115

MD - Manufactured Discontinued

**TABLE D  
200 SERIES — MULTILEVEL/AM-VSB**

USOC	SERVICE OFFERING	DATA SET TYPE	REMARKS	REFERENCE GUIDE
DEN++	Combined sending and receiving 1800, 3600, or 5400 bps	203A (MD)	2 or 4-wire private line	590-002-107
DFE++	2400, 4800, or 7200 bps	203A (MD)	4-wire private line	590-002-107
KF3++	2400, 4800, or 7200 bps	203A (MD)	2 or 4-wire private line	590-002-107
KEO++	3200, 6400, or 9600 bps	203A (MD)	4-wire private line	590-002-107
KFC++	3600, 7200, or 10,800 bps	203A (MD)	4-wire private line	590-002-107
DEG++	1800 or 3600 bps — sending and receiving — 150 bps secondary channel — auto answer	203A (MD)	Switched message network — rotary dial	590-002-107
DFL++	Same as DEG++ except dial	203A (MD)	Switched message network — Touch-Tone dial	590-002-107
KEF++	2400 or 4800 bps — sending and receiving — 150 bps secondary channel — auto answer	203A (MD)	Switched message network — rotary dial	590-002-107
KEZ++	Same as KEF++ except dial	203A (MD)	Switched message network — Touch-Tone dial	590-002-107
DEE++	1800 or 3600 bps — sending only — 150 bps secondary channel — auto answer	203B (MD)	Switched message network — rotary dial	590-002-107
DFH++	Same as DEE++ except dial	203B (MD)	Switched message network — Touch Tone dial	590-002-107
KED++	2400 or 4800 bps — sending only — 150 bps secondary channel — auto answer	203B (MD)	Switched message network — rotary dial	590-002-107
KEW++	Same as KED++ except dial	203B (MD)	Switched message network — rotary dial	590-002-107

**4**

**SECTION 4  
PART 5, PAGE 24**

**Rate information is not complete. Use TARIFFS for customer quotations.**

**TABLE D (Continued)  
200 SERIES — MULTILEVEL/AM-VSB**

USOC	SERVICE OFFERING	DATA SET TYPE	REMARKS	REFERENCE GUIDE
KF2++	2400, 4800, or 7200 bps	203C (MD)	4-wire private line	590-002-107
KEN++	3200, 6400, or 9600 bps	203C (MD)	*4-wire private line	590-002-107
KFB++	3600, 7200, or 10,800 bps	203C (MD)	*4-wire private line	590-002-107
DEF++	1800 or 3600 bps receiving only — 150 bps secondary channel — auto answer	203C (MD)	Switched message network — rotary dial	590-002-107
DFK++	Same as DEF++ except dial	203C (MD)	Switched message network — Touch-Tone dial	590-002-107
KEE++	2400 or 4800 bps receiving only — 150 bps secondary channel — auto answer	203C (MD)	Switched message network — rotary dial	590-002-107
KEY++	Same as KEE++ except dial	203C (MD)	Switched message network — Touch-Tone dial	590-002-107
DEQ++	Arrangement for 150 bps secondary channel	203A (MD)	†	590-002-107
3EU++	Arrangement for independent retraining of high-speed transmitter-receiver pairs	203A (MD)	†	590-002-107
DEV++	Arrangement for auto answer compatibility with automatic calling and alternate voice capability	203-type (MD)	†	590-002-107
KSJ	Arrangement for Military Standard Interface	203-type (MD)	†	590-002-107
MJJ++	Arrangement for multiple — access interface	203-type (MD)	†	590-002-107

\* 2-wire private line facilities available for broadcast-type networks (secondary channel not used)

† Can be ordered in addition to one of the basic speed options to provide extended service.

MD - Manufactured Discontinued

**TABLE E  
400 SERIES — PARALLEL OPERATION  
UP TO 20 CHARACTERS/SECOND**

USOC	SERVICE OFFERING	DATA SET TYPE	REMARKS	REFERENCE GUIDE
DAC00	Send only — alphanumeric with tone answer-back	401E (MD) 401M (MD)	Rotary dial — 3 signals	590-004-100
DAS00	(Same as DAC00 except dial)	401E (MD) 401M (MD)	Touch-Tone dial — 3 signals	590-004-100
DFB00	Send only — alphanumeric with voice answer-back	401E (MD) 401M (MD)	Rotary dial — 3 signals	590-004-100
DBM00	(Same as DFB00 except dial)	401E (MD) 401M (MD)	Touch-Tone dial — 3 signals	590-004-100
DDR00	Send only — alphanumeric with unattended answer for use with customer-provided telemetry equipment	401H (MD)	3 signals	590-004-100
DDV00	(Same as DDR00 except with electrical answer-back receiver at 30 baud)	401H (MD)	3 signals	590-004-100
DPK++	(Same as DPC++ except dial)	401J (MD)	Touch-Tone dial — 3 signals	590-004-100
DMC++	Receive only alphanumeric with voice answer-back	401J (MD)	Rotary dial — 3 signals	590-004-100
DME++	(Same as DMC++ except dial)	401J (MD)	Touch-Tone dial — 3 signals	590-004-100
DBK++	Send only — alphanumeric	401L (MD)	One number auto calling	590-004-107
DBN++	Send only — alphanumeric with answer-back receiver	401L (MD)	One number auto calling	590-004-107

\* Recommended 401J

MD - Manufactured Discontinued

**TABLE F  
400 SERIES — PARALLEL OPERATION  
UP TO 75 CHARACTERS/SECOND**

USOC	SERVICE OFFERING	DATA SET TYPE	REMARKS	REFERENCE GUIDE
DWU00	Send only attended operation only	402A (MD)	—	590-004-104
DUA++	Send only	402C (MD)	Rotary dial	590-004-104
DUC++	(Same as DUA++ except dial)	402C (MD)	Touch-Tone dial	590-004-104
*DYC++	Send only with reverse signaling	402C (MD)	Rotary dial	590-004-104
*DYL++	(Same as DYC++ except dial)	402C (MD)	Touch-Tone dial	590-004-104
DQW00	Receive only attended operation only	†402B (MD)	—	590-004-105
DYA++	*Receive only	402D (MD)	W/O reverse channel	590-004-105
DHA++	§Combined send and receive	402C (MD) 402D (MD)	Rotary dial	590-004-104 590-004-105
DHM++	§Combined send and receive	402C (MD) 402D (MD)	Touch-Tone dial	590-004-104 590-004-105

\* In those companies where the unattended feature is an additional tariff charged, DYC becomes DWB and DYL becomes DWS when unattended.

† Recommended 402D.

° DYA and DF3 can be provided with Touch-Tone — indicated in USOC for class of service (use Touch-Tone DAS 804).

§ Customer options, telco options, and usable data sets are the same as DUA (402C) and DYA (402D) for DHA and DUC (402C) and DYA (402D) for DHM.

MD - Manufactured Discontinued

**TABLE G  
400 SERIES — PARALLEL OPERATION  
UP TO 10 CHARACTERS/SECOND  
(RECEIVE ONLY)**

USOC	SERVICE OFFERING	DATA SET TYPE	REMARKS	REFERENCE GUIDE
DAX++	Receive only	403A (MD)	Without 5A1 data unit	590-004-106
DDA++	Receive only — 2 receivers	403A (MD)	With 5A1 data unit	590-004-106
DDS++	Receive only — 2 receivers	403A (MD)	Without 5A1 data unit	590-004-106
DFA++	Receive only — with code conversion — for multiple installation	403D (MD)	Contact closure interface	590-004-106
DBA++	(Same as DFA++)	403D (MD)	Binary coded matrix interface	590-004-106
DAV++	(Same as DFA++)	403D (MD)	ASCII interface	590-004-106
DCB++	Receive only — with code conversion for single installations	403E (MD)	Contact closure interface	590-004-106
DDC++	(Same as DCB++)	403E (MD)	Binary coded matrix interface	590-004-106
DCS++	(Same as DCB++)	403E (MD)	ASCII interface	590-004-106
4RZ++	Receive only	*407A	2-wire Touch-Tone signal	590-004-109
4QA00	Data mounting for maximum of eight DS 407 A-type and provides local and remote test features	*	Contains 101A power unit, 46A1 data unit, 47A1 data unit	590-004-109
4QB00	(Same as 4QA00 except does not contain test unit)	†	Contains 101A power unit	590-004-109

\* Must be ordered jointly to provide basic service.

† Can be ordered in addition to the basic service offering to provide extended service.

MD - Manufactured Discontinued

**TABLE H  
500 SERIES DATA SERVICE UNITS**

USOC	SERVICE OFFERING	DATA SET TYPE	REMARKS	REFERENCE GUIDE
DDQ++	2.4 kb/s send and receive	500A-L1/2	4-wire private line	590-005-100
DDW++	4.8 kb/s send and receive	500A-L1/3	4-wire private line	590-005-100
DDX++	9.6 kb/s send and receive	500A-L1/4	4-wire private line	590-005-100
DDY++	56 kb/s send and receive	500A-L1/5	4-wire private line	590-005-100

**TABLE I  
600 SERIES  
FOR OPERATION WITH CUSTOMER-PROVIDED TELEWRITING DEVICES**

USOC	SERVICE OFFERING	DATA SET TYPE	REMARKS	REFERENCE GUIDE
DBH00	Electrowriter	601A (MD)	Rotary dial	590-006-100
DBS00	Electrowriter	601A (MD)	Touch-Tone dial	590-006-100
DGA00	Phonewriter	601B (MD)	Rotary dial	590-006-100
DGC00	Phonewriter	601B (MD)	Touch-Tone dial	590-006-100

MD - Manufactured Discontinued

**TABLE J  
600 SERIES  
FOR OPERATION WITH CUSTOMER-PROVIDED FACSIMILE DEVICES**

USOC	SERVICE OFFERING	DATA SET TYPE	REMARKS	REFERENCE GUIDE
DEC++	Send and receive	602C (MD)	Touch-Tone dial	590-006-101
DVC++	Send and receive with simultaneous reverse signaling	602C (MD)	Rotary dial	590-006-101
DVL++	(Same as DVC++ except dial)	602C (MD)	Touch-Tone dial	590-006-101

MD - Manufactured Discontinued

**TABLE K  
600 SERIES  
FOR ELECTROCARDIOGRAPH EQUIPMENT**

USOC	SERVICE OFFERING	DATA SET TYPE	REMARKS	REFERENCE GUIDE
DKA++	Sending with reverse channel	603A (MD)	Rotary dial	590-006-102
DLA++	(Same as DKA++ except dial)	603A (MD)	Touch-Tone dial	590-006-102
DCQ++	Receiving	603B (MD)	Rotary dial	590-006-103
DFC++	Receiving	603B (MD)	Touch-Tone dial	590-006-103
DCZ00	Portable — acoustic coupler	603D (MD)	—	590-006-102
D5C++	Send only for use with EEG and EKG medical sets	604A (MD)	Rotary dial with reverse channel (3-channel)	590-006-104
D5R++	(Same as D5C++ except dial)	604A (MD)	Touch-Tone dial with 3-channel analog transmitter	590-006-104
D6C++	Receive only compatible with D5C above	604B (MD)	Rotary dial with reverse channel (3-channel)	590-006-105
D6D++	(Same as D6C++ except dial)	604B (MD)	Touch-Tone dial with 3-channel analog receiver	590-006-105

MD - Manufactured Discontinued

**TABLE L  
800 SERIES AUTOMATIC CALLING UNITS**

USOC	SERVICE OFFERING	DATA SET TYPE	REMARKS	REFERENCE GUIDE
DAY++	Without answer-tone detection	801A	Rotary dial	590-008-100
DLB++	With answer-tone detection	801A	Rotary dial	590-008-100
DAZ++	Without answer-tone detection	801C	Touch-Tone	590-008-101
DLC++	With answer-tone and dial tone detection	801C	Touch-Tone	590-008-101



**Rate information is not  
complete. Use TARIFFS  
for customer quotations.**

**TABLE M  
1000 SERIES DATA COUPLERS**

USOC	SERVICE OFFERING	DATA SET TYPE	REMARKS	REFERENCE GUIDE
CDT00	Provides data access arrangement with associated tel set — manual operation	1000A		590-000-110
CBS++	Provides both data access arrangement and network signaling unit — unattended operation	1001A 1001F	EIA voltage	590-000-111
CBT++	Same as CBS++	1001B 1001D	Contact interface	590-000-112

**GENERAL PURPOSE — CHANNEL CONDITIONING  
F.C.C. TARIFF 260, ISM DATA-4**

Channel conditioning is available on Series 2000 and Series 3000 channels, and on channels for similar purposes furnished under Series 5000 and 8000, as follows:

- Type C1** — For a two point or multi point channel
- the envelope delay distortion shall not exceed:
    - between 1000 and 2400 Hertz, a maximum difference of 1000 microseconds
  - the loss deviation with frequency (from 1000 Hertz reference) shall not exceed:
    - between 1000 and 2400 Hertz, -1db to +3db
    - between 300 and 2700 Hertz, -2db to +6db(+ means more loss)

- Type C2** — For a two point or multi point channel
- the envelope delay distortion shall not exceed:
    - between 1000 and 2600 Hertz, a maximum difference of 500 microseconds
    - between 600 and 2600 Hertz, a maximum difference of 1500 microseconds
    - between 500 and 2800 Hertz, a maximum difference of 3000 microseconds
  - the loss deviation with frequency (from 1000 Hertz reference) shall not exceed:
    - between 500 and 2800 Hertz, -1db to +3db
    - between 300 and 3000 Hertz, -2db to +6db(+ means more loss)

Note: On a multi point channel arranged for switching, conditioning in accordance with the above specifications is applicable only when in the unswitched mode.

- Type C3** — For access lines and trunks associated with a Switched Circuit Automatic Network or Common Control Switching Arrangement

**Access Lines**

- the envelope delay distortion shall not exceed:
  - between 1000 and 2600 Hertz, a maximum difference of 110 microseconds
  - between 600 and 2600 Hertz, a maximum difference of 300 microseconds
  - between 500 and 2800 Hertz, a maximum difference of 650 microseconds
- the loss deviation with frequency (from 1000 Hertz reference) shall not exceed:
  - between 500 and 2800 Hertz, -0.5db to +1.5db
  - between 300 and 3000 Hertz, -0.8db to +3db(+ means more loss)

**Trunks**

- the envelope delay distortion shall not exceed:
  - between 1000 and 2600 Hertz, a maximum difference of 80 microseconds
  - between 600 and 2600 Hertz, a maximum difference of 260 microseconds
  - between 500 and 2800 Hertz, a maximum difference of 500 microseconds
- the loss deviation with frequency (from 1000 Hertz reference) shall not exceed:
  - between 500 and 2800 Hertz, -0.5db to +1db
  - between 300 and 3000 Hertz, -0.8db to +2db(+ means more loss)

Note: Conditioning in accordance with the above specifications is limited to:  
Each Interexchange or Local Access Line between the customer's station and switching center.  
Each Trunk - between switching centers.

**CHANNEL CONDITIONING (Cont'd)**

- Type C4** — For a two point, three point or four point channel
- the envelope delay distortion shall not exceed:
    - between 1000 and 2600 Hertz, a maximum difference of 300 microseconds
    - between 800 and 3000 Hertz, a maximum difference of 500 microseconds
    - between 500 and 3000 Hertz, a maximum difference of 3000 microseconds
  - the loss deviation with frequency (from 1000 Hertz reference) shall not exceed:
    - between 500 and 3000 Hertz, -2db to +3db
    - between 300 and 3200 Hertz, -2db to +6db(+ means more loss)
- Note: On a three point or four point channel, conditioning in accordance with above specifications is applicable only between one exchange (that is designated by the customer as the control point) and each of the other two or three exchanges.
- Type C5** — For a two point channel
- the envelope delay distortion shall not exceed:
    - between 1000 and 2600 Hertz, a maximum difference of 100 microseconds
    - between 600 and 2600 Hertz, a maximum difference of 300 microseconds
    - between 500 and 2800 Hertz, a maximum difference of 600 microseconds
  - the loss deviation with frequency (from 1000 Hertz reference) shall not exceed:
    - between 300 and 3000 Hertz, -1.0db to +3.0db
    - between 500 and 2800 Hertz, -0.5db to +1.5db(+ means more loss)

**HIGH PERFORMANCE DATA CONDITIONING**

Certain data transmission characteristics necessary for high performance data transmission cannot be assured on all facilities generally available for data transmission. However, Type 3002, Type 5032, Type 5302 and Type 8302 voice grade two-point and three-point channels may be specifically arranged to provide for the following technical parameters at the request of the customer:

— Signal to C-Notched Noise Ratio	28db
— Nonlinear distortion:	
(a) signal to second order distortion	35db
(b) signal to third order distortion	40db

High Performance Data Conditioning for Type 3002, Type 5032, Type 5302 and Type 8302 Channels is furnished as follows:

- Type D1 — For a two-point channel not arranged for switching where there is not more than one station per service point.
- Type D2 — For a two-point or three-point channel where there is not more than three stations per channel.
- Type D3 — For Switched Circuit Automatic Network access lines.

Type D2 conditioning includes a Telephone Company provided switching arrangement which permits the transmission of data between a control station designated by the customer and either of two outlying stations, one station at a time. Only one such switching arrangement may be provided on any given service. Any service so arranged may not be switched to any other service. When the key control for the switching arrangement is located in a different exchange than the switching arrangement, rates for a Type 1001 channel are applicable for the remote control channel between exchanges.

When the channel equipped with these types of conditioning is utilized for voice communications, the Telephone Company does not undertake to represent that the channel will be suitable for such voice transmission.

**CHANNEL CONDITIONING (Cont'd)**

<b>Type C1</b>	<b>Installation</b>	<b>Monthly</b>	<b>USOC</b>
2-pt., no switching, per exchange	None	\$ 5.40	P2W
2-pt., arr'd for switching, per exchange (Note 1)	None	10.80	P2X
Multi point channel, per exchange, no switching	None	10.80	P3G
<b>Type C2</b>			
2-pt., no switching, per exchange	None	20.55	P3H
2-pt., arr'd for switching, per exchange (Note 1)	None	30.35	P3J
Multi point channel, per exchange, no switching	None	30.35	P3W
Multi point channel, arr'd for SW, per exchange (Note 1)	None	30.35	PH9
<b>Type C3 (SCAN or CCSA Channels)</b>			
Local access line, each	None	3.80	P6W
IXC access line, per exchange	None	14.90	P7W
Trunk line, per exchange	None	13.00	P7G
Incremental conditioning for above local or interexchange access lines associated with a Switched Circuit Automatic Network to provide for operation with non-conditioned trunk lines per access line	None	14.65	DJKGV
<b>Type C4</b>			
2-pt. channel, 1st sta. in exchange	None	32.50	P4G
-ea. add'l sta. in same exchange	None	10.55	P4H
3-pt. or 4-pt. channel, 1st sta. in exchange	None	39.00	6DU
-ea. add'l sta. in same exchange	None	10.55	6PY
<b>Type C5</b>			
2-pt. channel, no switching -1st station in an exchange	None	40.05	UHD

(Type C5 furnished in United States only)

Note 1: Type C1 and C2 arranged for switching contemplates the use of Telephone Company Switching Arrangements. Where the Telephone Company Switching Arrangement is provided on the customer premises no representation is made that the conditioning parameters set forth in Tariff F.C.C. No. 260 will be maintained in the switched mode.

**SECTION 4  
PART 6, PAGE 4**

**Rate information is not  
complete. Use TARIFFS  
for customer quotations.**

**CHANNELS (Cont'd)**

**Conditioning**

	<b>USOC</b>	<b>Monthly Charge</b>	<b>Installation Charge</b>
(1) When, at the request of the customer, a channel is equipped with High Performance Data Conditioning in accordance with the specifications in Tariff F.C.C. No. 260, conditioning charges apply as follows:			
(a) Type D1			
— on a two-point channel not arranged for switching where there is not more than one station per service point.			
per channel	QHA	14.65	163.00
(b) Type D2			
— on a two-point or three-point channel where there is not more than three stations per channel			
per channel	QHB	48.95	167.00
(c) Type D3			
— for access lines associated with a Switched Circuit Automatic Network (System B) terminated in a four wire telephone station arrangement.			
per access line	QHC	18.00	165.00

When High Performance Data Conditioning is ordered subsequent to the start of the basic service, a charge equal to the installation charges for the appropriate Type 3002, Type 5032, Type 5302 or Type 8302 service terminals or station terminals will apply for each service terminal or station terminal on the channel in addition to the charges for the High Performance Data Conditioning.

**DATA TRANSMISSION**  
(Broad Band)

F.C.C. TARIFF 260, I.S.M. WDBN-1

**SERIES 8000 CHANNELS**

**General**

This series provides transmission paths for wideband channels suitable for High Speed Data and Facsimile transmission or for use as individual voice grade channels up to a maximum of twelve. In addition, when provided for High Speed Data or Facsimile transmission, these channels will be arranged at the request of the customer for alternate use as individual channels of voice grade up to a maximum of twelve.

When the wideband service terminals provided have an equivalent of less than twelve individual voice grade channels, the remaining capacity of the interexchange channel may be arranged for use as individual voice grade channels.

**Interexchange Channels**

**Type 8800**

Channels having a maximum equivalent carrier spectrum of approximately 48 kilocycles per second for use as wideband channels suitable for High Speed Data or Facsimile transmission or for use as individual voice grade channels.

Channels are furnished over a single facility within the equivalent carrier spectrum in such manner as the Telephone Company may elect, whether by wire, radio or a combination thereof.

Channels are furnished for half-duplex or duplex operation, the charge being the same in either case, on a two-point basis for service twenty-four hours per day, seven days per week, for a minimum period of one month.

**Terminating Arrangements**

The Terminating Arrangements for use with this series are as follows:

- Service terminals for use as a wideband channel
- Service terminals for use as individual voice grade channels
- Terminal control arrangements

**SERIES 8000 CHANNELS (Cont'd)**

**Service Terminals for Use as a Wideband Channel**

**Type 8801**

Service terminals for any one of the following uses. The channel or channels developed by each service terminal require the full capacity of a Type 8800 interexchange channel.

To terminate a channel having a frequency bandwidth of approximately 0 to 20,000 cycles per second with only minor deviation in gain and delay characteristics within this frequency range.

To accommodate the transmission of data signals at a rate of 40,800 bits per second in sequence and including one voice channel termination for coordination purposes.

To accommodate the transmission of two-level sequential non-synchronous facsimile signals with a minimum signal element width of 20 microseconds or sequential synchronous signals at a rate of 50,000 bits per second. Arrangements for terminating a voice channel for coordination purposes are also included.

At the customer's option a supplementary control arrangement will be provided suitable for simultaneously conditioning three signals, one from each of two groups of five possible signals and one from a group of four possible signals, at rates up to 20 such combinations per second for transmission in lieu of, or alternate to, voice use of the coordination channel.

**Type 8803**

Service terminals for any one of the following uses. The channels developed by each service terminal require the interexchange channel capacity equivalent to six voice channels.

To accommodate the transmission of two-level facsimile, signals within the frequency range of approximately 29 to 44 kilocycles per second. Arrangements for terminating a voice channel for coordination purposes are also included.

To accommodate the transmission of sequential synchronous signals at a rate of 19,200 bits per second. Arrangements for terminating a voice channel for coordination purposes are also included.

**Service Terminals for Use as Individual Voice Grade Channels**

**Voice**

Service terminals suitable for terminating channels having transmission characteristics and with terminating arrangements similar to those furnished under Series 2000 and Series 3000 (Type 3001 only) channels. The types of Series 8000 voice service terminals are as follows:

Type 8201	Type 8203	Type 8206
Type 8202	Type 8204	Type 8301

**SERIES 8000 CHANNELS (Cont'd)**

**Service Terminals for Use as Individual Voice Grade Channels (Cont'd)**

**Telephotograph**

Service terminals suitable for terminating channels having transmission characteristics and with terminating arrangements similar to those for type 4002 channels for telephotograph transmission furnished under Series 4000 channels. Each channel has the equivalent of one voice grade channel. The types of Series 8000 telephotograph service terminals are as follows:

Type 8402

**Data**

Service terminals suitable for terminating channels having transmission characteristics and with terminating arrangements similar to those for Series 3000 (except Type 3001) or Type 4001 channels furnished for data transmission. Each channel has the equivalent of one voice grade channel. The types of Series 8000 data service terminals are as follows:

Type 8302            Type 8304            Type 8401  
Type 8303            Type 8305

**Terminal Control Arrangements**

Required when individual voice grade channels are provided either alone, alternately or in addition to wideband channels.

**SERIES 8000 CHANNELS — RATES**

**Interexchange channels**

Type 8800 Channels	Rate Per Mile — Per Month
First 250 (1-250)	\$16.20
Next 250 (251-500)	11.40
Each Add'l Mile, (501 and Over)	8.15

**Service Terminals for Wideband Channels**

For the first station in an exchange: Per Service Terminal	Installation	Monthly	USOC
Type 8801	\$216.00	\$460.00	G6P
Supplementary cont. argt.	108.00	70.35	G7P
Incremental Arg.-48 Kbps	216.00	54.15	N81
Incremental Arg.-28.5 Kbps	130.00	75.75	V2P
Type 8802	108.00	163.00	UP7
Type 8803	216.00	460.00	G8P
For the second or subsequent station in an exchange on any individual service Per Service Terminal	Installation	Monthly	USOC
Type 8801	216.00	324.00	GEP
Incremental-28.5 Kbps	130.00	75.75	OOW
Type 8803	216.00	406.00	GKP



**SECTION 4**  
**PART 7, PAGE 4**

**Rate information is not complete. Use TARIFFS for customer quotations.**

**SERIES 8000 CHANNELS - RATES (Cont'd)**

**Service Terminals for Wideband Channels (Cont'd)**

Charges for Types 8801 and 8803 service terminals include either:

A key control and lamp indicator argt. at one of the stations within the exchange to transfer the interexchange data or facsimile channel or such channel and the telephone coordinating channel or

A bridging arrangement for data or facsimile receiving only capabilities

Additional charges to equip. from two to a maximum of ten Type 8801 or 8803 service terminals with both the key transfer argt. and the bridging argt. described above.

	Installation	Monthly	USOC
For the first two stations (including the first station in an exchange)	\$ 43.30	\$ 41.15	GMB
For each add'l station	27.10	21.65	GP3

**Where an IXC terminates in a multiway wideband switching arrangement the service terminal charges are:**

For each termination of an IXC

**Type 8801**

Per line terminated (from customer station)	108.00	163.00	GP4
Per trunk terminated (from another switching arrangement)	163.00	249.00	GP6
Available for (1) 40,800 bps, (2) two-level sequential, non-synchronous facsimile signals, (3) 50 Kbps sequential synchronous signals.			

**Type 8803**

Available only for 19.2 Kbps sequential synchronous signals.

Per line terminated (from customer station)	108.00	163.00	4HV
Per trunk terminated (from another switching arrangement)	163.00	379.00	LJJ
For each coordinating voice channel terminated at the customer's station on a nonswitched basis	10.80	13.55	GP7

**SERIES 8000 CHANNELS - RATES (Cont'd)**

A coordinating voice channel terminated at a wideband station may be extended to additional locations within the same building at the following rates:

	Installation	Monthly	USOC
Each Termination	\$ 10.80	\$ 1.10	GP8

**Service Terminals for Individual Voice  
Grade Channels**

For the first station in an exchange

Voice			
Types 8201-8204,8206 and 8301	54.15	13.55	—
Telephotograph			
Types 8402	54.15	64.95	H4P
Data			
Types 8302	54.15	13.55	H6P
Types 8401	54.15	251.00	HPQ

For the Second or Subsequent station  
in an exchange

Voice			
Types 8201-8204 and 8301	54.15	8.15	—
Telephotograph			
Types 8402	54.15	21.65	J4P
Data			
Types 8302	54.15	8.15	HTP
Types 8401	54.15	18.95	J3P

**Terminal Control Arrangements**

To provide for use of a wideband channel  
as individual channels of voice grade

Per arrangement	None	271.00	J6P
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When the operation of a terminal control arrangement is controlled from a different exchange to permit individual voice grade channels to be used alternately with a wideband channel, a low frequency control channel as provided in Series 1000 or other appropriate control path is required between the terminal control arrangement and associated control station.

**SERIES 8000 CHANNELS — RATES (Cont'd)**

**Terminal Control Arrangements (Cont'd)**

**Supplementary Tone Arrangement**

Supplementary tone arrangement to produce an interrupted tone transmitted from a control station to all stations on individual voice grade services provided alternately to a wideband channel. Includes automatic operation of terminal control arrangement at the control station upon expiration of a timed period.

	<b>Installation</b>	<b>Monthly</b>	<b>USOC</b>
First service	\$ 21.65	\$ 11.90	J 7P
Each additional service simultaneously affected	None	1.10	J 8P

**Switching and Selecting Arrangements**

Switching arrangements for use with the following types of channels are provided at the same rates as specified for channels furnished under other series:

Voice, Telephotograph, Remote Metering, etc., and Data

**Multiway Wideband Switching Arrangement**

Multiway wideband switching arrangements permit connection to be established between:

A Series 5000 or Series 8000 service terminal, as appropriate, located in the same exchange as the switching arrangement

Series 5000 and/or Series 8000 interexchange wideband channels

Types 5701, 5703 and 5706 service terminals furnished in connection with Series 5000 wideband interexchange channels

Types 8801 and 8803 service terminals furnished in connection with Series 8000 wideband interexchange channels

The switching arrangements may be ordered only

In an exchange where the service terminates at the customer premises or

At an exchange where the switching arrangement is connected to a wideband channel arranged for alternate use as a number of individual voice grade channels, and all of these exchange channels service stations within that exchange.

**SERIES 8000 CHANNELS - RATES (Cont'd)**

**Multiway Wideband Switching Arrangement (Cont'd)**

<b>10 Port Switch</b>	<b>Installation</b>	<b>Monthly</b>	<b>USOC</b>
-----------------------	---------------------	----------------	-------------

Arrangement with capacity for terminating up to a maximum of ten wideband channels. (Requires the use of, but does not include, an appropriate control channel and control equipment for switching purposes.)

Per termination	\$ 16.20	\$ 19.45	J9P
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Service terminals in connection with inter-exchange channels are furnished as specified on page 4 preceding

A termination at a customer's premises in the same exchange as the switching arrangement is furnished at the rate set forth on page 3 preceding the second subsequent station in an exchange.

**38 Port Switch**

Arrangement with capacity for terminating up to a maximum of thirty-eight wideband channels. (Includes control equipment but requires use of a voice coordinating channel for control purposes. (See Note)

One to eleven terminations		536.00	BJK
—voice coord. channel			
in rotary dial telephones		628.00	20J
—voice coord. channel			
in Touchtone Telephones		48.70	BKJ

Service on terminals in connection with interexchange channels are furnished as specified on page 4 preceding.

A termination at a customer's premises in the same exchange as the switching arrangement is furnished at the rate set on page 3 preceding for the second or subsequent station in an exchange.

**Note:** The voice coordinating channel must be equipped with a USOC 27E dial arrangement furnished at the rate in Tariff F.C.C. 260. (\$5.00 monthly this date)

**Multi way WB switching arrangements - See Tariff F.C.C. No 260**

**SECTION 4  
PART 7, PAGE 8**

**Rate information is not  
complete. Use TARIFFS  
for customer quotations.**

**SERIES 8000 CHANNELS - RATES (Cont'd)**

**Conditioning**

Conditioning for individual channels of voice grade furnished under this series for voice and data transmission (except Type 8401) is provided at the charges specified in Part 6 of this Section.

**DATAPHONE 50** (See Note 2)

TARIFF F.C.C. NOS. 263 and 260 AND I.S.M. DATA-9

**INTERSTATE**

**Installation**

**Monthly**

Station Terminals (Note 1)

For transmission of either sequential non-synchronous signals at maximum rates of approximately 50,000 bps or synchronous signals at a rate of 50,000 bps

Per terminal	\$125.00	\$275.00
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For alternate transmission of sequential non-synchronous signals at maximum rates of approximately 50,000 bps and synchronous signals at a rate of 50,000 bps

Per terminal	125.00	300.00
--------------	--------	--------

Rate	Airline Mileage	Per Minute of
From	To	Fraction Thereof
0	50	\$ .50
51	150	.80
151	300	1.25
301	600	1.75
601	1200	2.25
1201	2000	2.75
2001 and over		3.25

The monthly charge for Interstate DATAPHONE 50 service is obtained by adding the monthly Station Terminal charge to the sum of charges developed from the above rate table for each two-point Interstate DATAPHONE 50 connection.

**Note 1:** Includes a voice coordinated local 50 kilobit access line, termination in a telephone company switching center and data terminal equipment at the customer's premise (Data Sets and Data Auxiliary Sets) to interface with COAM data (or facsimile) transmitting and receiving equipment.

There are four switching centers. They are located in the following four cities: Chicago, Illinois; New York, New York; Los Angeles, California; and Washington, D.C. The Washington, D.C., New York and Los Angeles switching centers are connected to the Chicago switching center by common-user intercity trunk groups. Chicago is the "hub" of the network.

**SECTION 4  
PART 8, PAGE 2**

**Rate information is not  
complete. Use TARIFFS  
for customer quotations.**

**DATAPHONE — 50 (Cont'd)**

**Interstate (Cont'd)**

Customer premises located in the same exchange as a switching center are connected to that center by a local access line (See Station Terminals above).

There is presently an Interstate Foreign Exchange service to connect a customer's premise to a switching center when the customer's premise is not located in the same exchange as the switching center and is located in a different State, (i.e., A customer's premise in St. Louis, Mo. can be connected to the Chicago switching center via a wideband Interstate foreign exchange channel). Rates for a Series 5,000 or 8,000 IXC applies for the FX channel, as well as a Series 5,000 or 8,000 FX Service Terminal at each end of the wideband FX channel. The FX monthly charges would be in addition to the charges listed above (Station Terminal and Usage charges). The FX Service Terminal charge is as follows:

	<b>Installation</b>	<b>Monthly</b>	<b>USOC</b>
Per Service Terminal (50 Kilobit FX Service Terminal) Type 5708 or Type 8802	\$108.00	\$163.00	UP6, UP7

Interstate DATAPHONE — 50 service is available in the following exchange areas:

1. Chicago, Illinois Exchange (City Zone 1 thru 11)
2. Los Angeles, California Area which includes  
Los Angeles (City Zones 1 thru 14), Beverly Hills,  
Culver City, Inglewood, El Segundo, Hawthorne and  
Montebello, California exchanges
3. New York, N.Y. Exchange (City Zones 1 thru 15)
4. Washington, D.C. Zone 1
5. San Francisco

The four Associated Companies where the switching centers are located have filed Tariffs to permit intra-exchange (and intra-state) DATAPHONE — 50 service. Said Tariffs enable DATAPHONE\* — 50 calls between stations connected to any switching center on an Intrastate or Interstate basis.

Note 2: See ISM Sections TLPK-2, WDBN-1 and DATA-9 for detailed information. The information contained herein is a summary and should be used only as a guide for the Salesman's quick reference. It should not be used as the basis upon which commitments to the customer are made.

**DATA LINE CONCENTRATOR**  
F.C.C. TARIFF 260, I.S.M. DATA-7

<b>DATA LINE CONCENTRATOR EQUIPMENT</b>	<b>Install.</b>	<b>Monthly</b>	<b>USOC</b>
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For use at a customer's premises to concentrate up to a maximum of 128 data station lines to an 8, 16, or 32 trunk (size) group, for access to customer-provided terminal equipment. The station lines and trunks utilize half-duplex facilities capable of transmitting signals at rates up to 150 bauds.

Line Concentrator  
Connects station lines to trunks

Basic Capacity —

Up to a Maximum of:			
8 Trunk Size—32 lines and 8 Trunks	\$108.00	\$ 85.55	D12
16 Trunk Size—32 lines and 16 Trunks	135.00	102.00	D1C
32 Trunk Size—32 lines and 32 Trunks	271.00	135.00	D1F

Additional Station Line Capacity—  
For increasing capacity of Data Line  
Concentrator by an additional  
32 station lines

—in #8 Trunk Size	54.15	25.95	D13
—in #16 Trunk Size	81.20	36.80	D1E
—in #32 Trunk Size	135.00	68.20	D1G

Station Line and Trunk Termi-  
nating Equipment—  
To provide for the termination of  
station lines and trunks in Data  
Line Concentrator

—per line side termination	10.80	1.10	D1K
—per trunk side termination	10.80	1.90	D1N

Mounting Equipment

Cabinet, to mount Line Concentrator	81.20	30.35	D4C
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Interface Arrangements

Arrangement to permit the trunkside of a Data Line concentrator to terminate in customer provided equipment			
—per initial 3 arrangements	108.00	40.05	H6T
—per each additional arrangement	32.50	5.50	H6U

The above arrangement is  
furnished only to agencies  
of the Federal Government



**SPECIAL ROUTING OF SERVICES OR CHANNELS**

S.A.M. Sect. 602, ISM Section MISC-2

The basic provisions of the Tariff specify that when a customer requests that the facilities provided for a particular service or channel avoid specific geographic locations and/or be furnished over diverse routes from other specific services or channels, special routing charges apply.

Special routing is involved when the Telephone Company furnishes the private line service in a manner which includes one or both of the following conditions:

- (A) Where two or more private lines must be furnished over not more than two different physical routes.
- (B) Where a private line must be furnished on a route which avoids specific geographical locations.

Special routing of services excluding series 6000, 7000, 10000 channels is available only within the United States.

The following charges apply for each two-point private line of a type number lower than 5700 that is specially routed between designated customer stations having different rate centers or each such section of a multi-point private line.

	<b>USOC</b>	<b>Monthly</b>
a. Diversity	*SL2	\$21.65
b. Avoidance	SL4	\$43.30
c. Diversity and Avoidance	SL6	\$43.30
d. Diversity furnished separate from route traversed by a Dataphone® Digital Service furnished under Tariff FCC No. 267	SL7	\$43.30

The following charges apply for Type 5701, 5703, 5706, 5756, 8801, 8803 and 8856 Services

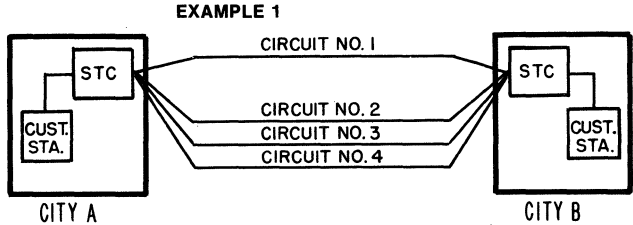
	<b>USOC</b>	<b>Install</b>	<b>Monthly</b>
a. Special routing between two private line services — one type 5700 or 8800 from another type 5700 or 8800	*SL2	\$1030.00	\$155.00
b. Special routing between two private line services — one type 5700 or 8800 from one or more channels on the same route of a type lower than 5700	*SL2	\$1030.00	\$155.00
c. Special routing between a type 5700 or 8800 service and the route traversed by a Dataphone® Digital Service furnished under Tariff FCC No. 267	*SL8	\$2060.00	\$310.00

\* Class of service code provides proper billing information.

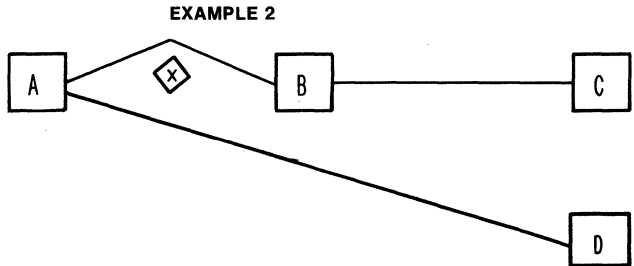
**SECTION 4  
PART 9, PAGE 2**

**Rate information is not complete. Use TARIFFS for customer quotations.**

In Example 1 below a customer specifies that circuit No. 1 be diversified from circuits 2, 3 and 4. The \$21.65 charge would be applicable to each of the four circuits involved.



A combination of diversification and avoidance is illustrated in Example 2 below. Circuit A-D must be diversified from A-B-C. Also, the A-B section of circuit A-B-C must avoid point x. A, B, C and D are service points.



The following charges are applicable:

Circuit A-D	\$21.65 for diversification
Section A-B of circuit A-B-C	\$43.30 for diversification and avoidance
Section B-C of circuit A-B-C	\$21.65 for diversification
<b>Total monthly charges for Special routing</b>	<b>\$86.60</b>

**SERIES 5,000 CHANNELS**  
F.C.C. TARIFF 260, I.S.M. TLPK-1

**SERIES 5000 CHANNELS**

**General**

This series is available only to existing customers of record on July 21, 1977.

This series applies only to those channels and services which the customer has specifically ordered to be furnished as Series 5000 channels and services under this tariff.

This series provides Base capacity for transmitting various forms of electrical communications up to the limits specified for the various types as set forth in Base Capacity following, and Terminating Arrangements necessary for the utilization of such capacity.

This series also provides for individual voice grade channel extensions to extend individual channels of lesser capacity arranged for use within a Base Capacity.

Within the limits of a Base Capacity the customer may order as many wideband and/or individual channels of lesser capacity arranged for use as he requires. A channel is considered arranged for use when the necessary service terminals or connecting arrangements are furnished pursuant to the customer's order.

Channels are furnished between specified locations for voice, telephotograph, facsimile, teletypewriter, data transmission, remote metering, supervisory control, miscellaneous signaling and other purposes for which service terminals are provided.

Wideband channels are furnished in connection with 50 kilobit switched foreign exchange service to permit a customer to obtain a 50 kilobit switched exchange terminal in an exchange foreign to the exchange in which the customer is located.

Channels are furnished for half-duplex or duplex operation, the charge being the same in either case, on a two-point or multi-point basis for service on a seven day per week, twenty-four hour per day basis, for a minimum period of one month, except that channels furnished in connection with 50 kilobit switched foreign exchange service are furnished on a two-point basis only.

**Base Capacity**

The Base Capacity is furnished and arranged as follows:

For use as a wideband channel.

For wideband channels and/or individual channels of lesser capacity.

Provided in such manner and over such facilities as the Telephone Company may elect.

Provide only that part of the Base Capacity that the customer has specifically ordered.

**SERIES 5000 CHANNELS (Cont.)**

**Terminating Arrangements**

Terminating Arrangements for use with the two types of Base Capacity are furnished under two classifications:

Service terminals for use as a wideband channel

Service terminals for use as individual channels of a lesser capacity

**INTEREXCHANGE CHANNELS (IXC)**

<u>Base Capacity</u>	<u>Max. Equiv. Carrier Spectrum Assigned Kilocycles Per Second</u>	<u>Maximum Equivalent Voice Grade Channels *</u>
Type 5700	240	60
Type 5800	1,000 (Approx.)	240

\*1 Voice grade channel is the equivalent of 2 Telegraph channels.

**Service Terminals for Use as a Wideband Channel**

**Type 5701**

Service terminals for any one of the following uses. The channel or channels developed by each service terminal requires IXC capacity equivalent to 12 voice channels.

To terminate a channel having a frequency bandwidth of approximately 10 to 20,000 Hertz per second with only minor deviation in gain and delay characteristics within this frequency range.

To accommodate the transmission of data signals at a rate of 40,800 bits per second in sequence and including one voice channel termination for coordination purposes.

To accommodate the transmission of two-level sequential non-synchronous facsimile signals with a minimum signal element width of 20 microseconds or sequential synchronous signals at a rate of 50,000 bits per second. Arrangements for terminating a voice channel for coordination purposes are also included.

At the customer's option a supplementary control arrangement will be provided suitable for simultaneously conditioning three signals, one from each of two groups of five possible signals and one from a group of four possible signals, at rates up to 20 such combinations per second for transmission in lieu of, or alternate to, voice use of the coordination channels.

**Type 5703**

Requires IXC capacity equivalent to 6 voice channels

To accommodate the transmission of two-level facsimile signals within the frequency range of approximately 29 to 44 Kilohertz per second. Arrangements for terminating a voice channel for coordination purposes are also included.

To accommodate the transmission of sequential synchronous signals at a rate of 19,200 bits per second. Arrangements for terminating a voice channel for coordination purposes are also included.

**SERIES 5000 CHANNELS (Cont.)**

**Service Terminals for Use as a Wideband Channel (Cont.)**

**Type 5706**

Arranged to accommodate binary digital baseband signals in a random polar format at the rate of 50 Kbps. Includes arrangements for transmitting signal and supervisory tones

Service Terminals Type 5706 are furnished to a Department or Agency of the U.S. Government for transmission of secure communication from customer owned equipment. The Service Terminals require IXC capacity equivalent to 12 and 6 voice channels respectively.

**Type 5708 (DATA-PHONE 50)**

See ISM DATA-9 for DATA-PHONE 50 service.

**Type 5751**

Requires IXC capacity equivalent to 60 voice channels.

To terminate channels having a frequency bandwidth of approximately 200 to 100,000 Hertz per second with only minor deviation in gain and delay characteristics within this frequency range.

To accommodate the transmission of sequential synchronous digital data signals at a rate of approximately 230,400 bits per second or two-level sequential non-synchronous facsimile signals with a minimum signal element width of 4.3 microseconds. Arrangements for terminating a voice channel for coordinating purposes are also included.

At the customer's option a supplementary control arrangement will be provided suitable for simultaneously conditioning three signals, one from each of two groups of five possible signals and one from a group of four possible signals, at rates up to 20 such combinations per second for transmission in lieu of, or alternate to, voice use of the coordination channel.

**Type 5753**

Requires IXC capacity equivalent to 60 voice channels.

Service Terminal furnished only to a Department or Agency of the U.S. Government for Type P-1 service.

**SECTION 5  
PAGE 4**

**Rate information is not complete. Use TARIFFS for customer quotations.**

**SERIES 5000 CHANNELS — RATES  
INTEREXCHANGE CHANNELS**

<u>Base Capacity</u>	<u>USOC</u>	<u>Per Airline Mile Per Month</u>
Type 5700	ILKCW	\$32.50
Type 5800	ILKDW	92.05

**SERVICE TERMINALS, I.S.M. TLPK-2**

	<u>USOC</u>	<u>1st Station Instal- lation</u>	<u>Monthly Rate</u>	<u>USOC</u>	<u>Add'l Station <math>\emptyset</math> Monthly Rate</u>
<b>For Wideband Channels</b>					
<b>Type 5701:**</b>				G2W	\$324.00
10 to 20,000 Hertz	DY4	\$216.00	\$460.00		
40,800 bits per second	DY4	216.00	460.00		
50,000-sync or non-sync	DY4	216.00	460.00		
supp argt (control)	T5W	103.00*	70.35*		
<b>Type 5703:**</b>				2LW	\$400.00
29 to 44 KC	91D	216.00	460.00		
19,200 bits per second	91D	216.00	460.00		
<b>Type 5706:</b>				P4X	\$324.00
50,000 bits per second (for U.S. Gov. Agencies)	P3X	216.00	460.00		
<b>Type 5708:</b>					
DATA-PHONE 50	UP6	108.00	163.00		
<b>Type 5751:**</b>					
200 to 100,000 cycles	DZ4	216.00	703.00		
230,400 bits per second	DZ4	216.00	703.00		
supp argt (control)	T5W	108.00	70.35		
<b>Type 5753:</b>					
P-1 Service (Govt Only)	3UM	542.00	1,023.00		

$\emptyset$  Installation charge is same as for 1st station

\* Same rates for Add'l Station

\*\* Refer to ISM CLAS for suffix

**SERVICE TERMINALS (Cont.)**

For channels of Lesser Capacity	<u>USOC</u>	1st Station		<u>USOC</u>	Add'l Station $\emptyset$ Monthly Rate
		<u>Instal- lation</u>	<u>Monthly Rate</u>		
<b>Voice</b>					
Type 5201	TP3	\$54.15	\$43.30	TT3	\$21.65
Type 5202	G5Y	54.15	43.30	3JP	21.65
Type 5203	S8X	54.15	43.30	4HP	21.65
Type 5204	UUX	54.15	43.30	4JP	21.65
Type 5206	ZUP	54.15	43.30	No Add'l Sta	
Type 5301	UWP	54.15	43.30	6GP	21.65
<b>Teletypewriter</b>					
Type 5101	WDG	\$54.15	\$43.30	WDG	\$21.65
Type 5102	SBM	54.15	43.30	4GP	21.65
Type 5103	U3M	54.15	43.30	6HP	21.65
Type 5105	VWP	54.15	43.30	7HP	21.65
Type 5106	4MT	54.15	43.30	40W	21.65
<b>Telephotograph</b>					
Type 5302	WBM	54.15	157.00	6JP	27.10
<b>Data</b>					
Type 5302	YBM	54.15	43.30	BGP	21.65
Type 5401	3GP	54.15	281.00	BJP	32.50

$\emptyset$  Installation charges are the same as for the 1st station.

**WIDEBAND MULTIWAY SW ARG'T, —  
SERVICE TERMINAL**

USOC

Installation

Monthly

When an IXC with service terminals of the following Types is terminated in a wideband multiway SW. arg't, the service terminal charge at the exchange in which the SW arg't, is located is:

**Type 5701**

Per line terminated (from customer station)	TMH	\$108.00	\$163.00
Per trunk terminated (from another switching arrangement)	SJT	163.00	249.00
(not available for 10 to 20,000 Hertz)			

**Type 5703**

Per line terminated (19.2 kbps only)	VPH	108.00	163.00
Per trunk terminated	TJK	163.00	379.00

**Type 5706**

Per line terminated (from a customer station)	P5X	108.00	163.00
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For each coordinating voice Channel Terminated at the customers Station on a Non-Switched basis.

G4W	10.80	13.55
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**Rate information is not complete. Use TARIFFS for customer quotations.**

**WIDEBAND MULTI-SW. ARGT. —  
SERVICE TERMINALS (Cont'd)**

**USOC      Installation      Monthly**

**Coordinating Voice Channel Extension**

A coordinating voice channel terminated at a wideband station may be extended to additional locations within the same building at the following rates:

Each termination	B 9X	10.80	1.10
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**CONNECTING ARGT. I.S.M. TLPK 3**

A connecting arrangement is required for each connection of a channel furnished under this series to:

- (a) an IXC furnished under other series, except where the connection is by means of a switching arrangement.
- (b) an alternate use arrangement except where a connecting arrangement, for the purpose specified in (a) preceding, or a service terminal is provided.

The connecting arrangement charge is equal to the service terminal charge for the first station on such channel (See page 4 preceding)

A connecting arrangement is also required for services furnished under this series for each connection of an individual channel of lesser capacity to individual channel extensions.

**SWITCHING AND SELECTING  
ARRANGEMENTS**

**Multiway Wideband Switching Arrangements permit connections to be established between:**

Series 5000 and/or Series 8000 interexchange wideband channels.

A Series 5000 or Series 8000 service terminal, as appropriate, located in the same exchange as the switching arrangement.

Types 5701, 5703, and 5706 service terminals furnished in connection with Series 5000 interexchange wideband channels.

Types 8801 and 8803 service terminals furnished in connection with Series 8000 interexchange wideband channels.



**SWITCHING AND SELECTING  
ARRANGEMENTS (Cont.)**

**The Switching Arrangement May be  
Ordered Only:**

**In an exchange where a customer is  
connected to the service, or**

At an exchange where the switching arrangement is connected to a wideband channel arranged for alternate use as a number of channels of lesser capacity and one or more of said channels serves a station within such exchange.

<b>10-PORT SWITCH</b>	<u>USOC</u>	<u>Installation</u>	<u>Monthly</u>
Arrangement with capacity for terminating up to a maximum of ten wideband channels. (Requires the use of, but does not include, an appropriate control channel and control equipment for switching purposes.)			
Per termination	B3X	\$ 16.20	\$ 19.45

**38-PORT SWITCH**

Arrangement with capacity for terminating up to a maximum of thirty-eight wideband channels. (Includes control equipment but requires the use of voice coordinating channel for control purposes - See Note.)

Note: The voice coordinating channel must be equipped with a USOC 27E dial arrangement furnished at the rate specified in F.C.C. 260 and terminate in a rotary dial telephone.

One to eleven terminations

When voice coordinating channels terminate in:

—Rotary dial telephone sets	BEJ	\$536.00
—Touch-Tone* telephone sets	2JN	\$628.00

Each additional termination in excess of eleven	BFJ	\$ 48.70
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Service terminals in connection with interexchange channels are furnished as specified in the preceding. Under "Wideband Multiway SW ARG T - Service Terminals."

Connection of a customer premises in the same exchange as the switching arrangement, is furnished at the rate set forth in the preceding for the "second or subsequent station in an exchange."

\* Registered Service Mark

**Rate information is not complete. Use TARIFFS for customer quotations.**

**INDIVIDUAL CHANNEL EXTENSIONS**

Channels of Lesser Capacity within a Base Capacity may be extended out of the Base Capacity by use of Individual Channel Extensions Series 5000, to the first service point only. All channels beyond the first service point are 2/3000 series.

Following types are available

Type 5021	5026 (Half Dux Only)
5022	5031
5023	5032
5024	

IXC Rates per Airline Mile

		HDX	DUX
First 25	(1-25)	\$3.24	
Next 75	(26-100)	2.28	
Next 150	(101-250)	1.63	Rates are for Half Dux plus 10%
Next 250	(251-500)	1.13	
Each Add'l	(501 and over)	.81	

**Service Terminals for Use on Individual Channel Extensions**

For the first station in an exchange or for a connection to a Telephone Company office on each service in use.

**Per Service Terminal**

	<u>USOC</u>	<u>Installation Charge</u>	<u>Monthly Charge</u>
Types 5021 through 5024			
—half duplex	WP5	\$54.15	\$16.20
—duplex	WP6	54.15	17.85
Types 5026			
—Where the total interexchange channel mileage of the extension channel is			
—over 25 airline miles	WP9	54.15	16.20
—25 airline miles or less	WPB	54.15	10.80
Type 5031 and 5032	WUP	54.15	16.20
—duplex	VPV	54.15	17.85

For the second or subsequent stations in an exchange on any individual service.

**Per Service Terminal**

<b>Voice</b>	<u>USOC</u>	<u>Installation Charge</u>	<u>Monthly Charge</u>
Types 5021 through 5024			
—half duplex	WP7	\$54.15	\$10.80
—duplex	WP8	54.15	11.90
Types 5031 and 5032			
—half duplex	WX4	54.15	10.80
—duplex	VPW	54.15	11.90

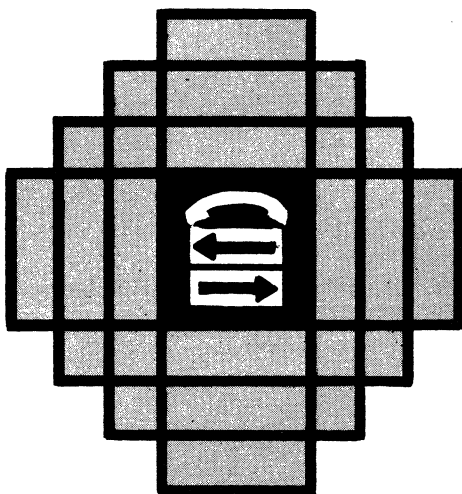
**Service Terminals for Use on Individual Channel Extensions (Cont'd)**

**Move Charges**

When a service terminal is moved to a new location on the same premises, one-half the installation charge applies.

When a service terminal is moved to a new location on different premises, installation charges apply.

# **WATS**



**6**

**WIDE AREA TELECOMMUNICATIONS SERVICE**

**A FLEXIBLE, ECONOMICAL BELL SYSTEM COMMUNICATIONS SERVICE**

**TAILORED TO FIT MANY BUSINESS REQUIREMENTS**

## **HOW WATS WORKS**

### **INTERSTATE**

WATS - **Wide Area Telecommunications Service** is a packaged telecommunications plan providing dial type service between a station associated with a WATS access line and other stations in designated service areas.

#### **Component I Service Areas.**

WATS customers have a choice of five service areas (1, 2, 3, 4, or 5) for service within the contiguous states and two service areas (6 or 7) for service to and from Alaska/Hawaii and Puerto Rico/U.S. Virgin Islands respectively. Service to a higher number service area *includes* service to all lower numbered service areas.

Both Inward and Outward WATS as interstate offerings do *not* provide for calls to or from points within the same state in which the access line terminates. These services are considered *intrastate* and offered by the Telephone Company in the Telephone Company's Exchange Service Tariffs.

#### **Component II Time Volume.**

There are two time plans to choose from.

- **Full Business Day**, referred to as WATS 240, gives you unlimited calling for up to 240 hours per month to the service area selected. This is provided at monthly rates.
- **Measured Time**, referred to as WATS 10 is a more compact component with up to 10 hours of unlimited calling per month to the service area selected, for one set monthly fee.
- **Additional Period** charges for both packages are billed in addition to the monthly charge in units of one-tenth of an hour, at a lower hourly rate.

There are virtually no requirements\* as to how the time volumes for either WATS 240 or WATS 10 is consumed.

#### **Component III Inward/Outward.**

**Outward Service** - This service provides for the *origination* of calls from a station associated with an outward WATS access line to stations in a designated service area.

**Inward Service** - This service provides for the *termination* of calls from stations in a designated service area to a station associated with an inward WATS access line.

**Miscellaneous Components**

Full Business Day and Measured Time Rates — see following rate tables in this section.

Other chargeable items include —

<b>Monthly</b>	
Access line extensions:	
— same exchange	\$10.80
— different exchange	16.20
Suspension of service	54.15
<b>Non-Recurring</b>	
Installation	\$54.15
Move:	
— same premises	27.08
— different premises	54.15
Conversion	27.10
Acoustic, Inductive connection	27.10
Maintenance of service	27.10

\* If the number of calls in any month exceeds the number of minutes in your package — 14,400 for WATS 240; 600 for WATS 10 — then the total time will be increased to average one minute per call. Although the first inward WATS access line to each Service Area for WATS 240 or WATS 10 must consist of two communication paths, the basic monthly and additional period rates for only one line will be charged.

**INTRASTATE**

Statewide service is currently available in all states except Hawaii and Alaska and the territories of Puerto Rico/U.S. Virgin Islands. Since intrastate WATS' plans vary, consult the Telephone Company's Exchange Service Tariffs or the appropriate area WATS coordinator.

**How WATS benefits many businesses.**

- WATS collection teams speed payment from traditional "slow pays".
- WATS (800) promotes speedy responses and sales from advertising and extends sales areas.
- WATS "buying trips" are the travel-free way to search for merchandise.
- While a business is "closed", WATS remains open. Daily feeds can supply central information systems — every evening — for reliable and timely morning reports.
- WATS searches out supplier availabilities to help keep inventories in balance.
- A limited sales force can WATS canvass distant territories without extensive travel.

There are many other creative uses for WATS -- Just analyze your customer's calling needs and construct a communication package with WATS. **Wide Area Telecommunications Service.**

Rate information is not  
complete. Use TARIFFS  
for customer quotations.

WIDE AREA TELECOMMUNICATIONS SERVICE (WATS)  
INTERSTATE — FULL BUSINESS DAY — OUTWARD OR INWARD  
F.C.C. TARIFF 259

TABLE 3 - MONTHLY RATE SCHEDULES FOR  
FULL BUSINESS DAY

State	Initial Period First 240 Hours Service Areas							Additional Period Each Hour Service Areas						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Alabama	\$1,315	\$1,570	\$1,630	\$1,645	\$1,670	\$3876	\$7856	\$3.65	\$4.36	\$4.52	\$4.56	\$4.63	\$10.76	\$21.84
Arizona	1,500	1,630	1,645	1,665	1,675	3264	7858	4.16	4.52	4.56	4.62	4.65	9.07	21.84
Arkansas	1,315	1,570	1,630	1,645	1,660	3474	7858	3.65	4.36	4.52	4.56	4.61	9.65	21.84
California-No.	1,570	1,640	1,660	1,670	1,675	3264	8864	4.36	4.55	4.61	4.63	4.65	9.07	24.63
California-So.	1,610	1,645	1,660	1,670	1,675	3264	8864	4.47	4.56	4.61	4.63	4.65	9.07	24.63
Colorado	1,570	1,610	1,630	1,645	1,670	3474	7858	4.36	4.47	4.52	4.56	4.63	9.65	21.84
Connecticut	900	1,315	1,640	1,660	1,675	3878	7858	2.50	3.65	4.55	4.61	4.65	10.78	21.84
Delaware	900	1,315	1,610	1,650	1,675	3878	7858	2.50	3.65	4.47	4.58	4.65	10.78	21.84
Dist. of Columbia	900	1,315	1,570	1,645	1,675	3878	7858	2.50	3.65	4.36	4.56	4.65	10.78	21.84
Florida	1,570	1,640	1,645	1,655	1,675	3878	7858	4.36	4.55	4.56	4.59	4.65	10.78	21.84
Georgia	1,315	1,570	1,630	1,645	1,670	3878	7858	3.65	4.36	4.52	4.56	4.63	10.76	21.84
Idaho	1,400	1,610	1,645	1,665	1,675	2892	8864	3.89	4.47	4.56	4.62	4.65	8.03	24.63
Illinois-No.	1,150	1,400	1,610	1,640	1,660	3474	7858	3.19	3.89	4.47	4.55	4.61	9.65	21.84
Illinois-So.	1,150	1,500	1,610	1,640	1,660	3474	7858	3.19	4.16	4.47	4.55	4.61	9.65	21.84
Indiana	1,150	1,400	1,570	1,630	1,670	3474	7858	3.19	3.89	4.36	4.52	4.63	9.65	21.84
Iowa	1,315	1,570	1,610	1,645	1,660	3474	7858	3.65	4.36	4.47	4.56	4.61	9.65	21.84
Kansas	1,400	1,570	1,610	1,645	1,660	3474	7858	3.89	4.36	4.47	4.56	4.61	9.65	21.84
Kentucky	1,150	1,400	1,570	1,630	1,670	3878	7858	3.19	3.89	4.36	4.52	4.63	10.78	21.84
Louisiana	1,400	1,610	1,640	1,650	1,665	3474	7858	3.89	4.47	4.55	4.58	4.62	9.65	21.84
Maine	1,400	1,610	1,650	1,665	1,675	3878	7858	3.89	4.47	4.58	4.62	4.65	10.78	21.84
Maryland	900	1,315	1,610	1,650	1,675	3878	7858	2.50	3.65	4.47	4.58	4.65	10.78	21.84
Massachusetts	900	1,400	1,640	1,660	1,675	3878	7858	2.50	3.89	4.55	4.61	4.65	10.78	21.84
Michigan-No.	1,400	1,610	1,630	1,640	1,670	3474	7858	3.89	4.47	4.52	4.55	4.63	9.65	21.84
Michigan-So.	1,315	1,570	1,610	1,640	1,670	3474	7858	3.65	4.36	4.47	4.55	4.63	9.65	21.84
Minnesota	1,315	1,570	1,640	1,650	1,660	3474	7858	3.65	4.36	4.55	4.58	4.61	9.65	21.84
Mississippi	1,400	1,570	1,630	1,645	1,665	3878	7858	3.89	4.36	4.52	4.59	4.65	10.78	21.84
Missouri	1,400	1,500	1,610	1,640	1,660	3474	7858	3.89	4.16	4.47	4.55	4.61	9.65	21.84
Montana	1,570	1,630	1,645	1,660	1,670	3264	8864	4.36	4.52	4.56	4.61	4.63	9.07	24.63
Nebraska	1,400	1,570	1,630	1,645	1,660	3474	7858	3.89	4.36	4.52	4.56	4.61	9.65	21.84
Nevada	1,315	1,610	1,650	1,670	1,675	3264	8864	3.65	4.47	4.58	4.62	4.65	9.07	24.63
New Hampshire	1,075	1,500	1,640	1,660	1,675	3878	7858	2.98	4.16	4.55	4.61	4.65	10.78	21.84
New Jersey	900	1,150	1,630	1,655	1,675	3878	7858	2.50	3.19	4.52	4.59	4.65	10.76	21.84
New Mexico	1,500	1,610	1,640	1,655	1,670	3474	7858	4.16	4.47	4.55	4.59	4.63	9.65	21.84
New York-N.E.	1,150	1,570	1,630	1,655	1,675	3878	7858	3.19	4.36	4.52	4.59	4.65	10.78	21.84
New York-S.E.	900	1,500	1,630	1,655	1,675	3878	7858	2.50	4.16	4.52	4.59	4.65	10.78	21.84
New York-West	1,150	1,400	1,630	1,655	1,675	3878	7858	3.19	3.89	4.52	4.59	4.65	10.78	21.84
North Carolina	1,315	1,500	1,610	1,645	1,675	3878	7858	3.65	4.16	4.47	4.56	4.65	10.78	21.84
North Dakota	1,400	1,630	1,645	1,655	1,665	3474	7858	3.89	4.52	4.56	4.59	4.62	9.65	21.84
Ohio-No.	1,150	1,400	1,570	1,630	1,670	3878	7858	3.19	3.89	4.36	4.52	4.63	10.78	21.84
Ohio-So.	1,150	1,400	1,570	1,630	1,670	3878	7858	3.19	3.89	4.36	4.52	4.63	10.78	21.84
Oklahoma	1,400	1,570	1,630	1,645	1,660	3474	7858	3.89	4.36	4.52	4.56	4.61	9.65	21.84
Oregon	1,400	1,630	1,660	1,670	1,675	2892	8864	3.89	4.52	4.61	4.63	4.65	8.03	24.63
Pennsylvania-E	900	1,315	1,610	1,645	1,675	3878	7858	2.50	3.65	4.47	4.56	4.65	10.78	21.84
Pennsylvania-W	1,150	1,315	1,610	1,645	1,675	3878	7858	3.19	3.65	4.47	4.56	4.65	10.78	21.84
Rhode Island	900	1,400	1,640	1,660	1,675	3878	7858	2.50	3.89	4.55	4.61	4.65	10.78	21.84
South Carolina	1,315	1,570	1,630	1,645	1,670	3878	7858	3.65	4.36	4.52	4.56	4.63	10.78	21.84
South Dakota	1,400	1,610	1,630	1,650	1,660	3474	7858	3.89	4.47	4.52	4.58	4.61	9.65	21.84
Tennessee	1,400	1,500	1,610	1,640	1,670	3878	7858	3.89	4.16	4.47	4.55	4.63	10.78	21.84
Texas-E	1,500	1,630	1,645	1,655	1,670	3474	7858	4.16	4.52	4.56	4.59	4.63	9.65	21.84
Texas-S	1,610	1,640	1,645	1,655	1,670	3474	7858	4.47	4.55	4.56	4.59	4.63	9.65	21.84
Texas-W	1,570	1,630	1,645	1,655	1,670	3474	7858	4.36	4.52	4.56	4.59	4.63	9.65	21.84
Utah	1,500	1,570	1,640	1,660	1,670	3264	8864	4.16	4.36	4.55	4.61	4.63	9.07	21.84
Vermont	1,075	1,500	1,640	1,660	1,675	3878	7858	2.98	4.16	4.55	4.61	4.65	10.78	21.84
Virginia	1,150	1,315	1,570	1,645	1,675	3878	7858	3.19	3.65	4.36	4.56	4.65	10.78	21.84
Washington	1,610	1,645	1,660	1,670	1,675	2892	8864	4.47	4.56	4.61	4.63	4.65	8.03	24.63
West Virginia	1,075	1,315	1,570	1,640	1,670	3878	7858	2.98	3.65	4.36	4.55	4.63	10.78	21.84
Wisconsin	1,150	1,570	1,630	1,645	1,665	3474	7858	3.19	4.36	4.52	4.56	4.62	9.65	21.84
Wyoming	1,400	1,610	1,640	1,650	1,670	3474	7858	3.89	4.47	4.55	4.58	4.63	9.65	21.84

**WIDE AREA TELECOMMUNICATIONS SERVICE (WATS)  
INTERSTATE — MEASURED TIME — OUTWARD OR INWARD  
F. C. C. TARIFF 259**

**TABLE 4 — MONTHLY RATE SCHEDULES FOR  
MEASURED TIME**

State	Initial Period							Additional Period						
	First 10 Hours							Each Hour						
	Service Areas							Service Areas						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Alabama	\$210	\$230	\$236	\$239	\$244	\$248	\$700	\$16.43	\$17.25	\$17.70	\$17.93	\$18.23	\$18.38	\$27.08
Arizona	225	235	239	243	245	334	700	16.95	17.70	17.93	18.23	18.38	22.70	52.50
Kansas	219	230	236	239	242	351	700	16.43	17.25	17.70	17.93	18.23	24.20	52.50
California-No.	230	238	242	244	245	334	780	17.25	17.85	18.15	18.31	18.38	22.70	58.50
California-So.	234	239	242	244	245	334	780	17.55	17.93	18.15	18.31	18.38	22.70	58.50
Colorado	230	234	236	239	244	351	700	17.25	17.55	17.70	17.93	18.31	24.20	52.50
Connecticut	196	219	238	242	245	383	700	14.70	16.43	17.85	18.15	18.38	27.08	52.50
Delaware	196	219	234	240	245	383	700	14.70	16.43	17.55	18.00	18.38	27.08	52.50
D.C. of Columbia	196	219	230	239	245	383	700	14.70	16.43	17.25	17.93	18.38	27.08	52.50
Florida	230	236	239	241	245	383	700	17.25	17.85	17.93	18.08	18.38	27.08	52.50
Georgia	219	230	236	239	244	383	700	16.43	17.25	17.70	17.93	18.31	27.08	52.50
Iaho	224	234	239	243	245	305	780	16.80	17.55	17.93	18.23	18.38	20.04	58.50
Illinois-No.	214	224	234	238	242	351	700	16.05	16.80	17.55	17.85	18.15	24.20	52.50
Illinois-So.	214	225	234	238	242	351	700	16.05	16.95	17.55	17.85	18.15	24.20	52.50
Indiana	214	224	230	236	244	351	700	16.05	16.80	17.25	17.70	18.31	24.20	52.50
Iowa	219	230	234	239	242	351	700	16.43	17.25	17.55	17.93	18.15	24.20	52.50
Kansas	224	230	234	239	242	351	700	16.80	17.25	17.55	17.93	18.15	24.20	52.50
Kentucky	214	224	230	236	244	383	700	16.05	16.80	17.25	17.70	18.31	27.08	52.50
Louisiana	224	234	238	240	243	351	700	16.80	17.55	17.85	18.00	18.23	24.20	52.50
Maine	224	234	240	243	245	383	700	16.80	17.55	18.00	18.23	18.38	27.08	52.50
Maryland	196	219	234	240	245	383	700	14.70	16.43	17.55	18.00	18.38	27.08	52.50
Massachusetts	196	224	238	242	245	383	700	14.70	16.80	17.85	18.15	18.38	27.08	52.50
Michigan-No.	224	234	236	238	244	351	700	16.80	17.55	17.70	17.85	18.31	24.20	52.50
Michigan-So.	219	230	234	238	244	351	700	16.43	17.25	17.55	17.85	18.31	24.20	52.50
Minnesota	219	230	238	240	242	351	700	16.43	17.25	17.85	18.00	18.15	24.20	52.50
Mississippi	224	230	236	239	243	383	700	16.80	17.25	17.70	17.93	18.23	27.08	52.50
Missouri	224	225	234	238	242	351	700	16.80	16.95	17.55	17.85	18.15	24.20	52.50
Montana	238	236	239	242	244	334	780	17.25	17.70	17.93	18.15	18.31	27.08	58.50
Nebraska	224	230	236	239	242	351	700	16.80	17.25	17.70	17.93	18.15	24.20	52.50
Nebraska	219	234	240	244	245	334	780	16.43	17.55	18.00	18.31	18.38	22.70	58.50
New Hampshire	207	225	238	242	245	383	700	15.53	16.95	17.85	18.15	18.38	27.08	52.50
New Jersey	196	214	235	241	245	383	700	14.70	16.05	17.70	18.08	18.38	27.08	52.50
New Mexico	226	234	238	241	244	351	700	16.95	17.55	17.85	18.08	18.31	24.20	52.50
New York-N.E.	214	230	235	241	245	383	700	16.05	17.25	17.70	18.08	18.38	27.08	52.50
New York-S.E.	196	225	236	241	245	383	700	14.70	16.95	17.70	18.08	18.38	27.08	52.50
New York-West	214	224	235	241	245	383	700	16.05	16.80	17.70	18.08	18.38	27.08	52.50
North Carolina	219	225	234	239	245	383	700	16.43	16.95	17.55	17.93	18.38	27.08	52.50
North Dakota	224	236	239	241	243	351	700	16.80	17.70	17.93	18.08	18.23	24.20	52.50
Ohio-No.	214	224	230	236	244	383	700	16.05	16.80	17.25	17.70	18.31	27.08	52.50
Ohio-So.	214	224	230	236	244	383	700	16.05	16.80	17.25	17.70	18.31	27.08	52.50
Oklahoma	224	230	236	239	242	351	700	16.80	17.25	17.70	17.93	18.15	24.20	52.50
Oregon	224	236	242	244	245	305	780	16.80	17.70	18.15	18.31	18.38	20.04	58.50
Pennsylvania-E	196	219	234	239	245	383	700	14.70	16.43	17.55	17.93	18.38	27.08	52.50
Pennsylvania-W	214	219	234	239	245	383	700	16.05	16.43	17.55	17.93	18.38	27.08	52.50
Rhode Island	196	224	238	242	245	383	700	14.70	16.80	17.85	18.15	18.38	27.08	52.50
South Carolina	219	230	236	239	244	383	700	16.43	17.25	17.70	17.93	18.31	27.08	52.50
South Dakota	224	234	236	240	242	351	700	16.80	17.55	17.70	18.00	18.15	24.20	52.50
Tennessee	224	225	234	238	244	383	700	16.80	16.95	17.55	17.85	18.31	27.08	52.50
Texas-E	225	235	239	241	244	351	700	16.95	17.70	17.93	18.08	18.31	24.20	52.50
Texas-S	234	238	239	241	244	351	700	17.55	17.85	17.93	18.08	18.31	24.20	52.50
Texas-W	230	235	239	241	244	351	700	17.25	17.70	17.93	18.08	18.31	24.20	52.50
Texas	225	230	238	242	244	334	700	16.95	17.25	17.85	18.15	18.31	22.70	52.50
Vermont	207	225	238	242	245	383	700	15.53	16.95	17.85	18.15	18.38	27.08	52.50
Virginia	214	219	230	239	245	383	700	16.05	16.43	17.25	17.93	18.38	27.08	52.50
Washington	224	239	242	244	245	305	780	17.55	17.93	18.15	18.31	18.38	20.04	58.50
West Virginia	207	219	230	238	244	383	700	15.53	16.43	17.25	17.85	18.31	20.04	58.50
Wisconsin	214	230	235	239	243	351	700	16.05	17.25	17.70	17.93	18.23	24.20	52.50
Wyoming	224	234	238	240	244	351	700	16.80	17.55	17.85	18.00	18.31	24.20	52.50





**LOW, DIAL-IT-YOURSELF RATES APPLY TO ALL  
INTRA — U.S. — MAINLAND  
CALLS**

**CALLS CAN BE PLACED TO MORE THAN 97% OF THE  
WORLD'S TELEPHONES**

**RADIOTELEPHONE CALLS CAN BE PLACED TO, FROM  
OR BETWEEN SHIPS AND AIRCRAFT IN THE ATLANTIC,  
PACIFIC AND CARIBBEAN AREAS**

**MARINE TELEPHONE SERVICE PROVIDES CONNECTIONS  
WITH BOATS IN THE UNITED STATES COASTAL AND  
INLAND WATERWAYS**

**COMMUNICATE WITH AUTOMOBILES, TRUCKS, AND  
AIRCRAFT IN THE UNITED STATES**

**LONG DISTANCE MESSAGE TELECOMMUNICATIONS SERVICE**

**GENERAL**

Business by telephone is an American tradition of long standing. It has become a vital tool in producing and distributing millions of products daily across the nation and around the world.

Many businessmen have begun using the telephone in new and unique ways to fight the effects of inflation and to improve their competitive and profit position.

We call this **Phone-Power**

Phone-Power is a profit building concept for business selling to business which applies planned telephone programs to key marketing, servicing, and collection areas. Today more and more customers are using Phone-Power in a wide variety of applications, such as handling inquiries, marketing research, direct marketing/direct response, etc.

The Bell System has recognized and developed these concepts of Phone-Power and can help to implement them through our highly trained Phone-Power specialists.

The eight major programs which have been proven successful are:

- Opening New Accounts
- Qualifying Prospects and Making Appointments
- Selling on the Service Call
- Selling Existing Customers
- Reactivating Old Accounts
- Collecting Overdue Accounts
- Handling Inquiries
- Introducing New Products

An economical and efficient way of making both business and residence phone calls is with a Telephone Credit Card.

- With a Bell System Credit Card, calls may be made from any phone, with charges billed to either home or office.
- No delays while the operator checks a Third Number for approval.
- No apologies or awkward "I'll pay for it", moments when using someone else's phone.
- The Bell System keeps the records, so there is no need to keep a "telephone diary" to keep track of calls.
- Traveling personnel, in particular, will benefit from the ease and speed of making calls . . . to the home office, the plant, local offices, customers, hotels, motels and restaurants.
- Credit Card calls may be made from any telephone in the United States or Canada to any other country or territory.
- More than 75 overseas countries and territories (and ships at sea) accept the Bell System Credit Card for calls placed TO the United States or Canada.
- Each month, company bills will be broken down by cardholder, making the allotment of charges to accounts and/or individuals automatic.

**Enhancements**

Some new MTS features designed to further enhance service include:

**Direct Dial Conferencing (DDC)**

A service which allows business or residential customers who have (12) button Touch-Tone® sets (or Touch-Tone® pads) to dial their own conference calls without operator assistance.

Features: can add up to 6 additional parties; no operator intervention; residential as well as business potential.

Trial: Initiated February 2, 1977 (intrastate)

Effective: If trial successful, early 1980's (interstate)

**Remote Call Forwarding (RCF)**

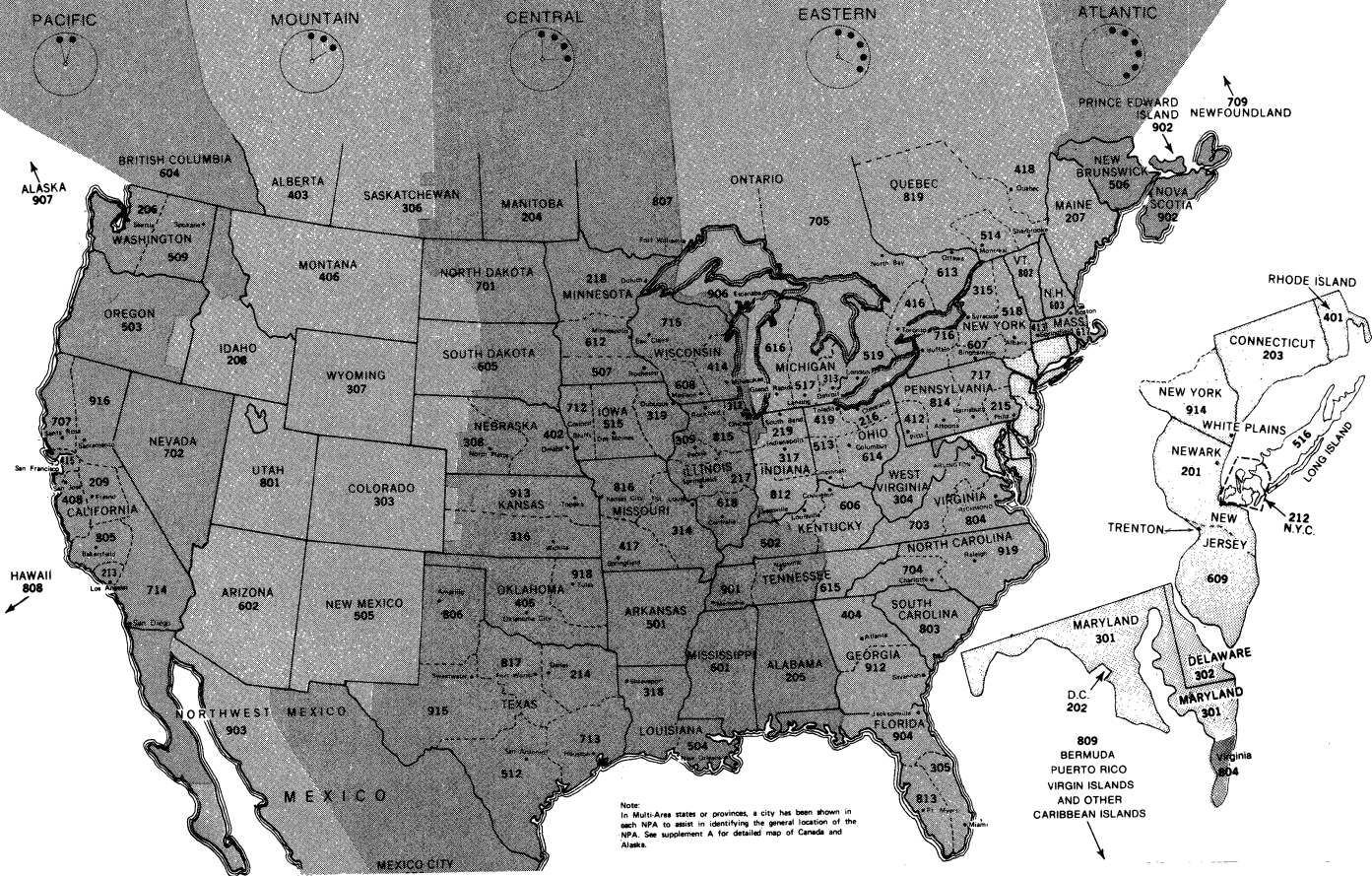
A reverse — charge exchange service that utilizes a telephone number and ESS Central Office facilities in a distant calling area to automatically forward all incoming calls (dialed to that number) to a designated number at the customer's location.

Features: speed/convenience to callers; requires no operator; usage - sensitive; station - to - station rates; and provides the appearance of being local.

Filing: September 8, 1977

Effective: December 7, 1977

Rates: Rates of the local operating Telephone Company providing the service apply.



Note: In Multi-Area states or provinces, a city has been shown in each NPA to assist in identifying the general location of the NPA. See supplement A for detailed map of Canada and Alaska.

Rate information is not complete. Use TARIFFS for customer quotations.

**RATE TABLE**

**Intra — U.S. — Mainland Message Telephone  
Mileages and Corresponding Rates**

**FCC TARIFF NUMBER 263**

**DIAL STATION-TO-STATION**

**Operator Station-to-Station and Person-to-Person**

Rate Mileage	Initial Period			Additional Minutes
	Day	All Days, All Hours		Day
	Dial Station-to-Station	Operator Station-to-Station	Person-to-Person	All Classes of Service
	Initial 1 minute	Initial 3 minutes	Initial 3 minutes	Each Additional minute
<b>1-10</b>	.19	.45	1.45	.09
11-16	.23	.60	1.60	.12
17-22	.27	.80	1.80	.14
<b>23-30</b>	.31	1.00	2.00	.18
31-40	.35	1.10	2.10	.21
41-55	.39	1.35	2.35	.25
<b>56-70</b>	.41	1.60	2.60	.27
71-124	.43	1.75	2.75	.29
125-196	.44	1.85	2.85	.30
<b>197-292</b>	.46	1.95	2.95	.32
293-430	.48	2.00	3.05	.34
431-925	.50	2.05	3.15	.34
<b>926-1910</b>	.52	2.15	3.30	.36
1911-3000	.54	2.25	3.55	.38

Discounts - Discounts apply to total charges for Dial Station-to-Station messages and to total Additional Minute Charges # only for Operator Station-to-Station and Person-to-Person messages with total fractional amounts rounded down to the lower cent.

Rates Effective 9-13-77

**RATE DISCOUNTS APPLICABLE TO  
INTERSTATE LONG DISTANCE CALLS**

	MON.	TUES.	WED.	THUR.	FRI.	SAT.	SUN.		
8:00 A.M. to *5:00 P.M.	Day Rate Period FULL RATE								
5:00 P.M. to *11:00 P.M.	Evening Rate Period 35% Discount							EVE 35%	
11:00 P.M. to *8:00 A.M.	Night and Weekend Rate Period 60% Discount								

\* to but not including

**RATE DETERMINATION**

Long Distance rates are determined according to:

- time of day
- day of week
- customer dialed/operator assisted

Some representative rates:

New York - Philadelphia (83 miles)  
New York - Kansas City (1097 miles)  
New York - Los Angeles (2451 miles)

From N.Y.C.:	To:	Days	Evenings	Nights	WEEKENDS
		(MON-FRI.) 8 A.M.-5 P.M.	(FRI-SUN) 5 P.M.-11 P.M.	(SUN-FRI) 11 P.M.-8 A.M.	SAT 8 P.M.- SUN 5 P.M.
Cust. Dialed (First Minute)	Phila.	.43	.27	.17	.17
	K.C.	.52	.33	.20	.20
	L.A.	.54	.35	.21	.21
Oper. Assisted- Station (First 3 Minutes)	Phila.	1.75	1.75	1.75	1.75
	K.C.	2.15	2.15	2.15	2.15
	L.A.	2.25	2.25	2.25	2.25
Oper. Assisted- Person (First 3 Minutes)	Phila.	2.75	2.75	2.75	2.75
	K.C.	3.30	3.30	3.30	3.30
	L.A.	3.55	3.55	3.55	3.55
All Calls (Each Add'l Minute)	Phila.	.29	.19	.12	.12
	K.C.	.36	.24	.15	.15
	L.A.	.38	.25	.16	.16

**TABLE OF AIRLINE MILEAGE\***

	Atlanta	Birmingham	Boston	Buffalo	Chicago	Cincinnati	Cleveland	Dallas	Denver	Detroit	El Paso	Houston	Indianapolis	Jacksonville	Kansas City	Los Angeles	Louisville	Memphis
Atlanta	140	937	697	587	369	554	721	1212	596	1291	701	426	285	676	1936	319	337	
Birmingham	140	1052	776	578	406	618	581	1095	641	1152	567	433	374	579	1802	331	217	
Boston	937	1052	400	851	740	551	1551	1769	613	2072	1805	807	1017	1251	2596	826	1137	
Buffalo	697	776	400	454	393	173	1198	1370	216	1692	1286	435	879	861	2198	483	803	
Chicago	587	578	851	454	252	308	803	920	238	1252	940	165	863	414	1745	269	483	
Cincinnati	369	406	740	393	252	222	814	1094	235	1335	892	100	626	541	1897	90	410	
Cleveland	554	618	551	173	308	222	1025	1227	90	1525	1114	263	770	700	2049	311	630	
Dallas	721	581	1551	1198	803	814	1025	663	663	999	572	225	763	908	451	1240	726	420
Denver	1212	1095	1769	1370	920	1094	1227	663	1156	557	879	1000	1467	558	831	1038	879	
Detroit	596	641	613	216	238	235	90	999	1156	1479	1105	240	831	645	1983	316	623	
El Paso	1291	1152	2072	1692	1252	1335	1525	572	557	1479	676	1264	1473	839	701	1254	976	
Houston	701	567	1605	1286	940	892	1114	225	879	1105	676	865	821	644	1374	803	484	
Indianapolis	426	433	807	435	165	100	263	763	1000	240	1264	865	699	453	1809	107	384	
Jacksonville	285	374	1017	879	863	626	770	908	1467	831	1473	821	699	950	2147	594	590	
Kansas City	676	579	1251	861	414	541	700	451	558	645	839	644	453	950	1366	480	369	
Los Angeles	1936	1802	2596	2198	1745	1897	2049	1240	831	1983	701	1374	1809	2147	1356	1829	1603	
Louisville	319	331	826	483	269	90	311	726	1038	316	1254	803	107	594	480	1829	320	
Memphis	337	217	1137	803	482	410	630	420	879	623	976	484	384	590	369	1603	320	
Miami	604	665	1255	1181	1188	952	1087	1111	1726	1152	1643	968	1024	326	1241	2339	919	872
Minneapolis	907	862	1123	731	355	605	630	862	700	543	1157	1056	511	1191	413	1524	605	699
Nashville	214	182	943	627	397	238	459	617	1023	470	1169	665	251	499	473	1780	154	197
New Orleans	424	312	1359	1086	833	706	924	443	1082	939	983	318	712	504	680	1672	623	358
New York	748	864	188	292	713	570	405	1374	1631	482	1905	1420	646	838	1097	2451	652	957
Philadelphia	666	783	271	279	666	503	360	1299	1579	443	1836	1341	585	758	1038	2394	582	881
Phoenix	1592	1456	2300	1906	1453	1581	1749	887	586	1690	346	1017	1499	1794	1049	357	1508	1263
Pittsburgh	521	608	483	178	410	257	115	1070	1320	205	1590	1157	330	703	781	2136	344	660
Portland, Ore.	2172	2066	2540	2156	1758	1985	2055	1633	982	1969	1286	1836	1885	2439	1497	825	1950	1849
St. Louis	467	400	1038	662	262	309	492	547	796	455	1034	679	231	751	238	1589	242	240
Salt Lake City	1583	1466	2099	1699	1260	1453	1568	999	371	1492	689	1200	1356	1837	925	579	1402	1250
San Antonio	882	744	1766	1430	1051	1039	1256	252	802	1238	503	189	999	1011	702	1204	949	631
San Francisco	2139	2013	2699	2300	1858	2043	2166	1483	949	2091	995	1645	1949	2374	1506	347	1986	1802
Seattle	2182	2082	2493	2117	1737	1972	2026	1681	1021	1938	1376	1891	1872	2455	1506	959	1943	1867
Syracuse	781	875	264	138	592	514	303	1326	1508	354	1828	1403	567	928	998	2336	603	923
Tulsa	678	552	1398	1023	598	661	853	236	550	813	674	442	591	921	216	1266	582	341
Washington	543	661	393	292	597	404	306	1185	1494	396	1728	1220	494	647	945	2300	476	765
Wichita	776	658	1424	1036	591	702	873	340	437	821	661	559	620	1031	177	1197	633	442

\* All mileages are approximate and should not be used for pricing.  
See FCC Tariff 264 for accurate pricing mileage.

Rate information is not complete. Use TARIFFS for customer quotations.

TABLE OF AIRLINE MILEAGE\*

	Miami	Minneapolis	Nashville	New Orleans	New York	Philadelphia	Phoenix	Pittsburgh	Portland, Ore.	St. Louis	Salt Lake City	San Antonio	San Francisco	Seattle	Syracuse	Tulsa	Washington	Wichita	
604	907	214	424	748	666	1592	521	2172	467	1583	882	2139	2182	781	678	543	776	Atlanta	
665	862	182	312	864	783	1456	608	2066	400	1466	744	2013	2082	875	552	661	658	Birmingham	
1255	1123	943	1359	188	271	2300	483	2540	1038	2099	1766	2699	2493	264	1398	393	1424	Boston	
1181	731	627	1086	292	279	1906	178	2156	662	1699	1430	2300	2117	138	1023	292	1036	Buffalo	
1188	355	397	833	713	666	1453	410	1758	262	1260	1051	1858	1737	592	598	597	591	Chicago	
952	605	238	706	570	503	1581	257	1985	309	1453	1039	2043	1972	514	661	404	702	Cincinnati	
1087	630	459	924	405	360	1749	115	2055	492	1568	1256	2166	2026	303	853	306	873	Cleveland	
1111	862	617	443	1374	1299	887	1070	1633	547	999	252	1483	1681	1326	236	1185	340	Dallas	
1726	700	1023	1082	1631	1579	586	1320	982	796	371	802	949	1021	1508	550	1494	437	Denver	
1152	543	470	939	482	443	1690	205	1969	455	1492	1238	2091	1938	354	813	396	821	Detroit	
1643	1157	1169	983	1905	1836	346	1590	1286	1034	689	503	995	1376	1828	674	1728	661	El Paso	
968	1056	665	318	1420	1341	1017	1137	1836	679	1200	189	1645	1891	1403	442	1220	559	Houston	
1024	511	251	712	646	585	1499	330	1885	231	1356	999	1949	1872	567	591	494	620	Indianapolis	
326	1191	499	504	838	758	1794	703	2439	751	1837	1011	2374	2455	928	921	647	1031	Kansanville	
1241	413	473	680	1097	1038	1049	781	1497	238	925	702	1506	1506	998	216	945	177	Kansas City	
2339	1524	1780	1673	2451	2394	357	2136	825	1589	579	1204	347	959	2336	1266	2300	1197	Los Angeles	
919	605	154	623	652	582	1508	344	1950	242	1402	949	1986	1943	603	582	476	633	Louisville	
872	699	197	358	957	881	1263	660	1849	240	1250	631	1802	1867	923	341	765	442	Memphis	
1511	815	669	1092	1019	1982	1010	2708	1061	2089	1148	2594	2734	1212	1176	923	1297	Miami		
815	697	1051	1018	985	1280	743	1427	466	987	1110	1584	1395	861	626	934	546	658	Minneapolis	
669	1051	469	469	761	685	1446	472	1969	254	1393	823	1963	1975	739	515	569	594	Nashville	
1092	1018	761	1171	1089	1316	919	2063	598	1434	507	1926	2101	1187	548	966	677	677	New Orleans	
1019	985	685	1079	83	2083	2145	259	2412	811	1925	1507	2523	2380	220	1163	123	1204	Philadelphia	
1982	1280	1446	1316	2145	2083	1828	1005	1272	504	849	653	1114	2044	932	1983	879	879	Phoenix	
1010	743	472	919	317	259	1828	2165	559	1668	1291	2264	2138	268	917	192	950	950	Pittsburgh	
2708	1427	1969	2063	2445	2412	1005	2165	559	1668	1291	2264	2138	268	917	192	950	950	Portland, Ore.	
1061	466	254	598	875	811	1272	559	1723	1162	792	1744	1724	796	361	712	394	394	St. Louis	
2089	987	1393	1434	1972	1925	504	1668	636	1162	1087	600	701	1835	917	1848	808	808	Salt Lake City	
1148	1110	823	507	1584	1507	849	1291	1720	792	1087	1490	1787	1553	486	1388	573	573	San Antonio	
2594	1584	1963	1926	2571	2523	653	2264	534	1744	600	1490	678	678	2435	1461	2442	1369	San Francisco	
2734	1395	1975	2101	2408	2380	1114	2138	145	1724	701	1787	678	678	2238	1560	2329	1437	Seattle	
1212	861	739	1187	194	220	2044	268	2281	796	1835	1553	2435	2238	1157	290	1173	1173	Syracuse	
1176	626	515	548	1231	1163	932	917	1531	361	917	486	1461	1560	1157	1058	130	130	Tulsa	
923	934	569	966	205	123	1983	192	2354	712	1848	1388	2442	2329	290	1058	1106	1106	Washington	
1297	546	594	677	1266	1204	879	950	1411	394	808	573	1369	1437	1173	130	1106	1106	Wichita	

\*All mileages are approximate and should not be used for pricing.  
See FCC Tariff 264 for accurate pricing mileage.



NPA	STATE	NPA	STATE
201	New Jersey	514	Montreal, Canada
202	District of Columbia	515	Iowa
203	Connecticut	516	New York
204	Manitoba, Canada	517	Michigan
205	Alabama	518	New York
206	Washington	601	Mississippi
207	Maine	602	Arizona
208	Idaho	603	New Hampshire
209	California	604	British Columbia, Canada
212	New York City	605	South Dakota
213	California	606	Kentucky
214	Texas	607	New York
215	Pennsylvania	608	Wisconsin
216	Ohio	609	New Jersey
217	Illinois	612	Minnesota
218	Minnesota	614	Ohio
219	Indiana	615	Tennessee
301	Maryland	616	Michigan
302	Delaware	617	Massachusetts
303	Colorado	618	Illinois
304	West Virginia	701	North Dakota
305	Florida	702	Nevada
306	Saskatchewan, Canada	703	Virginia
307	Wyoming	704	North Carolina
308	Nebraska	705	Ontario, Canada
309	Illinois	707	California
312	Illinois	712	Iowa
313	Michigan	713	Texas
314	Missouri	714	California
315	New York	715	Wisconsin
316	Kansas	716	New York
317	Indiana	717	Pennsylvania
318	Louisiana	801	Utah
319	Iowa	802	Vermont
401	Rhode Island	803	South Carolina
402	Nebraska	804	Virginia
403	Alberta, Canada	805	California
404	Georgia	806	Texas
405	Oklahoma	808	Hawaii
406	Montana	809	Puerto Rico/ U.S. Virgin Islands
408	California		
412	Pennsylvania	812	Indiana
413	Massachusetts	813	Florida
414	Wisconsin	814	Pennsylvania
415	California	815	Illinois
417	Missouri	816	Missouri
418	Quebec, Canada	817	Texas
419	Ohio	901	Tennessee
501	Arkansas	903	Mexico
502	Kentucky	904	Florida
503	Oregon	906	Michigan
504	Louisiana	907	Alaska
505	New Mexico	912	Georgia
507	Minnesota	913	Kansas
509	Washington	914	New York
512	Texas	915	Texas
513	Ohio	916	California
		918	Oklahoma
		919	North Carolina

STATE	AREA CODE
Alabama	205
Alaska	907
Arizona	602
Arkansas	501
California	209, 213, 408, 415, 707, 714, 805, 916
Canada	204, 306, 403, 418, 514, 604, 705
Colorado	303
Connecticut	203
Delaware	302
District of Columbia	202
Florida	305, 813, 904
Georgia	404, 912
Hawaii	808
Idaho	208
Illinois	217, 309, 312, 618, 815
Indiana	219, 317, 812
Iowa	319, 515, 712
Kansas	316, 913
Kentucky	502, 606
Louisiana	318, 504
Maine	207
Maryland	301
Massachusetts	413, 617
Mexico	903
Michigan	313, 517, 616, 906
Minnesota	218, 507, 612
Mississippi	601
Missouri	314, 417, 816
Montana	406
Nebraska	308, 402
Nevada	702
New Hampshire	603
New Jersey	201, 609
New Mexico	505
New York	212, 315, 516, 518, 607, 716, 914
North Carolina	704, 919
North Dakota	701
Ohio	216, 419, 513, 614
Oklahoma	405, 918
Oregon	503
Pennsylvania	215, 412, 717, 814
Rhode Island	401
South Carolina	803
South Dakota	605
Tennessee	615, 901
Texas	214, 512, 713, 806, 817, 915
Utah	801
Vermont	802
Virginia	703, 804
Washington	206, 509
West Virginia	304
Wisconsin	414, 608, 715
Wyoming	307

**TERRITORIES**

Puerto Rico/U.S. Virgin Islands

**PRIVATE BRANCH EXCHANGE SYSTEMS  
(PBX)**

**GENERAL GLOSSARY OF TERMS**

A Private Branch Exchange System is an arrangement of equipment consisting of switching apparatus, usually with an attendant's position (Switchboard or Console), trunks to a Central office (Trunk Lines), and stations (Station Lines) connected to the switching apparatus. Private Line Services (Tie Lines and Tie Trunks) may also be terminated in this equipment.

PBX systems are available in a wide range of sizes and may include a variety of features to meet the requirement of all types of business establishments. They are useful where the customer requires more flexible service than can be provided by other switching services such as wiring plans, multiple line key equipment and key telephone systems.

**ADD-ON**

A station user can add another station line, within the same PBX or Centrex system, to an existing incoming exchange network or CCSA call to establish a 3-party conference, without attendant assistance.

**ATTENDANT CAMP-ON**

An incoming call, which the attendant attempts to complete to a busy station line within the system, is held waiting until the called station becomes idle. The called station is then automatically rung and connected.

**ATTENDANT CONFERENCE**

Allows the attendant to establish a conference connection, via the switching equipment.

**ATTENDANT CONTROL OF TRUNK GROUP ACCESS (ACTGA)**

An attendant can restrict dial access to all station lines to FX, WATS and/or tie trunk groups by operating a key or dialing a code depending on the switching system.

**ATTENDANT DSS WITH BUSY LAMP FIELD**

The attendant at a console can place or complete calls to stations within the PBX or Centrex system by depressing a single pushbutton associated with the desired station line.

**ATTENDANT POSITION**

The equipment usually a console, from which listed directory number and other calls requiring assistance can be answered and completed by the attendant.

**ATTENDANT RESTRICTION**

The attendant is denied the ability to gain access to a trunk in order to originate a call unless attendant assistance is required.

**AUTOMATIC CALLBACK**

Allows the station user, upon encountering an internal station busy signal, to dial a single-digit number or flash the switchhook and hang-up . . . when both parties become free, the system automatically rings and connects both parties.

**AUTOMATIC ROUTE ADVANCE**

Routes station dialed outgoing calls over alternate facilities when the indicated trunk group is busy.

**AUTOMATIC WAKEUP SERVICE**

Permits the attendant to select a group of station lines to be automatically alerted in sequence (or at the same time) and connected to an announcement (or the attendant).

**BUSY LAMP FIELD ONLY**

Provides attendant with visual indication of busy or idle connection of station lines.

**BUSY TRUNK FIELD**

Provides attendant with visual indication of busy or idle condition of trunks.

**BUSY VERIFICATION—STATION LINES  
BUSY VERIFICATION—TRUNKS**

Allows the attendant to establish a "listening only" or a "talking" connection, depending on the switching system.

**CALL FORWARDING**

When activated by a station user, calls intended for his/her station line automatically route to any other station line he selects within the same system.

**CALL FORWARDING—BUSY LINE**

Automatically routes incoming DID or CCSA calls to the attendant when the called station line is busy.

**CALL FORWARDING—DON'T ANSWER**

Automatically routes incoming DID or CCSA calls to the attendant when the called station doesn't answer.

**CALL HOLD**

Allows a station user to "hold" any call in progress by flashing the switchhook and then dialing a "hold" code.

**CALL PICKUP**

A station user can answer any calls directed to another station line within his/her own preset pickup group by dialing a special code.

**CALL TRANSFER—ATTENDANT**

Allows the called station user, while connected to an incoming exchange network or CCSA call, to signal (recall) the attendant transfer the call to another station line.

**CALL TRANSFER—INDIVIDUAL**

A station user can transfer only incoming exchange network and CCSA calls to another station line within the same system without assistance.

**CALL TRANSFER—INDIVIDUAL—  
ALL CALLS**

A station user can transfer any established call to another station in or outside the PBX or Centrex system without assistance.

**CALL WAITING**

Allows a call to a busy station line to be held waiting while an audible tone is provided to the busy station line connection to indicate a call waiting.

**CAS—CENTRALIZED ATTENDANT SERVICE**

Permits multilocation PBX customers, served by separate switching vehicles, to concentrate attendants at a single location.

**CCS—An Abbreviation for 100 Call Seconds**

$$\frac{500 \times 120}{100} = 600 \text{ CCS}$$

$$\frac{250 \times 240}{100} = 600 \text{ CCS}$$

**CCSA ACCESS**

A service which provides access to a CCSA network for network inward dialing to the PBX or Centrex system and direct outward dialing to the network.

**CODE CALL**

Allows attendants and station users to dial an access code and a 2- or 3-digit called party code to activate signaling devices.

**CODE RESTRICTION**

A feature, that denies **selected** station lines **completion** of dialed outgoing exchange network calls to selected office and area codes.

**CONFERENCE CALLING**

Allows a station user to establish a conference connection without the aid of the attendant.

**Console**

PBX attendant station which has the capability of connection and switching telephone calls.

### **CONSULTATION HOLD**

A station user can hold **incoming** exchange network or CCSA calls by flashing the switchhook and, on the same line, originate a call to another station line or to the attendant within the same PBX or Centrex system for private consultation.

### **CONSULTATION HOLD—ALL CALLS**

A station user can hold any existing call by flashing the switchhook and on the same line originate a call to the attendant or to another station in or **outside** the PBX or Centrex system for private consultation.

### **CONTROLLED RESTRICTION FROM OUTGOING CALLS**

Permits attendant to control the restriction of outgoing exchange network calls from selected station lines.

### **CONTROLLED STATION RESTRICTION**

An attendant can prevent, on an individual or group basis, selected station lines from **receiving** any calls.

### **CONTROLLED STATION-TO-STATION RESTRICTION**

Permits attendant to deny Station-to-Station Calling from a preselected group of station lines to a preselected group of station numbers.

### **Cord Pairs**

Used by switchboard attendant to connect Trunk Jacks and/or Station Jacks to complete a call.

### **Dial PBX System**

Requires the PBX attendant to route incoming calls, (except Centrex) but provides automatic routing and connection of outgoing and internal calls when the station-user dials the desired station number.

### **DIRECT INWARD DIALING—DID**

A Centrex service feature which allows an incoming call from the exchange network (not FX or WATS) to reach a specific Centrex station line without attendant assistance.

### **DIRECT OUTWARD DIALING—DOD**

Allows a PBX or Centrex station user to gain access to the exchange network without the assistance of the attendant.

### **DIRECT TRUNK TERMINATION**

An attendant position option in which each trunk facility appears directly on a key at a console or jack on a switchboard.

### **DIRECTED CALL PICKUP**

A station user can answer calls directed to any other station line in the PBX or Centrex system by dialing the unique answer code of the station.

### **Disconnect Supervision**

To receive a disconnect signal on an existing connection established at a switchboard.

### **EXECUTIVE BUSY OVER-RIDE**

Preselected stations are provided to enable them, upon encountering busy signal on a call to an internal station, to dial a single digit, activate a special push-button or flash the switchhook and gain access to the existing conversation taking place.

### **EXECUTIVE RINGBACK**

Refer to Automatic Callback.

### **FLEXIBLE NUMBERING OF STATIONS**

Allows station numbers to be assigned to lines at the time of installation in accordance with a customer desired numbering plan.

### **FULLY RESTRICTED STATION**

Denies selected station lines the ability to place or receive any but station-to-station calls.

### **FX CO ACCESS**

A service which provides access to a distant central office via Foreign exchange trunks.

### **IDENTIFIED OUTWARD DIALING—IOD**

A centrex service feature which provides either automatic or operator identification of the calling station line number to permit individual station billing on toll calls.

### **INCOMING CALL IDENTIFICATION—ICI**

Allows an attendant at a switched-loop console position to visually identify the type of service or trunk group associated with a call directed to that position.

### **INDICATION OF CAMP-ON**

This feature, provides an audible tone to the busy called station line connection to indicate that the incoming call is camped-on.

### **INWARD RESTRICTION**

Prevents selected station lines from receiving incoming exchange network calls, either DID or attendant completed.

### **LISTED DIRECTORY NUMBER (LDN) SERVICE**

Incoming exchange network calls to the PBX or Centrex switching system attendant are placed via the assigned listed local telephone directory number.

### **LOCKOUT**

Denies attendant the ability to re-enter an established incoming exchange network or CCSA connection unless recalled by the station user.

**MANUAL LINE SERVICE**

Provides station lines arranged to alert attendant when the station user goes off-hook for service.

**Manual PBX System**

Requires hand-routing by the switchboard attendant of all calls.

**MEET ME CONFERENCE**

Allows station users at a mutually prearranged time to dial a conference circuit to effect a multipoint conference.

**MESSAGE WAITING**

Provides the ability to light a lamp remotely on a station telephone set within the system to indicate that a message is waiting.

**MISCELLANEOUS TRUNK RESTRICTION**

Denies preselected station lines the ability to dial calls to preselected miscellaneous trunk groups.

**NIGHT POSITION**

A feature that provides an alternate attendant position which can be used at night.

**NIGHT SERVICE**

Provides arrangements to route incoming calls, normally directed to the attendant, to preselected station lines within the system.

**OUTGOING CALL TRANSFER**

The ability of a station to transfer an outgoing call to another station within the PBX.

**PAGING—LOUDSPEAKER**

Permits attendants and station users to dial access customer-owned loudspeaker paging equipment for the purpose of voice paging.

**PAGING—RADIO**

Allows users to dial access customer-owned radio paging equipment to selectively tone alert or voice page individuals carrying radio receivers.

**POWER FAILURE TRANSFER—ATTENDANT**

Calls to the attendant are routed to a preassigned night station line during a power failure at a customer location remote from a system where reserve power is not provided.

**POWER FAILURE TRANSFER—STATION**

Provides service to and/or from the exchange network (non-FX and WATS) for a limited number of prearranged stations during a power failure.



**PBX**

Private Branch Exchange. A switching system providing internal telephone communication between stations of a telephone system as well as between these stations and DDD Network.

**Private Line Services**

Both Intrastate and Interstate Private Lines may be terminated in the PBX Switchboard. These Lines are referred to as Tie Trunks (sometimes called Tie Lines) and are used to connect (tie) two remote PBX locations. One end may be terminated directly in a telephone instrument at the remote location but the line is still a Tie Line. A Tie Line more accurately refers to a line connecting two remote telephone instruments, i.e., terminated in other than a PBX Switchboard or Console.

**PUSH-BUTTON DIALING TO STATIONS**

Primarily intended as a special feature for attendant positions which serve "rotary dial" central office lines, a 10-button "keyset" is provided which allows speedy dialing of extension numbers to complete incoming calls . . . when the system lines are TOUCHTONE, this feature does not apply.

**RECORDED TELEPHONE DICTATION**

Permits access to and control of customer-owned dictating equipment by station users.

**RESERVE POWER**

Provides an alternate source of power to maintain telecommunications service during a power failure.

**RESTRICTION FROM OUTGOING CALLS**

Preselected station lines are denied the ability to access the exchange network, or CCSA trunk groups without the assistance of the attendant.

**Ringdown Signaling**

Manual signalling at a switchboard.

**SECRECY**

The attendant enters on an automatically split basis for consulting privately with the recalling party while the calling party is automatically held.

**Terminal (Also Called 1-Way Hunt)**

The hunt starts with the called station line and ends with the last station line in the prearranged group, completing the call to the first idle station line encountered.

**Circular (Also Called 2-Way Hunt)**

The hunt starts with the called station line and proceeds in a prearranged order to test all lines in the group once.

**Signaling**

To create an audible and/or a visual indication of an incoming call.

### **SINGLE-DIGIT DIALING**

Permits a station user to reach any of a preselected group of stations by dialing single-digit codes.

### **SPEED CALLING**

Allows station users to assign abbreviated codes to certain called numbers.

### **STATION DIRECT STATION SELECTION**

A station user can place a call to one of a preselected number of station lines within the system by depressing a button.

### **STATION HUNTING**

Routes a call to an idle station line in a prearranged group when the called station line is busy.

#### **Station Lines**

PBX Stations are the telephone connected directly to the PBX System, and the lines between the PBX and the stations are PBX Station Lines.

Stations may be classified as either On-Premises or Off-Premises.

#### **Station Jacks**

Terminations of all station lines in a switchboard.

### **STATION MESSAGE REGISTERS**

Provides message register equipment located on the customers' premises for use by the customer.

### **STATION-TO-STATION CALLING**

The station user can directly dial other stations without the assistance of the attendant.

### **STATUS DISPLAY**

Centrally located equipment provided to visually display, on a per "unit" basis, a number of states to indicate a condition of the "unit".

### **STRAIGHT FORWARD OUTWARD COMPLETION**

Allows attendant to place an outgoing call, for a station user who reached the attendant via dial 0 or intercept, without requiring the station user to hang up.

### **STUTTER DIAL TONE**

Interruption of the first few seconds of dial tone on a Call Transfer Individual attempt to distinguish between a call origination and a call transfer.

### **SUPERVISORY CABINET (SUPERVISOR'S TURRET)**

Provides a cabinet which furnishes lamp indications to show position availability and calls waiting conditions.

## **SURCHARGE**

The ability to charge PBX users message units for calls outside the local calling area.

## **Switchboard**

PBX attendant position with direct access to trunks and stations; it has the capability of manually connecting and switching telephone calls.

## **SWITCHED LOOP**

An attendant position option whereby the trunk facility requiring attendant assistance is automatically switched to one of a limited number of idle loops appearing as keys or jacks on an idle console or switchboard attendant position.

## **THREE-WAY CALLING**

A station user can add a third party to any established call for a 3-party conference, without the assistance of the attendant.

## **THRU DIALING**

Station users can complete dialing after the attendant selects the trunk facility on attendant-handled outgoing calls.

## **TIE TRUNKS**

A service that provides one or more 1- or 2-way circuits interconnecting two PBX or Centrex systems. Tie trunks can be either ringdown, automatic or dial repeating and may be dial selected by station users, and either dial- or manually-selected by attendants depending on the switching system and arrangement chosen.

### **Ringdown or Automatic**

When seized, these tie trunks signal the distant attendant for manual answer and completion.

### **Dial Repeating**

These tie trunks allow dialing directly to station lines at the distant end without assistance of the distant attendant.

## **TIMED REMINDERS**

The attendant is automatically alerted, after a prescribed time interval, to a camped-on or unanswered call completed through her position so that she may give the calling party a progress report.

## **TOLL-RESTRICTION (Formerly Toll Diversion)**

A limited form of Code Restriction which permits station users to access the local central office and dial local service area calls but prevents completion of toll calls or calls to the toll operator without assistance of the attendant.

## **TOLL TERMINAL**

Allows a station user to directly dial a toll operator with a single-digit code.

## **TOUCH-TONE® CALLING**

Offers greater speed and convenience in dialing through the use of pushbutton dials, instead of rotary dials.

**TRUNK ANSWER FROM ANY STATION**

Incoming exchange network calls, normally directed to the attendant, activate a common alerting signal on the customer's premise when the attendant positions are in night service.

**TRUNK GROUP BUSY LAMPS**

Provides the attendant at a switched-loop console position with a visual indication when all trunks in a trunk group are busy.

**Trunk Jacks**

Terminates all Trunk Lines from the Central office and/or Private Line Services.

**Trunk Lines**

PBX Trunks are lines connecting a PBX System with the Central office for exchange and toll services.

**TWO-WAY SPLITTING**

The attendant can consult privately with either party on a call completed through and held on her position.

**WATS ACCESS**

A service which provides one-way access to or from a WATS serving office.

## **PBX AND CENTREX SERVICE FEATURE DEFINITIONS**

(This is a glossary of terms used in the PBX and Centrex Feature Definitions and refers specifically to PBX and Centrex usage.)

### **AREA CODE**

A one-, two- or three-digit number that, for the purpose of distance dialing, designates one of the geographical areas within a country.

### **ATTENDANT**

A person, situated at a position of a switchboard, desk, or console on a customer's premises, who handles switching and signaling operations.

### **ATTENDANT IMPULSE SENDER**

Allows the attendant to use the pushbutton keyset for outpulsing to central office trunks.

### **AUTOMATIC SWITCHING SYSTEM**

A system in which connections are automatically established.

### **CALLING DEVICE**

An apparatus that generates the signals required for establishing connections in an automatic switching system.

### **CENTRAL OFFICE TRUNK**

A telecommunications channel between a PBX or Centrex system and the local central office.

### **CENTREX SERVICE**

An automatic switching system service providing PBX service and in addition Direct Inward Dialing and Identified Outward Dialing.

### **CENTREX SYSTEM**

A switching system providing Centrex Service. The system may be Centrex - CO or Centrex - CU.

#### **Centrex—CO (Company)**

The provision of Centrex service by switching equipment located on telephone company premises.

#### **Centrex—CU (Customer)**

The provision of Centrex service by switching, station equipment, and attendant facilities located on the premises of the customer.

### **COMMON CONTROL SWITCHING ARRANGEMENT—CCSA**

A private switched service network which features direct station-to-station network inward and outward dialing and other features similar to those provided by the exchange network.

**DIAL "0" TRUNK**

The trunk facilities which connect stations to the attendant position usually accessed by dialing the digit "0".

**DIRECT DISTANCE DIALING—DDD**

The automatic establishing of toll calls in response to signals from the originating customer.

**EXCHANGE NETWORK**

The overall communication facilities serving the general public consisting of central offices, tandem offices, toll offices and other facilities necessary for the interconnection of customers.

Note: The use of the term "exchange network" includes local central office, FX and WATS trunk connections.

**FOREIGN EXCHANGE TRUNK—FX TRUNK**

A trunk facility between a PBX or Centrex system and a central office outside the local service area.

**INTERNATIONAL DIRECT DISTANCE DIALING—IDDD**

The automatic establishing of an international call in response to signals from the originating customer.

**LISTED DIRECTORY NUMBER—LDN**

The number, which is listed in the telephone directory, for reaching the PBX or Centrex attendant on dial basis.

**PRIVATE BRANCH EXCHANGE (PBX) SERVICE**

A service which provides internal telecommunications among a group of stations associated with a particular customer as well as between these stations and the exchange network.

**PRIVATE BRANCH EXCHANGE (PBX) SYSTEM**

A switching system providing PBX service, PBXs may be PBX-CO or PBX-CU.

**PBX—CO (COMPANY)**

The provision of PBX service by switching equipment located on telephone company premises.

**PBX—CU (CUSTOMER)**

The provision of PBX service by switching, station equipment, and attendant facilities located on the premises of the customer.

**SATELLITE PBX**

A PBX or Centrex system not equipped with attendant positions and is associated with an attended main PBX or Centrex system via tie trunks.

**STATION**

An installed telephone set or other terminal equipment.

**SUPERVISION**

The function of indicating the state of a call (busy, idle, etc.).

**TOLL CALL**

Any call for a destination outside of the local service area of the calling station.

**TOLL OPERATOR**

The person on telephone company premises, who handles switching and signaling operations needed to establish toll telephone connections not established via Direct Distance Dialing.

**WIDE AREA TELECOMMUNICATIONS SERVICE TRUNK—  
WATS TRUNK**

A trunk between a PBX or Centrex system and a central office providing Wide Area Telecommunications Service.

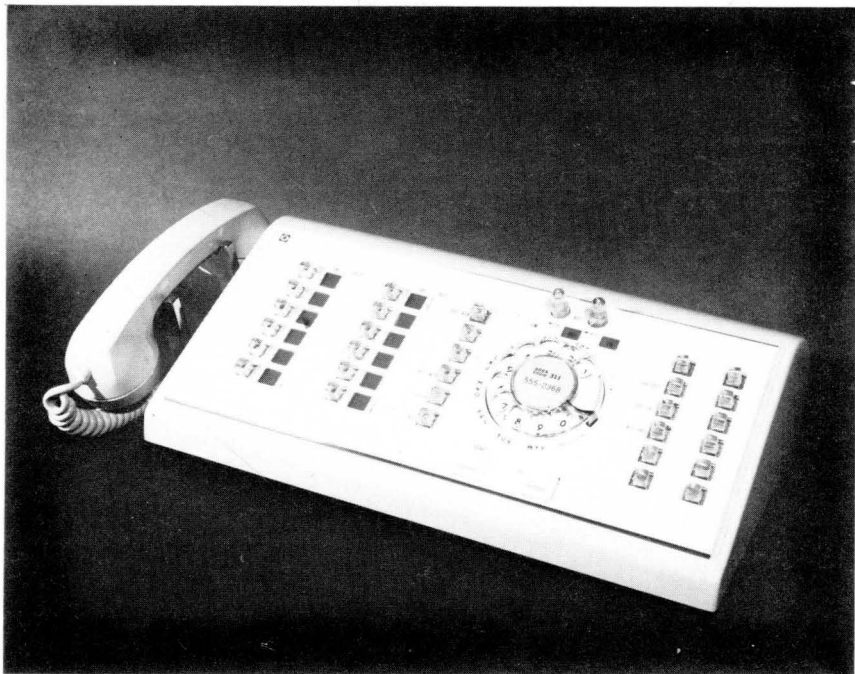
## **CONSOLES**

### **General**

Consoles are desk type units of various sizes and configurations having the necessary pushbuttons, lamps, and other electrical or mechanical equipment required by an attendant to perform specific functions relative to a switching system, principally Private Branch Exchanges (PBX). These consoles are designed for use with rotary, TOUCH-TONE, or direct current key pulse dialing with specific features to permit their use with a designated switching system.

### **1B & 2B Consoles**

These consoles are pushbutton desk types designed for use with the 701B, No. 101 ESS, No. 1 ESS and the No. 5 Crossbar PBX Systems. The 1B is arranged for a minimum of 6 and a maximum of 12 trunk or loop pickup buttons while the 2B is arranged for a minimum of 12 and a maximum of 30 trunk or loop pickup buttons. These units are equipped with dual jacks to accommodate handset and/or headset applications. They can also be supplemented by a 1A1, or 1A2 selector console when direct station selection is desired.

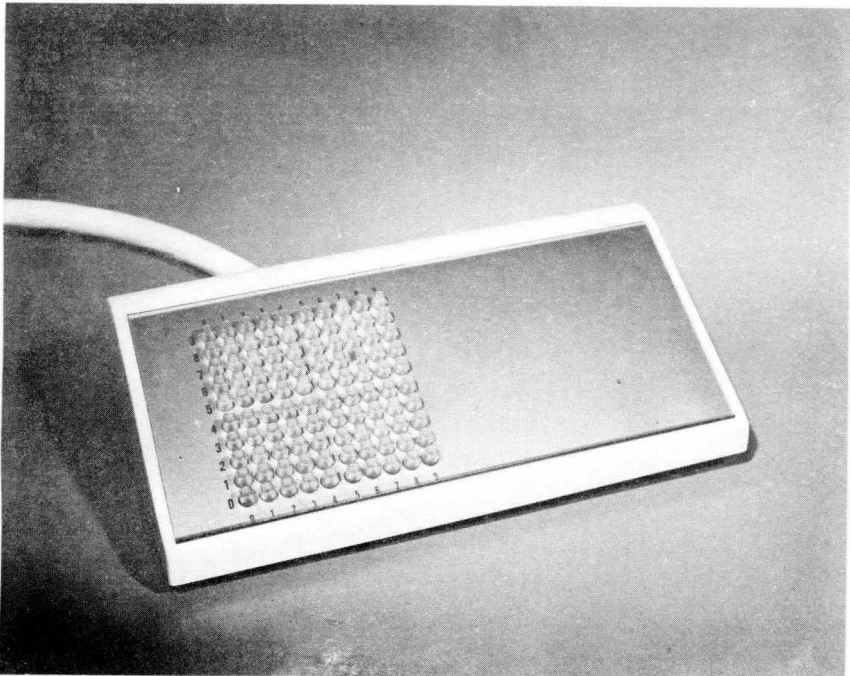


1B Console



**1A1 & 1A2 Consoles**

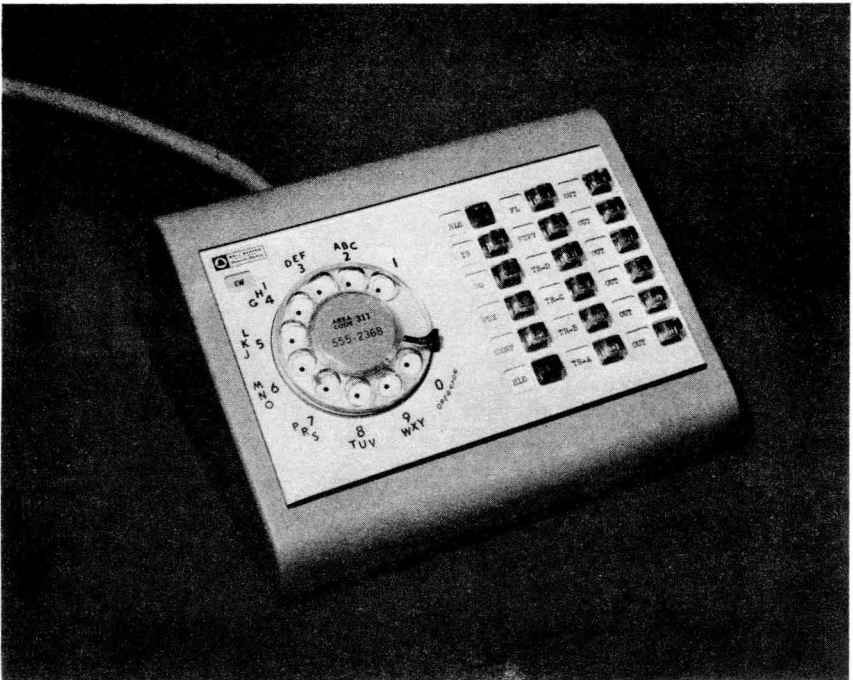
The 1A1 and 1A2 type selector consoles are used with the 1B and 2B telephone consoles to provide direct station selection (DSS). The 1A1 selector console contains one field of 100 buttons while the 1A2 selector has two fields of 100 buttons each. With the use of these consoles an attendant can place or complete calls to stations within the PBX or centrex system by depressing the pushbutton associated with the station line. Station numbers must be consecutive within each block of 100 buttons.



1A1 Console

**10B, 11B & 12B Console**

These consoles are intended for use with the 2A, 2B and 3A automatic call distributing (ACD) systems. The 10B and 11B consoles are designed for attendant positions handling incoming calls and originating calls to trunks, stations, and supervisory positions. The 12B console is designed to serve supervisory positions and is jack equipped while handset and headset operation for attendant consoles is available as an option.



11B Console

**30 Console**

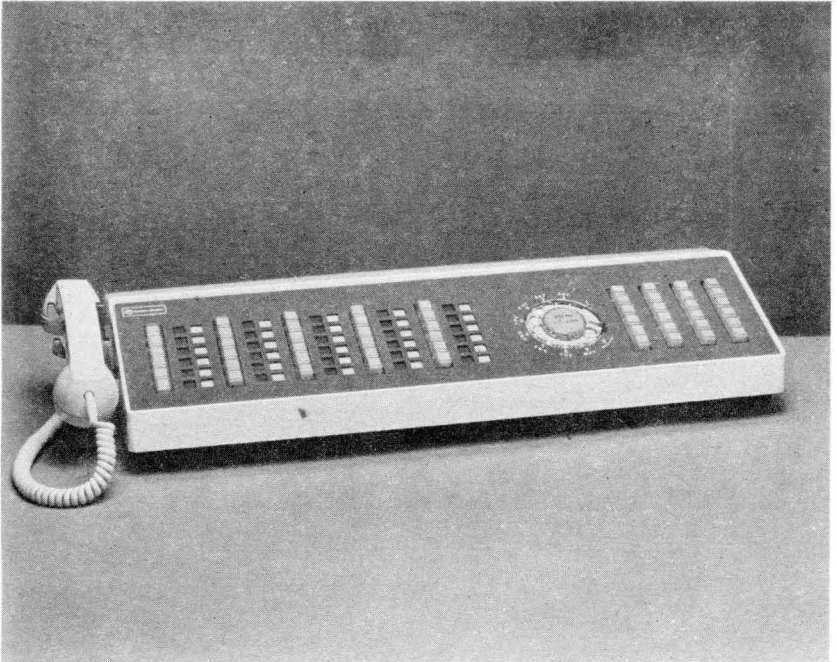
Type 34 is a short high console with 100 key D.S.S. associated with 800A and 801A PBX systems.



30 Console

**43 Console**

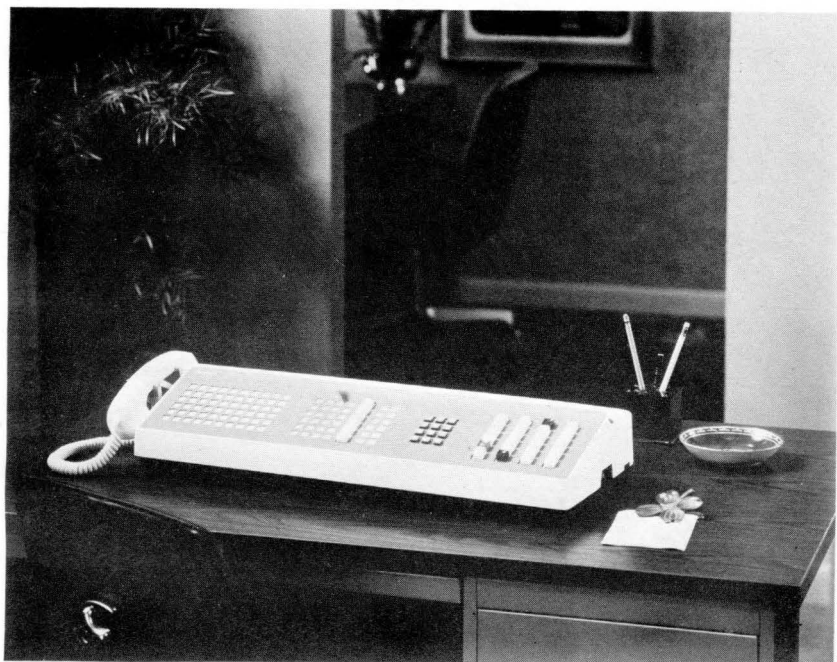
Designed for the 757A and 770 PBX. Trunk pickup buttons, located on the left side of the console, are nonlocking, illuminating and self-designating. To aid the attendant in processing each call, two supervisory lamps are associated with each pickup button to indicate the status at the source and destination of each call.



43 Console

**46 Console**

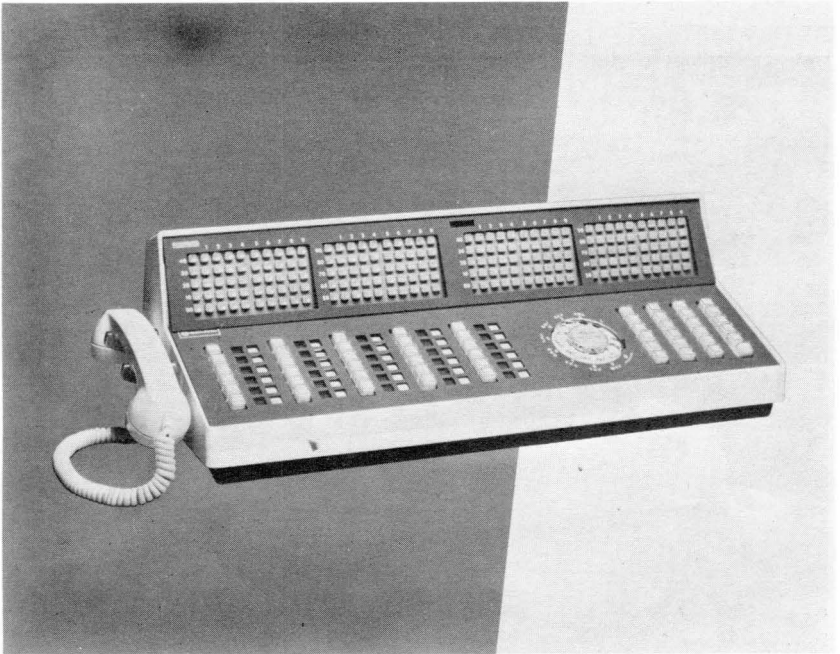
The 46-type console is intended for use with the No. 101 ESS. It has 6 loop pickup buttons, 60 TGB lamps, 24 ICI lamps, and 24 control buttons. Dual jacks permit handset or headset operation. The console is arranged for switched loop operation.



46 Console

**50 Console**

Type 53 is a long high console with 200 key D.S.S. associated with 757A and 770A PBX systems.

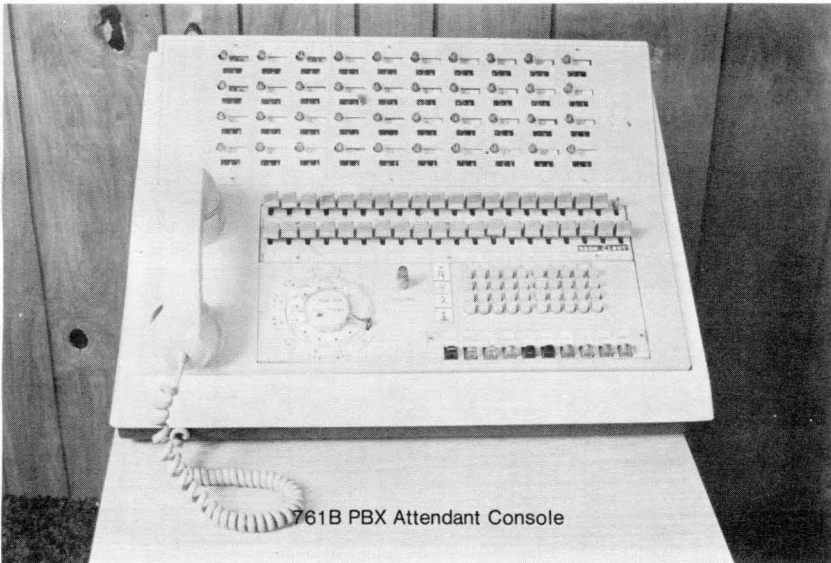


50 Console

<i>Console Code</i>	<i>Associated System</i>
21	701B
23	770A
24	800A & 801A
26	#1 ESS
27	51A CPS
28	#5 X-Bar
34	801A
43	770A
45	812A
46	#101 ESS
47	51A CPS
48	#5 X-Bar
51	701B
53	770A
54	801A
56	#101 ESS
120	4A CD
121	50A CPS
131	50A CPS
132	2B ACD
151	50A CPS
152	2B ACD

**761B PBX Attendant Console**

The Console for the 761B PBX is a pushbutton console designed for use in the Hotel/Motel industry. It has a maximum of 40 station lines and gives a visual and audible signal to indicate the status of each call. The console provides message registers for each station, a message waiting service, and a direct station selection (DSS) field.



761B PBX Attendant Console

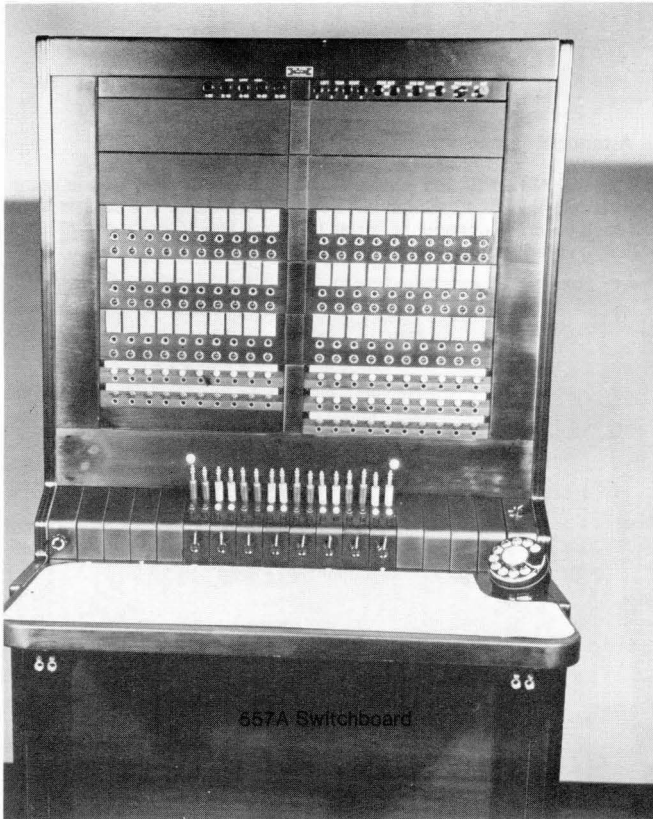
**SWITCHBOARDS**

**556A Switchboard**

The 556A is a small, single-position manual switchboard which can handle up to 180 lines and 40 trunks. It is used mainly as a manual auxiliary with the 740 or 756 dial PBX. All station lines, central office trunks and tie trunks have jack and lamp appearances in the switchboard. The attendant establishes connection by inserting the plugs of a cord circuit in the jacks of two station lines or in the jacks of a line and trunk between which the connection is to be made.

**557A Switchboard**

The 557A, a single-position manual switchboard, is designed to serve as a combined PBX and secretarial service switchboard for telephone answering services. It has a capacity of 100 secretarial lines, 40 station lines, 20 trunks and 15 cord circuits. In addition to most of the manual PBX features, the 557A includes secretarial line circuits bridged to subscriber lines at the central office to permit incoming calls to be answered either by the subscriber or secretarial attendant. All lines and trunks have single jack and lamp appearances on the switchboard.



557A Switchboard



**557B Switchboard**

The 557B is a single-position manual switchboard for 100 secretarial lines, is designed primarily as an intercept-only type secretarial switchboard for bureaus furnishing answering service to such telephone subscribers as small businesses, doctors and other professional people.



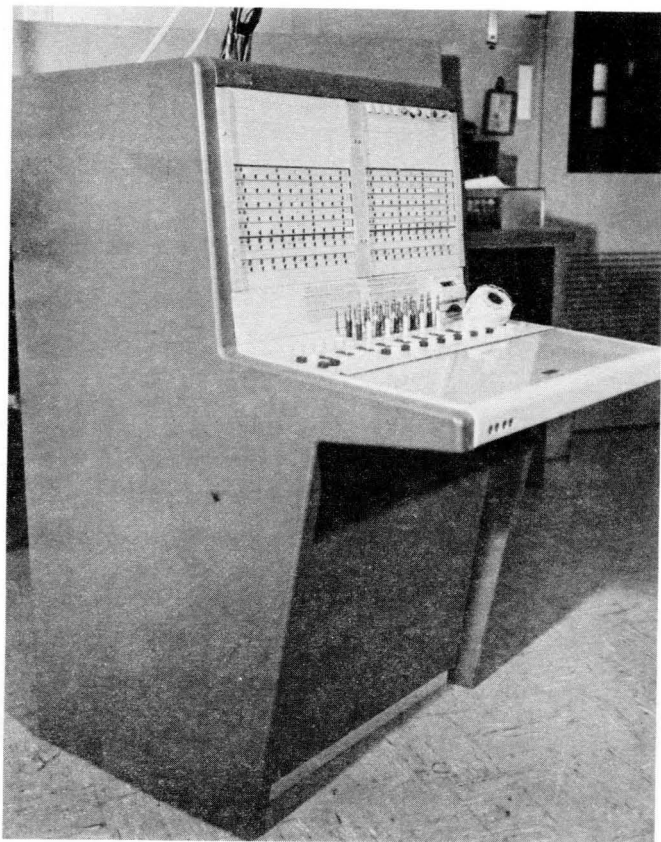
557B Switchboard

### **608D Switchboard**

The 608 Switchboard is designed for use on a multiple or non-multiple basis as a manual PBX or as an attendant board for a dial PBX. Connections are established manually between trunks and station lines. When used as a manual PBX, the station lines have jack appearances with lamps, when associated with a dial system, the lamps are omitted.

On a single position manual basis, this switchboard will handle up to 360 lines and 40 trunks. However, if multiplied in association with a dial PBX it can grow to 2400 lines and 480 trunks with 16 cord pairs per position.

The 608D board offers improved equipment circuit features including slide mounted equipment units, plug-in feeder cables and connector ended jacks on all packaged positions, automatic transfer arrangements and more reliable supervisory signals. The 608D is available as a packaged position.



608D Switchboard

## **PRIVATE BRANCH EXCHANGE (PBX)**

### **General**

A private branch exchange is a telephone switching system installed for the benefit of an individual or private organization and is usually located on the customers premises. It provides for internal telecommunications between the telephone stations within the customers organization as well as facilities for connecting these telephones to the telephone network via central office trunks. In addition, stations can be connected to tie-trunks to gain access to another PBX or switched services network.

The switching equipment and its control network utilize electromechanical (crossbar, step-by-step or reed) and/or solid state devices to automatically control the flow of traffic. This equipment can be housed in metal cabinets or mounted on frames. In most cases, the equipment is modular in design for ease of expansion and installation. All PBX's are capable of providing a variety of service features. These features can be classified as follows:

**Standard Service Features**—To provide the customer with those features needed for efficient call handling and control, e.g., station hunting, night service, call transfer, attendant conference etc.

**Optional Service Features**—To complement the standard service features and to satisfy special customer requirements, e.g., TOUCH-TONE calling, paging, tie-trunks, toll restriction, direct inward dialing, etc.

**Hotel/Motel Services**—To provide the PBX with Hotel/Motel features needed to make it adaptable for Hotel/Motel applications, e.g., Automatic Wakeup Service, Message Waiting, Single Digit Dialing, etc.

### **101 ESS PBX**

The 101 ESS private branch exchange offers operation similar to a computer. Its magnetic memory can be programmed to carry out complex communications functions. It is a solid state system, utilizing a stored sprogram control, and has a line range of 200 to 4,000 station lines. The system is divided into two parts, a Control Unit and a Switch Unit. The Switch Unit is located on the customer's premises, and the Control Unit, which often serves more than one customer, is located in a central office.

### **761B PBX**

The 761B private branch exchange provides service for hotels and motels with a capacity of up to 40 lines. All switching equipment is packaged in one cabinet. The attendants console conveniently combines Direct Station Selection, Message Waiting Keys and Message Registers in one housing.

### **770A PBX**

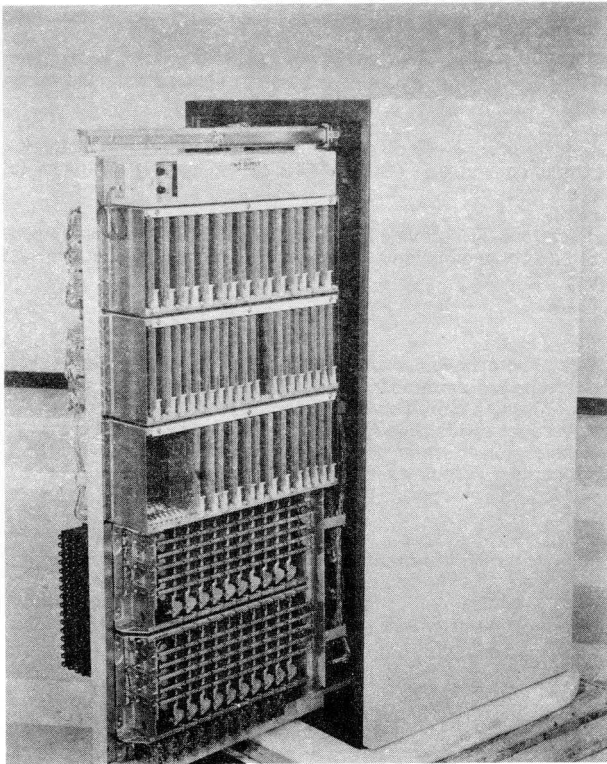
The 770A private branch exchange is a cabinetized system utilizing a crossbar network with a line range of 40 to 400 telephone stations. It is designed for larger businesses and offers standard, optional and Hotel/Motel service features. The entire system (including power) can be housed in four soundproof cabinets and requires approximately 40 sq. ft. of floor space thus making it suitable for any general office area.

**801A PBX**

The 801A private branch exchange is a cabinetized system utilizing a reed network and electronic control. It is designed for medium and large businesses when their requirements do not exceed 270 lines and 40 trunks. It offers standard and optional service features. A complete system (including power) can be housed in four cabinets and requires approximately 27 sq. ft. of office space. The quiet operation of its electronic switching permits its use in any general office area.

**805A PBX**

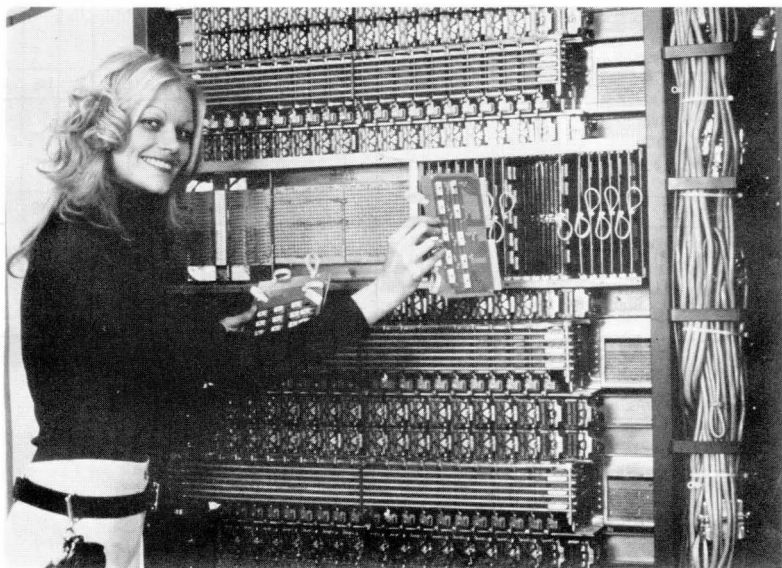
The 805A private branch exchange is a cabinetized system utilizing a crossbar switching network with a capacity of 57 station lines and 12 trunks. It is designed for the small business customer and offers standard and optional service features. A complete system (including power) can be housed in a single cabinet that requires approximately 6 sq. ft. of floor space. The soundproof construction of the cabinet permits its placement in any general office area.



**805A PBX**

**812A PBX**

The 812A private branch exchange is a cabinetized system utilizing a crossbar network with a line range of 160 to 2,000 telephone stations. It is designed for the larger business customer and offers standard, optional and Hotel/Motel service features. A complete system (including power) can be housed in 17 soundproof cabinets and requires approximately 160 sq. ft. of floor space and is suitable for use in a general office area.



**Rate information is not complete. Use TARIFFS for customer quotations.**

**FEATURE AVAILABILITY SUMMARY**

**PBX and Centrex Communications Service Packages**

*The following charts show the availability of each feature by switching system*

(Excluding Dimension)

**PBX And Centrex Communications Service Packages**

**Feature Availability Summary**

Optional Features	Switching System										
	701B	770A	800A	801A	805A	812A	50A CPS	No. 1 ESS	No. 2 ESS	No. 5 XBR	101 ESS
Series 100	A	A	A	A	A	A	A	A	A	US	A
Attendant Position (Console) Call Transfer-Attendant Direct Outward Dialing Night Service Power Failure Transfer—Station Restriction From Outgoing Calls Station Hunting Station-to-Station Calling											
Series 200	A	A	A	A	NP	A(1)	A	P	A	US	A
Series 100 Feature Plus Attendant Camp-On Attendant Conference Attendant DDS W/Busy Lamp Field Indication of Camp-On											
Series 300	A	A	A	A	NP	A(1)	A	P	A	US	A
Series 200 Features Plus Consultation Hold Add-On Call Transfer—Individual Trunk Answer From Any Station(2)											

A—Available (Standard)

P—Planned (Under Development)

US—Under Study

NP—Not Planned

- (1) Less Attendant DSS W/Busy Lamp Field.
- (2) Fulfills Night Service Requirements.

**Switching System**

Centrex Packages (CNTX)	701B	770A	800A	801A	805A	812A	50A CPS	No. 1 ESS	No. 2 ESS	No. 5 XBR	101 ESS
Centrex I	A(1)	A	NP	(3) NP	NP	A	A	A	A	A	A
Attendants Position (Console) Call Transfer—Attendant Direct Inward Dialing Direct Outward Dialing Identified Outward Dialing Night Service Reserve Power Restriction From Outgoing Calls Station Hunting Station-to-Station Calling											
Centrex II	A	A	NP	NP	NP	A	A	A	A	A	A
Centrex I Features Plus Consultation Hold Add-On Call Transfer—Individual Trunk Answer From Any Station(2)											

A—Available (A.T.&T Standard)      P—Planned (Under Development)      US—Under Study      NP—Not Planned

- (1) Less the Night Service feature, requirement fulfilled by Night Position option where available.  
 (2) Fulfills Night Service requirement.  
 (3) Identified Outward Dialing is planned.

**Switching System**

Optional Features	701B	770A	800A	801A	805A	812A	50A CPS	No. 1 ESS	No. 2 ESS	No. 5 XBR	101 ESS
Attendant Camp-On & Indication of Camp-On (console only) Centrex CCSA Access	A P	A P	— —	— —	— —	A A	A A	A A	A A	P US	A A
Attendant Conference (Optional for CNTX Only)	A	A	—	P	NP	A	A(4) NP	A	A	A	A
Attendant Control of Trunk Group Access	US	US	US	—	NP	A	NP	A	A	A	A
Attendant DSS W/Busy Lamp Field (Optional for CNTX Only)	A	A	—	—	—	NP	A	P	A	US	A
Attendant Position Options											
Switchboard (in lieu of console)											
Series 100	A	NP	(1)	NP	NP	NP	NP	NP	NP	US	NP
Centrex I	A	NP	—	—	NP	NP	NP	NP	NP	A(2)	NP
Centrex II	A	NP	—	—	NP	NP	NP	NP	NP	A(2)	NP
Direct Trunk Termination	A	A	A	A	A	NP	NP	NP	NP	A	—
Switchboard Console	A	—	A	A	A	NP	NP	NP	NP	A	NP
Switched Loop Console	A	—	NP	NP	NP	—	—	—	—	A	—
Switchboard Console	A	—	NP	NP	NP	—	—	—	—	A	—
Supervisory Cabinet	A	NP	NP	NP	NP	A	NP	A	A	A	A
Two-Way Splitting	A	A	NP	NP	NP	NP	—	A	A	A(3)	A
Attendant Restriction	NP	NP	—	—	—	NP	NP	NP	NP	+	—
Direct Trunk Termination	NP	NP	NP	NP	NP	NP	NP	NP	NP	+	—
Switched Loop	+	NP	—	—	—	NP	NP	NP	NP	+	NP

**Key:**

- A —Available (AT&T Std)  
 P —Planned (Under Development)  
 NP —Not Planned  
 US —Under Study  
 — —Does Not Apply  
 + —Always Provided

- (1) Currently available, planned to rate "MD".  
 (2) AT&T "Special" basis.  
 (3) Console positions only.  
 (4) CTX 6 or later.

Optional Features	Switching System										
	701B	770A	800A	801A	805A	812A	50A CPS	No. 1 ESS	No. 2 ESS	No. 5 XBR	101 ESS
Automatic Wake-up Service	NP	NP	NP	NP	NP	NP	NP	US	US	US	US
Busy Lamp Field Only	A(2)	A	NP	NP	US	NP	A(4)	NP	NP	NP	NP
Busy Trunk Field	NP	US	NP	NP	US	NP	—	—	—	—	—
Busy Verification—Station Lines	A	P	NP	NP	NP	NP	A	A	A	A	A
—Trunks	NP	NP	NP	NP	NP	NP	A(3)	A(3)	A	A	A
Call Forwarding	NP	NP	NP	NP	NP	NP	—	—	—	—	—
Call Forwarding—Busy Line	NP	NP	NP	NP	NP	NP	A	A	A	A	A
Centrex	A	A	—	—	—	A	A	A	A	A	A
CCSA Access	A	P	—	—	—	A	A	A	A	A	A
Call Forwarding Don't Answer	NP	NP	NP	NP	NP	NP	A	A	A	A	A
Centrex	A	A	—	—	—	A	A	A	A	A	A
CCSA Access	A	P	—	—	—	A	A	A	A	A	A
Call Hold	NP	NP	NP	NP	NP	NP	A	A	A	A	A
Call Pickup	NP	NP	NP	NP	NP	NP	A	A	A	A	A
Consultation Hold—All Calls	NP	NP	NP	NP	NP	NP	A(5)	A	A	NP	A
Three-Way Calling	NP	NP	NP	NP	NP	NP	A	A	A	NP	A
Call Transfer—Individual	NP	NP	NP	NP	NP	NP	A	A	A	NP	A
All Calls	NP	NP	NP	NP	NP	NP	A	A	A	NP	A
CCSA Access	A	P	NP	NP	NP	P	A	A	A	A	A
Code Call	A	A	A	A	NP	A	A	A	A	A	A
Code Restriction	A(1)	NP	A(1)	A(1)	NP	A(1)	A	A	A	A	A
Call Waiting	NP	NP	NP	NP	NP	NP	—	—	—	—	—
Centralized Attendant Service	NP	A	NP	US	NP	A	—	—	—	—	—

**Key:**

- A —Available (AT&T Std)
- P —Planned Under Development
- NP —Not Planned
- US —Under Study
- —Does Not Apply
- + —Always Provided

- (1) Available with outside manufactured equipment or on a limited basis with equipment at Central Office.
- (2) Limited to 100 stations; series 100 only.
- (3) Call Forwarding outside is available.
- (4) Limited to 200 Stations.
- (5) CTX 6 or later.

Optional Features	Switching System										
	701B	770A	800A	801A	805A	812A	50A CPS	No. 1 ESS	No. 2 ESS	No. 5 XBR	101 ESS
Conference Calling	A	NP	A	A	NP	NP	A(2)	P	A	A	A
Controlled Restriction From	US	NP	NP	US	US	NP	NP	US	US	US	NP
Outgoing Calls	A	NP	NP	US	US	NP	NP	US	US	US	NP
Controlled Station Restriction	US	NP	NP	US	US	NP	NP	US	US	US	NP
Controlled Station-to-Station Restriction	US	NP	NP	US	US	NP	NP	US	US	US	NP
Customer Trunk Test	NP	P	NP	US	NP	NP	NP	US	US	US	NP
Directed Call Pickup	US	NP	NP	US	NP	NP	NP	US	US	US	A
Executive Busy Override	NP	A	A	NP	NP	NP	NP	NP	NP	NP	NP
Executive Ringback	NP	A	A	NP	NP	NP	NP	NP	NP	NP	NP
Flexible Numbering of Stations	(1)	A	A	US	NP	A(3)	NP	US	US	US	US
Fully Restricted Station	A	A	A	NP	NP	NP	NP	A	A	A	A
Incoming Call Identification	A	A	A	NP	NP	A	A	A	A	A	A
Inward Restriction	A	NP	NP	NP	NP	A	A	A	A	P	A
Lockout	A	NP	NP	NP	NP	NP	A	A	A	A	A
Incoming Exchange Network	A	A	NP	NP	NP	NP	NP	US	US	A	P
CCSA Access	A	—	—	—	—	—	NP	US	US	A	P
Manual Line Service	A	—	—	—	—	—	—	—	—	—	—
Switchboard	NP	NP	NP	NP	NP	NP	—	—	—	A	NP
Console	NP	NP	NP	NP	NP	NP	—	—	—	NP	NP
Message Waiting	A	A	NP	NP	NP	A	NP	A	US	NP	US
Miscellaneous Trunk Restrictions	A	A	A	A	NP	A	A	A	A	A	A

**Key:**

- A —Available (AT&T Std)
- P —Planned (Under Development)
- NP —Not Planned
- US —Under Study
- —Does Not Apply
- + —Always Provided

- (1) Available on a limited basis depending on customer requirements.
- (2) CTX 6 or later.
- (3) Limited to 3 or 4 digit numbering.



Optional Features	Switching System										
	701B	770A	800A	801A	805A	812A	50A CPS	No. 1 ESS	No. 2 ESS	No. 5 XBR	101 ESS
Night Position	A	NP	NP	NP	NP	A	NP	NP	NP	NP	NP
Outgoing Call Transfer	US	A	NP	P	A	A	A	A	A	NP	A
Paging—Loudspeaker	A	A	A	A	A(1)	A	A	A	A	A	A
Paging—Radio	A	NP	A	A	NP	A	A	A	A	A(3)	A
Power Failure Transfer— Station (2) Attendant (2)	A	A	—	—	—	A	—	—	—	NP	A
Pushbutton Dialing to Stations (DC Key Pulse)	A	NP	NP	US	NP	A	US	A	A	A	A
Recorded Telephone Dictation	A	A	A	A	NP	A	A	A	A	A	A
Reserve Power (Optional for PBX only)	A	A	A	NP	P	A	A	+	A	—	A
Secrecy (with Lockout only) incoming Exchange Network CCSA Access	A	A	—	NP	NP	NP	US	US	US	NP	P
Single Digit Dialing	A	A	NP	NP	NP	NP	US	US	US	NP	—
Speed Calling	NP	NP	NP	NP	NP	NP	A	A	A	NP	A
Station DSS	A	NP	NP	NP	NP	NP	NP	P	A	NP	P
Station Message Registers	A	A	NP	NP	NP	NP	A(5)	US	US	NP	US
Status Display	US	NP	NP	US	NP	US	US	US	US	US	—
Straightforward Outward Completion	NP	A(4)	NP	NP	NP	NP	—	—	—	—	—
Stutter Dial Tone	NP	A	NP	P	NP	A	—	—	—	—	—
Surcharge	NP	A	NP	NP	NP	A	—	—	—	—	—
Thru Dialing Switchboard Console	A NP A	— A A	— A A	— A A	— A P	— A A	— A A	— A A	— A A	US US A	— A A
Tie Trunks	A	A	A	A	A	A	A	A	A	A	A

- Key:
- A —Available (AT&T Std)
  - P —Planned Under Development
  - NP —Not Planned
  - US —Under Study
  - —Does Not Apply
  - + —Always Provided
- (1) Attendant access only.
  - (2) Optional for centrex, always provided with PBX Series packages.
  - (3) Calling port only, answering port arrangements under development.
  - (4) Switchloop systems only.
  - (5) CTX 6 or later.

Optional Features	Switching System										
	701B	770A	800A	801A	805A	812A	50A CPS	No. 1 ESS	No. 2 ESS	No. 5 XBR	101 ESS
Timed Reminders	NP	A	NP	NP	NP	A	—	A	A	NP	A
Toll Restriction (formerly Toll Diversion)											
Per System Basis	A(1)	A(3)	A(1)	A(1)	US	A(1)	A	A	A	A	A
Per Station Basis	A(2)	A(3)	A(1)	A(1)	US	A(1)	A	A	A	A	A
Toll Terminal	A	A	NP	NP	NP	A	—	A	US	NP	A
Touch Tone Calling	A	A	A	A	A	A	A	A	A	A	A
Trunk Group Busy Lamps Console only	P	A	NP	NP	NP	A	A(4)	A	A	P	A

- Key:
- A —Available (AT&T Std)
  - P —Planned Under Development
  - NP —Not Planned
  - US —Under Study
  - —Does Not Apply
  - + —Always Provided
- (1) Battery reversal from central office
  - (2) Note (5) applies and segregated trunk groups are required.
  - (3) Note (5) applies plus digit monitoring; (0 or 1) toll restriction is also available.
  - (4) CTX 6 or later.
  - (5) Equipment required at central office.

**BELL SYSTEM PBX VEHICLES**

(Excluding Dimension)

**BELL SYSTEM PBX VEHICLES**

<b>SYSTEM</b>	<b>EQPT.</b>	<b>LINE SIZE</b>	<b>MAX. TRUNK</b>	<b>LINK</b>	<b>SERVICE</b>	<b>WEIGHT Lbs./Sq. Ft.</b>
HM/60	XB	10-60	8	16	SM Hotel	
101ESS	ELECT	200-400	332	Various	100, 200, 300 CENTREX	180
400SS	XB	20-40	Various	16	DIAL INTERCOM	140
558A	XB	40	40	10	MANUAL PBX	125
701B	SXS	60-10,000	Various	Various	100, 200, 300 CENTREX	110
740E	SXS	80-300	Various	Various		110
761B	XB	20-40	8	16	SM Hotel	136
770A	XB	40-400	240	200	100, 200, 300 H/M, CENTREX	180
800A	ELECT	30-80	20	52	100, 200, 300	120
801A	ELECT	Light 60-270 Heavy 48-180	48	84	100, 200, 300	150
805A	ELECT	18-57	12	18	100	127
812A	ELECT	Light 160-2080 Heavy 160-1660	400	780	100, 200, 300 H/M CENTREX	180

**DIMENSION PBX**

**General Summary**

DIMENSION\* Electronic Private Branch Exchange is a new dimension in communications equipment. It is a PBX built for the future as well as for today. Dimension PBX features Stored Program Control combined with time division switching that provides exceptional versatility for today's needs, and is easily adaptable to future requirements. Its modular packaging allows for rapid installation and growth while permitting easy and economical "turnaround" for subsequent re-use. Large Scale Integration technology offers you the advantage of compact size and quiet operation — two characteristics of major importance in Customer Premises equipment. Dimension PBX also features sophisticated built-in diagnostic capability and an inherent reliability that minimizes down-time and maintenance costs while assuring customers of reliable service.

\*Trademark of AT&T Co.



**DIMENSION PBX PICTURE**

- **DIMENSION 100** has a nominal capacity of 84 station lines with 30 trunks. A capacity of 100 station lines with 22 trunks using three carriers or 52 station lines with 14 trunks using two carriers can be achieved. Only one attendant console may be provided.
- **DIMENSION 400** has a nominal capacity of 360 station lines with 96 trunks. A capacity of 420 lines with 64 trunks or 300 station lines with 128 trunks can be achieved. A maximum of four attendant consoles may be provided.
- **DIMENSION 2000/Custom** has nominal capacity of 2000 station lines and 350 trunks with up to 1000 DIMENSION Custom Telephone Service (DCTS) stations with memory configuration D. A larger capacity is available with Custom configuration E and F. The number of attendant consoles may vary from 14 to 26.
- **DIMENSION Custom Telephone Service (DCTS)** provides deluxe key telephone features and simplified access to selected features through the use of electronic multi-button telephone sets under the control of the DIMENSION PBX. The number of the DCTS station sets is dependent upon the capacity of the DIMENSION PBX and the associated Custom Telephone Service Common Equipment.

**DEFINITIONS**

- **Abbreviated and Delayed Ringing** - Transfers the ringing associated with an incoming call automatically and/or in response to a button operation.
- **Alphanumeric Display** - A visual display device provided on certain attendant consoles to display one or more digits, letters, or symbols.
  - Calling Number Display** - Provides the attendant with the line number for the station seeking attendant assistance.
  - Class of Service Display** - Provides the attendant with information regarding the class of service associated with attendant seeking calls from stations.
- **Attendant CCSA Access** - Provides attendant assistance in Listed Directory Number (LDN) calls incoming from the CCSA network as well as on calls outgoing from the CCSA network.
- **Attendant Console** - A desk-top console from which the attendant handles assistance calls by means of nonlocking keys.
- **Attendant Control of Trunk Group Access (ACTGA)** - An attendant can restrict dial access by all station lines to FX, WATS, and/or tie trunk groups by operating a key or dialing a code.
- **Attendant DDS With Busy Lamp Field** - The attendant at a console can place or complete calls to stations within the PBX by depressing a nonlocking pushbutton associated with the desired station line. A visual indication of the busy or idle condition of the station is provided via a lamp.
- **Attendant Flash Over Trunks** - A PBX attendant can operate a non locking flash button on the attendant position to cause a time flash signal to be transmitted over and outgoing on two-way trunk to recall an operator (such as a toll or overseas operator)
- **Attendant Lockout** - Denies an attendant the ability to re-enter an established connection unless recalled by a station user.
- **Attendant Transfer - All Calls** - Allows a station user, while participating in any two-party connection, to call (recall) an attendant, so that the attendant may transfer the call. A flash during any established call will return Recall Dial Tone and hold the other party.
- **Automatic Callback** - Enables a station user calling a busy station line to be automatically connected to the called station when the station becomes idle.
- **Automatic Identified Outward Dialing (IOD)** - Provides identification of station line numbers on outgoing long distance calls.
- **Busy Lamp Field** - Provides an attendant with visual indication of the busy or idle connection of station lines.
- **Busy Verification** - Allows the attendant to establish a "talking" connection to an apparently busy station line to determine if the station line is in working order.
- **Call Forwarding** - Allows calls directed to a station to be routed to another station.
- **Call Forwarding - Busy Line, Don't Answer** - Allows calls directed to a station to be routed to another station whenever the called station is either busy or does not answer within a prescribed period.
- **Calling Number Display** - Provides a called station with a display of the number of the calling station within the PBX.
- **Call Hold** - Allows a station user to "hold" any call in progress by flashing and then dialing a "hold" code.

- **Call Pickup** - A station user can answer any call directed to another station line within its preset pickup group by dialing a special code.
- **Call Waiting Services** - Allows a call to a busy station line to be held waiting while a burst of tone is directed towards the busy station user.

**Attendant Call Waiting** - All calls the attendant completes to a busy station are held waiting while a burst of tone is directed towards the busy station. The burst of tone is delayed until the attendant leaves the connection. Subsequent bursts are applied each time the attendant leaves the waiting connection.

**Originating Call Waiting** - Provides the user with the ability to direct a unique tone signal toward any other station called if that station user is already on another call.

**Terminating Call Waiting** - Allows a station user to have Call Waiting Service on any call attempting to terminate on his station when he is already busy on another call.

- **CCSA Access** - Provides access to a CCSA network for network inward dialing to the PBX, direct outward dialing to the network, and other features similar to those provided on the exchange network. CCSA trunks cannot tandem through the DIMENSION PBX without attendant assistance.
- **Code Restriction** - Denies selected station lines completion of dialed outgoing exchange network calls to selected office and area codes.
- **Common Audible Ringing** - Allows a station user to receive the same audible indication for incoming calls on two or more lines.
- **Controlled Restrictions**

**Controlled Total Restriction** - Provides the attendant with the ability to restrict selected station lines or groups of lines from originating and receiving any calls.

**Controlled Termination Restriction** - Provides the attendant with the ability to restrict direct dialed outgoing exchange network calls from selected station lines or groups of lines.

**Controlled Termination Restriction** - Provides the attendant with the ability to restrict selected station lines or groups of lines from receiving any calls.

**Controlled Station-to-Station Restriction** - Provides the attendant with the ability to restrict selected station lines or groups of lines from receiving station-to-station calls.

- **Data Restrictions** - Request to Call Wait (including Attendant Call Waiting) Executive Override busy Verification of Trunk or Trunk Verification, or any connection involving a line and/or trunk having a data line classes service will be denied. The attempted call will be routed to a town or recorded announcement.
- **Dial Access to Attendant** - Allows station users within the switching system or via dial repeating tie trunks to reach the attendant by dialing a code.
- **Direct Inward Dialing (DID)** - Allows an incoming call from the exchange network (not FX or WATS) to reach a specific station line without attendant assistance.
- **Direct Outward Dialing (DOD)** - Allows a PBX station user to gain access to the exchange network without the assistance of the attendant by dialing an access code and receiving a second dial tone.
- **Direct Trunk Group Selection** - An attendant can access an outgoing trunk by depressing a single pushbutton associated with the desired trunk group.

— **Distinctive Ringing** - Unique patterns of station ringing using existing station sets are provided to prevent the station user to distinguish between various types of calls. These patterns are available as follows:

- one burst of tone (normal ringing indicates station-to-station call)
- two burst ringing indicates attendant call or outside call
- three burst ringing indicates either Night Station Service calls or Automatic Callback, Originating Call Waiting, or Outgoing Trunk Queuing callbacks

— **Executive Override** - Allows the user to bridge onto busy station connections.

— **Flexible Numbering of Stations** - Allows station numbers to be assigned to lines at the time of installation in accordance with a customer-desired numbering plan and to be reassigned while in service to permit personnel moves without requiring number changes.

— **Flexible Numbering of Stations - Mixed Numbering** - Provides, in addition to the standard Flexible Numbering of Stations capability, for variance from one to four digits within the same installation.

— **Foreign Exchange Access** - Provides access to Foreign Exchange line terminations.

— **Fully Restricted Station** - Denies selected station lines the ability to place or receive any but station-to-station calls.

— **Hold**

**Exclusive Hold** - Allows a station user to maintain a connection to a line while not off-hook on the line.

**I-Hold** - Provides a flutter signal indication via the status indicator at the station which placed the line on hold.

**Priority Hold** - Provides a priority signal, indicated by the status indicator.

— **Hot Line Service** - Provides the capability for stations on the PBX system to automatically place a call to a preassigned number when the station user goes off-hook. A maximum of 14 digits can be automatically dialed.

— **I-Use Indication** - Provides the user with a steady visual indication via a red I-Use indicator associated with the line to be connected when off-hook, or the line to be automatically connected when on-hook.

— **Incoming Call Identification (ICI) - Indicator Lamps** - Allows an attendant at a switched-loop console position to visually identify the type of service or trunk group associated with a call directed to that position.

— **Intercept Treatment** - Routes calls which "cannot be completed" to an appropriate audible signal, or to the attendant.

**Attendant Intercept** - Routes certain calls that cannot be completed to the attendant position for further treatment.

**Intercept Tone** - A continuous tone alternating between a low pitch and high pitch indicating that a restricted or unassigned code has been dialed or a special service has been denied.

— **Intercom Line**

**Automatic** - When a station initiates the call, the predetermined called station automatically receives a distinctive audible signal.

**Manual** - —One predetermined called telephone can be signaled before or after call initiation by pressing the manual signaling button.

**Dial** - An intercom line is provided via a PBX line but when a user receives a call from another PBX station, the call terminates on this additional line.

—**Inward Restriction** - Prevents selected station lines from receiving incoming exchange network calls.

—**Last PBX CALL** - Permits an electronic telephone user to place a call to the PBX line which was last dialed or directly selected via a DDS button.

—**Line Lockout With Warning** - provides approximately 10 seconds of warning tone and then holds the line out of service when a station line remains off-hook for longer than 10 seconds without dialing.

—**Line Preferences**

**Idle Line Preference** - Automatically connects the station user to an idle line upon going off-hook.

**Incoming Call Preference** - Automatically connects the station user to an incoming call.

—**Interposition Calling** - Allows an attendant at one position of a multi-position attendant team to call an attendant at another position of the same team.

—**Interposition Transfer** - Allows an attendant at one attendant position of a multi-position attendant team to transfer a call to another attendant position of the same team for special handling.

**Ringing Line Preference** - Automatically connects the station user to a line which is ringing at the telephone.

**Last Line Preference** - A station user having this feature will not be automatically connected to any line upon going off-hook.

**Prime Line Preference** - Automatically reconnects the station user to the line designated as the prime line.

—**Line Ringer** - allows a multibutton telephone to receive an audible indication to indicate an incoming call on a specific line on the station.

—**Line Status Indication** - Provides the user with a visual indication of line status.

—**Loudspeaker Paging Access** - Allows the attendant direct access and the station user dial access to paging equipment.

**Basic** - Provides paging as described above.

**Deluxe** - In addition to the above, Deluxe paging access allows the paged party to be connected to the paging party by dialing a discrete code from any station within the PBX.

—**Manual Exclusion** - Allows user to restrict all other multiple appearances of the line from being bridged.

—**Manual Originating Line Service** - Provides for automatic routing to the attendant when the station user goes off-hook for service.



- **Manual Signaling** - Provided in conjunction with the manual intercom feature, however, it can be provided independently.
- **Manual Terminating Line Service** - Provides station lines which require all terminating calls be completed by the attendant.
- **Miscellaneous Trunk Restriction** - Denies preselected station lines (and dial repeating trunks) dial access to preselected miscellaneous trunk groups.
- **Multiple Listed Directory Number Service** - Provides for more than one listed directory number to be associated with a single DIMENSION PBX installation.
- **Music on Hold Access** - Provides music or other audible indication to the held party during the hold interval. The held call condition can be the result of Call Hold, or three way calling transfer hold, or the hold associated with other similar features.
- **Night Console Position** - Provides an alternate attendant position which can be used at night.
- **Night Station Service**
  - Fixed Service** - Provides arrangements to route calls, normally directed to the attendant, to preselected station lines within the system.
  - Full Service** - Provides arrangements to route calls, normally directed to the attendant, to preselect station lines within the system when the regular attendant positions are set to night service. Calls to specific non-DID exchange network trunks can be arranged to route to specific station lines. Routings can be assigned on a flexible basis by the attendant and remain in effect night-to-night until changed.
- **Originating Restriction** - A station line cannot be used to originate calls at any time.
- **Outgoing Trunk Queuing** - Provides a means for stations to dial a busy outgoing trunk group, be automatically placed in a queue, and to be signaled when a trunk in the group is available.
- **Outward Restriction** - Preselected station lines within the PBX are denied the ability to access the exchange network without the assistance of the attendant.
- **Power Failure Transfer**
  - System** - Provides service to and/or from the exchange network for a limited number of prepared stations during a power failure.
  - Station** - Provides outgoing service through the Central Office for a limited number of predesignated Dimension Customer Telephone Stations during a commercial power failure.
- **Preselection** - Allows the user to select a line for access by depressing the associated line button prior to going off-hook.
- **Privacy** - Privacy automatically splits the connection whenever an attendant would otherwise be bridged on a call with more than one person.
- **Recall** - Provides the flash function required during the operation of many of the DIMENSION features.
- **Recall Dial Tone** - Provides means of indicating to the user the successful use of the switchhook flash in requesting a service feature.

- **Recorded Telephone Dictation Access** - Permits the station user to dial access recorded telephone dictation equipment.
- **Remote Access to PBX Service** - Allows a user outside the PBX to access the PBX services via an exchange network connection.
- **Ringer Transfer** - Allows ringing to be transferred to another group of stations.
- **Rotary Dial Calling** - The DIMENSION PBX will accept dialing information from rotary dial equipment.
- **Route Advance** - Routes outgoing calls over alternate facilities when the first choice trunk group is busy.
- **Serial Call** - Automatically holds the trunk that was involved in a call to a station that has just hung up and visually signals recall to the attendant.
- **Single Digit Dialing** - Provides for single digit dialing to reach a preselected group of stations.
- **Splitting - 1 Way Auto-Manual** - Allows an attendant to consult privately with one party on a call without the other party's hearing.
- **Station Busy Indication** - Provides a visual indication of the switch hook status of a station at another station.
- **Station Direct Station Selection** - Allows a station user to dial other stations by depressing a DSS button.
- **Station Hunting** - Routes a call to an idle station line in a prearranged group.
- **Station Message Detail Recording** - Provides a record of PBX outgoing and/or incoming calls. The call is measured from the establishment of the connection in the customer system to the time when the station goes on-hook.
- **Station Message Registers** - Provides message registration which is centrally located on the customer's premises.
- **Station Message Waiting** - Allows a Custom Telephone Service user to activate a status indicator at another Station.
- **Station Ringer Cutoff** - Allows the tone ringer to be cut off at a particular station by the ringer volume control on the station set or by a button in the key field.
- **Station-to-Station Calling** - The station user can directly dial other stations within the same system.
- **Straightforward Outward Completion** - Allows the attendant to place an outgoing call, for a station user without requiring the station user to hang up.
- **Switched Loop Operation** - An attendant position arrangement whereby each call requiring assistance is automatically switched to one of a limited number of idle loops.
- **Tandem Tie Trunk Switching** - A service arrangement that allows tie trunk connections through the switching system or the attendant position.
- **Termination Restriction** - Station lines with this restriction cannot receive calls at any time.
- **Three-way Conference Transfer** - A station user can, by flashing while on any two-party call, effect a three-way conference and transfer.

- **Through Dialing** - Station users can complete dialing after the attendant selects the trunk facility.
- **Tie Trunk Access** - Provides for termination of Tie Trunk Access Line.
- **Timed Reminders** - The attendant is automatically alerted, after 30 seconds when a call waiting or unanswered call has been extended from the console.
- **Toll Restriction - Battery Reversal, 0/1** - Prevents completion of toll calls or calls to the toll operator without the assistance of the attendant.
  - Battery Reversal** - A battery reversal signal from the Central Office on an outgoing call will cause the DIMENSION PBX to route the calling party to intercept.
  - 0/1** - Form of toll restriction based on digit screening rather than on Central Office signaling.
- **Toll Terminal Access** - Provides for a station user or attendant to dial a toll operator directly or access a uniquely identified trunk group to a TSPS position with a single digit access code.
- **TOUCH-TONE Calling** - The DIMENSION PBX will accept dialing information from standard TOUCH-TONE station equipment.
- **Trunk Answer Any Station** - Incoming calls activate a common alerting signal on the customer's premises when attendant positions are in night service. Calls may be answered by any station user in the system who dials a special code from any nonrestricted station.
- **Trunk Group Busy Indication on Attendant Position** - Provides the attendant with a visual indication when all trunks in a group are busy.
- **Trunk Group Warning Indication on Attendant Position** - Provides the attendant with a visual indication when a preset number of trunks in a group are busy.
- **Trunk-to-Trunk Connections** - allows incoming or outgoing trunk calls to be extended to another outgoing trunk.
- **Trunk Verification by Customer** - Provides attendant access to individual trunks of a group to verify supervision and transmission.
- **WATS Access** - Provides for termination of WATS access line.

FEATURE PACKAGE NO.	FEATURE PACKAGE APPLICATIONS		
	100	DIMENSION	
		400	2000
1	E	A	
2	A	A	
3		A	
4		A	
5		A	
7			A
10		A	

- A — FEATURE PACKAGE IS APPLICABLE IN DIMENSION MODEL INDICATED.
- B — APPLICABLE IN DIMENSION 100 WITH THE EXCEPTION OF THE AIOD FEATURE.

**DIMENSION® PBX FEATURE CONFIGURATIONS**

The following features are listed by system and package with which they are provided. The subscriber may not use all features in a given package. Features are not interchangeable between packages or packages between vehicles. In addition to the software Feature Package, individual features may require additional hardware to make them operational.

FEATURE	FEATURE PACKAGE							
	1	2	3	4	5	7	10	
Alphanumeric Display For Attn. Pos*								
- Calling Number Display	X	X	X	X	X	X	X	X
- Class of Service Display	X	X	X	X	X	X	X	X
- Incoming Call Identification	S	S	S	S	S	S	S	S
Atnd Conference				X		X	X	
Atnd Console	S	S	S	S	S	S	S	S
Atnd Control of Trunk Group Access	X	X	X	X	X	X	X	X
Atnd DDS with Busy Lamp Field*	X	X	X	X	X	X	X	X
Atnd Lockout	X	X	X	X	X	X	X	X
Atnd Transfer - All Calls	S	S	S	S	S	S	S	S
Automatic Callback - Calling**	X	X	X	X	X	X	X	X
Automatic ident. Outward Dialing	X	X	X	X	X	X	X	X
Automatic Route Selection				X		X	X	
Busy Lamp Field (without DSS)*	X	X	X	X	X	X	X	X
Busy Verification of Station Lines	X	X	X	X	X	X	X	X
Call Forwarding - All Calls**	X	X	X	X	X	X	X	X
- BY and DA**	X	X	X	X	X	X	X	X
Call Hold**	X	X	X	X	X	X	X	X
Call Pickup**	X	X	X	X	X	X	X	X
Call Waiting Services**	X	X	X	X	X	X	X	X
Calling Number Display to Station			X	X		X	X	
Centralized ATND Service (CAS)								X
Code Call Access								X
CCSA Access	X		X	X	X	X	X	X
Code Restriction	X	X	X	X	X	X	X	X
Controlled Restrictions			X	X		X	X	
Custom Intercom			X	X	X	X	X	
Data Privacy			X	X	X	X	X	
Data Restriction			X	X	X	X	X	
Dial Access To Atnd	S	S	S	S	S	S	S	S
Dimension Custom Telephone Service					X	X		
Direct Department Calling (DDC)								X
Direct Inward Dialing (DID)		X		X	X	X	X	X
Direct Outward Dialing (DOD)	S	S	S	S	S	S	S	S
Direct Trunk Group Selection	X	X	X	X	X	X	X	X
Distinctive Ringing	S	S	S	S	S	S	S	S
Duplicate Common Control								
Executive Override**		X		X	X	X	X	X
Flexible Numbering of Stations	S	S	S	S	S	S	S	S
Flex. No. of Stations - Mixed Number			X					
Foreign Exchange (FX) Access	S	S	S	S	S	S	S	S
Hot Line Service			X					
Intercept Treatment	S	S	S	S	S	S	S	S
Interposition Calling							X	
Interposition Transfer							X	
Line Lockout with Warning	S	S	S	S	S	S	S	S
Listed Directory Number Service	S	S	S	S	S	S	S	S
Loudspeaker Paging - Basic	X	X	X	X	X	X	X	X
- Deluxe	X	X	X	X	X	X	X	X
Manual Originating Line Service				X				
Message Waiting				X				
Multiple LDN - Non-DID only	X	X						
- DID and NON-DID				X		X	X	X
Music on Hold				X		X	X	
Night Console Position	S	S	S	S	S	S	S	S

S - Standard  
X - Optional  
\* - Trademark of AT&T  
\* - Designated Consoles only  
\*\* - These features provided with button activation when associated with Dimension Custom Telephone Service.

FEATURE	FEATURE PACKAGE						
	1	2	3	4	5	7	10
Night Station Service - Fixed Service	S	S	S	S	S	S	S
- Full Svc.	X	X		X	X	X	X
Off-Premises Stations	S	S	S	S	S	S	S
Outgoing Trunk Queuing	X	X		X	X	X	X
Power Failure Transfer	S	S	S	S	S	S	S
Privacy and Lockout		X		X	X	X	X
Recall Dial Tone	S	S	S	S	S	S	S
Recorded Announcement Intercept				X		X	X
Recorded Tel. Dictation Access		X		X	X	X	X
Remote Access to PBX Services		X		X	X	X	X
Restrictions							
- Fully Restricted Stations	X	X	X	X	X	X	X
- Inward Restriction	X	X	X	X	X	X	X
- Manual Terminating Line Svc.	X	X	X	X	X	X	X
- Misc. Trunk Restrictions	X	X	X	X	X	X	X
- Origination Restriction	X	X	X	X	X	X	X
- Outward Restriction	S	S	S	S	S	S	S
- Termination Restriction	X	X	X	X	X	X	X
Rotary Dial Calling	S	S	S	S	S	S	S
Route Advance	S	S	S	S	S	S	S
Serial Call		X	X	X	X	X	X
Single Digit Dialing			X				
Speed Calling				X		X	X
Splitting - 1-Way Automanual	S	S	S	S	S	S	S
Station Hunting - Circular Hunt	S	S	S	S	S	S	S
- Terminal Hunt	S	S	S	S	S	S	S
Station Message Dial Recording				X		X	X
Station Message Register Service			X				
Station to Station Calling	S	S	S	S	S	S	S
Straight Forward Outward Completion	S	S	S	S	S	S	S
Switched Loop Operation	S	S	S	S	S	S	S
Tandem Tie Trunk Switching		X	X	X	X	X	X
Three way Conference Transfer**	X	X	X	X	X	X	X
Through Dialing	S	S	S	S	S	S	S
Tie Trunk Access		X	X	X	X	X	X
Timed Recall on Outgoing Calls				X		X	X
Timed Reminders	S	S	S	S	S	S	S
Toll Restriction - Battery Reversal	S	S	S	S	S	S	S
- 0/1	X	X	X	X	X	X	X
Toll Terminal Access			X				
Touch-Tone Calling	S	S	S	S	S	S	S
Touch-Tone to Dial Pulse Conversion	S	S	S	S	S	S	S
Trunk Answer From Any Station	X	X	X	X	X	X	X
Trunk Grp. Busy Ind. on Atnd. Pos.	X	X	X	X	X	X	X
Trunk Grp. Warning Ind. on Atnd. Pos.	X	X	X	X	X	X	X
Trunk to Trunk Connections		X	X	X	X	X	X
Trunk Verification by Customer (ATND)		X		X	X	X	X
Trunk Verification by Station							X
Two Party Hold on Console		X	X	X	X	X	X
Uniform Call Distribution (UCD)							X
WATS Access	S	S	S	S	S	S	S
Wide Freq. Tolerant Power Supply	S	S	S	S	S	S	S

S - Standard  
X - Optional

\* - Trademark of AT&T  
\* - Designated Consoles only  
\*\* - These features provided with button activation when associated with Dimension Custom Telephone Service.

---

**DIMENSION CUSTOM TELEPHONE  
SERVICE (DCTS) FEATURES**

---

Abbreviated and Delayed Ringing

---

Bridged Call

---

Common Audible Ringing

---

Hold

- Exclusive Hold
  - I-Hold
  - Line Hold
  - Priority Hold
- 

I-Use Indication

---

Intercom

- Automatic
  - Manual
  - Dial
- 

Last PBX Call

---

Line Preferences

- Idle Line Preference
  - Incoming Line Preference
  - Last Line Preference
  - No Line Preference
  - Preselection Line Preference
  - Prime Line Preference
  - Ringing Line Preference
- 

Line Ringer

---

Line Status Indication

---

Manual Exclusion

---

Manual Signalling

---

Music on Hold Access

---

Recall

---

Ringling Transfer

---

Station Busy Indication

---

Station Direct Station Selection

---

Station Message Waiting

---

Station Power Failure Transfer

---

Station Ringer Cutoff

---

Plus Button-Activated Custom Calling Features

- Automatic Callback - Calling
  - Call Forwarding - All Calls
    - BY and DA
  - Call Hold
  - Call Pickup
  - Call Waiting - Answer
    - Originating
    - Terminating
  - Executive Override
  - Threeway Conference Transfer
-

## **TIE TRUNKS — DIAGRAMS AND OPERATION**

Private Line Services may be terminated in a PBX along with the Station Lines and Trunk Lines. These Tie Trunks are used to connect two remote PBX's. An Off-Premises Station is also connected via a Private Line and involves IXC mileage charges.

Tie Trunks may be arranged from a very simple operation of Two-Way Manual-completely operator handled, all the way up to Two-Way Dial Repeating where Station users dial remote PBX station users without operator assistance.

Some Associated Companies are unable to accept Touch-Tone pulses on incoming Tie Lines. Salesmen must confirm the type of PBX or station equipment at each end of a circuit to insure Touch-Tone compatibility. It is essential to establish the Associated Companies' ability to accept Touch-Tone pulses before selling or modifying a circuit with Touch-Tone operation. Touch-Tone equipped central offices must be used if terminal equipment is Touch-Tone.

### **HOW TO USE THE TIE LINE DIAGRAMS**

- The location on the left will be known as the "Black" location; the location on the right will be known as the "Red" location.
- Points of access are circled.
- Broken lines indicate that the operator has to complete the call.
- To trace the path of a call originating at the Red location, follow the directional red lines all the way across.
- The verbal description of the tie lines' operation is also color coded. For a narrative of the red location, start with the "outgoing" in red print and follow over to the red "incoming" on the opposite side.
- Follow the same procedure for the Black location.
- The two letters below the tel sets in parentheses are **USOC** suffixes for **DIAL SIGNALING ARRANGEMENTS**.
- See **DIAL SIGNALING ARRANGEMENT CHART** on page 52 following for USOC suffix application.

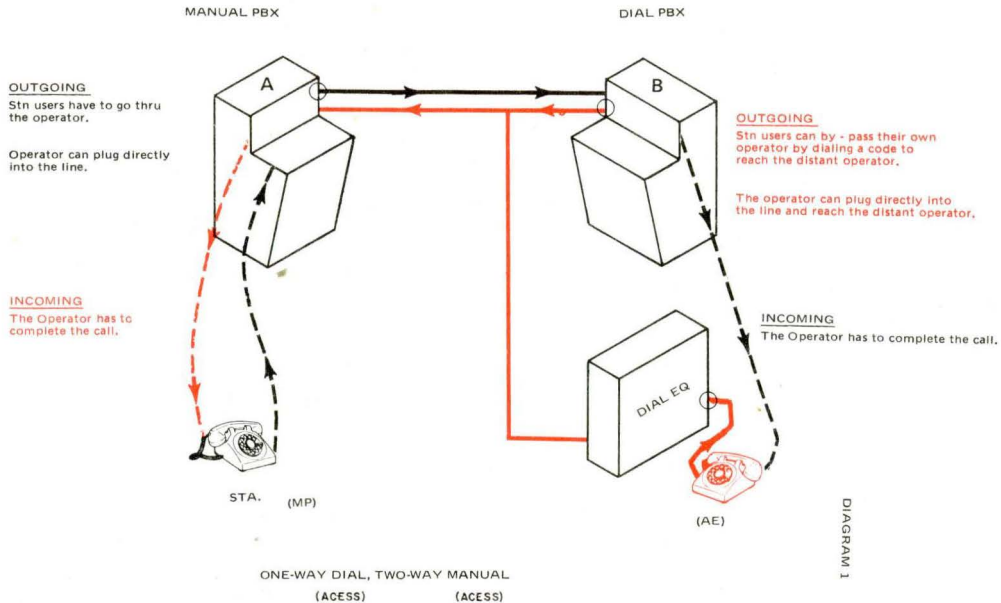


DIAGRAM 1

EQUIPMENT REQUIRED

SWITCHBOARD A

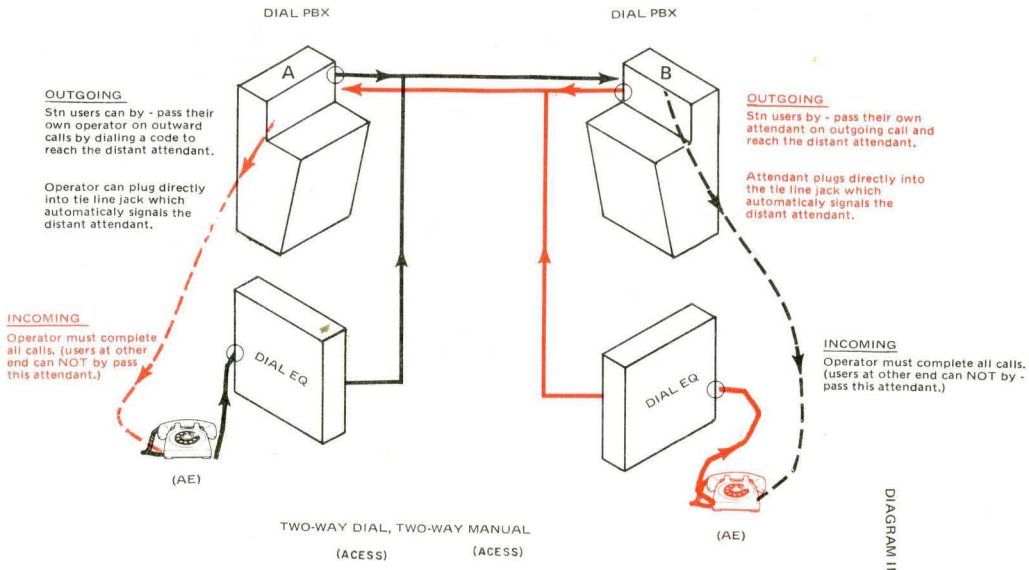
1. Trunk Jack
2. Trunk Equipment

SWITCHBOARD B

1. Trunk Jack
2. Trunk Equipment
3. Selector Level
- or
4. Dial Station Terminal  
if line is arranged for trunk (A) to station connection (B).

Rate information is not complete. Use TARIFFS for customer quotations.





EQUIPMENT REQUIRED

SWITCHBOARD A

1. Trunk Jack
2. Trunk Equipment
3. Selector Level

SWITCHBOARD B

1. Trunk Jack
2. Trunk Equipment
3. Selector Level

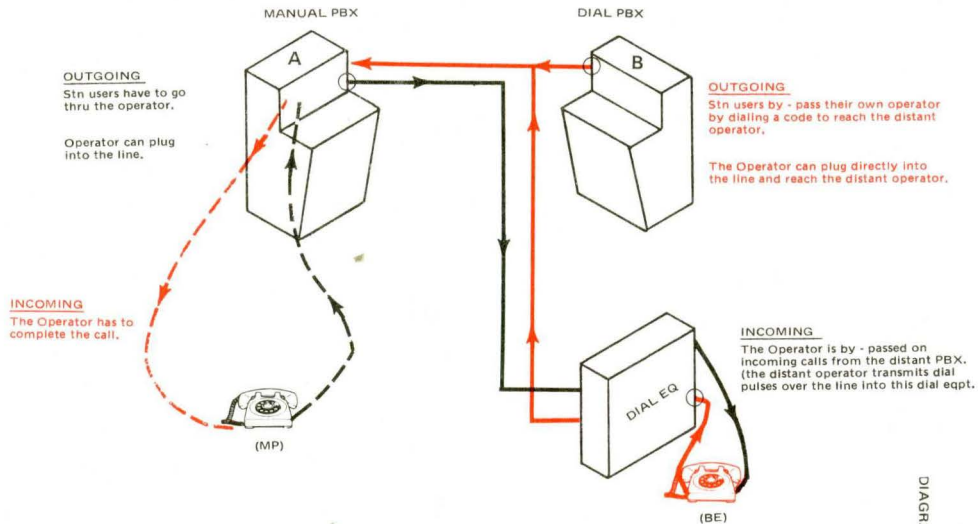


DIAGRAM III

ONE-WAY DIAL, ONE-WAY REPEATING, ONE-WAY MANUAL  
(ACCESS) (OPERATION) (ACCESS)

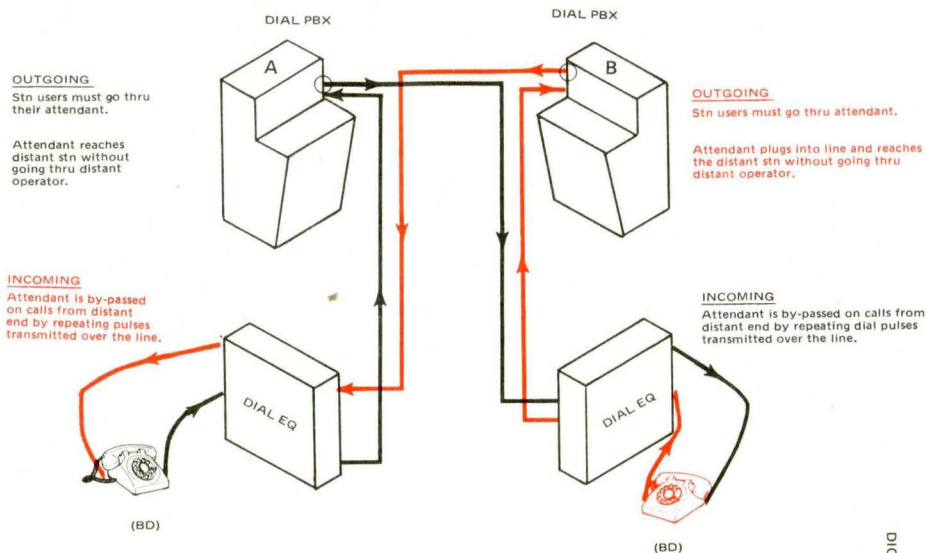
EQUIPMENT REQUIRED

SWITCHBOARD A

1. Trunk Jack
2. Trunk Equipment

SWITCHBOARD B

1. Trunk Jack
2. Trunk Equipment
3. Selector Level
4. Incoming Selector



TWO-WAY MANUAL, TWO-WAY REPEATING  
(ACCESS) (OPERATION)

DIAGRAM IV

EQUIPMENT REQUIRED

SWITCHBOARD A

1. Trunk Jack
2. Trunk Equipment
3. Incoming Selector

SWITCHBOARD B

1. Trunk Jack
2. Trunk Equipment
3. Incoming Selector

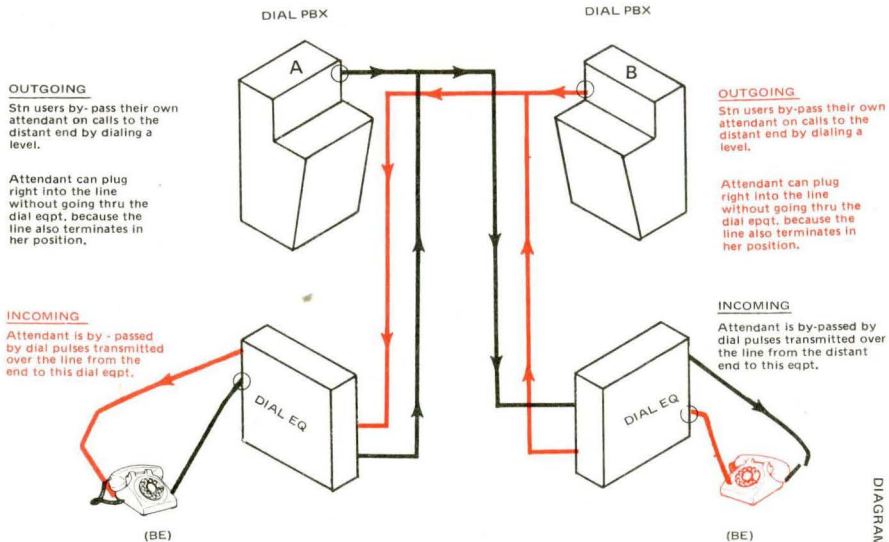


DIAGRAM V

TWO-WAY DIAL REPEATING

EQUIPMENT REQUIRED

SWITCHBOARD A

1. Trunk Jack
2. Trunk Equipment
3. Selector Level
4. Incoming Selector

SWITCHBOARD B

1. Trunk Jack
2. Trunk Equipment
3. Selector Level
4. Incoming Selector

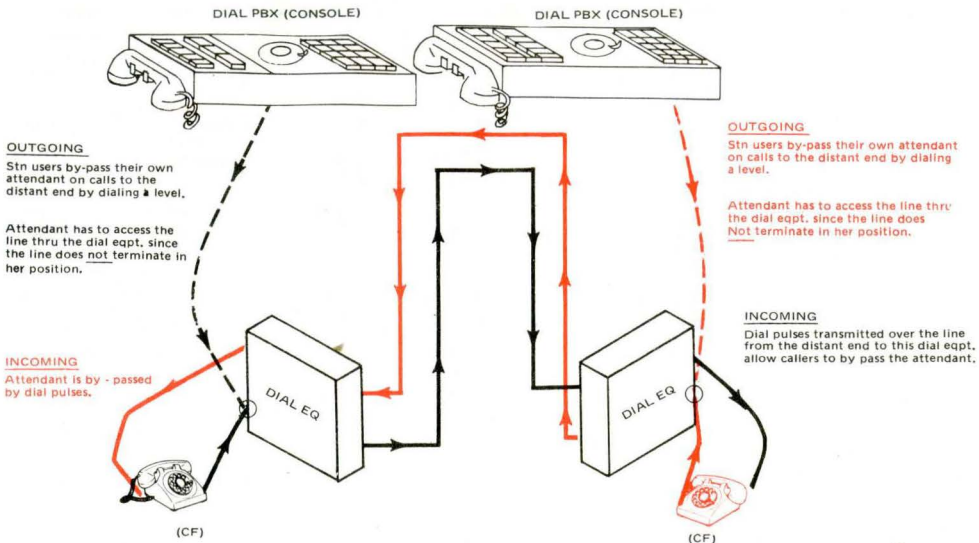


DIAGRAM VI

TWO-WAY DIAL REPEATING



EQUIPMENT REQUIRED

SWITCHBOARD A

1. Selector Level
2. Incoming Selector

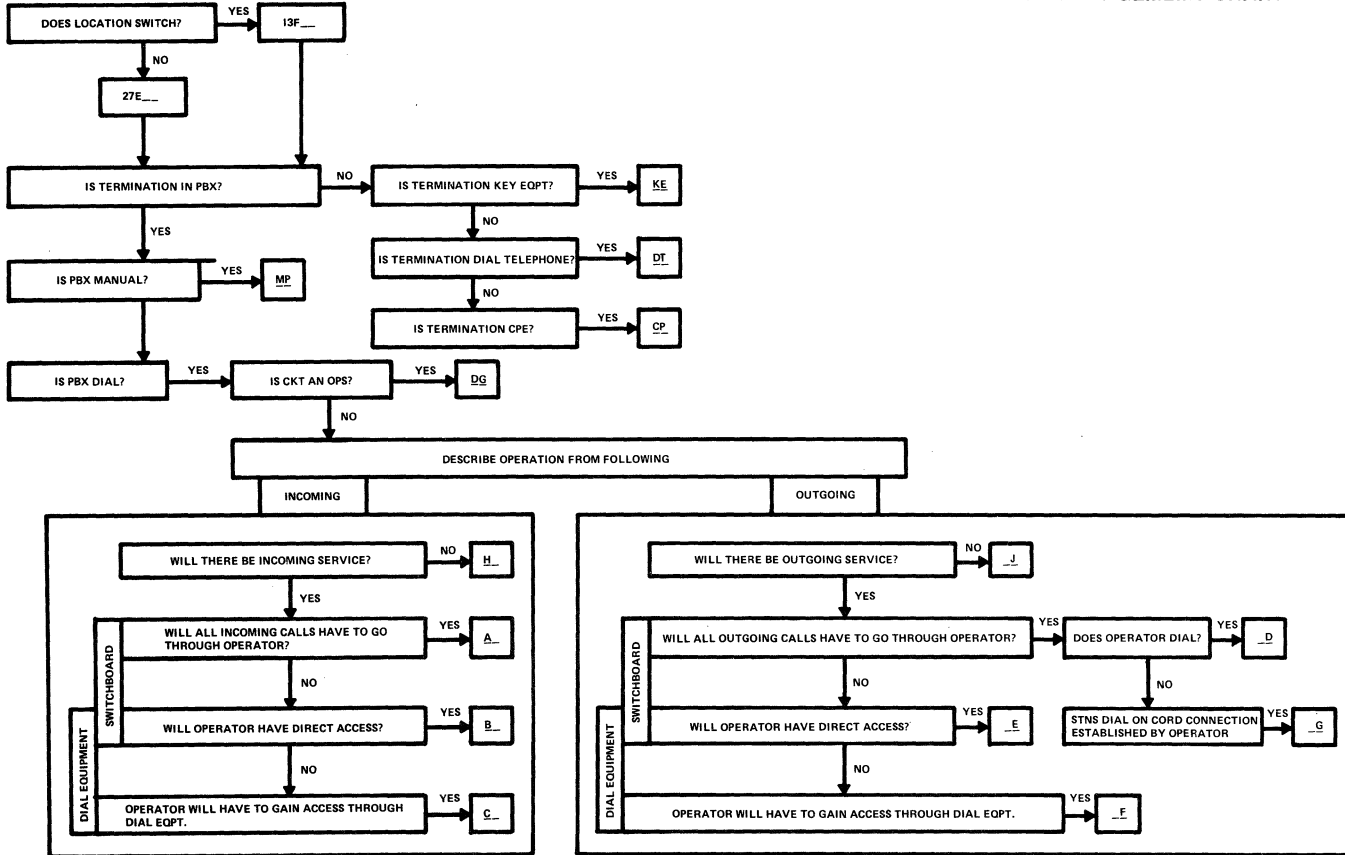
SWITCHBOARD B

1. Selector Level
2. Incoming Selector

If Dial Equipment at either end is of the 756 or 757 variety it is not step but crossbar and selectors are not used. In these cases, station terminal capacity is required between 80-89.

NOTE: For additional information on Dial Arrangements, refer to Section 2 (USSOCs 27E, 27C, and 8FS)

# DIAL SIGNALING ARRANGEMENT CHART



Rate information is not complete. Use TARIFFS for customer quotations.

**PBX EQUIPMENT RESERVATIONS**

**GENERAL**

When equipment ordered on the Long Lines USSO is normally ordered and billed by OTC Long Lines contacts the OTC ISC Team Marketing member to reserve terminations. Reservations are generally required for terminations in a PBX, Call Director and Key Equipment, among others. However, no reservations are necessary Long Lines has definite knowledge that the terminating equipment required for the service is available. A positive confirmation is suggested.

A reservation for terminating equipment is made by Long Lines through the OTC ISC Team Marketing member. The name of the ISC Team member, as well as the name of the Long Lines representative, are recorded along with the USSO number. The equipment will be reserved by the ISC Team for no more than 30 days.

The reservation information is shown in the S&E section of the USSO. The following information is shown on the RMK line of the order:

**Reserved Eqpt on (date) with (name of contact)**

For other order writing activity, such as a disconnect, which could affect Associated Company billing, the following note should be included on the BI line in the S&E section to advise the Associated Company to review their billing:

**Assoc. Co. billing affected by this order**

**PRE-SERVICE CHECK LIST**

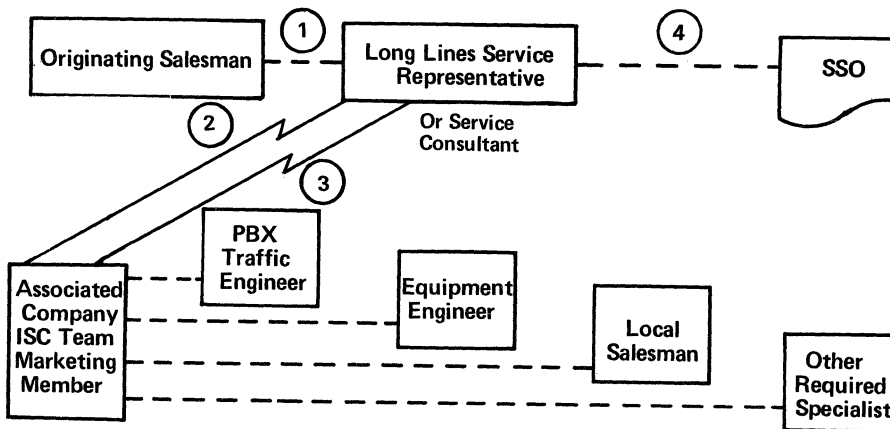
- Does a local form exist for collecting information needed to prepare a service order? Has all this information been collected and recorded?
- Has the customer provided space for this installation? Other locations?
- Is local power required? Have arrangements been made for it?
- Will the premises be available to the installation forces?
- Have wiring requirements been considered on Trunks, PBXs, Data Sets, etc.?
- The customer must provide conduit and drill access holes when required. Has this subject been covered?

- For new customers — is their credit rating known? Is a deposit required?
- Has the customer been informed about:
  - Trouble reporting procedures?
  - Rebates on service interruptions?
  - Billing policy and procedures?
  - How to read a Long Lines Bill?
  - Liabilities of "Cancellation of Application"?
  - Telco and customer's responsibilities on multi-supplier systems (SAM 307)?
  - Maintenance of service charge?
- Have reservations been made for all locations with terminations in Associated/Other company equipment?
- Are local orders necessary for terminal equipment? When are these orders due for completion?

**REMINDERS**

- On FX Service:
  - Use Touch-Tone equipped central offices if terminal is equipped with Touch-Tone.
  - Dial service requires 10 PPS dials.
  - Obtain restrictions and special operating procedures.
- On PBX and Centrex Terminations:
  - How will service operate — incoming, outgoing, both?
  - Is 9 level access required?
  - Are there any restrictions?
- When adding stations to a tie line — will signalling remain the same or must all locations change signaling arrangements?
- On Teletypewriter order:
  - All stations must be compatible — same speed, shift — unshift, etc.
  - Is friction or sprocket feed required?
  - Is a paper box, winder or accumulation shelf required?
- When data services are ordered and the data set is not provided by the Bell System, the information required in ISM Section 75 must be provided. When the data set is provided by the Bell System, certain decisions must be made by the customer in order to provide proper data set options. Refer to the ISM or ISH for options available for a particular data set.

RESERVATION SUMMARY



1. Originating salesman refers to LL Support Unit which contacts OTC ISC Team Marketing member, giving name and USSO number, to request reservation of equipment.
2. Associated Company ISC Team member or a PBX coordinator handles the request for terminating equipment.
3. Advice received ICW equipment reservation.
4. Service Representative completes the USSO. Enters "RESERVED EQPT. ON (date) WITH (name and telephone number of Associated Company contact)" as a RMK after SEI entry. Indicates "ASSOC. CO. BILLING AFFECTED BY THIS ORDER" on BI line of USSO.



**RESERVATION CHECKLIST**

The following list is designed to act as a memory jogger for the salesman when he contacts the customer. The information will be invaluable when reserving the tie line termination.

**A. TIE LINE ACCESS (CHECK ONE)**

Station User:

- Reaches his attendant for access to the tie line; attendant completes call.
- Reaches his attendant for access to the tie line; he or his attendant dials station user direct.
- Dials a code to seize the tie line; the distant attendant completes call.
- Dials a code to seize the tie line; dials the distant station direct.

**B. SIGNALING (CHECK ONE)**

- Manual — Attendant must ring on tie line to signal the distant attendant. (Note: Also called ringdown signalling)
- Automatic — Ring on the tie line occurs automatically when connection made.
- Dial — Dial pulses on tie line condition equipment at distant end to signal attendant.

**C. DIRECTION TIE LINE USED (CHECK ONE)**

- One-way incoming
- One-way outgoing
- Two-way

**D. FEATURES (CHECK WHERE APPLICABLE)**

- Switch central office calls
- Night Connections
- Touch-Tone
- Rotary Dial

**E. DISTANT PBX TERMINATION (CHECK ONE OR BOTH)**

- Type switching system
- Attendant position

After completing steps A thru E and locating the Diagram that best describes the service ordered, complete the reservation procedure by passing the appropriate information to the Associated Company.

**PART II — KEY SYSTEM CHECKLIST**

- Determine how Associated Company defines key system. Note: May affect USOC coding on multiples or adds.
- Identify key equipment — 6 Button Handset, Call Director, etc.
- Insure that there is sufficient capacity for circuit.

**REFERENCES**

TARIFF F.C.C. 260  
SERVICE REP'S TRAINING SYSTEM (SRTS)  
'195' SALES REFERENCE MANUAL — VOL. 2  
CENTRAL AREA METHODS TEAM  
ISC BSP

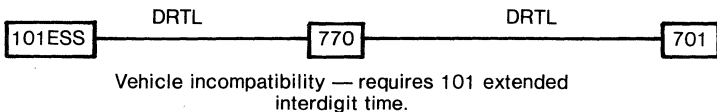
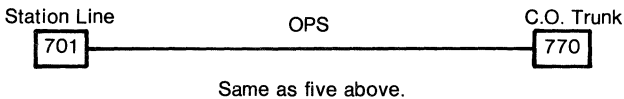
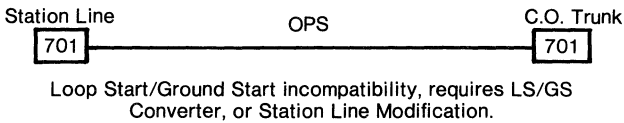
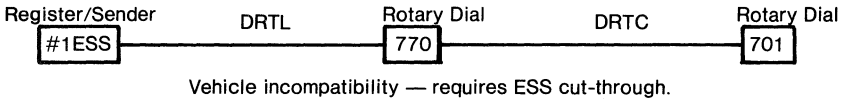
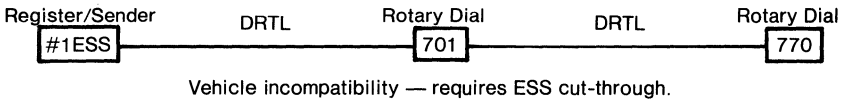
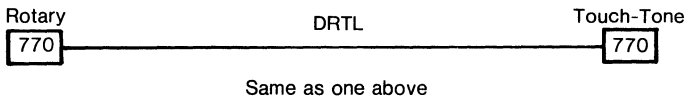
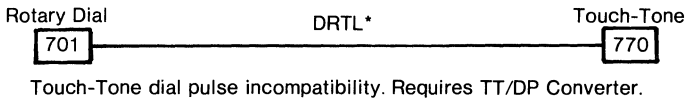
### **TERMINATING EQUIPMENT CONSIDERATIONS**

It is important to consider the ability of one PBX to function with all other PBXs used on a network. This "compatibility" depends upon the correct combination of vehicle signalling and switching functions.

The following broad guidelines should be considered when combining PBX vehicles on a network:

- A. Generally, step by step PBXs can only accept rotary dial signals. If the other PBX is a Touch-Tone type vehicle a Touch-Tone/Dial Pulse converter will be required.
- B. Common control type PBXs may be either rotary dial, Touch-Tone, or a combination of both. If they are rotary dial equipped, they will not accept Touch-Tone from a tie line unless Touch-Tone receivers are installed.
- C. Touch-Tone to dial pulse converters are available, however there is no method at the present time of converting dial pulses to Touch-Tone.
- D. C.O. trunks are ground start and station line circuits are normally loop start. If these circuits are combined as in the case of an OPS line between two PBXs, they both must be made ground start. This is done either with a Loop/Ground Start converter, or preferably, by modifying the station line circuit to ground start.
- E. Problems will *probably* be encountered on networks in which common control register only type PBXs such as 770 etc. are combined with senderized vehicles such as #1ESS unless cut-through is used in the #1ESS.

The following sketches illustrate some of the common incompatible arrangements which are experienced.



**\*DIAL REPEATING TIE LINE**

The above examples are not complete. Many other incompatible configurations exist including those involving Bell System and/or other manufacturers' PBX's. The examples are shown merely to emphasize the need for a thorough network review prior to the issuance of USSO's. Engineering will assist in the determination of acceptable network configurations.

**TERMINATING EQUIPMENT CONSIDERATIONS**

<b>SERVICE FEATURE</b>	<b>CENTRAL OFFICE OR COMBINATION TRUNK</b>	<b>2-WAY DIAL REPEAT TRUNK</b>	<b>GROUND START</b>
<u>FX</u> Closed End Term in Key Set			
<u>FX</u> Closed End Term in PBX with only operator access	Reserve space in PBX and reserve terminating equipment (010-520-101)		
<u>FX</u> Closed end term in PBX with operator and station dial access	Reserve space in PBX and reserve terminating equipment (010-520-101)		Both ends should be ground start
<u>OPS</u> Station End Term in Key Set			
<u>OPS</u> Station End term in PBX with only operator access	Reserve space in PBX and reserve terminating equipment (010-520-101)		
<u>OPS</u> Station End Term in PBX with operator and station dial access	Reserve space in PBX and reserve terminating equipment (010-520-101)		Ground start should be sought for each end
<u>Auto Ringing</u> 27M Term in Key Set, CDU or Common Control PBX (756,757,770,800)	Reserve space in PBX and reserve terminating equipment (where PBX used).* (010-520-101)		
2-Way Dial Repeating		Reserve space in PBX and reserve terminating equipment (ISM Sec. 24)	Not Applicable
Auto Signaling 27L		Reserve space in PBX and reserve terminating equipment (010-520-101)	Not Applicable

\* Note: The Long Lines Engineer should be contacted prior to issuing the USO, to arrange for central office equipment required for this operation.

LOOP START	OTHER	REMARKS
Both ends should be loop start	Reserve space in key set or Call Director, etc. (010-520-101)	USSO specify open end telephone number and type of central office (#1 ESS, #5 X-Bar, etc.) (SAM Sec. 800) (ISM Sec. 5)
Both ends should be loop start		USSO specify open end telephone number and type of central office (#1 ESS, #5 X-Bar, etc.) (SAM Sec. 800) (ISM Sec. 5)
		USSO specify open end telephone number and type of central office (#1 ESS, #5 X-Bar, etc.) (SAM Sec. 800) (ISM Sec. 5)
Both ends should be loop start	Reserve space in key set or Call Director, etc. (010-520-101)	
Both ends should be loop start		Station line circuits are loop start designed - most can be modified to ground start operation
Should be loop start for all service terminations		27M does not provide supervision. If terminating in key set, Call Director, etc., the trunk requirement is omitted. (ISM Sec. 24)
Not Applicable		
Not Applicable		The 2-way dial repeating tie trunk optioned for Automatic Signaling. Supervision is provided here.

**AUDIO  
SERIES 6000 CHANNELS  
FCC TARIFF 260, ISM VOL 1**

**AUDIO — FULL-TIME SERVICE**

**7 Days a Week, 24 Hours a Day**

	TYPE			
	6003	6005	6007	6009
<b>Interexchange Channel</b> Per airline mile, per month	\$4.66	\$6.25	\$7.85	\$9.83
<b>Station Connection - Connect Charge*</b> Per connection, per month	39.80	102.00	142.00	177.00

\*Where the airline mileage of a two-point interexchange channel between service points on a two-point service is 25 miles or less, station connections will not be required for satisfactory transmission.

**Local Channels**

	Charges	
	Installation	Monthly
Within An Exchange - Per Channel		
In the same building	\$ 8.55	\$ 2.25
Between buildings on same premises	8.55	4.55
Other		
Non-equalized	17.00	11.35
Equalized		
Approximately 100 to 5,000 Hertz	34.10	20.40
Approximately 50 to 8,000 Hertz	34.10	27.25
Approximately 50 to 15,000 Hertz	34.10	34.10

**Between Exchanges**

IXC charges between exchanges apply in addition to the preceding charges for each exchange

**Conditioning to Provide Zero Loss**

Conditioning equipment - per equalized receive local channel	113.00	12.50
--	--------	-------

**Extension to Local Channel**

When extension is in the same building as the main station	8.55	2.25
When extension is in another building on the same premises	8.55	4.55

**AUDIO — FULL-TIME SERVICE (Cont'd)**

**Studio-To-Transmitter Channels**

	Installation	Charges	Monthly
Within an Exchange - Per Channel			
Non-equalized	\$17.00		\$11.35
Equalized			
Approximately 100 to 5,000 Hertz	34.10		20.40
Approximately 50 to 8,000 Hertz	34.10		27.25
Approximately 50 to 15,000 Hertz	34.10		34.10

**Between Exchanges**

IXC charges between exchanges apply in addition to the preceding charges for each exchange. Station connection charges are not applicable.

**Conditioning to Provide Zero Loss**

Conditioning equipment per channel	113.00		12.50
------------------------------------	--------	--	-------

**Multipoint Loudspeaker Networks**

Within an Exchange (Between Distributing Center and Loudspeaker Locations)

Per Channel			
Non-equalized	17.00		5.70
Equalized			
Approximately 100 to 5,000 Hertz	34.10		9.10
Approximately 50 to 8,000 Hertz	34.10		13.65
Approximately 50 to 15,000 Hertz	34.10		18.15

Between Exchanges or Distributing Centers IXC charges apply. Station connection charges are not applicable.

Extension to Loudspeaker Channels  
Extension in same building as main station

	8.55		2.25
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**REVERSALS**

**Type 1 Channel Reversals (Types 6005 & 6007)**

Interexchange Channels arranged for Reversals Per airline mile	NONE		00.85
Each Service Point Equipped Includes one control and associated indicating lamps on station premises	NONE		85.25
Extension of Control or Indicating Lamps or Both, on Same station premises			
First Extension	171.00		11.35
Each Additional Extension	85.25		5.70

**AUDIO — FULL-TIME SERVICE — REVERSALS (Cont'd)**

**Type 1 Channel Reversals (Cont'd)**

	Installation	Charges	Monthly
<b>Remote Control Arrangement</b> To permit control of reversal equipment from an exchange different from that in which the reversal equipment is located	\$68.20		\$18.15
(Rates as provided in applicable tariffs will apply for the remote control channel between exchanges)			
<b>Operating Charges</b> When reversals are effected by the customer	NONE		NONE
When reversals are effected by the Telephone Company - each reversal including restoral	10.25		—
When reversals are effected jointly by the customer and the Telephone Company - each reversal including restoral.	5.14		—

**Type 2 Channel Reversals  
(Type 6003, 6005 & 6007)**

Performed only by Telco. Requires 15 to 30 minutes for either reversing or restoring to normal.

A charge of \$10.25 per service point associated with the IXC being reversed applies for each reversal, including restoral.

Where reversals cannot be effected, equivalent type channels in the opposite direction at the Type 6009 channel rates.

Type 6009 channels cannot be reversed. Requires additional facilities in the opposite direction at the Type 6009 channel rates.

**Station Connections — Reversals**

Types 6003, 6005, 6007, 6009 station connections may be used in either direction. No additional charges for reversal or restoral.

**Local Channel — Reversals**

No charge when the local channel is associated with the reversal of an IXC. Otherwise a \$2.57 charge per reversal applies.



**AUDIO — PART-TIME SERVICE**

<b>MINIMUM ONE HOUR</b>	TYPE				
<b>Interexchange Channel</b>	6001	6002	6004	6006	6008
Per airline mile, per hour or fraction thereof, per occasion.	\$.14	\$.16	\$.22	\$.27	\$.35

<b>Station Connections - Connect Charge*</b>					
Per connection, per hour or fraction thereof, per occasion.	2.50	2.50	7.65	10.80	13.65
Maximum charge for any consecutive 30 day period	39.80	39.80	102.00	142.00	177.00

<b>MINIMUM ONE DAY</b>	Charges	
<b>Local Channels</b>	Installation	Per Day
<b>Within An Exchange - Per Channel</b>		
<b>Non-equalized</b>		
First day	\$17.00	\$ 2.25
Each add'l day consecutive with first day	NONE	1.15
Maximum for any consecutive 30 day period		\$11.35
<b>Equalized</b>		
<b>Approximately 100 to 5,000 Hertz</b>		
First day	34.10	4.55
Each add'l day consecutive with first day	NONE	2.25
Maximum for any consecutive 30 day period		\$20.40
<b>Approximately 50 to 8,000 Hertz</b>		
First day	34.10	7.90
Each add'l day consecutive with first day	NONE	2.90
Maximum for any consecutive 30 day period		\$27.25
<b>Approximately 50 to 15,000 Hertz</b>		
First day	34.10	11.35
Each add'l day consecutive with first day	NONE	3.40
Maximum for any consecutive 30 day period		\$34.10

**Between Exchanges**

IXC charges between exchanges apply in addition to the preceding charges for each exchange.

**NOTE:** Station Connections and Local Channels will be billed as ordered. The maximum charge, if applicable, will be reflected in a subsequent billing adjustment.

	Installation	First Day	Each Add'l Day Consecutive With First Day
<b>Extension to Local Channels</b>			
When extension is in the same building as the main station	\$8.55	\$.85	\$.50
When extension is in another building on the same premises	\$8.55	\$1.75	\$.85

\*Where the airline mileage of a two-point interexchange channel between service points on a two-point service is 25 miles or less, station connections will not be required for satisfactory transmission.

**AUDIO — OTHER FACILITIES AND SERVICES**

**Station Connections**

Station connections are required when a station transmits to or receives from an interexchange channel via a local channel; when local channels of the same or different customer are connected at a Telephone Central Office; or when interexchange channels of different types are connected. Separate station connections are required for each station receiving and transmitting.

**Switches**

A charge of \$5.14 applies for connecting and disconnecting (switch operation) of an existing section of a network requested by the customer except that this charge is halved when only one function is performed.

	Installation	Charges	Monthly
Equipment to Permit Local Channel Switches at Telco Central Switching Point to be Made Remotely by the Customer			
Common equipment	\$28.45		\$14.25
Per local channel terminating in the common equipment	NONE		.55
Equipment to permit customer to remotely switch an IXC at a Telco Central Office to either of two designated sources of Audio.			
Per arrangement	NONE		20.40

**Note:** Both of the above require a control channel at Tariff specified rates in addition to required local channels.

**Monitoring**

Monitoring will be required when the exact time for a switch or reversal is not given. (Audible Cue)

A \$5.70 charge at each monitoring location where approximate time for switch or reversal is given and monitor time is 30 minutes or less.

A \$11.35 charge at each location for each hour or fraction thereof of monitoring time where an approximate time for switch or reversal time is not given or the monitoring period exceeds 30 minutes.

**SERIES 7000 — TELEVISION**

**PRESENT SERVICE RATES**

**TYPE 7001 — IXC AND STATION CONNECTIONS  
Series 7000 — Local Channels**

525 line standard U.S. monochrome or N.T.S.C. color video and 5 KHz audio.  
Same charges apply for monochrome or color service.

**\* FULL TIME SERVICE (Service seven days per week, 24 hours per day)**

**Interexchange Channels**

Airline mile, per month.

**Charge**  
\$ 55.00

**Station Connections**

Full-time — 24 hours per day per connection,  
per month.

1,500.00

**Local Channels**

For 525 line standard U.S. monochrome or N.T.S.C. color video and 5 KHz audio between  
two stations or a station and a point of connection with a type 7001 interexchange channel  
within an exchange or between two stations in separate exchanges where the airline  
mileage between rate centers is 25 miles or less.

Per channel, per month

1,000.00

Conditioning to Provide Zero Loss on Audio  
Portion on TV Local Channel

Conditioning equipment - per receiving  
local channel

**Installation**  
\$100.00

**Monthly**  
\$11.00

\* Series 7000 Full-time Services are subject to a six month minimum service period.

**\* FULL-TIME SERVICE RATES (Cont'd)**

**Studio to Transmitter Channels**

525 line standard U.S. monochrome or N.T.S.C. color video and 50 to 15,000 Hertz audio to directly connect a studio to a transmitter used for broadcasting to the area in which the studio is located.

	<b>Charge</b>
25 miles - per channel, per month	\$1,000.00
(Within an exchange) Over 25 miles - per channel, per month	1,000
Between separate exchanges - per exchange - per channel, per month	1,000.00
IXC charges between separate exchanges apply in addition to the preceding charges for each exchange. Station connection charges are not applicable.	
Conditioning to Provide Zero Loss on Audio Portion of TV Studio-to-Transmitter Channel.	
	<b>Installation                      Monthly</b>
Conditioning equipment - per channel	\$100.00                      \$11.00

\* Series 7000 Full-time Services are subject to a six month minimum service period.

**TELEVISION — PART-TIME SERVICE**

<b>MINIMUM ONE HOUR</b>	Charge
<b>Interexchange Channels</b> Per airline mile per hour or fraction thereof.	\$ .75
<b>Station Connections</b> Per connection, per hour or fraction thereof	80.00
<b>Local Channels</b> Per channel, per day	500.00
Maximum charge for any consecutive 30 day period	1,000.00

**TELEVISION — OTHER FACILITIES AND SERVICES**

**Station Connections**

Station connections are required when a station transmits to or receives from a Type 7001 interexchange channel via a local channel or when local channels of the same or different customer are connected at a Telephone Central Office. Separate station connections are required for each station receiving and transmitting. Charges for Type 7001 interexchange channels and station connections are the same for monochrome and color services.

**Switches**

A switch is an operation performed by the Telephone Company at its premises to connect or disconnect an existing section of a Type 7001 network to or from another existing section of a network.

A charge of \$9.00 applies for connecting and disconnecting (switch operation) of an existing section of a network requested by the customer except the charge is halved when only one function is performed.

Equipment to permit customer to remotely switch a television channel at a Telco Central Office to any of a maximum of 6 pre-designated television channels.

	Charges	
	Termination	Monthly
Per arrangement		
One channel to either of two	\$2,500.00	\$80.00
For each additional channel	NONE	13.00

This arrangement requires a control channel at Tariff specified rates in addition to required local channels.

**Monitoring Service**

At the request of the customer the Telephone Company will perform a switch of a network section on a specified audible cue. Monitoring will be required when the exact time for a switch is not given.

An \$8.00 charge at each location where approximate time for switch is given and monitor time is 30 minutes or less.

A \$15.00 charge at each location for each hour or fraction thereof of monitoring time where an approximate time for switch is not given or the monitoring period exceeds 30 minutes.

**TYPE 7003 — LOCAL DISTRIBUTION SYSTEMS**

**Monochrome or Color Television Comprised of Video  
and Audio Signals**

For use by non-commercial educational broadcast stations and other non-commercial educational organizations.

Full-time service 7 days per week, 24 hours per day-between customer premises

Channels	Monthly Charge
a. Between buildings on the same premises, per 1/10 airline mile, or fraction thereof	
First channel	\$ 6.00
Second channel	2.00
Third and fourth channels, each	1.20
Fifth and sixth channels, each	.80
Minimum charge for the total number of channels between a signal source and a receiving location, per 1/10 airline mile or fraction thereof	6.00
b. Between separate premises, per 1/4 airline mile, or fraction thereof	
First channel	15.00
Second channel	5.00
Third and fourth channels, each	3.00
Fifth and sixth channels, each	2.00
Minimum charge for the total number of channels between a signal source and a receiving location, per 1/4 airline mile, or fraction thereof.	15.00

Maximum mileage charge for channels in any two-point section of a local distribution system (Type 7003) will be equivalent to the charge for 25 miles at the IXC system rates (Type 7004) for the appropriate number of channels between the same two points.

Channel Input Equipment	Monthly Charge
Per Signal Source	
Input for first channel	\$40.00
Input for second channel	30.00
Inputs for third and fourth channels, each	25.00
Inputs for fifth and sixth channels, each	12.50

**TYPE 7003 — LOCAL DISTRIBUTION SYSTEMS (Cont'd)**

	Monthly Charge
<b>Channel Output Equipment</b>	
Per Receiving Location	
First output	\$ 7.50
Second to sixth outputs, inclusive, each	5.00
<b>Outlet Connections</b>	
Per Receiving Location	
Distribution Amplifier	15.00
Each outlet	1.25
<b>Channel Output Suppression Arrangement</b>	
For use at a signal source to prevent an incoming signal on a channel from being retransmitted to more distant receiving locations	
Per channel arranged	8.00
<b>Channel Output at a Receiving Location Arranged as a Signal Source</b>	
To convert a VHF signal to video and audio baseband frequencies	
Per channel arranged	12.50

**TYPE 7004 — INTEREXCHANGE SYSTEMS**

**Monochrome or Color Television Comprised of Video and Audio Signals for use by any Customer**

Full-time service 7 days per week, 24 hours per day - between customer premises

Channels per airline mile or fraction thereof	
First channel	
if monochrome	27.50
if color	31.50
Second channel	
if monochrome	12.50
if color	15.00
Third channel - monochrome	12.50
Fourth and Fifth channels - monochrome, each	10.00

**CHANNELS FOR  
CORPORATION FOR PUBLIC BROADCASTING (CPB)**

This service provides for the use of Series 7000 local channels, Type 7001 interexchange channels and station connections by CPB. Service is intended for the transmission of television programs to, and for use by, non-commercial educational broadcast stations as defined in the Public Broadcasting Act of 1967. The channels furnished are the same as those provided for commercial customers. The stations between which service is available are listed in Tariff FCC No. 260. Service is provided on a permanent basis 24 hours per day.

The annual Bell and non-Bell Company charges for permanent service to CPB for a 110 point television network were indicated in a FCC Memorandum Opinion and Order issued June 3, 1971.

Tariff FCC No. 260 lists these charges and, as additional stations requested by CPB are added to the 110 point network, the specific stations and charges will be listed. Other channels and services furnished to CPB not specifically covered in the CPB section of the tariff will be subject to commercial rates and regulations.

As facilities become available and service is provided to CPB on a permanent basis, Tariff FCC No. 260 will be revised to reflect these additions. Because this is a restricted offering, any requests for this service from a customer other than CPB should be referred to the contacts in Washington Sales, Administrator Rates and Tariffs group or Operations Facility Management Center.



**REMOTE METERING, SUPERVISORY CONTROL AND MISCELLANEOUS SIGNALING**

FCC TARIFF 260, ISM-SEC. TTGD-2 & DATA-2

**CHANNELS OF TELETYPEWRITER GRADE - (Types 1002 & 1005)**

**Interexchange Channels\***

Miles	Rate per Airline Mile per Month	
	Type 1001-1005	Type 1006
First 100	\$1.25	\$1.55
Next 150 (101-250)	1.00	1.25
Next 250 (251-500)	.60	.80
Next 500 (501-1000)	.40	.50
Each additional mile (1001 & over)	.25	.30

\* Rates apply between each pair of service points.

**Station Terminals and Channel Terminals**

Rates are the same as those for Type 1002 teletypewriter service - See Section 3.

**CHANNELS OF TELEPHONE GRADE (Type 3001)**

Rates for interexchange channels and service terminals are the same as those for private line VOICE service - See Section 2.

**TELEPHOTOGRAPH**

FCC TARIFF 260

**Interexchange Channels**

Per Airline Mile per Month  
Half Duplex

Type 4002

First 25 (1-25)	4.33
Next 75 (26-100)	3.03
Next 150 (101-250)	2.16
Next 250 (251-500)	1.51
Each add'l mile (501 and over)	1.08

Duplex Rates are those for Half-Duplex Service plus 10%

**Service Terminals**

Installation

Monthly

Per Service Terminal  
for the first station in an exchange

Type 4002 - Half Duplex (one-way)	\$54.15	\$59.55
Type 4002 - Half Duplex (two-way)	54.15	70.35
Type 4002 - Duplex	54.15	76.85

**Service Terminals**

Installation

Monthly

for additional station on the  
same service and in the same  
exchange as the first station

Type 4002 - Half Duplex (one-way)	\$54.15	\$16.20
Type 4002 - Half Duplex (two-way)	54.15	27.10
Type 4002 - Duplex	54.15	29.25

**TELEPHOTOGRAPH (Cont'd)**

<b>Channel Conditioning</b>	<b>Installation</b>	<b>Monthly</b>
<b>Type 4002</b>		
To specially condition channel for transmission of picture material between the frequencies of approximately 800-2800 cycles per second.		
To send or receive signals (one direction only)		
Per station	\$81.20	\$18.40
To receive signals non-simultaneously from two directions		
Per station	163.00	32.50
To send and receive signals either simultaneously or nonsimultaneously		
Per station	163.00	36.80

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