

FRONTIER TELEPHONE OF ROCHESTER, INC.  
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## 7 CHANNEL CONNECTIONS

The channel connection is a non-switched connection for each link or between a link and a dedicated interoffice transport circuit and consists of the cross connection of a private line or dedicated access link to another link, a multiplexer, or a dedicated channel to another end office or tandem. The channel connection may be between the Telephone Company's facilities and other carrier's facilities, or between two facilities of other carriers. All such facilities must be located on or near the same main Distribution Frame.

The following channel connections are available:

### CHANNEL CONNECTIONS

- A = 2 Wire Analog Channel Connection
- B = 4 Wire Analog Channel Connection
- C = APLUS Channel Connection
- D = Digital Channel (up to and including DS-0) Connection
- E = DS-1 Digital Channel Connection
- F = DS-3 Digital Channel Connection
- G = DACS Connection
- H = Fractional DS-1

#### 7.1 2 Wire Analog channel Connection

A 2 Wire Analog Channel connection is a transmission connection for each link composed of two-wires, signal and ground, used to both send and receive information.

#### 7.2 4 Wire Analog Channel Connection

4 Wire Analog Channel connection is a transmission connection for two pairs of circuits. Two circuits are used for transmitting and two circuits are for receiving. A 4 Wire Analog Channel connection joins two pairs of circuits.

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## 7 CHANNEL CONNECTIONS

### 7.3 Advanced Private Line User Service (APLUS)

#### 7.3.1 General

Advanced Private Line User Service (APLUS) is a digital private line service that will provide service at rates of 2.4 Kbps, 4.8 Kbps, 9.6 Kbps, 19.2 Kbps, 38.4 Kbps, 56 Kbps, 64 Kbps, and increments of 64 Kbps up to 1.544 Mbps. APLUS will enable end users to take advantage of digital cross-connects throughout the network and contains options that will enable a customer to perform Bridging and Sub-rate Multiplexing. APLUS can be provisioned via a 1.544 Mbps loop facility, two or four-wire digital loop facilities or any combination thereof.

(C)

This service is available within the Frontier Telephone of Rochester, Inc.'s territory where appropriate facilities and equipment are available as determined by the Telephone Company.

The Customer or end user shall furnish all end user premise equipment including, but not limited to: Data Termination Units, Digital Service Units, Channel Service Units, and 1.544 Mbps Multiplexers.

#### 7.3.2 Descriptions

##### APLUS Channel

The term "APLUS Channel" denotes a logical digital path between two points or multiple points which operate at a bit rate of 64 Kbps or less.

##### DS-1 Central Office Channel Connection

The term "DS-1 Central Office Channel Connection" denotes central office equipment which provides for connection of a 1.544 Mbps loop facility to APLUS.

##### Data Termination Unit (DTU)

A DTU is a piece of end user premises equipment which terminates a two-wire digital loop facility consisting of two 64 Kbps channels and an APLUS signaling channel. DTU equipment must conform to the Telephone Company's equipment specifications.

##### Data Termination Unit Central Office Channel Connection

The term "DTU Central Office Channel Connection" denotes the central office equipment which provides APLUS over a two-wire digital loop facility. The DTU Central Office Channel Connection will enable an end user to transmit two user accessible 64 Kbps channels and an APLUS signaling channel over one two-wire loop facility. The two-end user accessible 64 Kbps channels may be divided into multiple sub-channels operating at a lower bit rate.

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## **7 CHANNEL CONNECTIONS**

### **7.3 Advanced Private Line User Service (APLUS) (Cont'd)**

#### **7.3.2 Descriptions (Cont'd)**

##### Digital Service Unit (DSU)

A DSU is a piece of end user premises equipment which terminates a four-wire digital loop facility consisting of a single channel operating at or below the bit rate of 64 Kbps.

##### Digital Service Unit Central Office Channel Connection

The term "DSU Central Office Channel Connection" denotes the central office equipment which provides APLUS over a four-wire digital loop facility.

##### Analog Central Office Channel Connection

The term "Analog Central Office Channel Connection" denotes the central office equipment which provides for the connection of analog transmission equipment to APLUS. APLUS is transmitted over digital facilities.

##### Interoffice APLUS DS0 Channel

The term "Interoffice APLUS DS0 Channel" denotes a digital path at the DS0 rate of 64 Kbps for APLUS transmission between two central offices.

##### Bridging

The term "Bridging" denotes the central office function which provides for multipoint digital data circuits. Each circuit drop on a multipoint circuit has a bridge on it. Bridges are not used on point to point circuits. All drops on the same multipoint circuit must operate at the same bit speed.

##### Sub-rate Multiplexing

The term "Sub-rate Multiplexing" denotes the central office function which provides time division central office multiplexing. Sub-rate multiplexing allows multiple Sub-rate channels (which operate at a bit rate of less than 64 Kbps) to be combined into one 64 Kbps channel for transport. The exact number of channels that can be combined into a 64 Kbps channel depends on the precise bit rate of the Sub-rate channels.

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## 7 CHANNEL CONNECTIONS

### 7.3 Advanced Private Line User Service (APLUS) (Cont'd)

#### 7.3.3 Regulations

- a. APLUS is available on a point-to-point basis. Multipoint service is also available for single channels operating at a bit rate of 64 Kbps or less.
- b. If the end user serving central office is not equipped to provide APLUS, additional charges will apply. Connection to a T1 Central Office Channel Connection will require that a 1.544 Mbps loop facility be leased to a central office equipped to provide APLUS. Connection to the DTU Central Office Channel Connection will require that the Customer pay a DTU Network Extension Fee, as stated in Section M.5.d below, to connect their serving central office with the nearest central office equipped to provide APLUS. Connection to a DSU Central Office Channel Connection is available through the use of Low Speed Digital Service. The Customer will be charged applicable Low Speed Digital Service rates for transport to the Low Speed Digital Service "node". Connection to an Analog Channel Connection will require a two or four-wire facility be leased to a central office equipped to provide APLUS.
- c. Charges for the loop facility required to provide APLUS will be applied at applicable tariffed rates. A DS-1 Central Office Channel Connection will require a 1.544 Mbps loop facility be leased. A DTU Central Office Channel Connection will require a two-wire loop facility be leased. A DSU Central Office Channel Connection will require a four-wire loop facility be leased. An Analog Central Office Channel Connection will require either a two or four-wire loop facility be leased.
- d. Charges for APLUS will be applied on a per channel basis.
- e. Channel groups are allowed by the Telephone Company and may be formed by a contiguous group of multiple 64 Kbps channels. This allows interoffice APLUS circuits to operate at a bit rate greater than 64 Kbps. Channel groups may consist of a maximum of twenty-four channels.
- f. APLUS is available at a bit per second rate of 1.544 Mbps (DS-1), increments of 64 Kbps (DS-0) channels, and at selected rates less than 64 Kbps (Sub-rate).
- g. DTU Central Office Channel Connections have cable distance limitations. The Channel Connections follow American National Standard T1.601-1988 with regard to line format (2B1Q) and are subject to the distance limitations of that standard. Service may be denied if the cable length exceeds the distance limitation.

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## 7 CHANNEL CONNECTIONS

### 7.3 Advanced Private Line User Service (APLUS) (Cont'd)

#### 7.3.3 Regulations (Cont'd)

- h. DSU Central Office Channel Connections have cable distance limitations which vary depending on the operating bit rate of the service. Service may be denied if the cable length exceeds the distance limitation.
- i. The customer or end user, upon request, shall furnish such information as may be required to permit the Telephone Company to design and maintain the APLUS it offers and to assure that the service arrangement is in accordance with the tariff regulations contained herein.

#### 7.3.4 Method of Applying Rates

Different rate elements will be applied depending on the particular design configuration. The following describes each rate element and when it will apply.

- a. DS-1 Central Office Channel Connection: This rate element will be applied when a 1.544 Mbps circuit is connected to APLUS.
- b. DTU Central Office Channel Connection: This rate element will be applied when a DTU is connected to APLUS using a two-wire loop facility. One or two DTU Central Office Channel Connection charges will apply to each two-wire loop facility connected to APLUS depending on the number of 64 Kbps channels utilized. Although each DTU can support up to two 64 Kbps channels the DTU Central Office Channel Connection supports only one 64 Kbps channel.
- c. DSU Central Office Channel Connection: This rate element will be applied when a DSU is connected to APLUS using a four-wire loop facility. Each DSU Central Office Channel Connection can support one DSU.
- d. Analog Central Office Channel Connection: This rate element will be applied when an analog voice or data loop facility is connected to APLUS.
- e. Interoffice APLUS DS0 Channel: This rate element is applied in quarter mile increments and is applied to each 64 Kbps path or fraction thereof required between central offices. On a multipoint circuit, if a number of drops are all served by the same central office, only one path is required back to the central office with the master drop.

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## 7 CHANNEL CONNECTIONS

### 7.3 Advanced Private Line User Service (APLUS) (Cont'd)

#### 7.3.4 Method of Applying Rates (Cont'd)

- f. Bridging: This rate element is applied to each circuit drop, including the master drop, on a multipoint circuit.
- g. Sub-rate Multiplexing: This rate element is applied to each Sub-rate channel that is multiplexed. Since multiplexing is often performed at one end and demultiplexed at the other end, two multiplexing charges will usually be applied.
- h. DTU Network Extension: This rate element will be applied when a DTU CO Port customer resides in the serving area of a central office that is not equipped for APLUS. The interoffice mileage portion of the rate element will be applied between the serving central office and the nearest APLUS office.

### 7.4 Digital Local Channel Connection

Digital Local Channel denotes a path for Low Speed Digital service furnished from the designated serving central office to the end user premises. Digital terminating equipment is required by the end user in order to terminate Low Speed Digital services at the end user premises.

#### 7.4.1 General

- a. Low Speed Digital Service provides point-to-point and multi-point data transmission service designed to transmit data in digital form, end-to-end over digital facilities routed through a central office node.
- b. This service is available within the Frontier Telephone of Rochester, Inc.'s territory where appropriate digital facilities are available as determined by the Telephone Company.
- c. The transmission medium used to provide this service will be determined by the Telephone Company.
- d. The customer shall furnish the Digital Terminating Equipment (DTE) on the end user's premises.

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## 7 CHANNEL CONNECTIONS

### 7.4 Digital Local Channel Connection (Cont'd)

#### 7.4.2 Regulations

##### a. Description of Service

Low Speed Digital Service is capable of the simultaneous two-way transmission of digital signals at synchronous speeds of 2.4, 4.8, 9.6, 19.2 or 56.0 Kilobits per second (Kbps) between two or more points.

The design, maintenance and operation of Low Speed Digital Service contemplates communications originating or terminating at premises of the end user.

1. The Digital Terminating Equipment (DTE) provided by the customer or end user is required at the end user's premises to perform such functions as:
  - proper termination of the service
  - regeneration
  - signal shaping
  - remote loop-back

##### b. Description of Options

##### 1. Secondary Channel Capability (SCC)

Secondary Channel Capability (SCC) is a diagnostic channel comprised of previously unavailable bits out of the existing data stream. This allows for control and testing of the network. The SCC is independent of the primary data path and operates at a substantially lower bit rate. Special customer equipment is necessary to utilize the benefits of the SCC. Customers or end users not wishing to utilize the capability will not be impacted. Due to the transmission equipment restrictions, SCC cannot be provided on 56.0 Kbps circuits that require the installation of loop repeater equipment for provision of service.

##### 2. Digital Data Service Bridging

Digital Data Service Bridging is a service which allows an end user the ability to bridge either 2.4, 4.8, 9.6, 19.2 or 56 kbps data circuit using a multi-junction unit. The control leg of the circuit transmits and receives from all of the branch legs. The branch legs transmit to and receive from the control leg only, and not other branch legs. This service is only available between an end user premises and a Telephone Company designated digital node.

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## **7 CHANNEL CONNECTIONS**

### **7.4 Digital Local Channel Connection (Cont'd)**

#### **7.4.2 Regulations (Cont'd)**

##### **c. Definitions**

##### **1. DIGITAL LOCAL CHANNEL**

The term "Digital Local Channel" denotes a path for Low Speed Digital Service furnished from the designated serving central office to the end user's premises.

##### **2. DIGITAL INTEROFFICE CHANNEL**

The term "Digital Interoffice Channel" denotes a path for Low Speed Digital Service between the designated serving central office and the Telephone Company's node.

##### **3. DIGITAL TERMINATING EQUIPMENT**

The term "Digital Terminating Equipment" denotes equipment provided by the customer or end user to terminate Low Speed Digital Service at the end user's premises.

##### **4. NODE**

The term "node" denotes the location to which digital channels in the Frontier Telephone of Rochester, Inc. territory area are routed and where access is provided to such lines and associated equipment for testing.



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## 7 CHANNEL CONNECTIONS

### 7.4 Digital Local Channel Connection (Cont'd)

#### 7.4.2 Regulations (Cont'd)

##### d. Mileage Measurement and Regulations

Links for Low Speed Digital Service will be charged at rates based on the airline distance from the designated serving central office to the end user's premises.

Digital interoffice channels will be charged at rates based on the airline distance from the designated serving central office to the Telephone Company's node.

The length of the digital local channel is restricted by the speed of the transmission desired. Many parameters affect the limitation and the Telephone Company reserves the right to deviate from the typical limitation.

The typical limitations are as follows:

##### Airline Miles

-	2.4 Kbps	8.6
-	4.8 Kbps	6.5
-	9.6 Kbps	4.9
-	19.2 Kbps	3.0
-	56.0 Kbps	2.6

##### e. Low Speed Digital Service may be used for the transmission of communications of the end user, provided that:

1. Low Speed Digital Service shall not be used for an unlawful purpose, and
2. The customer or end user, upon request, shall furnish such information as may be required to permit the Telephone Company to design and maintain the Low Speed Digital Service it offers and to assure that the service arrangement is in accordance with the tariff regulations contained herein.

##### f. Payment Arrangements

1. The minimum period for which service is furnished and for which charges are applicable is one month.
2. Suspension of service is not allowed.

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## **7 CHANNEL CONNECTIONS**

### **7.4 Digital Local Channel Connection (Cont'd)**

#### **7.4.2 Regulations (Cont'd)**

##### **g. Unusual Installation Charges**

If the Telephone Company incurs additional costs because the customer requests the service to terminate at a specific location, then the customer will be charged the additional cost incurred. In addition, the mileage used to determine the monthly charge for the local channel will be measured to the actual point of termination.

##### **h. Service Charges**

Basic order charges, as set forth in Section 13, Rates will apply.

### **7.5 DS-1 Digital Channel Connection**

A DS-1 Digital Channel connection joins a DS-1 link to other facilities and terminating equipment. A channel service unit is the equipment located at the Customer's premise which terminates each DS-1 channel.

#### **DS-1/DS-3 Service Regulations**

##### **7.5.1 General**

These regulations are applicable to DS-1 and DS-3 Systems furnished by the Telephone Company for point to point digital communications at a transmission rate of 1.544 Mbps (DS-1) and 45 Mbps (DS-3). DS-3 Service uses optical fiber facilities.

##### **7.5.2 Description of Service**

DS-1 and DS-3 Service consists of a two-point digital channel which provides for simultaneous two-way transmission of digital signals at a transmission rate of 1.544 Mbps and 45 Mbps, respectively. This service will be provided by utilizing existing interoffice and local distribution facilities and/or facilities constructed to meet specific end user requirements.

DS-1 Service may be terminated at an end user's location with an appropriate charge for conversion of the digital signal to its equivalent 24 channels. The design, maintenance and operation of DS-1 Service contemplates communications originating or terminating at end user locations.

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## **7 CHANNEL CONNECTIONS**

### **7.5 DS-1 Digital Channel Connection (Cont'd)**

#### **7.5.3 Definitions**

##### **Bit**

The smallest unit of information in the Binary System of notation.

##### **Channel Conversion**

The term "Channel Conversion" denotes the termination of DS-1 or DS-3 Service at a central office or end user location, with conversion of the digital signal to 24 analog voice grade circuits, or 28 1.544 Mbps channels, respectively. Channel Conversion can be furnished by the end user at the end user premises.

Customers who wish to substitute digital data channels for voice grade channels will be charged an additional rate element for each digital data channel. This rate element is in addition to the charge for Voice Grade Central Office Channel Conversion.

##### **Channel Service Unit**

A Channel Service Unit (CSU) is the equipment located at the end user's premises which terminates each DS-1 Local Channel and performs such functions as proper termination of facilities, regeneration of signals, recognition and correction of signal format errors and provide remote loop-back capability.

##### **Customer-Provided Derivation Equipment (Channel Bank)**

The term "end user-provided derivation equipment" denotes a device provided by an end user which enables several narrow bandwidth channels to be obtained from one wider band.

##### **Interoffice Channel**

The term "interoffice channel" denotes one point to point duplex path for transmission between two central offices.

##### **Local Channel**

The term "local channel" denotes a path for DS-1 or DS-3 furnished from the central office to the end user's premises.

##### **Node Splice Point**

The term "Node Splice Point" denotes the point within the Telephone Company's fiber ring where traffic can be directionalized back to the serving wire center on a diverse basis.

##### **System**

The term "system" represents the increment in which the service is offered. A system refers to one 1.544 Mbps System equivalent to 24 voice channels for DS-1 Service or one 45 Mbps System.

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## **7 CHANNEL CONNECTIONS**

### **7.5 DS-1 Digital Channel Connection (Cont'd)**

#### **7.5.4 Regulations**

- a. DS-1 or DS-3 Service is available only on a two-point basis.
- b. This service is subject to the availability of suitable digital or light wave facilities between the serving central office and the end user's premises, and between serving central offices when interoffice facilities are required. If such equipment or facilities are not available, or if changes to existing facilities are required to provide DS-1 or DS-3 Service, a charge based on the cost incurred may apply in addition to the rates for the service.
- c. It is the responsibility of the end user (or any other party in interest such as the applicant for service or the owner or operator of the premises or the builder) to provide in a manner satisfactory to the Telephone Company and without cost to the Telephone Company: a means of entrance for the cable into the building; space for mounting the necessary terminals and equipment; and, where required, a means to reach each floor and each suite or office on each floor where telephone service is desired.
- d. 110 volt AC, 15 amperes, separately fused, non-switch controlled, single power outlet, or 48 volt DC, 10 amperes, must be provided by the end user for end-to-end service provided over fiber optic facilities.

Battery backup for the end user's service may be provided by the Telephone Company at charges based on cost.

- e. Service is provided by means of the following rating arrangements:
  1. Service between two customer locations in the same central office area consists of two Channel Connection links connected at the serving central office.
  2. Service between two customer locations in different central office areas consists of two Channel Connections connected to an Interoffice Channel between the serving central offices.
- f. For DS-1 Service, the default parity is AMI. For DS-3 Service, the default parity is M13.
- g. Method of Applying Rates

DS-1 Service is available on a month to month, 12, 36, or 60-month terms. DS3s are available on month-to-month, 18, 36 or 60-month terms. If the customer enters into a contract, suspension of service is not allowed.

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## **7 CHANNEL CONNECTIONS**

### **7.5 DS-1 Digital Channel Connection (Cont'd)**

#### **7.5.4 Regulations (Cont'd)**

If this service is terminated prior to the expiration of the agreed to payment period, the end user shall be required to continue paying the applicable charges for the remainder of the agreed to payment period.

Normally, installation at the end user's premises will involve termination of the Telephone Company's service at the closest possible access point to the central office. Any additional material or installation required from this closest possible point to the actual terminating point will be charged to the Customer at actual cost.

Systems furnished between serving central offices will be charged a fixed rate.

If the end user elects a termination of service which is not described here, charges other than those listed in this tariff may apply.

#### **h. Connections**

End user-provided terminal equipment, end user-provided channel conversion equipment, end user-provided derivation equipment and end user-provided communications systems may be connected to DS-1 and DS-3 Service when such connection is made in accordance with the provisions which follow:

The responsibility of the Telephone Company shall be limited to the furnishing of an electronic 1.544 Mbps (DS-1) or 45 Mbps (DS-3) digital signal to that point on the end user's premises where provision is made for the connection of end user-provided equipment. The end user is responsible for testing its equipment or facilities to ensure that when they are connected with DS-1 or DS-3 Service such equipment or facilities are operating properly, and further that the cause of any service difficulty reported by the customer to the Telephone Company results from the operation of equipment and facilities provided by the Telephone Company.

The end user shall be responsible for payment of a maintenance service charge for:

Visits by the Telephone Company to the premises of the end user where the service difficulty or trouble report results from the use of equipment or facilities provided by the end user.

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## **7 CHANNEL CONNECTIONS**

### **7.5 DS-1 Digital Channel Connection (Cont'd)**

#### **7.5.4 Regulations (Cont'd)**

##### **h. Connections (Cont'd)**

1. Connection of End User-Provided Terminal Equipment, End User-Provided Derivation Equipment, End User-Provided Channel Conversion Equipment and End User-Provided Communications Systems.

- a. End User-provided terminal equipment, end user-provided channel conversion equipment, end user-provided derivation equipment and end user-provided communications systems may be connected at the premises of the end user at a DS-1 or DS-3 signal level.

2. Accessories

Accessories provided by an end user may be used in conjunction with DS-1 or DS-3 provided that such accessories comply with the provisions of (3) following.

3. Responsibility of Customer

Where DS-1 or DS-3 Service is available under this tariff for use in connection with terminal equipment or communications systems provided by an end user, the operating characteristics of such equipment or systems shall be such as not to interfere with any of the services offered by the Telephone Company. Such use is subject to the further provisions that the equipment provided by an end user does not endanger the safety of the Telephone Company employees or the public; does not damage, require change in or alteration of the equipment or other facilities of the Telephone Company; does not interfere with the proper functioning of such equipment or facilities; does not impair the operation of the Telephone Company's facilities or otherwise injure the public in its use of the Telephone Company services.

Upon notice from the Telephone Company that the equipment provided by an end user is causing or is likely to cause such hazard or interference, the end user shall take such steps as shall be necessary to remove or prevent such hazard or interference or incur termination of service by the Telephone Company.

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## **7 CHANNEL CONNECTIONS**

### **7.5 DS-1 Digital Channel Connection (Cont'd)**

#### **7.5.4 Regulations (Cont'd)**

##### **h. Connections (Cont'd)**

##### **3. Responsibility of Customer (Cont'd)**

Where an end user elects to connect an end user-provided communications system to DS-1 or DS-3 Service the customer shall be responsible for:

- a. Compatibility of the connected communications system and the DS-1 or DS-3 Service.
- b. Testing, sectionalization and clearance of trouble conditions or service difficulties on any communications system which is connected to DS-1 or DS-3 Service.
- c. A Channel Service Unit or functional equivalent is required at each terminating point for DS-1 Service.
- d. If an end user elects to provide the CSU, the end user may not disconnect this equipment without prior written consent of the Telephone Company.
- e. If the end user disconnects the equipment without this consent or fails to provide the equipment completely, the Telephone Company has the option of discontinuing service. All monthly charges will continue to apply.
- f. If the end user provides the CSU, the end user provided equipment must perform such functions as: proper termination of the facility, regeneration, signal shaping and remote loop back.

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## **7 CHANNEL CONNECTIONS**

### **7.5 DS-1 Digital Channel Connection (Cont'd)**

#### **7.5.4 Regulations (Cont'd)**

##### **h. Connections (Cont'd)**

#### **4. Responsibility of the Telephone Company**

- a. The Telephone Company shall not be responsible for installation, operation or maintenance of any terminal equipment or communications systems provided by an end user. DS-1 or DS-3 Service is not represented as adapted to the use of such equipment or system and where such equipment or system is connected to the Telephone Company facilities the responsibility of the Telephone Company shall be limited to the furnishing of facilities suitable for DS-1 or DS-3 Service and to the maintenance and operation of such facilities in a manner proper for such digital service. Therefore, the Telephone Company shall not be responsible for the through transmission of signals generated by such equipment or system, or for the quality of, or defects in, such transmission. Further, the Telephone Company shall not be responsible for the reception of signals by such equipment or system.
- b. The Telephone Company shall not be responsible to the Customer or end-user if changes in any of the facilities, operations or procedures of the Telephone Company utilized in the provision of DS-1 or DS-3 Service render any facilities provided by an end user or customer obsolete or require modification or alteration of such equipment or system or otherwise affect its use or performance.
- c. The Telephone Company undertakes to maintain and repair the facilities which it furnishes. The Customer or end user may not rearrange, disconnect, remove or attempt to repair any equipment installed by the Telephone Company without prior written consent of the Telephone Company.



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## **7 CHANNEL CONNECTIONS**

### **7.5 DS-1 Digital Channel Connection (Cont'd)**

#### **7.5.5 Optional Features and Functions**

##### **a. Route Diversity with Automatic Protection Switching (Alternate Entrance)**

In order to provide this option DS-1 or DS-3 Service must be provided over end-to-end fiber optic facilities and a separate entrance facility must be made available to the Telephone Company.

Route Diversity with Automatic Protection Switching (Alternate Entrance) provides added reliability to DS-1 or DS-3 Service. This feature provides a separate facility path for the protection system between the serving central office and the Telephone Company Point of Termination located in the same building as the customer designated premises.

This added protection is provided by ensuring that backup electronics and two physically separate facility paths are used in the provisioning of the service. A primary (or working) service path is established between the serving central office and the end user designated premises. A secondary (or protect path) is provisioned between the end user designated premises and the serving central office via the Telephone Company designated alternate route. Should the working path or electronics fail, or the service performance becomes impaired, i.e., the bit error rate degenerates to less than or equal to  $10^{-6}$ , DS-1 or DS-3 Service will automatically switch to the service protect path in order to maintain a near continuous flow of information between locations.

This option is only available where facilities permit.

##### **b. Route Diversity with Automatic Protection Switching (Same Entrance)**

In order to provide this option DS-1 or DS-3 Service must be provided over end-to-end fiber optic facilities.

Route Diversity with Automatic Protection Switching (Same Entrance) provides added reliability to DS-1 or DS-3 Service. This feature provides a separate facility path for the protection system between the serving central office and the node splice on the Telephone Company's fiber ring. This option does not provide for protection between the node splice point on the Telephone Company's ring and the Telephone Company Point of Termination.

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## 7 CHANNEL CONNECTIONS

### 7.5 DS-1 Digital Channel Connection (Cont'd)

#### 7.5.5 Optional Features and Functions (Cont'd)

##### b. Route Diversity with Automatic Protection Switching (Same Entrance) (Cont'd)

This added protection is provided by ensuring that backup electronics and two physically separate facility paths are used in the provisioning of the service from the node splice point to the serving central office. A primary (or working) service path is established between the serving central office and the end user designated premises. A secondary (or protect path) is provisioned between the node splice point and the serving central office via the Telephone Company designated alternate route.

Should the working path or electronics fail, or the service performance becomes impaired, i.e., the bit error rate degenerates to less than or equal to 10 to the minus 6, between the node splice point and the serving central office the DS-1 or DS-3 Service will automatically switch to the service protect path in order to maintain a near continuous flow of information between locations.

This option is only available where facilities permit.

##### c. Channel Conversion

1. Channel Conversion multiplexes up to 24 voice grade channels. The voice grade channel services available for Central Office Channel Conversion include:
  - a. Voice grade circuits
    - b. Analog data circuits
    - c. PBX and Centrex off premises extensions
    - d. Tie lines
    - e. Interoffice portion of a foreign exchange line (FX)
    - f. Digital Data Service (Kbps 2.4, 4.8, 9.6, 56, 64 Kbps)
    - g. APLUS
    - h. Fractional DS-1 (up to 6 channels)
2. The end user provided Channel Conversion equipment must be compatible with the facilities provided by the Telephone Company.
3. A Customer of Channel Conversion will be billed for DS-1 or DS-3 Service and the appropriate voice grade channels in addition to Central Office Channel Conversion.

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## **7 CHANNEL CONNECTIONS**

### **7.5 DS-1 Digital Channel Connection (Cont'd)**

#### **7.5.5 Optional Features and Functions (Cont'd)**

##### **c. Channel Conversion (Cont'd)**

4. Rates and charges for voice grade channels or DS-1 between the central office where the channel conversion occurs, and the customer's premises will apply. Foreign exchange service will be calculated from the foreign exchange office to the central office where the channel conversion occurs.
5. The minimum period for which service is furnished and for which charges are applicable is 12 months for DS-1 Service and 18 months for DS-3 Service. Suspension of service is not allowed.
6. Service is furnished in month to month, 12, 36 or 60 months for DS-1 Service and month to month, 18, 36 or 60 months for DS-3 Service. Suspension of service is not allowed.

##### **d. 1.544 Clear Channel Capability Option (B8ZS Protocol Type)**

1. This service option will be available only between locations which are equipped for sending and receiving signals with B8ZS coding/decoding capabilities.
2. End user provided equipment must be capable of transmitting and decoding B8ZS signals as described in ANSI T1.102.
3. End users must agree to out-of-service periods required to add this feature to an existing circuit. No credit allowance will be made for the periods of interruption.

#### **7.5.6 Individual Case Billing Arrangements**

The Telephone Company may, in response to a request from a Customer or potential Customer, develop a responsive competitive pricing proposal for DS-1 or DS-3 Service.

Prices quoted in response to such requests may be different than those in effect in this tariff but will be set at a level that is at least equal to the relevant incremental costs for the requested service.

An individual case billing arrangement price quote will be offered to the Customer for acceptance in writing. Such individual case billing arrangements will specify, among other things, the length of service.

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## **7 CHANNEL CONNECTIONS**

### **7.5 DS-1 Digital Channel Connection (Cont'd)**

#### **7.5.7 Demonstration Period**

##### **a. General**

The Demonstration Period gives the Telephone Company the option of waiving recurring charges, nonrecurring charges, or both, in order to promote the sale of DS-1 and DS-3 Service.

##### **b. Regulations**

1. The Telephone Company reserves the right to waive any or all of the recurring charges, nonrecurring charges, or both, associated with DS-1 and DS-3 Service at any time upon 1 days' notice to the Commission.
2. Individual promotional periods will not exceed 120 days.

### **7.6 DS-3 Digital Channel Connection**

DS-3 Digital Channel connection joins a DS-3 link to other facilities and terminating equipment. DS-3 Digital Channel is a leased channel for high capacity transport (45 Mbps) of digital electrical signals. 45 Mbps service consists of a two-point digital channel which provides for simultaneous two-way transmission of digital electrical signals at a transmission rate of 45 Mbps. (See Section 7.E for regulations regarding DS-3.)

### **7.7 DACS Connection**

#### **7.7.1 General**

DACS Connection will enable customers to terminate a 1.544 Mbps facility and cross-connect individual DSO channels. Through the use of a Digital Access Cross-Connect system (DACS), located in the Telephone Company's Hub, customers will be able to utilize digital transmission facilities for the transport of DSO channels between the end user serving central office and the Telephone Company's DACS. The DACS functions as an electronic switching node that allows circuits to be cross-connected.

1.544 Mbps facilities will utilize a 1.544 Mbps termination on the DACS. Up to twenty-four DSO circuits can be cross-connected into a 1.544 Mbps facility.

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## 7 CHANNEL CONNECTIONS

### 7.7 DACS Connection (Cont'd)

#### 7.7.1 General (Cont'd)

DACS Connection rates apply in addition to any monthly recurring and nonrecurring charges for 1.544 Mbps, Low Speed Digital, two-wire or four-wire loop facilities.

- a. DACS terminations are only available in selected central offices.
- b. The rate for DACS connections can be found in Section 13, Rates.

### 7.8 Fractional DS-1 Connection

#### 7.8.1 General

- a. Fractional DS-1 Service is a High Capacity Digital Service that provides for the transmission of signals in N x 56Kbps or N x 64Kbps, ordered in increments of 2, 3, 4, 5, or 6 DSO channels. Channels must be sequential. Signaling can either be digital or analog and will handle AMI or B8ZS options. The Speeds at which the service may be ordered are as follows:

N x 56	N x 64
2 x 56 = 112Kbps	2 x 64 = 128Kbps
3 x 56 = 168Kbps	3 x 64 = 192Kbps
4 x 56 = 224Kbps	4 x 64 = 256Kbps
5 x 56 = 280Kbps	5 x 64 = 320Kbps
6 x 56 = 336Kbps	6 x 64 = 484Kbps

- b. Fractional DS-1 Service is deployed, where available, using a Digital Access Cross-connect System (DACS), or D4-type channel bank located in the central office. The link (local loop) from the end user's serving wire center (SWC) to the end user's premises must be a 4-wire non-loaded copper facility. The maximum length over which the service may be provided is, 12,000 feet from the SWC to the end user's premises.

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## 7 CHANNEL CONNECTIONS

### 7.8 Fractional DS-1 Connection (Cont'd)

#### 7.8.2 Regulations

- a. Fractional DS-1 Service is available only on a two-point basis.
- b. This service is subject to the availability of suitable digital facilities between the serving central office and the end user's premises, and between serving central offices when interoffice facilities are required. If such equipment or facilities are not available, or if changes to existing facilities are required to provide Fractional DS-1 Service, a charge based on the cost incurred may apply in addition to the rates for the service.
- c. It is the responsibility of the end user (or any other party in interest such as the applicant for service, the owner or operator of the premises, the builder or Customer) to provide in a manner satisfactory to the Telephone Company and without cost to the Telephone Company: a means of entrance for the cable into the building; space for mounting the necessary terminals and equipment; and, where required, a means to reach each floor and each suite or office on each floor where telephone service is desired.
- d. Method of Applying Rates

The minimum period for which service is furnished and for which charges are applicable is 12 months. Suspension of service is not allowed.

If this service is terminated prior to the expiration of the agreed to payment period, the customer shall be required to continue paying the applicable charges for the remainder of the agreed to payment period.

A local channel is furnished between a central office and the end user's premises. The rate is based on a monthly port and link fixed charge dependent on the speed of service required by the end user. Normally, installation at the end user's premises will involve termination of the Telephone Company's service at the closest possible access point to the central office. Any additional material or installation required from this closest possible point to the actual terminating point will be charged to the customer at actual cost.

Rates for Fractional DS-1 Service are for local channel transport only. Inter-office transport, may be provided by a DS-1 Service Interoffice Channel, DACS Cross-Connect Inter-Office Mileage, or Low Speed Digital Service Inter-Office transport as found in Section 13, Rates. Charges for Fractional DS-1 Service will be assessed for the interoffice transport chosen by the end user. A Basic Order charge applies for installation of this service.

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## **7 CHANNEL CONNECTIONS**

### **7.8 Fractional DS-1 Connection (Cont'd)**

#### **7.8.2 Regulations (Cont'd)**

##### **e. Responsibility of the Customer/End User**

1. The customer shall be responsible for payment of a maintenance service charge for:  
  
Visits by the Telephone Company to the premises of the end user where the service difficulty or trouble report results from the use of equipment or facilities provided by the end user.
2. Accessories provided by an end user may be used in conjunction with Fractional DS-1 Service provided that such accessories comply with the provisions of (3) following.
3. Where Fractional DS-1 Service is available under this tariff for use in connection with terminal equipment or communications systems provided by an end user, the operating characteristics of such equipment or systems shall be such as not to interfere with any of the services offered by the Telephone Company. Such use is subject to the further provisions that the equipment provided by an end user does not endanger the safety of the Telephone Company's employees or the public; does not damage, require change in or alteration of the equipment or other facilities of the Telephone Company; does not interfere with the proper functioning of such equipment or facilities; does not impair the operation of the Telephone Company's facilities or otherwise injure the public in its use of the Telephone Company's services.
4. Upon notice from the Telephone Company that the equipment provided by an end user or customer is causing or is likely to cause such hazard or interference, the end user or customer shall take such steps as shall be necessary to remove or prevent such hazard or interference or incur termination of service by the Telephone Company.

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## **7 CHANNEL CONNECTIONS**

### **7.8 Fractional DS-1 Connection (Cont'd)**

#### **7.8.2 Regulations (Cont'd)**

##### **e. Responsibility of the Customer/End User (Cont'd)**

5. Where an end user elects to connect an end user-provided communications system to Fractional DS-1 Service the end user shall be responsible for:
  - a. Compatibility of the connected communications system and the Fractional DS-1 Service.
  - b. Testing, sectionalization and clearance of trouble conditions or service difficulties on any communications system which is connected to Fractional DS-1 Service.
  - c. A Channel Service Unit or functional equivalent is required at each terminating point.
  - d. If an end user elects to provide the CSU, the end user may not disconnect this equipment without prior written consent of the Telephone Company.
  - e. If the end user disconnects the equipment without this consent or fails to provide the equipment completely, the Telephone Company has the option of discontinuing service. All monthly charges will continue to apply.
  - f. If the end user provides the CSU, the end user-provided equipment must perform such functions as: proper termination of the facility, regeneration, signal shaping and remote loop back.



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## **7 CHANNEL CONNECTIONS**

### **7.8 Fractional DS-1 Connection (Cont'd)**

#### **7.8.2 Regulations (Cont'd)**

##### **f. Responsibility of the Telephone Company**

1. The responsibility of the Telephone Company shall be limited to the furnishing of an electronic digital signal to that point on the end user's premises where provision is made for the connection of end user-provided equipment. The end user is responsible for testing its equipment or facilities to ensure that when they are connected with Fractional DS-1 Service such equipment or facilities are operating properly, and further that the cause of any service difficulty reported by the customer or end user to the Telephone Company results from the operation of equipment and facilities provided by the Telephone Company.
2. The Telephone Company shall not be responsible for installation, operation or maintenance of any terminal equipment or communications systems provided by an end user. Fractional DS-1 Service is not represented as adapted to the use of such equipment or system and where such equipment or system is connected to the Telephone Company's facilities, the responsibility of the Telephone Company shall be limited to the furnishing of facilities suitable for Fractional DS-1 Service and to the maintenance and operation of such facilities in a manner proper for such digital service. Therefore, the Telephone Company shall not be responsible for the through transmission of signals generated by such equipment or system, or for the quality of, or defects in, such transmission. Further, the Telephone Company shall not be responsible for the reception of signals by such equipment or system.
3. The Telephone Company shall not be responsible to the customer or end user if changes in any of the facilities, operations or procedures of the Telephone Company utilized in the provision of Fractional DS-1 Service render any facilities provided by a customer or end user obsolete or require modification or alteration of such equipment or system or otherwise affect its use or performance.
4. The Telephone Company undertakes the responsibility of maintenance and repairs the facilities which it furnishes. The customer or end user may not rearrange, disconnect, remove or attempt to repair any equipment installed by the Telephone Company without prior written consent of the Telephone Company.