7. Special Access Service

7.1 General

Special Access Service provides a transmission path to directly connect an IC terminal location and an end user premises {1}, two IC terminal locations, an IC terminal location and a Hub or two end users premises. Special Access Service includes all exchange access not utilizing Telephone Company end office switches. This type of Access Service is used, for example, by ICs for the provision of private line service.

The connections provided by Special Access Service can be either analog or digital. Analog connections are differentiated by spectrum and bandwidth. Digital connections are differentiated by bit rate. The specific types of services (e.g., Narrowband, Voice Grade, Wideband Digital) provided under Special Access Service are described in Section 7.2 following.

7.1.1 Rate Categories

There are four basic rate categories which apply to Special Access Service:

- Access Connection
- Channel Mileage
- Features and Functions
- Special Access Line

Unless specifically stated otherwise, each of the rate categories will apply for each Special Access Service provided to an IC.

{1} Telephone Company Centrex CO-like switches are considered to be end users premises for purposes of this tariff.

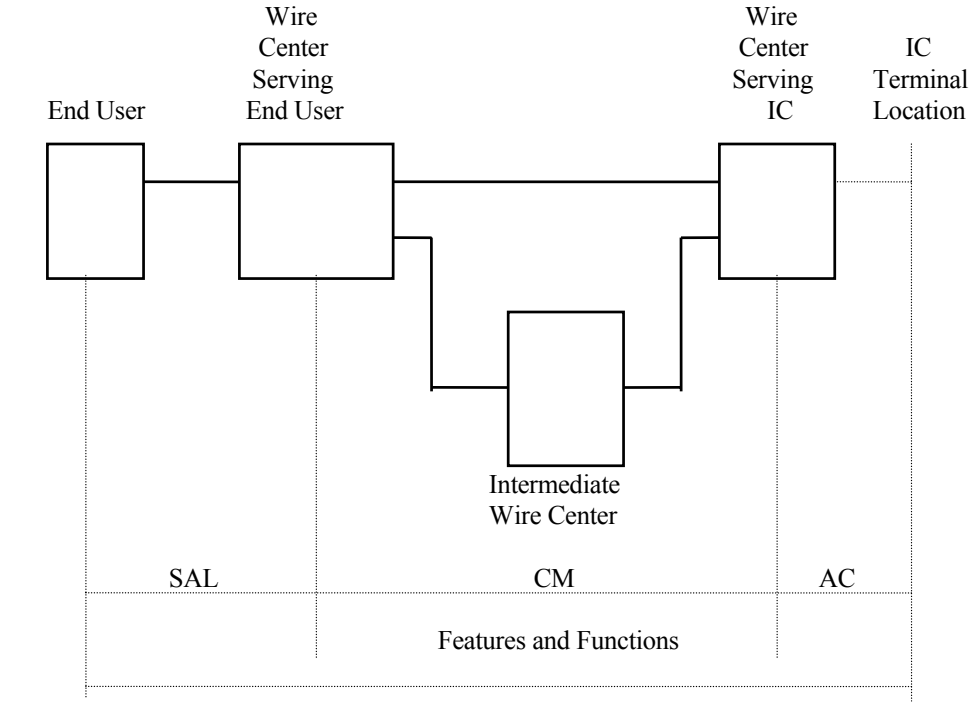
7. Special Access Service (Cont'd)

7.1 General (Cont'd)

7.1.1 Rate Categories (Cont'd)

The following diagram depicts a generic view of the components of Special Access Service and the manner in which the components are combined to provide a complete Access Service.

SPECIAL ACCESS SERVICE



End User Facility Interface

AC - Access Connection
CM - Channel Mileage
SAL - Special Access Line

IC Facility Interface

7. Special Access Service (Cont'd)

7.1 General (Cont'd)

7.1.1 Rate Categories (Cont'd)

(A) Access Connection

This rate category provides a channel between the IC terminal location and the wire center serving the IC terminal location. This rate category varies by type of facility.

(B) Special Transport

This rate category provides the actual physical transmission facilities between (1) an IC terminal location serving wire center and the end user serving wire center, (2) an IC terminal location serving wire center and a Hub, and (3) a Hub and the end user serving wire center. The facilities may be either analog or digital. This rate category has a fixed rate portion plus is distance sensitive and varies by type of facility.

(C) Features and Functions

This rate category provides available facility interface combinations (including signaling), Hub functions (i.e., bridging and multiplexing) and optional features or functions that improve the quality or utility of a service to meet specific communications requirements. In addition, there is a separate charge for Voice Grade Performance which is also included in this rate category. The Voice Grade Performance charge applies for all Voice Grade Services (i.e., VG1-13) ordered by the IC.

(D) Special Access Line

This rate category provides a channel between the wire center serving the end user premises and the end user premises. This rate category varies by type of facility.

7. Special Access Service (Cont'd)

7.1 General (Cont'd)

7.1.2 Facility Interface (FI) Combinations

When ordering Special Access Service, the IC must specify the facility interface (FI) that is desired for the service ordered. The FI defines the technical characteristics associated with the type of signaling and type of facilities presented for connection to the Access Service at both the IC terminal location and the end user premises.

The FI's specified for the IC terminal location and the end user premises may be asymmetrical or symmetrical. However, only certain combinations are technically possible. Therefore, for purposes of this tariff, FIs are being described in terms of available combinations for all services. These combinations are set forth in Section 7.2 following.

7.1.3 Optional Features and Function

Optional features and functions may be added to a service to improve its quality or utility to meet specific communications requirements. These are not necessarily identifiable with specific facilities, but rather represent the end result in terms of performance characteristics which may be obtained. These characteristics may be obtained by using various combinations of facilities. Although the facilities necessary to perform a specified function may be installed at various locations along the path of the service, including the premises of the end user, they will be charged for as a single rate element. Examples of features or functions that are available include, but are not limited to, the following:

- Conditioning
- Transfer Arrangement
- Automatic Protection Switching

Rates for each of the available features and functions are set forth in Section 16.3(D)(1)(a) following.

7. Special Access Service (Cont'd)

7.1 General (Cont'd)

7.1.4 Service Configurations

There are two types of service configurations over which Special Access Services are provided: two-point service and multipoint service.

(A) Two-Point Service

A two-point service is a channel which is provided to connect two locations. The locations connected may be:

- An IC terminal location and an end user premises, whether provided direct or through a Telephone Company designated facility hub
- An IC terminal location and a hub
- Two IC terminal locations
- Two end user premises

All Special Access Services may be provided as two-point service.

(B) Multipoint Service

A multipoint service is a channel that is provided to connect three or more locations. The locations connected may be:

- an IC terminal location and two or more end user premises
- all IC terminal locations
- all end users premises
- multiple IC terminal locations and multiple end user premises.

Only certain types of Special Access Service are provided as multipoint services. These are so designated in the Technical Service Descriptions set forth in Section 7.2.1 and Section 7.2.2 following. Multipoint Service is available with a maximum of three mid-links in tandem. The specific number of bridges required for such services will be determined by the Telephone Company.

7. Special Access Service (Cont'd)

7.1 General (Cont'd)

7.1.4 Service Configurations (Cont'd)

(B) Multipoint Service (Cont'd)

Multipoint service is provided in the following manner:

- The Telephone Company will designate serving wire centers where bridging (by service type) is available. These serving wire centers are referred to as Hubs.

- The IC will specify the bridging serving wire center (i.e., Hub), selected from the Telephone Company list of available locations.

- Service will be priced as provided.

- Access Connection from the designated IC terminal location to IC serving wire center. (Additional IC terminal locations will be treated as end user premises.)

- Channel Mileage from the IC serving wire center to the bridging serving wire center (may also be end user serving wire center.)

- Appropriate Facility Interface Combination (per end user premises bridged) and bridging equipment charge. The facility interfaces at the end user premises do not have to be the same at each end user premises on a multipoint service, but all must work in combination with a common IC terminal location facility interface. The rates to be applied at the IC terminal location are those for the facility interface combination with the highest rates at the initial installation of service.

- Channel Mileage from the bridging serving wire center to the end user serving wire center, if required.

- Special Access Line from the end user wire center to end user premises (per end user location).

- Special Access Surcharge (per end user premises).

7. Special Access Service (Cont'd)

7.1 General (Cont'd)

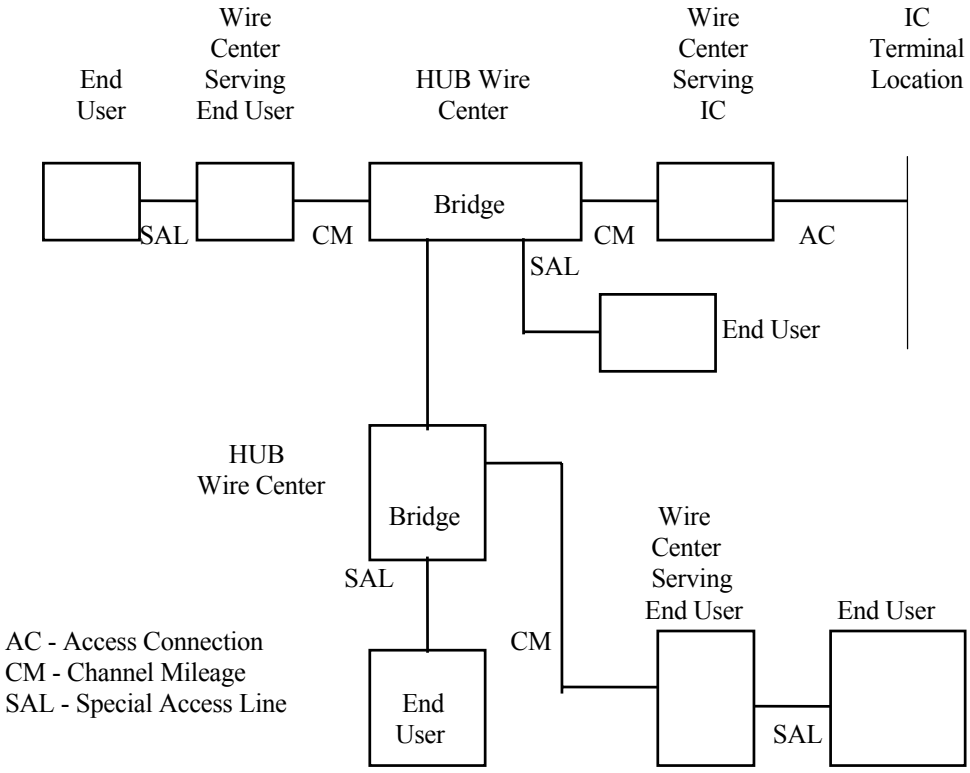
7.1.4 Service Configurations (Cont'd)

(B) Multipoint Service (Cont'd)

Features and Functions

- Voice Grade Performance
- Conditioning

MULTIPOINT SERVICE CONFIGURATION



As each additional leg is added to an existing multipoint service, additional Channel Mileage, an end user facility interface, a Special Access Line and a Special Access Service Surcharge will be charged to the IC as required. If another bridge is connected, additional Channel Mileage, end user facility interface(s), Special Access Line(s) and Special Access Service Surcharge will be charged to the IC as required.

7. Special Access Service (Cont'd)

7.1 General (Cont'd)

7.1.5 Alternate Use

Alternate Use occurs when an IC uses a service for different types of transmission at different times. The IC may transfer from one type of operation to another at will, but only one type of transmission can be used at a time.

The Telephone Company will review each request for alternate use on an individual case basis. If it agrees to allow the alternate use, the arrangement required to transfer the service from one operation to the other (i.e., the transfer relay and control leads) will be rated and provided on an individual case basis and filed in Section 12., Specialized Service or Arrangements. The IC will pay the stated tariff rates for the Access Service rate elements ordered (i.e., Access Connection, Channel Mileage, Facility Interface Combination and Special Access Line).

7.1.6 Special Facilities Routing

An IC may request that the facilities used to provide Special Access Service be specially routed. The regulations, rates and charges for Special Facilities Routing (i.e., Avoidance, Diversity and Cable-Only) are set forth in Section 11 following.

7.1.7 Design Layout Report

The Telephone Company will provide to the IC the make-up of the facilities and services provided under this tariff as Special Access to aid the IC in designing its overall service. This information will be provided in the form of a Design Layout Report. The Design Layout Report will be provided to the IC at no charge.

7.1.8 Acceptance Testing

At no additional charge the Telephone Company will, at the IC's request, cooperatively test, at the time of installation, the following parameters:

For Voice Grade (VG) Services 1, 2, 3, 6, 7, 8, 9, 10, 11 and 12: loss, 3-tone slope, DC continuity and operational signaling. When the Access Connection provides a four-wire voice transmission interface and the network interface provides two-wire voice transmission, (i.e., there is a four-wire to two-wire conversion in Channel Mileage) balance (equal level echo path loss) may also be tested. Additionally, C-notched noise tests will be provided on VG 6, 7, 8, 9, 10, 11 and 12.

7. Special Access Service (Cont'd)

7.1 General (Cont'd)

7.1.8 Acceptance Testing (Cont'd)

All other Access Services will be tested to the performance parameters specified for the individual services.

If acceptance tests are not started within 30 minutes after the scheduled appointed time for such tests, as negotiated between the Telephone Company and the IC, additional charges will apply, as set forth in Section 13 following.

7.1.9 Ordering Options and Conditions

There are two ordering options available to an IC in the provision of Special Access Service. These are:

- Access Order
- Planned Facilities Order

These options are set forth in detail in Section 5 preceding, as are the conditions under which the options may be elected. Cancellation charges associated with these options are also included in Section 5 preceding.

Ordering, rating and billing of Special Access Services where more than one Exchange Telephone Company is involved will apply as set forth in Section 2.4.7 preceding.

7.1.10 Jurisdictional Report Requirements

When an IC orders Special Access Service, the IC is responsible for providing the jurisiction of the service in accordance with Section 2.3.15 preceding.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service

Special Access Service may be either analog or digital. Analog services are differentiated by spectrum and bandwidth. Digital services are differentiated by bit rate. There are five major categories of analog service and three digital services. These are:

- Analog: Narrowband
  Voice Grade
  Program Audio
  Video
  Wideband

- Digital: Wideband
  Digital Data
  High Capacity

Each of these are further broken down into a number of subcategories.

This section includes the technical service descriptions for each type of analog and digital service provided, typical applications for which each type of service can be used, the optional features or functions available with specific services, transmission performances and the available facility interface (FI) combinations with which service can be provided. The facility interface codes are described in Section 7.3 following.

The Telephone Company will maintain existing transmission performance on service configurations installed prior to January 1, 1984. All service configurations installed after January 1, 1984 will conform to the transmission performance standards contained in this tariff, except as follows. Where local facility conditions cannot support the transmission performance standards contained in this tariff, transmission standards that can be supported will be uniformly applied to all ICs.

7.2.1 Analog Services

(A) Narrowband Services

(1) Narrowband 1 (NB1) Special Access Service

(a) Description

Special Access Service NB1 provides a channel for a balanced metallic pair between an IC terminal location and an end user premises. Service will be provided only where appropriate metallic facilities are available. Signal transfer rates up to 30 baud will be accommodated.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(A) Narrowband Services (Cont'd)

(1) Narrowband 1 (NB1) Special Access Service (Cont'd)

(b) Illustrative Applications

Special Access Service NB1 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- Protective Alarm (Direct Wire)
- Wire Pair Facility

(c) Optional Features

Bridging: provision of tip-to-tip and ring-to-ring connection in a central office of a metallic pair to a second end user location.

Customer requiring a four-wire metallic facility must buy two NB1 services.

(d) Transmission Performance

Leakage

Remedial action will be initiated when the DC resistance between the conductors in each customer pair or the resistance between individual serving pair conductors and ground is observed to be less than 30,000 ohms.

(e) Available Facility Interface Combinations

IC	End User
2DC8-3	2DC8-3

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(A) Narrowband Services (Cont'd)

(2) Narrowband 2 (NB2) Special Access Service

(a) Description

Special Access Service NB2 provides a channel for simplex low-frequency, narrowband electrical transmission which may be provided to a number of end user premises (up to a maximum of 25) to form a series of electrical paths from the IC terminal location to each end user premises. The electrical path is capable of transporting the three-level signal used in the McCulloh signaling system at speeds up to 15 bps.

Service will be provided only where appropriate metallic or other facilities are available.

(b) Illustration Application

Special Access Service NB2 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- Protective Alarm (McCulloh)

(c) Optional Feature

- Series Bridging: up to 25 end user premises.

(d) Transmission Performance

- Leakage

Remedial action will be initiated when the DC resistance between the conductors in each serving pair and the resistance between individual serving pair conductors and ground is observed to be less than 30,000 ohms.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(A) Narrowband Services (Cont'd)

(2) Narrowband 2 (NB2) Special Access Service (Cont'd)

(e) Available Facility Interface Combinations

IC	End User	IC	End User
2DC8-2	2DC8-1	4AH5-B {2}	2DC8-1
2DC8-1	2DC8-2	4AH5-B {2}	2DC8-2
4DS9- {1}	2DC8-1	4AH6-C {2}	2DC8-2
4DS9- {1}	2DC8-2	4AH6-D {2}	2DC8-1
4AH6-D{2}	2DC8-2	4AH6-C {2}	2DC8-1

(3) Narrowband 3 (NB3) Special Access Service

(a) Description

Special Access Service NB3 provides a channel for the transmission of direct current and/or low frequency control signals between an IC terminal location and an end user premises. Central office bridging for connection to a third point is available.

This service provides dc continuity which may be continuously monitored. Service is available only where appropriate metallic facilities exist.

(b) Illustration Application

Special Access Service NB3 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- Protective Relaying Telegraph Grade
- Protective Relaying Signal Grade

{1} See Section 7.3.3 following for explanation.
{2} Available only to ICs selecting the multiplexed 4-wire High Capacity analog facility interface option at the IC terminal location and providing subsequent system and channel assignment data.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(A) Narrowband Services (Cont'd)

(3) Narrowband 3 (NB3) Special Access Service

(c) Optional Feature

- Bridging: provision of tip-to-tip and ring-to-ring connection in a central office of a metallic pair to a second end user location.

(d) Transmission Performance

- Loop Resistance

For protective relaying services, the end-to-end dc loop resistance will not exceed 2000 ohms for two-point channels. For three-point channels, the maximum dc loop resistance per leg is 500 ohms.

- Shunt Capacitance

For protective relaying services, the end-to-end shunt capacitance between the two conductors will not exceed 1.5 microfarads for a two-point channel. For three-point channels, the maximum total shunt capacitance is 1.8 microfarads.

(e) Available Facility Interface Combinations

IC	End User
2DC8-3	2DC8-3

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(A) Narrowband Services (Cont'd)

(4) Narrowband 4 (NB4) Special Access Service

(a) Description

Special Access Service NB4 provides a channel for transmission of asynchronous transitions between two current levels at rates up to 75 baud between an IC terminal location and an end user premises. This service is furnished for half-duplex or duplex operation on a two point or multipoint configuration. Neither direct current continuity of this service nor the capability to transport continuously varying alternating current is assured.

(b) Illustrative Applications

Special Access Service NB4 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- Telegraph Grade Facilities
- Entrance Facility - Telegraph Grade
- Extension Service - Telegraph Grade
- Teletypewriter Service
- Alarm Circuits
- Control/Remote Metering - Telegraph Grade

(c) Optional Feature

- Central office bridging capability.

(d) Transmission Performance

- Telegraph Distortion Remedial action will be initiated whenever the telegraph distortion is observed to exceed 9%.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(A) Narrowband Services (Cont'd)

(4) Narrowband 4 (NB4) Special Access Service (Cont'd)

(e) Available Facility Interface Combinations

IC	End User	IC	End User
2TT2-2	2TT2-2	4DS9- {2}	2TT2-2
2TT2-3	2TT2-2	2DS9- {2}	4TT2-2
2DB2-10	2TT2-2	4DS9- {2}	2TT2-6
2DB2-43 {1}	2TT2-2	4DS9- {2}	4TT2-6
4DB2-10	2TT2-2	4AH5-B{3}	2TT2-2
2DB2-43 {1}	2TT2-2	4AH5-B{3}	4TT2-2
2TT2-3	2TT2-2	4AH5-B{3}	2TT2-6
2DB2-10	4TT2-2	4AH5-B{3}	4TT2-6
2DB2-43 {1}	4TT2-2	4AH6-C{3}	2TT2-2
4TT2-2	4TT2-2	4AH6-C{3}	4TT2-2
4DB2-10	4TT2-2	4AH6-C{3}	2TT2-6
4DB2-43 {1}	4TT2-2	4AH6-C{3}	4TT2-6
2TT2-6	4TT2-2	4AH6-D{3}	2TT2-2
2DB2-43 {1}	4TT2-2	4AH6-D{3}	4TT2-2
2DB2-10	4TT2-2	4AH6-D{3}	2TTA-6
4DB2-43 {1}	2TT2-6	4AH6-D{3}	4TT2-6
2DB2-43	2TT2-6		
4TT2-6	2TT2-6		
4DB2-43 {1}	2TT2-6		

{1} Supplemental Channel Assignment information required.
{2} See Section 7.3.3 following for explanation.
{3} Available only to ICs selecting the multiplexed 4-wire High Capacity analog facility interface option of the IC terminal location and providing subsequent system and channel assignment data.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(A) Narrowband Services (Cont'd)

(5) Narrowband 5 (NB5) Special Access Service

(a) Description

Special Access Service NB5 provides a channel for transmission of asynchronous transitions between two current levels at rates up to 150 baud between an IC terminal location and an end user premises. This service is furnished for half-duplex or duplex operation on a two-point or multipoint configuration. Neither direct current continuity of this service nor the capability to transport continuously varying alternating currents is assured.

(b) Illustrative Applications

Special Access Service NB5 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- Extension Service - Telegraph Grade
- Teletypewriter Service
- Alarm Circuits
- Control/Remote Metering - Telegraph Grade

(c) Optional Feature

- Central office bridging capability.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(A) Narrowband Services (Cont'd)

(5) Narrowband 5 (NB5) Special Access Service (Cont'd)

(d) Transmission Performance

- Telegraph Distortion

Remedial action will be initiated whenever the telegraph distortion is observed to exceed 12%.

(e) Available Facility Interface Combinations

IC	End User	IC	End User
2DB2-10	10IA2	4DS9- {2}	10IA2
4DB2-10	10IA2	4AH5-B{3}	10IA2
2DB2-43 {1}	10IA2	4AH6-C{3}	10IA2
4DB2-43 {1}	10IA2	4AH6-D{3}	10IA2

(B) Voice Grade Services

There are 13 types of Voice Grade Service, each having a different transmission performance. The transmission performances determine the applications that the various types of Voice Grade Service can be used for. VG1 through VG4 services are intended for voice application only. VG5 through VG10 are suitable for voiceband data for voice/data applications. VG11 is suitable for telephoto service and VG12 is suitable for protective relaying service. VG13 is suitable for physically intraLATA, jurisdicitionally intrastate services.

{1} Supplemental Channel assignment information required.
{2} See Section 7.3.3 following for explanation.
{3} Available only to ICs selecting the 4-wire multiplexed High Capacity analog facility interface option at the IC terminal location and providing subsequent system and channel assignment data.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(1) Voice Grade 1 (VG1) Special Access Service

(a) Description

Special Access Service VG1 provides a channel for voice frequency transmission capacity. Usable frequencies are nominally 300 to 3000 Hz between an IC terminal location and an end user premises. The transmission interface can be either two-wire or four-wire at both the IC terminal location and the end user premises. Various interface options are available. This service will support effective two-wire or effective four-wire transmission.

(b) Illustrative Applications

Special Access Service VG1 is suitable for use as part of the facilities used to provide intrastate telecommunications services such as:

- Voice Grade Facility
- Alarm Circuits

(c) Optional Feature

- Improved return loss at four-wire point of interface, applicable to each two-wire leg of effective four-wire channel.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(1) Voice Grade 1 (VG1) Special Access Service (Cont'd)

(d) Transmission Performance

- C-Message Noise

The C-Message Noise shall be less than:

Channel Mileage (mi)	Limit (dBrnCO) {1} Type V1	Type V2
0 - 50	32	38
51 - 100	33	39
101 - 200	35	41
201 - 400	37	43
401 - 1000	39	45

- Echo Control

Echo Control, identified as Equal Level Echo Path Loss at four-wire interfaces or Return Loss at two-wire interfaces, and expressed as Echo return Loss and Singing Return Loss, at either the end user premises or IC terminal location shall be not less than the following limits:

	Echo Return Loss	Singing Return Loss
Standard Return Loss Interface (Return Loss)	5 dB	2.5 dB
Four-Wire Interface (Equal Level Echo Path Loss)	16 dB	11 dB

{1} Where facility network conditions will support the parameters, Type V1 will be provided. Where the Type V1 parameters cannot be supported, Type V2 will be provided.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(1) Voice Grade 1 (VG1) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

- Echo Control (Cont'd)

Effective Four-Wire Transmission

(Two-wire interface at the end user premises.)

	Echo Return Loss	Singing Return Loss
Two-Wire Interface (Return Loss)	24 dB	18 dB
Four-Wire Interface (Equal Level Echo Path Loss) (For Centrex application 2 dB pad is "in").	20 dB	14 dB

- Improved Return Loss

The Return Loss (RL), expressed as Echo Return Loss (ERL) and Singing Return Loss (SRL), on two-wire ports of a four-wire point of interface shall be equal to or greater than:

Standard RL	Improved RL
ERL 5 dB	ERL 20 dB
SRL 2.5 dB	SRL 13.5 dB

- Loss Variation

The long term loss variation from the nominal 1004 Hz EML shall not exceed ± 4.0 dB.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(1) Voice Grade 1 (VG1) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

- Attenuation Distortion

The attenuation distortion between 404 Hz and 2804 Hz shall be within -2.0 dB and +10.0 dB with reference to the loss at 1004 Hz (minus equals less loss, plus equals more loss). The attenuation distortion between 504 Hz and 2504 Hz shall be within -2.0 dB and +8.0 dB and between 304 Hz and 3004 Hz shall be within -3.0 dB and +12.0 dB.

(e) Available Facility Interface Combinations

VG1 is available only with specific facility interface combinations as set forth in Section 7.2.1(B)(30).

(2) Voice Grade 2 (VG2) Special Access Service

(a) Description

Special Access Service VG2 provides a channel for voice frequency transmission capability. Usable frequencies are nominally 300 to 3000 Hz between an IC terminal location and an end user premises. The transmission interface at the end user premises is two-wire or four-wire and the IC terminal location interface is four-wire. This service will support effective two-wire or effective four-wire transmission.

(b) Illustrative Applications

Special Access Service VG2 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(2) Voice Grade 2 (VG2) Special Access Service (Cont'd)

(b) Illustrative Applications (Cont'd)

- Centrex C.O. Line
- Concentrator Identifier Trunk
- Extension Service
- Off-Premises Intercommunications Line
- Private Line Voice Circuit
- Paging Circuit
- Foreign Exchange Line (closed end)
- Centrex Station Line - Off Premises
- Off-Premises Extension
- Off-Premises PBX Station Line

(c) Optional Features

- Central office bridging capability.
- Improved return loss for effective two-wire transmission at the end user premises.
- IC specified end user premises receive level within a range acceptable to the Telephone Company on effective four-wire transmission.
- Improved return loss at four-wire point of interface, applicable to each two-wire leg of effective four-wire channel.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(2) Voice Grade 2 (VG2) Special Access Service (Cont'd)

(d) Transmission Performance

- C-Message Noise

The C-Message Noise shall be less than:

Channel Mileage (mi)	Limit (dBrnCO) {1}	
	Type V1	Type V2
0 - 50	32	38
51 - 100	33	39
101 - 200	35	41
201 - 400	37	43
401 - 1000	39	45

- Echo Control

Echo Control, identified as Equal Level Echo Path Loss at four-wire interfaces or Return Loss at two-wire interfaces, for both Echo Return Loss and Singing Return Loss, at either the end user premises or IC terminal location shall be not less than the following limits:

Effective Two-Wire Transmission

(Four-wire interface at the IC terminal location and two-wire interface at the user premises).

{1} Where facility network conditions will support the parameters, Type V1 will be provided. Where the Type V1 parameters cannot be supported, Type V2 will be provided.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(2) Voice Grade 2 (VG2) Special Access Service (Cont'd)

(d) Transmission Performance

- Echo Control (Cont'd)

	Echo Return Loss	Singing Return Loss
Standard Return Loss (at Two-Wire Interface)	5 dB	2.5 dB
Improved Return Loss (at Two-wire Interface)	13 dB	8 dB
Four-Wire Interface (Equal Level Echo Path Loss) (For Centrex Application, 2 dB pad is "in")	16 dB	11 dB

Effective Four-Wire Transmission

(Two-wire interface at the end user premises.)

	Echo Return Loss	Singing Return Loss
Two-wire Interface (Return Loss)	24 dB	18 dB
Four-wire Interface (Equal Level Echo Path Loss)	20 dB	14 dB

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(2) Voice Grade 2 (VG2) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

- Improved Return Loss (Cont'd)

The Return Loss (RL), expressed as Echo Return Loss (ERL) and Singing Return Loss (SRL), on two-wire ports of a four-wire point of interface shall be equal to or greater than:

Standard RL	Improved RL
ERL 5 dB	ERL 20 dB
SRL 2.5 dB	SRL 13.5 dB

- Loss Variation

The long term loss variation from the nominal 1004 Hz EML shall not exceed ± 1.5 dB.

- Attenuation Distortion

The attenuation distortion between 404 Hz and 2804 Hz shall be within -1.0 dB and +4.0 dB with reference to the loss at 1004 Hz (minus equals less loss, plus equals more loss). The attenuation distortion between 304 Hz and 3004 Hz shall be within -1.0 dB and +5.0 dB.

(e) Available Facility Interface Combinations

VG2 is available only with specific facility interface combinations as set forth in Section 7.2.1(B)(30).

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(3) Voice Grade 3 (VG3) Special Access Service

(a) Description

Special Access Service VG3 provides a channel for voice frequency transmission capability. Usable frequencies are nominally 300 to 3000 Hz between an IC terminal location and an end user premises. The transmission interface at the end user premises is two-wire or four-wire and the IC terminal location interface is four-wire. This service will support effective two-wire or four-wire transmission.

(b) Illustrative Applications

Special Access Service VG3 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- Foreign Exchange Trunk (Closed End)
- Alternate Use Service
- PBX/CTX Tie Trunks
- SSN Access Line
- SSN Station Line
- SSN Network Line
- SSN Tie Trunk
- Station and Premises Connecting Facilities

(c) Optional Features

- Improved returned loss for effective two-wire transmission at the end user premises.

- IC specified end user premises receive level within a range acceptable to the Telephone Company on effective four-wire transmission.

- Improved return loss at four-wire point of interface, applicable to each two-wire leg of effective four-wire channel.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(3) Voice Grade 3 (VG3) Special Access Service (Cont'd)

(d) Transmission Performance

- C-Message Noise

The C-Message noise shall be less than:

Channel Mileage (mi)	Limit (dBrnCO) {1} Type V1	Type V2
0 - 50	32	38
51 - 100	33	39
101 - 200	35	41
201 - 400	37	43
401 - 1000	39	45

- Echo Control

Echo Control, identified as Equal Level Echo Path Loss at four-wire interfaces or Return Loss at two-wire interfaces, for both Echo Return Loss and Singing Return Loss, at either the end user premises or IC terminal location shall be not less than the following limits:

Effective Two-Wire Transmission

(Four-wire interface at the IC terminal location, two-wire interface at the end user premises).

{1} Where facility network conditions will support the parameters, Type V1 will be provided. Where the Type V1 parameters cannot be supported, Type V2 will be provided.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(3) Voice Grade 3 (VG3) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

- Echo Control (Cont'd)

Effective Two-Wire Transmission (Cont'd)

	Echo Return Loss	Singing Return Loss
Standard Return Loss (at Two-Wire Interface)	5 dB	2.5 dB
Improved Return Loss (at Two-Wire Interface)	13 dB	8 dB
Four-Wire Interface (Equal Level Echo Path Loss) (For Centrex application, 2 dB pad is "in".)	16 dB	11 dB

Effective Four-Wire Transmission

(Two-wire interface at the end user premises).

	Echo Return Loss	Singing Return Loss
Two-Wire Interface (Return Loss)	24 dB	18 dB
Four-Wire Interface (Equal Level Echo Path Loss)	20 dB	14 dB

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(3) Voice Grade 3 (VG3) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

- Improved Return Loss

The Return Loss (RL), expressed as Echo Return Loss (ERL) and Singing Return Loss (SRL), on two-wire ports of a four-wire point of interface shall be equal to or greater than:

Standard RL	Improved RL
ERL 5 dB	ERL 20 dB
SRL 2.5 dB	SRL 13.5 dB

- Loss Variation

The long term loss variation from the nominal 1004 Hz EML shall not exceed ± 1.5 dB.

- Attenuation Distortion

The attenuation distortion between 404 Hz and 2804 Hz shall be within -1.0 dB and +3.0 dB with reference to the loss at 1004 Hz (minus equals less loss, plus equals more loss). The attenuation distortion between 304 Hz and 3004 Hz shall be within -1.0 dB and +5.0 dB.

(e) Available Facility Interface Combinations

VG3 is available only with specific facility interface combinations as set forth in Section 7.2.1(B)(30).

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(4) Voice Grade 4 (VG4) Special Access Service

This service is available for use only by the Federal Government.

(a) Description

Special Access Service VG4 provides a channel for voice frequency transmission capability. Usable frequencies are nominally 300 to 3000 Hz between an IC terminal location and an end user premises. The transmission interface will be four-wire at both the IC terminal location and the end users premises. This service will support effective four-wire transmission.

(b) Illustrative Applications

Special Access Service VG4 is suitable for use as part of the facilities required to provide intrastate telecommunications services to the Federal Aviation Agency (FAA) for voice plus control tone transmission under FAA Specifications S-1142a.

(c) Optional Features

- Improved return loss at four-wire point of interface, applicable to each two-wire leg of effective four-wire channel.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(4) Voice Grade 4 (VG4) Special Access Service (Cont'd)

(d) Transmission Performance

- C-Message Noise

The C-Message Noise shall be less than:

Channel Mileage (mi)	Limit (dBrnCO) {1}	
	Type V1	Type V2
0 - 50	32	38
51 - 100	33	39
101 - 200	35	41
201 - 400	37	43
401 - 1000	39	45

- Improved Return Loss

The Return Loss (RL), expressed as Echo Return Loss (ERL) and Singing Return Loss (SRL), on two-wire ports of a four-wire point of interface shall be equal to or greater than:

Standard RL	Improved RL
ERL 5 dB	ERL 20 dB
SRL 2.5 dB	SRL 13.5 dB

- Loss Variation

The long term loss variation from the nominal 1004 Hz EML shall not exceed $\pm$ 1.0 dB.

{1} Where facility network conditions will support the parameters, Type V1 will be provided. Where the Type V1 parameters cannot be supported, Type V2 will be provided.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(4) Voice Grade 4 (VG4) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

- Attenuation Distortion

The attenuation distortion shall be within the following limits:

-1 to +3.5 dB between 304 and 504 Hz
-1 to +2.0 dB between 504 and 2504 Hz
-1 to +3.0 dB between 2504 and 2804 Hz
-1 to +4.0 dB between 2804 and 3004 Hz

- Signal-to-C Message Noise

The Signal-to-C Message Noise ratio should not be less than 41 dB, measured with -8 dBmO test tone. The Signal-to-C Message Noise ratio shall not be less than 21dB for signals over 2600-3000 Hz, measured with a -15 dBmO test tone.

(e) Available Facility Interface Combinations

VG4 is available only with specific facility interface combinations set forth in Section 7.2.1(B)(14).

(5) Voice Grade 5 (VG5) Special Access Service

(a) Description

Special Access Service VG5 provides a channel for voiceband data transmission capability. Usable frequencies are nominally 300 to 3000 Hz between an IC terminal location and an end user premises. The transmission interface can be either two-wire or four-wire at the end user premises and the IC terminal location. This service will support effective two-wire for four-wire transmission.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(5) Voice Grade 5 (VG5) Special Access Service (Cont'd)

(b) Illustrative Applications

Special Access Service VG5 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- Protective Alarm
- DATAPHONE Select-A-Station

(c) Optional Features

- C-Conditioning.
- Central office bridging capability.
- Improved return loss at four-wire point of interface, applicable to each two-wire leg of effective four-wire channel.

(d) Transmission Performance

- C-Message Noise

The C-Message Noise shall be less than:

Channel Mileage (mi)	Limit (dBrnCO) {1}	
	Type V1	Type V2
0 - 50	32	38
51 - 100	33	39
101 - 200	35	41
201 - 400	37	43
401 - 1000	39	45

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(5) Voice Grade 5 (VG5) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

- Echo Control

Echo Control, identified as Equal Level Echo Path Loss at four-wire interfaces or Return Loss at two-wire interfaces, for both Echo Return Loss and Singing Return Loss, at either the end user premises or IC terminal location shall be not less than the following limits:

Effective Two-Wire Transmission

(Four-wire interface at the IC terminal location and two-wire interface at the end user premises).

	Echo Return Loss	Singing Return Loss
Standard Return Loss (at Two-Wire Interface)	5 dB	2.5 dB
Four-Wire Interface (Equal Level Echo Path Loss) (For Centrex application, 2 dB pad is "in".)	16 dB	11 dB

{1} Where facility network conditions will support the parameters, Type V1 will be provided. Where the Type V1 parameters cannot be supported, Type V2 will be provided.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(5) Voice Grade 5 (VG5) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

- Echo Control (Cont'd)

Effective Four-Wire Transmission

(Two-wire interface at the end user premises).

	Echo Return Loss	Singing Return Loss
Two-Wire Interface (Return Loss)	24 dB	18 dB
Four-Wire Interface (Equal Level Echo Path Loss)	20 dB	14 dB

- Improved Return Loss

The Return Loss (RL), expressed as Echo Return Loss (ERL) and Singing Return Loss (SRL), on two-wire ports of a four-wire point of interface shall be equal to or greater than:

Standard RL	Improved RL
ERL 5 dB	ERL 20 dB
SRL 2.5 dB	SRL 13.5 dB

- Loss Variation

The long term loss variation from the nominal 1004 Hz EML shall not exceed ± 1.5 dB.

- Attenuation Distortion

The attenuation distortion between 404 Hz and 2804 Hz shall be within -1.0 dB and +5.0 dB with reference to the loss at 1004 Hz (minus equals less loss, plus equals more loss).

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(5) Voice Grade 5 (VG5) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

- Signal-to-C Notch Noise

The Signal-to-C Notch noise ratio shall not be less than 26 dB.

- Impulse Noise

The number of impulse noise counts exceeding a threshold of 67 dBrnCO in 15 minutes shall be less than 15.

(e) Available Facility Interface Combinations

VG5 is available only with specific facility interface combinations set forth in Section 7.2.1(B)(30).

(6) Voice Grade 6 (VG6) Special Access Service

(a) Description

Special Access Service VG6 provides a channel for voiceband data transmission capability. Usable frequencies are nominally 300 to 3000 Hz between an IC terminal location and an end user premises. The transmission interface is four-wire at both the IC terminal location and the end user premises. This service will support effective four-wire transmission.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(6) Voice Grade 6 (VG6) Special Access Service (Cont'd)

(b) Illustrative Applications

Special Access Service VG6 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- Private Line Data Circuit
- Control/Remote Metering

(c) Optional Features

- C-Conditioning
- DA-Conditioning.
- Central office bridging capability.
- Improved return loss at four-wire point of interface, applicable to each two-wire leg of effective four-wire channel.
- Central office multiplexing.

(d) Transmission Performance

- C-Message Noise

The C-Message Noise shall be less than:

Channel Mileage (mi)	Limit (dBrnCO) {1}	
	Type V1	Type V2
0 - 50	32	38
51 - 100	33	39
101 - 200	35	41
201 - 400	37	43
401 - 1000	39	45

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(6) Voice Grade 6 (VG6) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

- Improved Return Loss

The Return Loss (RL), expressed as Echo Return Loss (ERL) and Singing Return Loss (SRL), on two-wire ports of a four-wire point of interface shall be equal to or greater than:

Standard RL	Improved RL
ERL 5 dB	ERL 20 dB
SRL 2.5 dB	SRL 13.5 dB

- Loss Variation

The long term loss variation from the nominal 1004 Hz EML shall not exceed ± 1.5 dB.

- Attenuation Distortion

The attenuation distortion between 404 Hz and 2804 Hz shall be within -1.0 dB and +4.0 dB with reference to the loss at 1004 Hz (minus equals less loss, plus equals more loss). The attenuation distortion between 504 Hz and 2504 Hz shall be within -1.0 dB and +3.0 dB with reference to the loss at 1004 Hz. The attenuation distortion between 304 Hz and 3004 Hz shall be within -1.0 dB and +5.0 dB.

{1} Where facility network conditions will support the parameters, Type V1 will be provided. Where the Type V1 parameters cannot be supported, Type V2 will be provided.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(6) Voice Grade 6 (VG6) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

- Signal-to-C Notch Noise

  The Signal-to-C Notch noise ratio shall not be less than 30 dB.

- Envelope Delay Distortion

  The Envelope Delay Distortion (EDD) shall not exceed 700 microseconds between 800 and 2600 Hz.

- Impulse Noise

  The number of impulse noise counts exceeding a threshold of 67 dBrnCO in 15 minutes shall be less than 15.

- Intermodulation Distortion

  The intermodulation distortion based upon the four-tone method shall be such that R2 is not less than 33 dB and R3 not less than 40 dB.

- Phase Jitter

  The phase jitter over 20-300 Hz shall not exceed 5 degree peak-to-peak and over 4-300 Hz shall not exceed 10 degrees peak-to-peak.

- Frequency Shift

  The frequency shift shall not exceed ± 1 Hz.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(6) Voice Grade 6 (VG6) Special Access Service (Cont'd)

(e) Available Facility Interface Combinations

VG6 is available only with specific facility interface combinations as set forth in Section 7.2.1(B)(14).

(7) Voice Grade 7 (VG7) Special Access Service

(a) Description

Special Access Service VG7 provides a channel for voiceband data transmission capability. Usable frequencies are nominally 300 to 3000 Hz between an IC terminal location and an end user premises. The transmission interface at the end user premises is two-wire or four-wire and the IC terminal location interface is four-wire.

This service will support effective two-wire or four-wire transmission.

(b) Illustrative Applications

Special Access Service VG7 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- Centrex CO Station Line Off-Premises Station
- PBX Off-Premises Station
- Foreign Exchange Trunk (Closed End)
- Foreign Exchange Line (Closed End)
- PBX Tie Trunks
- SSN Tie Trunks
- Voice Grade Data Connecting Facility

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(7) Voice Grade 7 (VG7) Special Access Service (Cont'd)

(c) Optional Features

- Improved return loss for effective two-wire transmission at the end user premises.
- C-Conditioning
- DA-Conditioning
- IC specified end user premises receive level within a range acceptable to the Telephone Company on effective four-wire transmission.
- Improved return loss at four-wire point of interface, applicable to each two-wire leg of effective four-wire channel.

(d) Transmission Performance

- C-Message Noise

The C-Message Noise shall be less than:

Channel Mileage (mi)	Limit (dBrnCO) {1}	
	Type V1	Type V2
0 - 50	32	38
51 - 100	33	39
101 - 200	35	41
201 - 400	37	43
401 - 1000	39	45

{1} Where facility network conditions will support the parameters, Type V1 will be provided. Where the Type V1 parameters cannot be supported, Type V2 will be provided.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(7) Voice Grade 7 (VG7) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

- Echo Control

Echo Control, identified as Equal Level Echo Path Loss at four-wire interfaces or Return Loss at two-wire interfaces, for both Echo Return Loss and Singing Return Loss, at either the end user premises or IC terminal location shall be not less than the following limits:

Effective Two-Wire Transmission

(Four-wire interface at the IC terminal location and two-wire interface at the end user premises).

	Echo Return Loss	Singing Return Loss
Standard Return Loss (at Two-Wire Interface)	5 dB	2.5 dB
Improved Return Loss (at Two-Wire Interface)	13 dB	8 dB
Four-Wire Interface (Equal Level Echo Path Loss) (For Centrex application, 2 dB pad is "in".)	16 dB	11 dB

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(7) Voice Grade 7 (VG7) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

Effective Four-Wire Transmission

(Two-wire interface at the end user premises).

	Echo Return Loss	Singing Return Loss
Two-Wire Interface (Return Loss)	24 dB	18 dB
Four-Wire Interface (Equal Level Echo Path Loss)	20 dB	14 dB

- Improved Return Loss

The Return Loss (RL), expressed as Echo Return Loss (ERL) and Singing Return Loss (SRL), on two-wire ports of a four-wire point of interface shall be equal to or greater than:

Standard RL	Improved RL
ERL 5 dB	ERL 20 dB
SRL 2.5 dB	SRL 13.5 dB

- Loss Variation

The long term loss variation from the nominal 1004 Hz EML shall not exceed ± 1.5 dB.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(7) Voice Grade 7 (VG7) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

- Attenuation Distortion

The attenuation distortion between 404 Hz and 2804 Hz shall be within -1.0 dB and +2.0 dB with reference to the loss at 1004 Hz (minus equals less loss, plus equals more loss). The attenuation distortion between 304 Hz and 3004 Hz shall be within -1.0 dB and +5.0 dB.

- Signal-to-C Notch Noise

The Signal-to-C Notch noise ratio shall not be less than 30 dB.

- Envelope Delay Distortion

The Envelope Delay Distortion (EDD) shall not exceed 700 microseconds between 800 and 2600 Hz.

- Impulse Noise

The number of impulse noise counts exceeding a threshold of 67 dBrnCO in 15 minutes shall be less than 15.

- Intermodulation Distortion

The intermodulation distortion based upon the four tone method shall be such that R2 is not less than 33 dB and R3 not less than 40 dB.

- Phase Jitter

The phase jitter over 20-300 Hz shall not exceed 5 degrees peak-to-peak and over 4-300 Hz shall not exceed 10 degrees peak-to-peak.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(7) Voice Grade 7 (VG7) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

- Frequency Shift

The frequency shift shall not exceed ± 1 Hz.

(e) Available Facility Interface Combinations

VG7 is available only with specific facility interface combinations as set forth in Section 7.2.1(B)(14).

(8) Voice Grade 8 (VG8) Special Access Service

(a) Description

Special Access Service VG8 provides a channel for voiceband data transmission capability. Usable frequencies are nominally 300 to 3000 Hz between an IC terminal location and an end user premises. The standard transmission interface at the end user premises is two-wire or four-wire and the IC terminal location interface is four-wire. This service will support effective four-wire transmission.

(b) Illustrative Applications

Special Access Service VG8 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- SSN Access Line
- SSN Station Line

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(8) Voice Grade 8 (VG8) Special Access Service (Cont'd)

(c) Optional Features

- C-Conditioning.
- IC specified end user premises receive level within a range acceptable to the Telephone Company for effective four-wire transmission.
- Improved return loss at four-wire point of interface, applicable to each two-wire leg of effective four-wire channel.

(d) Transmission Performance

- C-Message Noise

The C-Message Noise shall be less than:

Channel Mileage (mi)	Limit (dBrnCO) {1}	
	Type V1	Type V2
0 - 50	32	38
51 - 100	33	39
101 - 200	35	41
201 - 400	37	43
401 - 1000	39	45

{1} Where facility network conditions will support the parameters, Type V1 will be provided. Where the Type V1 parameters cannot be supported, Type V2 will be provided.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(8) Voice Grade 8 (VG8) Special Access Service (Cont'd)

(d) Transmission Performance

- Echo Control

Echo Control, identified as Equal Level Echo Path Loss at four-wire interfaces or Return Loss at two-wire interfaces, and expressed as Echo Return Loss and Singing Return Loss, at either the end user premises or IC terminal location shall be not less than the following limits:

- Effective Four-Wire Transmission

(Two-wire interface at the end user premises).

	Echo Return Loss	Singing Return Loss
Two-Wire Interface (Return Loss)	24 dB	18 dB
Four-Wire Interface (Equal Level Echo Path Loss)	20 dB	14 dB

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(8) Voice Grade 8 (VG8) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

- Improved Return Loss

The Return Loss (RL), expressed as Echo Return Loss (ERL) and Singing Return Loss (SRL), on two-wire ports of a four-wire point of interface shall be equal to or greater than:

Standard RL	Improved RL
ERL 5 dB	ERL 20 dB
SRL 2.5 dB	SRL 13.5 dB

- Loss Variation

The long term loss variation from the nominal 1004 Hz EML shall not exceed ± 1.5 dB.

- Attenuation Distortion

The attenuation distortion between 404 Hz and 2804 Hz shall be within -1.0 dB and +2.0 dB with reference to the loss at 1004 Hz (minus equals less loss, plus equals more loss). The attenuation distortion between 304 Hz and 3004 Hz shall be within -1.0 dB and +5.0 dB.

- Signal-to-C Notch Noise

The Signal-to-C Notch noise ratio shall not be less than 32 dB.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(8) Voice Grade 8 (VG8) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

- Envelope Delay Distortion

The Envelope Delay Distortion (EDD) shall not exceed 700 microseconds between 800 and 2600 Hz.

- Impulse Noise

The number of impulse noise counts exceeding a threshold of 67 dBrnCO in 15 minutes shall be less than 15.

- Intermodulation Distortion

The intermodulation distortion based upon the four tone method shall be such that R2 is not less than 45 dB and R3 not less than 48 dB.

- Phase Jitter

The phase jitter over 20-300 Hz shall not exceed 4 degrees peak-to-peak and over 4-300 Hz shall not exceed 9 degrees peak-to-peak.

- Frequency Shift

The frequency shift shall not exceed $\pm$ 1 Hz.

(e) Available Facility Interface Combinations

VG8 is available only with specific facility interface combinations as set forth in Section 7.2.1(B)(14).

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(9) Voice Grade 9 (VG9) Special Access Service

(a) Description

Special Access Service VG9 provides a channel for voiceband data transmission capability. Usable frequencies are nominally 300 to 3000 Hz between an IC terminal location and another IC terminal location or a Telephone Company Central office which serves as an SSN Switch. The transmission interface at the end user premises or Telephone Company Central Office is four-wire and the IC terminal location interface is four-wire. This service will support effective four-wire transmission.

(b) Illustrative Application

Special Access Service VG9 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as SSN Network Trunks.

(c) Optional Features

- C-Conditioning.

- IC specified end user premises receive level within a range acceptable to the Telephone Company for effective four-wire transmission.

- Improved return loss at four-wire point of interface, applicable to each two-wire leg of effective four-wire channel.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(9) Voice Grade 9 (VG9) Special Access Service (Cont'd)

(d) Transmission Performance

- C-Message Noise

The C-Message Noise shall be less than:

Channel Mileage (mi)	Limit (dBrnCO) {1} Type V1	Type V2
0 - 50	32	38
51 - 100	33	39
101 - 200	35	41
201 - 400	37	43
401 - 1000	39	45

- Improved Return Loss

The Return Loss (RL), expressed as Echo Return Loss (ERL) and Singing Return Loss (SRL), on two-wire ports of a four-wire point of interface shall be equal to or greater than:

Standard RL	Improved RL
ERL 5 dB	ERL 20 dB
SRL 2.5 dB	SRL 13.5 dB

{1} Where facility network conditions will support the parameters, Type V1 will be provided. Where the Type V1 parameters cannot be supported, Type V2 will be provided.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(9) Voice Grade 9 (VG9) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

- Loss Variation

The long term loss variation from the nominal 1004 Hz EML shall not exceed ± 1.5 dB.

- Attenuation Distortion

The attenuation distortion between 404 Hz and 2804 Hz shall be within -1.0 dB and +2.0 dB with reference to the loss at 1004 Hz and between 304 Hz and 3004 Hz shall be within -3.0 dB and +12.0 dB. (minus equals less loss, plus equals more loss).

- Signal-to-C Notch Noise

The Signal-to-C Notch noise ratio shall not be less than 34 dB.

- Envelope Delay Distortion

The Envelope Delay Distortion (EDD) shall not exceed 700 microseconds between 800 and 2600 Hz.

- Impulse Noise

The number of impulse noise counts exceeding a threshold of 67 dBrnCO in 15 minutes shall be less than 15.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(9) Voice Grade 9 (VG9) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

- Intermodulation Distortion

The intermodulation distortion based upon the four tone method shall be such that R2 is not less than 50 dB and R3 not less than 54 dB.

- Phase Jitter

The phase jitter over 20-300 Hz shall not exceed 3 degrees peak-to-peak and over 4-300 Hz shall not exceed 8 degrees peak-to-peak.

- Frequency Shift

The frequency shift shall not exceed $\pm$ 1 Hz.

(e) Available Facility Interface Combinations

VG9 is available only with specific facility interface combinations as set forth in Section 7.2.1(B)(14).

(10) Voice Grade 10 (VG10) Special Access Service

(a) Description

Special Access Service VG10 provides a channel for voiceband data transmission capability. Usable frequencies are nominally 300 to 3000 Hz between an IC terminal location and an end user premises. The standard transmission interface at the end user premises and the IC terminal location is four-wire. This service will support effective four-wire transmission.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(10) Voice Grade 10 (VG10) Special Access Service (Cont'd)

(b) Illustrative Applications

Special Access Service VG10 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- Digital Data Off-Net Extension
- Voice Grade Data Facility

(c) Optional Features

- Central office bridging capability.
- Improved return loss at four-wire point of interface, applicable to each two-wire leg of effective four-wire channel.
- C-Conditioning
- DA-Conditioning

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(10) Voice Grade 10 (VG10) Special Access Service

(d) Transmission Performance

- C-Message Noise

The C-Message Noise shall be less than:

Channel Mileage (mi)	Limit (dBrnCO) {1}	
	Type V1	Type V2
0 - 50	32	38
51 - 100	33	39
101 - 200	35	41
201 - 400	37	43
401 - 1000	39	45

- Improved Return Loss

The Return Loss (RL), expressed as Echo Return Loss (ERL) and Singing Return Loss (SRL), on two-wire ports of a four-wire point of interface shall be equal to or greater than:

Standard RL	Improved RL
ERL 5 dB	ERL 20 dB
SRL 2.5 dB	SRL 13.5 dB

- Loss Variation

The long term loss variation from the nominal 1004 Hz EML shall not exceed $\pm$ 4 dB.

{1} Where facility network conditions will support the parameters, Type V1 will be provided. Where the Type V1 parameters cannot be supported, Type V2 will be provided.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(10) Voice Grade 10 (VG10) Special Access Service (Cont'd)

(d) Transmission Performance

- Attenuation Distortion

The attenuation distortion between 404 Hz and 2804 Hz shall be within -2.0 dB and +10.0 dB with reference to the loss at 1004 Hz (minus equals less loss, plus equals more loss). The attenuation distortion between 504 Hz and 2504 Hz shall be within -2.0 dB and +8.0 dB with reference to the loss at 1004 Hz. The attenuation distortion between 304 Hz and 3004 Hz shall be within -3.0 dB and +12.0 dB.

- Signal-to-C Notch Noise

The Signal-to-C Notch noise ratio shall not be less than 24 dB.

- Envelope Delay Distortion

The Envelope Delay Distortion (EDD) shall not exceed 1750 microseconds between 800 and 2600 Hz.

- Impulse Noise

The number of impulse noise counts exceeding a threshold of 71 dBrnCO in 15 minutes shall be less than 15.

- Intermodulation Distortion

The intermodulation distortion based upon the four-tone method shall be such that R2 is not less than 27 dB and R3 not less than 32 dB.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(10) Voice Grade 10 (VG10) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

- Phase Jitter

The phase jitter over 20-300 Hz shall not exceed 10 degrees peak-to-peak and over 4-300 Hz shall not exceed 15 degrees peak-to-peak.

- Frequency Shift

The frequency shift shall not exceed ± 3 Hz.

(e) Available Facility Interface Combinations

VG10 is available only with specific facility interface combinations as set forth in Section 7.2.1(B)(14).

(11) Voice Grade 11 (VG11) Special Access Service

(a) Description

Special Access Service VG11 provides a channel for telephoto/facsimile transmission capability. Usable frequencies are nominally 300 to 3000 Hz between an IC terminal location and an end user premises. The transmission interfaces at the end user premises can be either two-wire or four-wire and at the IC terminal location the interface is four-wire. This service will support either effective two-wire or four-wire transmission.

(b) Illustrative Applications

Special Access Service VG11 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as telephoto/facsimile.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(11) Voice Grade 11 (VG11) Special Access Service (Cont'd)

(c) Optional Features

- Central office bridging capability.
- Telephoto conditioning.
- Improved return loss at four-wire point of interface, applicable to each two-wire leg of effective four-wire channel.

(d) Transmission Performance

- C-Message Noise

The C-Message Noise shall be less than:

Channel Mileage (mi)	Limit (dBrnCO) {1}	
	Type V1	Type V2
0 - 50	32	38
51 - 100	33	39
101 - 200	35	41
201 - 400	37	43
401 - 1000	39	45

- Echo Control

Echo Control, identified as Equal Level Echo Path Loss at four-wire interfaces or Return Loss at two-wire interfaces, for both Echo Return Loss and Singing Return Loss, at either the end user premises or IC terminal location shall be not less than the following limits:

{1} Where facility network conditions will support the parameters, Type V1 will be provided. Where the Type V1 parameters cannot be supported, Type V2 will be provided.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(11) Voice Grade 11 (VG11) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

Effective Two-Wire Transmission

(Four-wire interface at the IC terminal locations and two-wire interface at the end user premises).

	Echo Return Loss	Singing Return Loss
Two-Wire Interface (Return Loss)	5 dB	2.5 dB
Four-Wire Interface (Equal Level Echo Path Loss)	16 dB	11 dB

Effective Four-Wire Transmission

(Two-wire interface at the end user premises).

	Echo Return Loss	Singing Return Loss
Two-Wire Interface (Return Loss)	24 dB	18 dB
Four-Wire Interface (Equal Level Echo Path Loss)	20 dB	14 dB

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(11) Voice Grade 11 (VG11) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

- Improved Return Loss

The Return Loss (RL), expressed as Echo Return Loss (ERL) and Singing Return Loss (SRL), on two-wire ports of a four-wire point of interface shall be equal to or greater than:

Standard RL	Improved RL
ERL 5 dB	ERL 20 dB
SRL 2.5 dB	SRL 13.5 dB

- Loss Variation

The long term loss variation from the nominal 2204 Hz EML shall not exceed ±1.5 dB.

- Attenuation Distortion

The attenuation distortion between 1204 Hz and 2604 Hz shall be within -1.0 dB and +1.0 dB with reference to the loss at 2204 Hz (minus equals less loss, plus equals more loss). The attenuation distortion between 304 Hz and 3004 Hz shall be within -1.0 dB and +5.0 dB.

- Signal-to-C Notch Noise

The Signal-to-C Notch noise ratio shall not be less than 30 dB.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(11) Voice Grade 11 (VG11) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

- Envelope Delay Distortion

  The Envelope Delay Distortion (EDD) shall not exceed 700 microseconds between 1200 and 2600 Hz.

- Impulse Noise

  The number of impulse noise counts exceeding a threshold of 67 dBrnCO in 15 minutes shall be less than 15.

- Intermodulation Distortion

  The intermodulation distortion based upon the four-tone method shall be such that R2 is not less than 33 dB and R3 not less than 40 dB.

- Phase Jitter

  The phase jitter over 20-300 Hz shall not exceed 5 degrees peak-to-peak and over 4-300 Hz shall not exceed 10 degrees peak-to-peak.

- Frequency Shift

  The frequency shift shall not exceed $\pm$1 Hz.

(e) Available Facility Interface Combinations

VG11 is available only with specific facility interface combinations as set forth in Section 7.2.1(B)(14).

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(12) Voice Grade 12 (VG12) Special Access Service

(a) Description

Special Access Service VG12 provides a channel for voice frequency transmission capability. Usable frequencies are nominally 300 to 3000 Hz between an IC terminal location and an end user premises. Such services are used by electric power utilities for the transmission of control signals (voice frequency tones) which are critical to the operation and protection of power systems during fault intervals. The service may be one-way, effective two-wire or two-way, effective four-wire and may be ordered in two-point or multipoint configurations. The transmission interface at the IC terminal location and the end user premises can be either two-wire or four-wire.

(b) Illustrative Applications

Special Access Service VG12 is suitable for use as part of the facilities required to provide intrastate voice grade private line audio tone protective relaying service.

(c) Optional Features

- Central office bridging capability.
- Improved return loss at four-wire point of interface, applicable to each two-wire leg of effective four-wire channel.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(12) Voice Grade 12 (VG12) Special Access Service (Cont'd)

(d) Transmission Performance

- C-Message Noise

The C-Message Noise shall be less than:

Channel Mileage (mi)	Limit (dBrnCO) {1} Type V1	Type V2
0 - 50	32	38
51 - 100	33	39
101 - 200	35	41
201 - 400	37	43
401 - 1000	39	45

- Echo Control

Echo Control, identified as Equal Level Echo Path Loss at four-wire interfaces or Return Loss at two-wire interfaces, for both Echo Return Loss and Singing Return Loss, at either the end user premises or IC terminal location shall be not less than the following limits:

Effective Two-Wire Transmission

(Two-wire interface at the end user premises).

	Echo Return Loss	Singing Return Loss
Two-Wire Interface (Return Loss)	5 dB	2.5 dB
Four-Wire Interface (Equal Level Echo Path Loss)	16 dB	11 dB

{1} Where facility network conditions will support the parameters, Type V1 will be provided. Where the Type V1 parameters cannot be supported, Type V2 will be provided.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(12) Voice Grade 12 (VG12) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

- Improved Return Loss

The Return Loss (RL), expressed as Echo Return Loss (ERL) and Singing Return Loss (SRL), on two-wire ports of a four-wire point of interface shall be equal to or greater than:

Standard RL	Improved RL
ERL 5 dB	ERL 20 dB
SRL 2.5 dB	SRL 13.5 dB

- Loss Variation

The long term loss variation from the nominal EML shall not exceed ±1.5 dB.

- Attenuation Distortion

The attenuation distortion between 304 Hz and 3004 Hz shall be within -1.0 dB and +2.5 dB with reference to the loss at 1004 Hz (minus equals less loss, plus equals more loss). The attenuation distortion between 504 Hz and 2804 Hz shall be within -0.5 dB and +1.0 dB with reference to the loss at 1004 Hz.

- Signal-to-C Notch Noise

The Signal-to-C Notch noise ratio shall not be less than 32 dB.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(12) Voice Grade 12 (VG12) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

- Envelope Delay Distortion

The Envelope Delay Distortion (EDD) shall not exceed 715 microseconds between 800 and 2600 Hz.

- Impulse Noise

The number of impulse noise counts exceeding a threshold of 67 dBrnCO in 15 minutes shall be less than 15.

- Frequency Shift

The frequency shift shall not exceed $\pm$1 Hz.

(e) Available Facility Interface Combinations

VG12 is available only with specific facility interface combinations as set forth in Section 7.2.1(B)(14).

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(13) Voice Grade 13 (VG13) Special Access Service

(a) Description

Special Access Service VG13 provides a channel for voiceband transmission capability. Usable frequencies are nominally 300 to 3000 Hz between end user premises. This channel will provide for physically intraLATA services that are jurisdictionally classified as intrastate.

(b) Illustrative Applications

Special Access Service VG13 is suitable for the provision of intrastate telecommunications services such as:

- PBX/Centrex Tie Trunks
- Remote Attendant Lines
- Turret or ACD Trunks or Lines
- Off-Premises Stations
- Voice Grade Data Service

(c) Optional Features

- Central office bridging capability.

(d) Transmission Performance

The transmission performance is the same as for similar private line services offered by the Telephone Company.

(e) Available Facility Interface Combinations

VG13 is available only with specific facility interface combinations. These combinations are set forth in 7.2.1(B)(14) following.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations

The following table shows the available facility interface (FI) combinations and the Voice Grade Services with which they may be ordered.

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
4AB2	4AC2		X											
4AB3	4AC2		X											
4AB2	2AC2		X											
4AB3	2AC2		X											
2AB2	2AC2		X											
2AB3	2AC2		X											
4AB2	4SF2		X											
4AB3	4SF2		X											
4AH6-D {1}	4AC2		X											
4AH6-D {1}	2AC2		X											
4AH6-C {1}	4AC2		X											
4AH6-C {1}	2AC2		X											
4AH5-B {1}	4AC2		X											
4AH5-B {1}	2AC2		X											
4AH6-D {1}	6DA2					X	X				X			
4AH6-D {1}	4DA2						X				X			
4AH6-D {1}	2DA2						X						X	
4AH6-C {1}	6DA2						X				X			
4AH6-C {1}	4DA2						X				X		X	
4AH6-C {1}	2DA2					X	X						X	
4AH5-B {1}	6DA2						X				X			
4AH5-B {1}	4DA2						X				X		X	
4AH5-B {1}	2DA2					X	X						X	
4AH6-D {1}	4DE2					X								
4AH6-C {1}	4DE2					X								
4AH5-B {1}	4DE2					X								

{1} Available only to ICs selecting the multiplexed 4-wire High Capacity analog facility interface option at the IC terminal location and providing subsequent system and channel assignment data.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
4AH6-D {1}	4DX3									X				
4AH6-C {1}	4DX3									X				
4AH5-B {1}	4DX3									X				
4AH5-D {1}	4DX2									X				
2AH6-C {1}	4DX2									X				
2AH5-B {1}	4DX2									X				
4AH6-D {1}	9DY2			X				X	X					
4AH6-D {1}	9DY3			X				X	X					
4AH6-D {1}	6DY2			X				X	X					
4AH6-D {1}	6DY3			X				X	X					
4AH6-D {1}	4DY2			X				X	X					
4AH6-D {1}	2DY2			X				X	X					
4AH6-C {1}	9DY2			X				X	X					
4AH6-C {1}	9DY3			X				X	X					
4AH6-C {1}	6DY2			X				X	X					
4AH6-C {1}	6DY3			X				X	X					
4AH6-C {1}	4DY2			X				X	X					
4AH6-C {1}	2DY2			X				X	X					
4AH5-B {1}	9DY2			X				X	X					
4AH5-B {1}	9DY3			X				X	X					
4AH5-B {1}	6DY2			X				X	X					
4AH5-B {1}	6DY3			X				X	X					
4AH5-B {1}	4DY2			X				X	X					
4AH5-B {1}	2DY2			X				X	X					

{1} Available only to ICs selecting the multiplexed 4-wire High Capacity analog facility interface option at the IC terminal location and providing subsequent system and channel assignment data.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
4AH6-D {1}	9EA2			X				X	X					
4AH6-D {1}	9EA3			X				X	X					
4AH6-D {1}	6EA2-E			X				X	X					
4AH6-D {1}	6EA2-M			X				X	X	X				
4AH6-D {1}	4EA2-E			X				X	X					
4AH6-D {1}	4EA2-M			X				X	X					
4AH6-C {1}	9EA2			X				X	X					
4AH6-C {1}	9EA3			X				X	X					
4AH6-C {1}	6EA2-E			X				X	X					
4AH6-C {1}	6EA2-M			X				X	X	X				
4AH6-C {1}	4EA2-E			X				X	X					
4AH6-C {1}	4EA2-M			X				X	X					
4AH5-B {1}	9EA2			X				X	X					
4AH5-B {1}	9EA3			X				X	X					
4AH5-B {1}	6EA2-E			X				X	X					
4AH5-B {1}	6EA2-M			X				X	X	X				
4AH5-B {1}	4EA2-E			X				X	X					
4AH5-B {1}	4EA2-M			X				X	X					
4AH6-D {1}	8EB2-E			X				X	X					
4AH6-D {1}	8EB2-M			X				X	X	X				
4AH6-D {1}	6EB2-E			X				X	X					
4AH6-D {1}	6EB2-M			X				X	X					
4AH6-C {1}	8EB2-E			X				X	X					
4AH6-C {1}	8EB2-M			X				X	X	X				
4AH6-C {1}	6EB2-E			X				X	X					
4AH6-C {1}	6EB2-M			X				X	X					
4AH5-B {1}	8EB2-E			X				X	X					
4AH5-B {1}	8EB2-M			X				X	X	X				
4AH5-B {1}	6EB2-E			X				X	X					
4AH5-B {1}	6EB2-M			X				X	X					

{1} Available only to ICs selecting the multiplexed 4-wire High Capacity analog facility interface option at the IC terminal location and providing subsequent system and channel assignment data.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
4AH6-D {1}	2GO2	X												
4AH6-C {1}	2GO2	X												
4AH5-B {1}	2GO2	X												
4AH6-D {1}	6GS2			X				X						
4AH6-D {1}	4GS2			X				X						
4AH6-D {1}	2GS3			X				X						
4AH6-D {1}	2GS2	X		X				X						
4AH6-C {1}	6GS2			X				X						
4AH6-C {1}	4GS2			X				X						
4AH6-C {1}	2GS3			X				X						
4AH6-C {1}	2GS2	X		X				X						
4AH5-B {1}	6GS2			X				X						
4AH5-B {1}	4GS2			X				X						
4AH5-B {1}	2GS3			X				X						
4AH5-B {1}	2GS2	X		X				X						
4AH6-D {1}	2LA2		X					X						
4AH6-C {1}	2LA2		X					X						
4AH5-B {1}	2LA2		X					X						
4AH6-D {1}	2LB2		X					X						
4AH6-C {1}	2LB2		X					X						
4AH5-B {1}	2LB2		X					X						
4AH6-D {1}	2LC2		X					X						
4AH6-C {1}	2LC2		X					X						
4AH5-B {1}	2LC2		X					X						

{1} Available only to ICs selecting the multiplexed 4-wire High Capacity analog facility interface option at the IC terminal location and providing subsequent system and channel assignment data.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
4AH6-D {1}	2LO3		X					X						
4AH6-D {1}	2LO2	X												
4AH6-C {1}	2LO3		X					X						
4AH6-C {1}	2LO2	X												
4AH5-B {1}	2LO3		X					X						
4AH5-B {1}	2LO2	X												
4AH6-D {1}	4LR2		X											
4AH6-D {1}	2LR2		X											
4AH6-C {1}	4LR2		X											
4AH6-C {1}	2LR2		X											
4AH5-B {1}	4LR2		X											
4AH5-B {1}	2LR2		X											
4AH6-D {1}	6LS2		X	X				X						
4AH6-D {1}	4LS2		X	X				X						
4AH6-D {1}	2LS2	X	X	X				X	X					
4AH6-D {1}	2LS3		X	X				X						
4AH6-C {1}	6LS2		X	X				X						
4AH6-C {1}	4LS2		X	X				X						
4AH6-C {1}	2LS2	X	X	X				X	X					
4AH6-C {1}	2LS3		X	X				X						
4AH5-B {1}	6LS2		X	X				X						
4AH5-B {1}	4LS2		X	X				X						
4AH5-B {1}	2LS2	X	X	X				X	X					
4AH5-B {1}	2LS3	X	X	X				X						

{1} Available only to ICs selecting the multiplexed 4-wire High Capacity analog facility interface option at the IC terminal location and providing subsequent system and channel assignment data.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
4AH6-D {1}	4NO2	X	X		X	X	X	X		X				
4AH6-D {1}	2NO2	X	X			X		X						
4AH6-C {1}	4NO2	X	X		X	X	X	X		X				
4AH6-C {1}	2NO2	X	X			X		X						
4AH5-B {1}	4NO2	X	X		X	X	X	X		X				
4AH5-B {1}	2NO2	X	X			X		X						
4AH6-D {1}	4RV2-T			X				X						
4AH6-D {1}	2RV2-T			X				X						
4AH6-C {1}	4RV2-T			X				X						
4AH6-C {1}	2RV2-T			X				X						
4AH5-B {1}	4RV2-T			X				X						
4AH5-B {1}	2RV2-T			X				X						
4AH6-D {1}	4SF2		X	X				X	X	X				
4AH6-C {1}	4SF2		X	X				X	X	X				
4AH5-B {1}	4SF2									X				
4AH6-D {1}	4SF3									X				
4AH6-C {1}	4SF3									X				
4AH5-B {1}	4SF3									X				
4AH6-D {1}	4TF2											X		
4AH6-D {1}	4TF2											X		
4AH6-C {1}	4TF2											X		
4AH6-C {1}	4TF2											X		
4AH5-B {1}	4TF2											X		
4AH5-B {1}	4TF2											X		
6DA2 {1}	6DA2										X			X
6DA2 {1}	4DA2										X			X
4DA2 {1}	6DA2										X			X
4DA2 {1}	4DA2										X			X

{1} Available only to ICs selecting the multiplexed 4-wire High Capacity analog facility interface option at the IC terminal location and providing subsequent system and channel assignment data.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
4DB2 {1}	6DA2						X				X			
4DB2 {1}	4DA2						X				X		X	
4DB2 {1}	2DA2					X	X				X		X	
2DB3 {1}	2DA2												X	
2DB2 {1}	2DA2					X	X							
4DB2 {1}	4NO2						X							
4DD3 {1}	4DE2					X								
2DD3 {1}	2DE2					X								
4DS9- {1}	4AC2		X											
4DS9- {1}	2AC2		X											
4DS9- {1}	6DA2						X				X		X	
4DS9- {1}	4DA2						X				X		X	
4DS9- {1}	2DA2					X	X				X			
4DS9- {1}	4DE2					X								
4DS9- {1}	4DX3									X				
4DS9- {1}	4DX2									X				
4DS9- {1}	9DY3			X				X	X					
4DS9- {1}	9DY2			X				X	X					
4DS9- {1}	6DY3			X				X	X					
4DS9- {1}	6DY2			X				X	X					
4DS9- {1}	4DY2			X				X	X					
4DS9- {1}	2DY2			X				X	X					

{1} Available only to ICs selecting the multiplexed 4-wire High Capacity analog facility interface option at the IC terminal location and providing subsequent system and channel assignment data.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
4DS9- {1}	9EA2			X				X	X					
4DS9- {1}	9EA3			X				X	X					
4DS9- {1}	6EA2-E			X				X	X					
4DS9- {1}	6EA2-M			X				X	X	X				
4DS9- {1}	4EA2-E			X				X	X					
4DS9- {1}	4EA2-M			X				X	X					
4DS9- {1}	8EB2-E			X				X	X					
4DS9- {1}	8EB2-M			X				X	X	X				
4DS9- {1}	6EB2-E			X				X	X					
4DS9- {1}	6EB2-M			X				X	X					
4DS9- {1}	2GO2	X												
4DS9- {1}	6GS2			X				X						
4DS9- {1}	4GS2			X				X						
4DS9- {1}	2GS2	X		X				X						
4DS9- {1}	2GS3			X				X						
4DS9- {1}	2LA2		X					X						
4DS9- {1}	2LB2		X					X						
4DS9- {1}	2LC2		X					X						
4DS9- {1}	2LO2	X												
4DS9- {1}	2LO3		X					X						
4DS9- {1}	4LR2		X											
4DS9- {1}	2LR2		X											

{1} See 7.3.3 following for explanation.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
4DS9- {1}	6LS2		X	X				X						
4DS9- {1}	4LS2		X	X				X						
4DS9- {1}	2LS2	X	X	X				X	X					
4DS9- {1}	2LS3		X	X				X						
4DS9- {1}	4NO2	X	X		X	X	X	X		X				X
4DS9- {1}	2NO2	X	X			X		X						X
4DS9- {1}	4RV2-T			X				X						
4DS9- {1}	2RV2-T			X				X						
4DS9- {1}	4SF2		X	X				X	X	X				
4DS9- {1}	4SF3									X				
4DS9- {1}	4TF2											X		
4DS9- {1}	4TF2											X		
4DX2	4DX2									X				
4DX3	4DX2									X				
4DX2	4DX3									X				
4DX3	4DX3									X				
6DX2	9DY3			X				X	X					
6DX2	9DY2			X				X	X					
6DX2	6DY3			X				X	X					
6DX2	6DY2			X				X	X					
6DX2	4DY2			X				X	X					
6DX2	2DY2			X				X	X					

1} See 7.3.3 following for explanation.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
4DX2	9DY3			X				X	X					
4DX3	9DY3			X				X	X					
4DX2	9DY2			X				X	X					
4DX3	9DY2			X				X	X					
4DX2	6DY3			X				X	X					
4DX3	6DY3			X				X	X					
4DX2	6DY2			X				X	X					
4DX3	6DY2			X				X	X					
4DX2	4DY2			X				X	X					
4DX3	4DY2			X				X	X					
4DX2	2DY2			X				X	X					
4DX3	2DY2			X				X	X					
6DX2	9EA3			X				X	X					
6DX2	9EA2			X				X	X					
6DX2	6EA2-E			X				X	X					
6DX2	6EA2-M			X				X	X					
6DX2	4EA2-E			X				X	X					
6DX2	4EA2-M			X				X	X					
4DX2	9EA2			X				X	X					
4DX3	9EA2			X				X	X					
4DX2	9EA3			X				X	X					
4DX3	9EA3			X				X	X					
4DX2	6EA2-E			X				X	X					
4DX3	6EA2-E			X				X	X					
4DX2	6EA2-M			X				X	X	X				
4DX3	6EA2-M			X				X	X	X				
4DX2	4EA2-E			X				X	X					
4DX3	4EA2-E			X				X	X					
4DX2	4EA2-M			X				X	X					
4DX3	4EA2-M			X				X	X					
6DX2	8EB2-E			X				X	X					
6DX2	8EB2-M			X				X	X					
6DX2	6EB2-E			X				X	X					
6DX2	6EB2-M			X				X	X					

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
4DX2	8EB2-E			X				X	X					
4DX2	8EB2-M			X				X	X	X				
4DX3	8EB2-E			X				X	X					
4DX3	8EB2-M			X				X	X	X				
4DX2	6EB2-E			X				X	X					
4DX2	6EB2-M			X				X	X					
4DX3	6EB2-E			X				X	X					
4DX3	6EB2-M			X				X	X					
4DX2	2LA2		X					X						
4DX3	2LA2		X					X						
2DX3	2LA2		X					X						
4DX2	2LB2		X					X						
4DX3	2LB2		X					X						
4DX3	2LB2		X					X						
4DX2	2LC2		X					X						
4DX3	2LC2		X					X						
2DX3	2LC2		X					X						
4DX2	2LO3		X					X						
4DX3	2LO3		X					X						
2DX3	2LO3		X					X						
4DX2	6LS2		X	X				X						
4DX3	6LS2		X	X				X						
4DX3	4LS2		X	X				X						
4DX2	4LS2		X	X				X						
4DX3	2LS3		X	X				X						
4DX2	2LS3		X	X				X						
4DX3	2LS2		X	X				X	X					
4DX2	2LS2		X	X				X	X					
2DX3	2LS2		X	X				X						
2DX3	2LS3		X	X				X						

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
4DX3	4RV2-T			X				X						
4DX2	4RV2-T			X				X						
4DX3	2RV2-T			X				X						
4DX2	2RV2-T			X				X						
6DX2	4SF2			X				X	X					
4DX2	4SF2		X	X				X	X	X				
4DX3	4SF2		X	X				X	X	X				
4DX2	4SF3									X				
4DX3	4SF3									X				
9DY3	9DY3													X
9DY3	9DY2													X
9DY2	9DY2													X
9DY2	9DY3													X
9DY3	6DY3													X
9DY3	6DY2													X
9DY2	6DY2													X
9DY2	6DY3													X
9DY3	4DY2													X
9DY2	4DY2													X
6DY3	9DY3													X
6DY3	9DY2													X
6DY2	9DY3													X
6DY2	9DY2													X
6DY3	6DY3													X
6DY3	6DY2													X
6DY2	6DY3													X
6DY2	6DY2													X
6DY3	4DY2													X
6DY2	4DY2													X
4DY2	9DY3													X
4DY2	9DY2													X
4DY2	6DY2													X
4DY2	6DY3													X
4DY2	4DY2													X

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
6EA2-E	4AC2		X											
6EA2-M	4AC2		X											
6EA2-E	2AC2		X											
6EA2-M	2AC2		X											
6EA2-E	4DX2									X				
6EA2-M	4DX2									X				
6EA2-E	4DX3									X				
6EA2-M	4DX3									X				
9EA2	9DY3													X
9EA2	9DY2													X
9EA2	6DY3													X
9EA2	6DY2													X
9EA2	4DY2													X
9EA3	9DY3													X
9EA3	9DY2													X
9EA3	6DY3													X
9EA3	6DY2													X
4EA3	4DY2													X
6EA2-E	9DY3			X				X	X					
6EA2-E	9DY2			X				X	X					
6EA2-E	6DY3			X				X	X					
6EA2-E	6DY2			X				X	X					
6EA2-E	4DY2			X				X	X					
6EA2-M	9DY3			X				X	X					
6EA2-M	9DY2			X				X	X					
6EA2-M	6DY3			X				X	X					
6EA2-M	6DY2			X				X	X					
6EA2-M	4DY2			X				X	X					
6EA2-M	2DY2			X				X	X					

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
6EA2-E	2DY2			X				X	X					
4EA2-E	9DY3													X
4EA2-E	9DY2													X
4EA3-E	9DY3			X				X						
4EA3-E	9DY2			X				X						
4EA3-E	6DY3			X				X						
4EA3-E	6DY2			X				X						
4EA3-E	4DY2			X				X						
4EA3-E	2DY2			X				X						
4EA2-E	6DY3													X
4EA2-E	6DY2													X
4EA2-E	4DY2													X
4EA2-M	9DY3													X
4EA2-M	9DY2													X
4EA2-M	6DY3													X
4EA2-M	6DY2													X
4EA2-M	4DY2													X
9EA2	9EA2													X
9EA2	9EA3													X
9EA2	6EA2-E													X
9EA2	6EA2-M													X
9EA2	4EA2-E													X
9EA2	4EA2-M													X
9EA3	9EA2													X
9EA3	9EA3													X
9EA3	6EA2-E													X
9EA3	6EA2-M													X
9EA3	4EA2-E													X
9EA3	4EA2-M													X
6EA2-E	9EA2			X				X	X					X
6EA2-E	9EA3			X				X	X					X
6EA2-M	9EA2			X				X	X					X

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
6EA2-M	9EA3			X				X	X					X
6EA2-E	6EA2-E			X				X	X					X
6EA2-E	6EA2-M			X				X	X	X				X
6EA2-M	6EA2-E			X				X	X					X
6EA2-M	6EA2-M			X				X	X	X				X
6EA2-E	4EA2-E			X				X	X					X
6EA2-E	4EA2-M			X				X	X					X
6EA2-M	4EA2-E			X				X	X					X
6EA2-M	4EA2-M			X				X	X					X
4EA2-E	9EA2													X
4EA2-E	9EA3													X
4EA2-E	6EA2-E													X
4EA2-E	6EA2-M													X
4EA2-E	4EA2-E													X
4EA3-E	6EA2-E			X				X						
4EA3-E	6EA2-M			X				X						
4EA3-E	4EA2-E			X				X						
4EA3-E	4EA2-M			X				X						
4EA2-E	4EA2-M													X
4EA2-M	9EA2													X
4EA3-E	9EA2			X				X						
4EA3-E	9EA3			X				X						
4EA2-M	9EA3													X
4EA2-M	6EA2-E													X
4EA2-M	6EA2-M													X
4EA2-M	4EA2-E													X
4EA2-M	4EA2-M													X
9EA2	8EB2-E													X
9EA2	8EB2-M													X
9EA2	6EB2-E													X
9EA2	6EB2-M													X
9EA3	8EB2-E													X
9EA3	8EB2-M													X
9EA3	6EB2-E													X
9EA3	6EB2-M													X
6EA2-E	8EB2-E			X				X	X					X

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
6EA2-E	8EB2-M			X				X	X	X				X
6EA2-E	6EB2-E			X				X	X					X
6EA2-E	6EB2-M			X				X	X					X
6EA2-M	8EB2-E			X				X	X					X
6EA2-M	8EB2-M			X				X	X	X				X
6EB3-E	6EB2-E			X				X						
6EB3-E	6EB2-M			X				X						
6EA2-M	6EB2-E			X				X	X					X
6EA2-M	6EB2-M			X				X	X					X
4EA2-E	8EB2-E													X
4EA2-E	8EB2-M													X
4EA3-E	8EB2-E			X				X						
4EA3-E	8EB2-M			X				X						
4EA2-E	6EB2-E													X
4EA2-E	6EB2-M													X
4EA3-E	6EB2-E			X				X						
4EA3-E	6EB2-M			X				X						
4EA2-M	8EB2-E													X
4EA2-M	8EB2-M													X
4EA2-M	6EB2-E													X
4EA2-M	6EB2-M													X
6EA2-E	2LA2		X					X						
6EA2-M	2LA2		X					X						
6EA2-E	2LB2		X					X						
6EA2-M	2LB2		X					X						
6EA2-E	2LC2		X					X						
6EA2-M	2LC2		X					X						
6EA2-E	2LO3		X					X						
6EA2-M	2LO3		X					X						
6EA2-E	6LS2		X	X				X						
6EA2-M	6LS2		X	X				X						
6EA2-E	4LS2		X	X				X						
6EA2-M	4LS2		X	X				X						
6EA2-E	2LS2		X	X				X	X					
6EA2-M	2LS2		X	X				X	X					
6EA2-E	2LS3		X	X				X						

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
6EA2-M	2LS3		X	X				X						
6EA2-E	4RV2-T			X				X						
6EA2-M	4RV2-T			X				X						
6EA2-E	2RV2-T			X				X						
6EA2-M	2RV2-T			X				X						
6EA2-E	4SF3									X				
6EA2-M	4SF3									X				
6EA2-E	4SF2		X	X				X	X	X				
6EA2-M	4SF2		X	X				X	X	X				
4EA3-E	4SF2			X				X						
8EB2-E	4AC2		X											
8EB2-M	4AC2		X											
8EB2-E	2AC2		X											
8EB2-M	2AC2		X											
8EB2-E	4DX2									X				
8EB2-M	4DX2									X				
8EB2-E	4DX3									X				
8EB2-M	4DX3									X				
8EB2-E	9DY3			X				X	X					X
8EB2-E	9DY2			X				X	X					X
8EB2-E	6DY3			X				X	X					X
8EB2-E	6DY2			X				X	X					X
8EB2-E	4DY2			X				X	X					X
8EB2-E	2DY2			X				X	X					
8EB2-M	9DY3			X				X	X					X
8EB2-M	9DY2			X				X	X					X
8EB2-M	6DY3			X				X	X					X
8EB2-M	6DY2			X				X	X					X
8EB2-M	4DY2			X				X	X					X
8EB2-M	2DY2			X				X	X					
6EB2-E	9DY2													X

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
6EB2-E	9DY3													X
6EB3-E	9DY2			X				X						
6EB3-E	9DY3			X				X						
6EB2-E	6DY2													X
6EB3-E	6DY2			X				X						
6EB2-E	6DY3													X
6EB3-E	6DY3			X				X						
6EB2-E	4DY2													X
6EB3-E	2DY2			X				X						
6EB3-E	4DY2			X				X						
6EB2-M	9DY2													X
6EB2-M	9DY3													X
6EB2-M	6DY2													X
6EB2-M	6DY3													X
6EB2-M	4DY2													X
8EB2-E	9EA2			X				X	X					X
8EB2-E	9EA3			X				X	X					X
8EB2-M	9EA2			X				X	X					X
8EB2-M	9EA3			X				X	X					X
8EB2-E	6EA2-E			X				X	X					X
8EB2-E	6EA2-M			X				X	X	X				X
8EB2-M	6EA2-E			X				X	X					X
8EB2-M	6EA2-M			X				X	X	X				X
8EB2-E	4EA2-E			X				X	X					X
8EB2-E	4EA2-M			X				X	X					X
8EB2-M	4EA2-E			X				X	X					X
8EB2-M	4EA2-M			X				X	X					X
6EB2-E	9EA2													X
6EB2-E	9EA3													X
6EB3-E	9EA2			X				X						
6EB3-E	9EA3			X				X						
6EB2-M	9EA2													X
6EB2-M	9EA3													X
6EB2-E	6EA2-E													X
6EB2-E	6EA2-M													X

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
6EB3-E	6EA2-E			X				X						
6EB3-E	6EA2-M			X				X						
6EB2-M	6EA2-E													X
6EB2-M	6EA2-M													X
6EB2-E	4EA2-E													X
6EB2-E	4EA2-M													X
6EB3-E	4EA2-E			X				X						
6EB3-E	4EA2-M			X				X						
6EB2-M	4EA2-E													X
6EB2-M	4EA2-M													X
8EB2-E	8EB2-E			X				X	X					X
8EB2-E	8EB2-M			X				X	X	X				X
8EB2-M	8EB2-E			X				X	X					X
8EB2-M	8EB2-M			X				X	X	X				X
8EB2-E	6EB2-E			X				X						
8EB2-E	6EB2-M			X				X						
8EB2-M	6EB2-E			X				X						
8EB2-M	6EB2-M			X				X						
6EB2-E	8EB2-E													X
6EB2-E	8EB2-M													X
6EB2-M	8EB2-E													X
6EB2-M	8EB2-M													X
6EB3-E	6EB2-E													X
6EB3-E	6EB2-M													X
6EB3-E	8EB2-E			X				X						
6EB3-E	8EB2-M			X				X						
6EB2-M	6EB2-E													X
6EB2-M	6EB2-M													X
8EB2-E	2LA2		X					X						
8EB2-M	2LA2		X					X						
8EB2-E	2LB2		X					X						
8EB2-M	2LB2		X					X						

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
8EB2-E	2LC2		X					X						
8EB2-M	2LC2		X					X						
8EB2-E	2LO3		X					X						
8EB2-M	2LO3		X					X						
8EB2-E	6LS2		X	X				X						
8EB2-M	6LS2		X	X				X						
8EB2-E	4LS2		X	X				X						
8EB2-M	4LS2		X	X				X						
8EB2-E	2LS2		X	X				X	X					
8EB2-M	2LS2		X	X				X	X					
8EB2-E	2LS3		X	X				X						
8EB2-M	2LS3		X	X				X						
8EB2-E	4RV2-T			X				X						
8EB2-M	4RV2-T			X				X						
8EB2-E	2RV2-T			X				X						
8EB2-M	2RV2-T			X				X						
8EB2-E	4SF2		X	X				X	X	X				
8EB2-M	4SF2		X	X				X	X	X				
8EB2-E	4SF3									X				
8EB2-M	4SF3									X				
6EB3-E	4SF2			X				X						
8EC2	9DY2			X				X	X					
8EC2	9DY3			X				X	X					
8EC2	6DY2			X				X	X					
8EC2	6DY3			X				X	X					
8EC2	4DY2			X				X	X					
8EC2	2DY2			X				X	X					

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
8EC2	9EA2			X				X	X					
8EC2	9EA3			X				X	X					
8EC2	6EA2-E			X				X	X					
8EC2	6EA2-M			X				X	X					
8EC2	4EA2-E			X				X	X					
8EC2	4EA2-M			X				X	X					
8EC2	8EB2-E			X				X	X					
8EC2	8EB2-M			X				X	X					
8EC2	6EB2-E			X				X	X					
8EC2	6EB2-M			X				X	X					
8EC2	4SF2			X				X	X					
6EX2-A	6GS2			X				X						
6EX2-A	4GS2			X				X						
6EX2-A	2GS2			X				X						
6EX2-A	2GS3			X				X						
6EX2-B	2LA2		X					X						
6EX2-B	2LB2		X					X						
6EX2-B	2LC2		X					X						
6EX2-B	2LO2	X												
6EX2-B	2LO3		X					X						
6EX2-B	4LR2		X											
6EX2-B	2LR2		X											

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
6EX2-A	6LS2		X	X				X						
6EX2-A	4LS2		X	X				X						
6EX2-A	2LS2	X	X	X				X						
6EX2-A	2LS3		X	X				X						
6EX2-A	4SF2	X		X				X						
6EX2-B	4SF2	X												
6GO2	6GS2			X				X						
6GO2	4GS2			X				X						
6GO2	2GS2	X		X				X						
6GO2	2GS3			X				X						
4GO2	6GS2			X				X						
4GO3	6GS2			X				X						
4GO2	4GS2			X				X						
4GO3	4GS2			X				X						
4GO2	2GS2	X		X				X						
4GO2	2GS3			X				X						
4GO3	2GS2	X		X				X						
4GO3	2GS3			X				X						
2GO2	2GS2	X		X				X						
2GO3	2GS2	X		X				X						
2GO2	2GS3			X				X						
2GO3	2GS3			X				X						
6GO2	4SF2			X				X						
4GO2	4SF2			X				X						
4GO3	4SF2			X				X						
6GS2	2GO2	X												
4GS2	2GO2	X												
4GS3	2GO2	X												
2GS2	2GO2	X												
2GS3	2GO2	X												

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
6LO2	6LS2		X	X				X						
6LO2	4LS2		X	X				X						
6LO2	2LS2	X	X	X				X						
6LO2	2LS3		X	X				X						
4LO2	6LS2		X	X				X						
4LO2	4LS2		X	X				X						
4LO3	6LS2		X	X				X						
4LO3	4LS2		X	X				X						
4LO3	2LS3		X	X				X						
4LO3	2LS2	X	X	X				X						
4LO2	2LS2	X	X	X				X						
4LO2	2LS3		X	X				X						
2LO3	2LS3		X	X				X						
2LO3	2LS2	X	X	X				X	X					
2LO2	2LS2	X	X	X				X	X					
2LO2	2LS3		X	X				X						
6LO2	4SF2		X	X				X						
4LO2	4SF2		X	X				X						
4LO3	4SF2		X	X				X						
4LR3	4LR2		X											
4LR3	2LR2		X											
4LR2	4LR2		X											
4LR2	2LR2		X											
2LR2	2LR2		X											
2LR3	2LR2		X											

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
4LR2	4SF2		X											
4LR3	4SF2		X											
6LS2	2LA2		X					X						
4LS2	2LA2		X					X						X
4LS3	2LA2		X					X						
2LS2	2LA2		X					X						X
2LS3	2LA2		X					X						
6LS2	2LB2		X					X						
4LS2	2LB2		X					X						X
4LS3	2LB2		X					X						
2LS2	2LB2		X					X						X
2LS3	2LB2		X					X						
6LS2	2LC2		X					X						
4LS2	2LC2		X					X						X
4LS3	2LC2		X					X						
2LS2	2LC2		X					X						X
2LS3	2LC2		X					X						
6LS2	2LO3			X				X						
6LS2	2LO2		X											
4LS2	2LO2		X											
4LS2	2LO3			X				X						X
4LS3	2LO2		X											
4LS3	2LO3			X				X						
2LS2	2LO2		X											
2LS3	2LO2		X											
2LS2	2LO3			X				X						X
2LS3	2LO3			X				X						

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
6LS2	4SF2		X											
4LS3	4SF2		X											
4NO2	6DA2						X				X			
4NO2	4DA2						X				X		X	
4NO2	2DA2						X							
2NO3	2DA2													X
4NO2	4NO2	X	X		X	X	X	X		X				
4NO2	2NO2	X	X			X		X						
2NO2	2NO2	X	X			X		X						
2NO3	2NO2	X	X			X		X						
4RV2-O	4RV2-T			X				X						
4RV2-O	2RV2-T			X				X						
4RV2-O	2RV2-T			X				X						
4RV2-O	4SF2			X				X						
4SF2	4AC2		X											
4SF2	4AC2		X											
4SF3	4DX3									X				
4SF3	4DX2									X				
4SF2	4DX2									X				
4SF2	4DX3									X				

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
4SF3	9DY3			X				X	X					
4SF2	9DY2			X				X	X					
4SF3	9DY2			X				X	X					
4SF2	9DY3			X				X	X					
4SF3	6DY3			X				X	X					
4SF2	6DY2			X				X	X					
4SF2	6DY3			X				X	X					
4SF3	6DY2			X				X	X					
4SF2	4DY2			X				X	X					
4SF3	4DY2			X				X	X					
4SF3	2DY2			X				X	X					
4SF2	2DY2			X				X	X					
4SF2	9EA2			X				X	X					
4SF3	9EA2			X				X	X					
4SF2	9EA3			X				X	X					
4SF3	9EA3			X				X	X					
4SF2	6EA2-E			X				X	X					
4SF2	6EA2-M			X				X	X	X				
4SF3	6EA2-E			X				X	X					
4SF3	6EA2-M			X				X	X	X				
4SF2	4EA2-E			X				X	X					
4SF2	4EA2-M			X				X	X					
4SF3	4EA2-E			X				X	X					
4SF3	4EA2-M			X				X	X					
4SF2	8EB2-E			X				X	X					
4SF2	8EB2-M			X				X	X	X				
4SF3	8EB2-E			X				X	X					
4SF3	8EB2-M			X				X	X	X				
4SF2	6EB2-E			X				X						
4SF2	6EB2-M			X				X						
4SF3	6EB2-E			X				X						
4SF3	6EB2-M			X				X						

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
4SF3	6GS2			X				X						
4SF2	6GS2			X				X						
4SF2	4GS2			X				X						
4SF3	4GS2			X				X						
4SF2	2GS2	X		X				X						
4SF2	2GS3			X				X						
4SF3	2GS2	X		X				X						
4SF3	2GS3			X				X						
4SF2	2LA2		X					X						
4SF3	2LA2		X					X						
4SF2	2LB2		X					X						
4SF3	2LB2		X					X						
4SF2	2LC2		X					X						
4SF3	2LC2		X					X						
4SF2	2LO3			X				X						
4SF2	2LO2		X											
4SF3	2LO2		X											
4SF3	2LO3			X				X						

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(B) Voice Grade Services (Cont'd)

(14) Available Facility Interface (FI) Combinations (Cont'd)

FI Combinations		Voice Grade Service (VG)												
IC	End User	1	2	3	4	5	6	7	8	9	10	11	12	13
4SF2	4LR2		X											
4SF2	2LR2		X											
4SF3	4LR2		X											
4SF3	2LR2		X											
4SF3	6LS2		X	X				X						
4SF2	6LS2		X	X				X						
4SF2	4LS2		X	X				X						
4SF3	4LS2		X	X				X						
4SF2	2LS2		X	X				X	X					
4SF2	2LS3		X	X				X						
4SF3	2LS2		X	X				X	X					
4SF3	2LS3		X	X				X						
4SF3	4RV2-T			X				X						
4SF2	4RV2-T			X				X						
4SF2	2RV2-T			X				X						
4SF3	2RV2-T			X				X						
4SF3	4SF3									X				
4SF3	4SF2		X	X				X	X	X				
4SF2	4SF2		X	X				X	X	X				
4SF2	4SF3									X				
4TF2	4TF2											X		
4TF2	2TF2											X		
2TF3	2TF2											X		

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(C) Program Audio Services

(1) Program Audio 1 (AP1) Special Access Service

(a) Description

Special Access Service AP1 provides a channel with a nominal bandwidth from 200 to 3,500 Hz for the transmission of a complex signal voltage, such as speech or music, between an IC terminal location and an end user premises. Only one-way transmission is provided.

(b) Illustrative Application

Special Access Service AP1 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- Wired Music

(c) Optional Features

- Gain Conditioning - control of 1004 Hz EML at initiation of service to 0 dB ± 0.5 dB.

- Central office bridging capability (wired music).

(d) Transmission Performance

- Actual Measured Loss (AML)

When the service is initiated, the 1004 Hz AML will be less than 10.0 dB. With the addition of optional gain conditioning, the initial AML will be 0 ± 0.5 dB. Remedial action will be taken when the loss variation at 1004 Hz exceeds the initial AML by ± 4.0 dB.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(C) Program Audio Services (Cont'd)

(1) Program Audio 1 (AP1) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

- Gain/Frequency Distortion

Over the frequency band from 200 to 3,500 Hz, the gain at any frequency will be within the range from +3.0 dB to -10.0 dB with respect to the gain 1004 Hz.

- Signal-to-Idle Circuit Noise

The ratio of received 1004 Hz signal power to the C-message weighted idle circuit noise will be at least 65 dB. The received signal power level is determined by subtracting the channel AML from +18 dBm (the instantaneous peak signal level).

(e) Available Facility Interface Combinations

IC	End User	IC	End User
2PG2-3	2PG2-3	2PG2-3	2PG2-3
4DS9-15E {1}	2PG2-3	4DS9-15E {1}	2PG1-3
4AH5-B {2}	2PG2-3	4AH5-B {2}	2PG1-3
4AH6-C {2}	2PG2-3	4AH6-C {2}	2PG1-3
4AH6-D {2}	2PG2-3	4AH6-D {2}	2PG1-3

{1} Available only to ICs selecting the multiplexed 4-wire DSX facility interface option at the IC terminal location and providing subsequent system and channel assignment data.

{2} Available only to the ICs selecting the multiplexed 4-wire High Capacity analog facility interface option at the IC terminal location and providing subsequent system and channel assignment data.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(C) Program Audio Services (Cont'd)

(2) Program Audio 2 (AP2) Special Access Service

(a) Description

Special Access Service AP2 provides a channel with a nominal bandwidth from 100 to 5,000 Hz for the transmission of a complex signal voltage, such as speech or music, between an IC terminal location and an end user premises. Only one-way transmission is provided.

(b) Illustrative Application

Special Access Service AP2 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- Wired Music

(c) Optional Features

- Gain Conditioning - control of 1004 Hz AML at initiation of service to 0 dB ± 0.5 dB.

- Central office bridging capability (wired music).

(d) Transmission Performance

- Actual Measured Loss (AML)

When the service is initiated, the 1004 Hz AML will be less than 32 dB. With the addition of optional gain conditioning, the initial AML will be 0 ± 0.5 dB. Remedial action will be taken when the loss variation at 1004 Hz exceeds the initial AML by ± 4.0 dB.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

. (C) Program Audio Services (Cont'd)

. (2) Program Audio 2 (AP2) Special Access Service (Cont'd)

. (d) Transmission Performance (Cont'd)

. - Gain/Frequency Distortion

Over the frequency band from 100 to 5,000 Hz, the gain at any frequency will be 1.0 dB of the gain at 1004 Hz.

- Signal-to-Idle Circuit Noise

The ratio of received 1004 Hz signal power to the 15 kHz flat weighted idle circuit noise will be at least 64 dB. The received signal power level is determined by subtracting the channel AML from +18 dBm (the instantaneous peak signal level).

(e) Available Facility Interface Combinations

IC	End User	IC	End User
2PG2-3	2PG2-3	2PG2-3	2PG2-3
2PG2-5	2PG2-5	2PG2-5	2PG1-5
4DS9-15F {1}	2PG2-5	4DS9-15F {1}	2PG1-5
4AH5-B {2}	2PG2-5	4AH5-B {2}	2PG1-5
4AH6-C {2}	2PG2-5	4AH6-C {2}	2PG1-5
4AH6-D {2}	2PG2-5	4AH6--D {2}	2PG1-5

{1} Available only to ICs selecting the multiplexed 4-wire DSX facility interface option at the IC terminal location and providing subsequent system and channel assignment data.

{2} Available only to the ICs selecting the multiplexed 4-wire High Capacity analog facility interface option at the IC terminal location and providing subsequent system and channel assignment data. Channels 5 and 6 are assigned for AP2.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(C) Program Audio Services (Cont'd)

(3) Program Audio 3 (AP3) Special Access Service

(a) Description

Special Access Service AP3 provides a channel with a nominal bandwidth from 50 to 8,000 Hz for the transmission of a complex signal voltage, such as speech or music, between an IC terminal location and an end user premises. Only one-way transmission is provided.

(b) Illustrative Application

Special Access Service AP3 suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- Wired Music

(c) Optional Features

- Gain Conditioning - control of 1004 Hz AML at initiation of service to 0 dB ± 0.5 dB.

- Central office bridging capability (wired music).

(d) Transmission Performance

- Actual Measured Loss (AML)

When the service is initiated, the 1004 Hz AML will be less than 32 dB. With the addition of optional gain conditioning, the initial AML will be 0 ± 0.5 dB. Remedial action will be taken when the loss variation at 1004 Hz exceeds the initial AML by ± 4.0 dB.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

. (C) Program Audio Services (Cont'd)

. (3) Program Audio 3 (AP3) Special Access Service (Cont'd)

(d) Transmission Performance (Cont'd)

- Gain/Frequency Distortion

Over the frequency band from 50 to 8,000 Hz, the gain at any frequency will be within 1 dB of the gain at 1004 Hz.

- Signal-to-Idle Circuit Noise

The ratio of received 1004 Hz signal power to 15 kHz flat weighted idle circuit noise will be at least 62 dB. The received signal power level is determined by subtracting the channel AML from +18 dBm (the instantaneous peak signal level).

(e) Available Facility Interface Combinations

IC	End User	IC	End User
2PG2-8	2PG2-8	2PG2-8	2PG1-8
4DS9-15E {1}	2PG2-8	4DS9-15E {1}	2PG1-8
4AH5-B {2}	2PG2-8	4AH5-B {2}	2PG1-8
4AH6-C {2}	2PG2-8	4AH6-C {2}	2PG1-8
4AH6-D {2}	2PG2-8	4AH6-D {2}	2PG1-8

{1} Available only to ICs selecting the multiplexed 4-wire DSX facility interface option at the IC terminal location and providing subsequent system and channel assignment data.

{2} Available only to the ICs selecting the multiplexed 4-wire High Capacity analog facility interface option at the IC terminal location and providing subsequent system and channel assignment data. Channels 5, 6 and 7 are assigned for AP3.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(C) Program Audio Services (Cont'd)

(4) Program Audio 4 (AP4) Special Access Service

(a) Description

Special Access Service AP4 provides a channel with a nominal bandwidth from 50 to 15,000 Hz for the transmission of a complex signal voltage, such as speech or music, between an IC terminal location and an end user premises. Only one-way transmission is provided.

(b) Illustrative Application

Special Access Service AP4 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- Wired Music

(c) Optional Features

- Gain Conditioning - control of 1004 Hz AML at initiation of service to 0 dB $\pm$ 0.5 dB.

- Stereo - provision of a pair of gain/phase equalized channels for stereo applications.

- Central office bridging capability (wired music).

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(C) Program Audio Services (Cont'd)

(4) Program Audio 4 (AP4) Special Access Service (Cont'd)

(d) Transmission Performance

- Actual Measured Loss (AML)

When the service is initiated, the 1004 Hz AML will be less than 32 dB. With the addition of optional gain conditioning, the initial AML will be 0 ± 0.5 dB. Remedial action will be taken when the loss variation at 1004 Hz exceeds the initial AML by 0 ± 4.0 dB.

- Gain/Frequency Distortion

Over the frequency band from 50 to 15,000 Hz, the gain at any frequency will be within 1 dB of the gain at 1004 Hz.

- Signal-to-Idle Circuit Noise

The ratio of received 1004 Hz signal power to 15 kHz flat weighted idle circuit noise will be at least 67 dB. The received power level is determined by subtracting the channel AML from +18 dBm (the instantaneous peak signal level).

(e) Available Facility Interface Combinations

IC	End User	IC	End User
2PG2-1	2PG2-1	2PG2-1	2PG1-1
4DS9-15H {1}	2PG2-1	4DS9-15H {1}	2PG1-1

{1} Available only to ICs selecting the multiplexed 4-wire DSX facility interface option at the IC terminal location and providing subsequent system and channel assignment data.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(D) Video Services

(1) Television 1 (TV1) Special Access Service

(a) Description

Special Access Service TV1 provides a channel with one-way transmission capability for a standard 525 line/60 field monochrome, or National Television Systems Committee color, video signal and one or two associated 15 kHz audio signal(s) between an IC terminal location and an end user premises.

(b) Illustrative Applications

Special Access Service TV1 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- Commercial Television (Full and Part-Time)

(c) Transmission Performance

- Video Performace

(1) Insertion Gain Variation

One hour 0dB $\pm$ 0.5dB

(2) Luminance Signal/CCIR Weighted Noise

65dB

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(D) Video Services

(1) Television 1 (TV1) Special Access Service

(c) Transmission Performance (Cont'd)

- Audio Performance

(1) Insertion Gain

0dB ± 1.0dB

(2) Signal/15kHz Flat Weighted Noise

The ratio of received 1004 Hz signal power to 15kHz flat weighted idle circuit noise will be at least 65dB. The received signal power level is determined by subtracting the channel AML from +18dBm (the instantaneous peak signal level).

(d) Available Facility Interface Combinations

IC	End User
2TV6-1	4TV6-15
2TV6-1	4TV7-15
2TV7-1	4TV6-15
2TV7-1	4TV7-15
4TV6-15	4TV6-15
4TV6-15	4TV7-15
4TV7-15	4TV6-15
4TV7-15	4TV7-15
2TV6-2	6TV6-15
2TV6-2	6TV7-15
2TV7-2	6TV6-15
2TV7-2	6TV7-15
6TV6-15	6TV6-15
6TV6-15	6TV7-15
6TV7-15	6TV6-15
6TV7-15	6TV7-15

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(D) Video Services (Cont'd)

(2) Television 2 (TV2) Special Access Service

(a) Description

Special Access Service TV2 provides a channel with one-way transmission capability for a standard 525 line/60 field monochrome, or National Television Systems Committee color, video signal and one or two associated 5 kHz audio signal(s) between an IC terminal location and an end user premises.

(b) Illustrative Applications

Special Access Service TV2 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- Noncommercial Television (Full-Time)

(c) Transmission Performance

- Video Performace

(1) Insertion Gain Variation

One hour 0dB $\pm$ 0.5dB

(2) Luminance Signal/CCIR Weighted Noise

65dB

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.2 Analog Services (Cont'd)

(D) Video Services (Cont'd)

(2) Television 2 (TV2) Special Access Service (Cont'd)

(c) Transmission Performance (Cont'd)

- Audio Performance

(1) Insertion Gain

0dB ± 1.5dB

(2) Signal/15kHz Flat Weighted Noise

The ratio of received 1004 Hz signal power to 15kHz flat weighted idle circuit noise will be at least 64dB. The received signal power level is determined by subtracting the channel AML from +18dBm (the instantaneous peak signal level).

(d) Available Facility Interface Combinations

IC	End User
4TV6-5	4TV6-5
4TV6-5	4TV7-5
4TV7-5	4TV6-5
4TV7-5	4TV7-5
6TV6-5	6TV6-5
6TV6-5	6TV7-5
6TV7-5	6TV6-5
6TV7-5	6TV7-5

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(E) Wideband Analog Services

(1) Wideband Analog 1 (WA1) Special Access Service

(a) Description

Special Access Service WA1 provides a high capacity channel with a bandwidth from 60 kHz to 108 kHz for the transmission of a wideband signal between an IC terminal location and an end user's premises, between IC terminal locations or between an IC terminal location and a Telephone Company designated Hub where multiplexing is offered.

(b) Illustrative Application

Special Access Service WA1 is suitable for the transmission of a 12 channel group.

(c) Optional Feature

- Central office multiplexing.

(d) Transmission Performance

- Nominal Bandwidth

60 kHz to 108 kHz with pilot slot reserved at 104.08 kHz.

(e) Available Facility Interface Combinations

IC	End User
4AH5-B	4AH5-B
4AH6-C {1}	4AH5-B
4AH6-D {1}	4AH5-B

{1} Available only to ICs selecting the multiplexed 4-wire High Capacity analog facility interface option at the IC terminal location and providing subsequent system and channel assignment data.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(E) Wideband Analog Services (Cont'd)

(2) Wideband Analog to Digital (WA1T) Special Connector Service

(a) Description

Special Access Service WA1T provides two WA1 channels from an IC terminal location for connection to an HC1 Special Access Service at a Telephone Company designated Hub location via a Group to DS1 multiplexer. The HC1 service may only be extended to another Hub for multiplexing to voice or other service.

(b) Illustrative Application

Special Access Service WA1T is suitable for the transmission of 24 channels connected via multiplexing to 24 DS1 channels.

(c) Optional Feature

- Central office multiplexing.

(d) Transmission Performance

Provides two Special Access WA1 channels each with the performance shown for WA1 in (1)(d) preceding.

NOTE: The Access Connection and Channel Mileage rate elements for WA1 apply for WA1T. Two of each are required.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(E) Wideband Analog Services (Cont'd)

. (3) Wideband Analog 2 (WA2) Special Access Service

(a) Description

. Special Access Service WA2 provides a high capacity channel with a bandwidth from 312 kHz to 552 kHz for the transmission of a wideband signal between an IC terminal location and an end user premises or between IC terminal locations or between an IC terminal location and a Telephone Company designated Hub where multiplexing is offered.

(b) Illustrative Application

. Special Access Service WA2 is suitable for the transmission of a 60 channel supergroup.

. (c) Optional Feature

. - Central office multiplexing.

(d) Transmission Performance

- Nominal Bandwidth

312 kHz to 552 kHz with pilot slot reserved at 315.92 kHz.

(e) Available Facility Interface Combinations

IC	End User
.. 4AH6-C	4AH6-C
.. 4AH6-D {1}	4AH6-C {2}

{1} Available only to ICs selecting the multiplexed 4-wire High Capacity analog facility interface option at the IC terminal location and providing subsequent system and channel assignment data.

{2} Available only via a Telephone Company designated HUB where multiplexing is offered.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(E) Wideband Analog Services (Cont'd)

(4) Wideband Analog 2A (WA2A) Special Access Service

(a) Description

Special Access Service WA2A provides a high capacity channel with a bandwidth from 564 kHz to 3084 kHz for the transmission of a wideband signal between IC terminal locations or between an IC terminal location and a Telephone Company designated Hub where multiplexing is offered.

(b) Illustrative Application

Special Access Service WA2A is suitable for the transmission of a 600 channel FDM mastergroup.

(c) Optional Feature

- Central office multiplexing.

(d) Transmission Performance

- Nominal Bandwidth

564 kHz to 3084 kHz with pilot slot reserved at 2840 kHz.

(e) Available Facility Interface Combinations

IC	End User{1}
4AH6-D	4AH6-D

{1} See 7.4.5(B) following for explanation.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(E) Wideband Analog Services (Cont'd)

. (5) Wideband Analog 3 (WA3) Special Access Service

(a) Description

. Special Access Service WA3 provides a channel for the transmission of a wideband signal falling approximately within the 10Hz to 20Hz (actually 300Hz to 18kHz) frequency band at an end user premises. The actual frequency range varies and is limited by the interface available at the IC terminal location. Service is provided between an IC terminal and an end user premises. A voicebank coordination channel is provided with this service.

(b) Illustrative Application

. Special Access Service WA3 is suitable for use as part of the facilities required to provide intrastate facsimile service.

. (c) Transmission Performance

- Nominal Bandwidth

300Hz to 18kHz

(d) Available Facility Interface Combinations

IC	End User
.. 4WD5-1	4WA5-1
.. 4WD5-2	4WA5-1

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.1 Analog Services (Cont'd)

(E) Wideband Analog Services (Cont'd)

(6) Wideband Analog 4 (WA4) Special Access Service

(a) Description

Special Access Service WA4 provides a channel with a frequency from approximately 29kHz to 44kHz for the transmission of a wideband signal between an IC terminal location and an end user premises. A voiceband coordinating channel is provided with this service.

(b) Illustrative Application

Special Access Service WA4 is suitable for use as part of the facilities required to provide intrastate facsimile service.

(c) Transmission Performance

- Nominal Bandwidth

29kHz to 44kHz

(d) Available Facility Interface Combinations

IC	End User
4WD5-3	4WA5-2

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.2 Digital Services

(A) Wideband Digital Services

(1) Wideband Digital 1 (WD1) Special Access Service

(a) Description

Special Access Service WD1 provides a channel for the transmission of 19.2 kbps synchronous serial data between an IC terminal location and an end user premises. Optional arrangements are available for transmission at 18.75 kbps or for transmission of nonsynchronous data with a minimum signal element width of 52 microseconds. A voiceband coordinating channel can be provided with this service at rates as specified for the specific VG service required by the customer.

(b) Illustrative Application

The nonsynchronous option is suitable for use as part of the facilities required to provide intrastate facsimile transmission.

(c) Transmission Performance

- Error-Free Seconds

While in service, the monthly average of the error-free seconds will be equal to or greater than 98.75%.

(d) Available Facility Interface Combinations

IC	End User
8WB5-19S	12WC6-19
8WB5-18S	12WC6-18
8WB5-19A	10WC6-19

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.2 Digital Services (Cont'd)

(A) Wideband Digital Services (Cont'd)

(2) Wideband Digital 2 (WD2) Special Access Services

(a) Description

Special Access Service WD2 provides a channel for the transmission of 50 kbps synchronous or isochronous serial data between an IC terminal location and an end user premises. Optional arrangements are available for transmission of synchronous serial data at 40.8 kbps or for transmission of nonsynchronous data with a minimum signal element width of 20 microseconds. An arrangement may also be included to accommodate the nonsimultaneous transmission of signal and supervisory tones between the frequencies of 300 and 3000 Hz. A voiceband coordinating channel can be provided with this service at rates as specified for the specific voice grade service required by the customer.

(b) Illustrative Application

Special Access Service WD2 is suitable for use as part of the facilities required to provide intrastate facsimile transmission.

(c) Transmission Performance

- Error-Free Seconds

While in service, the monthly average of the error-free seconds will be equal to or greater than 98.75%.

(d) Available Facility Interface Combinations

IC	End User
8WB5-50S	12WC6-50
8WB5-40S	12WC6-40
8WB5-50A	10WC6-50

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.2 Digital Services (Cont'd)

(A) Wideband Digital Services (Cont'd)

(3) Wideband Digital 3 (WD3) Special Access Service (Cont'd)

(a) Description

Special Access Service WD3 provides a channel for the transmission of 230.4 kbps synchronous serial data between an IC terminal location and an end user premises. Optional arrangements are available for the transmission of nonsynchronous data with a minimum signal element width of 4.3 microseconds. A voiceband coordinating channel can be provided with this service at rates as specified for the specific VG service required by the customer.

(b) Illustrative Application

The nonsynchronous option is suitable for use as part of the facilities required to provide intrastate facsimile transmission.

(c) Transmission Performance

- Error-Free Seconds

While in service, the monthly average of the error-free seconds will be equal to or greater than 98.75%.

(d) Available Facility Interface Combinations

IC	End User
8WB5-23S	12WC6-23S
8WB5-23A	10WC6-23

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.2 Digital Services (Cont'd)

(A) Wideband Digital Services (Cont'd)

(4) Wideband Digital 4 (WD4) Special Access Service

(a) Description

Special Access Service WD4 provides for the transmission of 56 kbps synchronous serial data between an IC terminal location and an end user premises.

(b) Illustrative Application

When using the DATAPHONE Digital Service timing option, this service is suitable for use as part of the facilities required to provide intrastate Digital Data Off-Net Extension.

(c) Transmission Performance

- Error-Free Seconds

While in service, the monthly average of the error-free seconds will be equal to or greater than 98.75%.

(d) Available Facility Interface Combinations

IC	End User
4WB5-64	6DU5-56
4DO5	6DU5-56

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.2 Digital Services (Cont'd)

(B) Digital Data Access Services

Digital Data Access Services are only available via Telephone Company designated Digital Data Hubs.

(1) Digital Data Access 1 (DA1) Special Access Service

(a) Description

Special Access Service DA1 provides a channel for duplex four-wire transmission capability of serial synchronous data at the 2.4 kbps rate between an IC terminal location and an end user premises. The service is synchronous with timing provided through the Telephone Company's facilities to the end user on the received bit stream.

DA1 is available only between the IC terminal location and locations designed by the Telephone Company which are served by digital facilities. All other locations are connectable to the Telephone Company designated digital Hub only through an analog off-network extension which is provided as a Voice Grade 10 Service as set forth in Section 7.2.1(B) preceding.

(b) Illustrative Application

Special Access Service DA1 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- Digital Data - 2.4 kbps

(c) Optional Features

- Transfer arrangement.
- Central office bridging capability.

(d) Transmission Performance

- Error-Free Seconds

While in service, the monthly average of the error-free seconds will be equal to or greater than 99.875%.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.2 Digital Services (Cont'd)

(B) Digital Data Access Services (Cont'd)

(1) Digital Data Access 1 (DA1) Special Access Service (Cont'd)

(e) Available Facility Interface Combinations

IC	End User
4DS9-15 {1}	6DU5-24
6DU5-24	6DU5-24

(2) Digital Data Access 2 (DA2) Special Access Service

(a) Description

Special Access Service DA2 provides a channel for duplex four-wire transmission capability of serial synchronous data at the 4.8 kbps rate between an IC terminal locations and an end user premises. The service is synchronous with timing provided through the Telephone Company's facilities to the end user on the received bit stream.

DA2 is available only between the IC terminal location and locations designated by the Telephone Company which are served by digital facilities. All other locations are connectable to the Telephone Company designated digital Hub only through an analog off-network extension which is provided as a Voice Grade 10 Service as set forth in Section 7.2.1(B) preceding.

(b) Illustrative Application

Special Access Service DA2 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- Digital Data - 4.8 kbps

{1} Available only to ICs selecting the multiplexed 4-wire DSX facility interface option at the IC terminal location and providing subsequent system and channel assignment data.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.2 Digital Services (Cont'd)

(B) Digital Data Access Services (Cont'd)

(2) Digital Data Access 2 (DA2) Special Access Service (Cont'd)

(c) Optional Features

- Loop transfer arrangement.
- Central office bridging capability.

(d) Transmission Performance

- Error-Free Seconds

While in service, the monthly average of the error-free seconds will be equal to or greater than 99.875%.

(e) Available Facility Interface Combinations

IC	End User
4DS9-15 {1}	6DU5-48
6DU5-48	6DU5-48

{1} Available only to ICs selecting the multiplexed 4-wire facility interface option at the IC terminal location and providing subsequent system and channel assignment data.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.2 Digital Services (Cont'd)

(B) Digital Data Access Services (Cont'd)

(3) Digital Data Access 3 (DA3) Special Access Service

(a) Description

Special Access Service DA3 provides a channel for duplex four-wire transmission capability of serial synchronous data at the 9.6 kbps rate between an IC terminal location and an end user premises. The service is synchronous with timing provided through the Telephone Company's facilities to the end user on the received bit stream.

DA3 is available only between the IC terminal location and locations designated by the Telephone Company which are served by digital facilities. All other locations are connectable to the Telephone Company designated digital Hub only through an analog off-network extension which is provided as a Voice Grade 10 Service as set forth in Section 7.2.1(B) preceding.

(b) Illustrative Application

Special Access Service DA3 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- Digital Data - 9.6 kbps

(c) Optional Features

- Loop transfer arrangement.
- Central office bridging capability.

(d) Transmission Performance

- Error-Free Seconds

While in service, the monthly average of the error-free seconds will be equal to or greater than 99.875%.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

. 7.2.2 Digital Services (Cont'd)

. (B) Digital Data Access Services (Cont'd)

(3) Digital Data Access 3 (DA3) Special Access Service (Cont'd)

. (e) Available Facility Interface Combinations

	IC	End User
.....	4DS9-15 {1}	6DU5-96
.....	6DU5-96	6DU5-96

. (4) Digital Data Access 4 (DA4) Special Access Service

(a) Description

Special Access Service DA4 provides a channel for duplex four-wire transmission capability of serial synchronous data at the 56 kbps rate between an IC terminal location and an end user premises. The service is synchronous with timing provided through the Telephone Company's facilities to the end user on the received bit stream.

. DA4 is available only between the IC terminal location and locations designated by the Telephone Company which are served by digital facilities. All other locations are connectable to the Telephone Company designated digital Hub only through an analog off-network extension which is provided as a Wideband Digital Service as set forth in Section 7.2.2(A) preceding.

. (b) Illustrative Application

Special Access Service DA4 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- Digital Data - 56 kbps

{1} Available only to ICs selecting the multiplexed 4-wire DSX facility interface option at the IC terminal location and providing subsequent system and channel assignment data.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.2 Digital Services (Cont'd)

(B) Digital Data Access Services (Cont'd)

(c) Optional Features

- Loop transfer arrangement.
- Central office bridging capability.

(d) Transmission Performance

- Error-Free Seconds

While in service, the monthly average of the error-free seconds will be equal to or greater than 99.875%.

(e) Available Facility Interface Combinations

IC	End User
4DS9-15 {1}	6DU5-56
6DU5-56	6DU5-56

(5) Subrate Multiplexed Digital Data Access 1 (SR1) Special Connector Service

(a) Description

Special Access Service SR1 provides the ability to combine up to 20 DA1 Special Access Services into a single channel of a HC1 Special Access Service.

Note: The only rate elements applicable to this service are the Carrier Submultiplexing Unit and the Carrier Multiplexing Plug-Ins per 64 kbps channel.

{1} Available only to ICs selecting the multiplexed 4-wire DSX facility interface option at the IC terminal location and providing subsequent system and channel assignment data.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.2 Digital Services (Cont'd)

(B) Digital Data Access Services (Cont'd)

(6) Subrate Multiplexed Digital Data Access 2 (SR2) Special Connector Service

(a) Description

Special Access Service SR2 provides the ability to combine up to 10 DA2 Special Access Services into a single channel of a HC1 Special Access Service. Note: The only rate elements applicable to this service are the Carrier Submultiplexing Unit and the Carrier Multiplexing Plug-Ins per 64 kbps channel.

(7) Subrate Multiplexed Digital Data Access 3 (SR3) Special Connector Service

(a) Description

Special Access Service SR3 provides the ability to combine up to five DA3 Special Access Services into a single channel of a HC1 Special Access Service.

Note: The only rate elements applicable to this service are the Carrier Submultiplexing Unit and the Carrier Multiplexing Plug-Ins per 64 kbps channel.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.2 Digital Services (Cont'd)

(C) High Capacity Services

(1) High Capacity 1 (HC1) Special Access Service

(a) Description

Special Access Service HC1 provides a channel for the transmission of nominal 1.544 Mbps isochronous serial data between an IC terminal location and an end user premises, between IC terminal locations or between an IC terminal location and a Telephone Company designated Hub where multiplexing is offered.

(b) Illustrative Application

Special Access Service HC1 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- 1.544 Mbps Access Line

(c) Optional Features

- Automatic Protection Switching.
- Central office multiplexing.
- Clear Channel Capability (CCC)

(d) Transmission Performance

- Error-Free Seconds

While in service, 98.75% of the one-second intervals will be error-free measured over a continuous 24 hour period.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.2 Digital Services (Cont'd)

(C) High Capacity Services (Cont'd)

(1) High Capacity 1 (HC1) Special Access Service (Cont'd)

(e) Available Facility Interface Combinations

IC	End User
4DS9-15J	6DU9-A
4DS9-156	DU9-B
4DS9-15K	6DU9-B
4DS9-15K	6DU9-C
4DS9-31 {1}	6DU9-A,B or C
4DS0-63 {1}	6DU9-A,B or C
4DS6-44 {1}	6DU9-A,B or C
4DS6-27 {1}	6DU9-A,B or C

(2) High Capacity 1C (HC1C) Special Access Service

(a) Description

Special Access Service HC1C provides a channel for the transmission of nominal 3.152 Mbps isochronous serial data between IC terminal locations or between an IC terminal location and a Telephone Company designated Hub where multiplexing is offered.

(b) Illustrative Application

Special Access Service HC1C is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- 3.152 Mbps Access Line

{1} Available only to ICs selecting the multiplexed 4-wire DSX facility interface option of the IC terminal location and providing subsequent system and channel assignment data.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.2 Digital Services (Cont'd)

(C) High Capacity Services (Cont'd)

(2) High Capacity 1C (HC1C) Special Access Service (Cont'd)

(c) Optional Features

- Central office multiplexing.

(d) Available Facility Interface Combinations

IC	End User
4DS9-31	4DS9-31

(3) High Capacity 2 (HC2) Special Access Service

(a) Description

Special Access Service HC2 provides a channel for the transmission of nominal 6.312 Mbps isochronous serial data between IC terminal locations or between an IC terminal location and a Telephone Company designated Hub where multiplexing is offered.

(b) Illustrative Application

Special Access Service HC2 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- Digital Service - High Speed

(c) Optional Feature

- Central office multiplexing.

{1} See Section 7.4.5(B) following for explanation.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.2 Digital Services (Cont'd)

(C) High Capacity Services (Cont'd)

(3) High Capacity 2 (HC2) Special Access Service (Cont'd)

(d) Available Facility Interface Combinations

IC	End User
4DS0-63	4DS0-63

(4) High Capacity 3 (HC3) Special Access Service

(a) Description

Special Access Service HC3 provides a channel for the transmission of 44.736 Mbps isochronous serial data between IC terminal locations or between an IC terminal location and a Telephone Company designated Hub where multiplexing is offered.

(b) Illustrative Application

Special Access Service HC3 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- Digital Service - High Speed

(c) Optional Feature

- Central office multiplexing.

(d) Available Facility Interface Combinations

IC	End User
4DS6-44	4DS6-44

{1} See 7.4.5(B) following for explanation.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

. 7.2.2 Digital Services (Cont'd)

(C) High Capacity Services (Cont'd)

(5) High Capacity 4 (HC4) Special Access Service

(a) Description

Special Access Service HC4 provides a channel for the transmission of 274.176 Mbps isochronous serial data between IC terminal locations or between an IC terminal location and a Telephone Company designated Hub where multiplexing is offered.

(b) Illustrative Application

Special Access Service HC4 is suitable for use as part of the facilities required to provide intrastate telecommunications services such as:

- Digital Service - High Speed

(c) Optional Feature

- Central office multiplexing.

(d) Available Facility Interface Combinations

IC	End User
4DS6-27	4DS6-27

{1} See Section 7.4.5(B) following for explanation.

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.3 Service Designator/Network Channel Code Conversion Table

. The purpose of this table is to show the relationship between the service designator codes (e.g. VG1, NB2, etc.) and the network channel codes that are used for various administrative purposes.

Service Designator Code	Network Channel Code
NB1	NT
NB2	NU
NB3	NV
NB4	NW
NB5	NY
VG1	LB
VG2	LC
VG3	LD
VG4	LE
VG5	LF
VG6	LG
VG7	LH
VG8	LJ
VG9	LK
VG10	LN
VG11	LP
VG12	LR
VG13	LU
AP1	PE
AP2	PF
AP3	PJ
AP4	PK

7. Special Access Service (Cont'd)

7.2 Technical Service Descriptions for Special Access Service (Cont'd)

7.2.3 Service Designator/Network Channel Code Conversion Table (Cont'd)

Service Designator Code	Network Channel Code
TV1	TV
TV2	TW
WA1	WJ
WA1T	WQ
WA2	WL
WA2A	WR
WA3	WN
WA4	WP
DALS (Standard)	SE
DALS (Improved)	SF
WD1	WB
WD2	WE
WD3	WF
WD4	WH
DA1	XA
DA2	XB
DA3	XG
DA4	XH
SR1	RB
SR2	RC
SR3	RD
HC1	HC
HC1C	HD
HC2	HE
HC3	HF
HC4	HG

7. Special Access Service (Cont'd)

7.3 Facility Interface Codes

This section explains the facility interface codes set forth in 7.2.1 and 7.2.2 preceding that the IC can specify when ordering Special Access Service. Included is an example which explains the specific characters of the code, a glossary of facility interface codes and impedance levels.

Example: If the IC specifies a 2DC8-3 facility interface at the IC terminal location, it is requesting the following:

2	=	Number of physical wires at IC terminal location.
DC	=	Facility interface for direct current or voltage
8	=	Variable impedance level
3	=	Metallic facilities (DC continuity) for direct current/low frequency control signals or slow speed data (30 baud)

. 7.3.1 Glossary of Facility Interface Codes and Options

Code	Option	Definition
AB-		accepts 20 Hz ringing signal at IC point of interface
AC-		accepts 20 Hz ringing signal at end user network interface
AH-		analog high capacity interface
	- B	60 kHz to 108 kHz (12 channels)
	- C	312 kHz to 552 kHz (60 channels)
	- D	564 kHz to 3084 kHz (600 channels)
DA -		data stream in VF frequency band at end user network interface
DB -		data stream in VF frequency band at IC point of interface location
	- 10	VF for NBB4 and NB5
	- 43	VF for 43 Telegraph Carrier type signals, NB4 and NB5
DC -		direct current or voltage
	- 1	monitoring interface with series RC combination (McCulloh format)
	- 2	Telephone Company energized alarm channel
	- 3	Metallic facilities (DC continuity) for direct current/low frequency control signals or slow speed data (30 baud)
DD -		DATAPHONE Select-A-Station (and TABS) interface at IC point of interface
DE -		DATAPHONE Select-A-Station (and TABS) interface at the end user NI
DO -		digital interface at IC terminal location at the digital signal level zero A (DS-OA)

7. Special Access Service (Cont'd)

7.3 Facility Interface Codes (Cont'd)

. 7.3.1 Glossary of Facility Interface Codes and Options

Code	Option	Definition
DS -		digital hierarchy interface
	- 15	1.544 Mbps (DS1) format per PUB41451 plus D4
	- 15E	8-bit PCM encoded in one 64 kbps of the DS1 signal
	- 15F	8-bit PCM encoded in two 64 kbps of the DS1 signal
	- 15G	8-bit PCM encoded in three 64 kbps of the DS1 signal
	- 15H	14/11-bit PCM encoded in six 64 kbps of the DS1 signal
	- 15J	1.544 Mbps format per PUB 41451
	- 15K	1.544 Mbps format per PUB 41451 plus extended framing format
	- 15L	1.544 Mbps (DS1) with SF signaling
	- 27	274.176 Mbps (DS4)
	- 27L	274.176 Mbps (DS4) with SF signaling
	- 31	3.152 Mbps (DS1C)
	- 31L	3.152 Mbps (DS1C) with SF signaling
	- 44	44.736 Mbps (DS3)
	- 44L	44.736 Mbps (DS3) with SF signaling
	- 63	6.313 Mbps (DS2)
	- 63L	6.312 Mbps (DS2) with SF signaling
DU -		digital access interface
	- 24	2.4 kbps
	- 48	4.8 kbps
	- 56	56.-kbps
	- 96	9.6 kbps
	- A	1.544 Mbps format per PUB 41451
	- B	1.544 Mbps format per PUB 41451 plus D4
	- C	1.544 Mbps format per PUB 41451 plus extended framing format
DX -		duplex signaling interface at IC POI
DY -		duplex signaling interface at end user NI
EA -	E	Type I E&M Lead Signaling. IC at POI or end user at NI originates on E Lead.
EA -	M	Type I E&M Lead Signaling. IC at POI or end user at NI originates on M Lead.
EB -	E	Type II E&M Lead Signaling. IC at POI or end user at NI originates on E Lead.
EB -	M	Type II E&M Lead Signaling. IC at POI or end user at NI originates on M Lead
EC -		Type III E&M Signaling at IC terminal POI tandem
EX -	A	channel unit signaling for loop start or ground start and IC supplies open end (disc tone, etc.) functions.
EX -	B	tandem channel unit signaling for loop start or ground start and IC supplies closed end (dial pulsing, etc.) functions.

7. Special Access Service (Cont'd)

7.3 Facility Interface Codes (Cont'd)

. 7.3.1 Glossary of Facility Interface Codes and Options

Code	Option	Definition
GO -		ground start loop signaling - open end function by IC or end user
GS -		ground start loop signaling - closed end function by IC or end user
IA -		E.I.A. (25 pin (RS-232)
LA -		end user loop start signaling - Type A OPS registered port open end
LB -		end user loop start loop signaling - Type B OPS registered port open end
LC -		end user loop start loop signaling - Type C OPS registered port open end
LO -		loop start loop signaling - open end function by IC or end user
LR -		20 Hz automatic ringdown interface at IC with Telephone Company provided PLAR
LS -		loop start loop signaling - closed end function by IC or end user
NO -		no signaling interface, transmission only
PG -		program transmission - no DC signaling
	1	nominal frequency from 50 to 15,000 Hz
	3	nominal frequency from 200 to 3,500 Hz
	5	nominal frequency from 100 to 5,000 Hz
	8	nominal frequency from 50 to 8,000 Hz
RV -	0	reverse battery signaling, one way operation, originate by IC
	T	reverse battery signaling, one way operation, terminate function by IC or end user
SF -		single frequency signaling with VF band at either IC POI or end user NI
TF -		telephotograph interface
TT -		telegraph/teletypewriter interface at either IC POI or end user NI
	2	20.0 milliamperes
	3	3.0 milliamperes
	6	62.5 milliamperes
WA -		wideband bandwidth interface at end user NI
	1	limited bandwidth
	2	nominal passband from 29,000 to 44,000 Hz

7. Special Access Service (Cont'd)

7.3 Facility Interface Codes (Cont'd)

. 7.3.1 Glossary of Facility Interface Codes and Options (Cont'd)

Code	Option	Definition
	WB -	wideband data interface at IC POI
	18S	18.75 kbps, synchronous
	19A	up to 19.2 kbps asynchronous
	19S	19.2 kbps synchronous
	23A	up to 230.4 kbps, asynchronous
	23S	230.4 kbps, synchronous
	40S	40.8 kbps, synchronous
	50A	up to 50.0 kbps, asynchronous
	50S	50.0 kbps, synchronous
	64	64.0 kbps, restored polar
	WC -	wideband data interface at end user NI
	18	18.75 kbps, synchronous
	19	for 12-wire interface: 19.2 kbps, synchronous for 10-wire interface: up to 19.2 kbps, asynchronous
	23	up to 230.4 kbps, asynchronous
	23S	230.4 kbps, synchronous
	40	40.8 kbps, synchronous
	50	for 12-wire interface: 50.0 kbps, synchronous for 10-wire interface: up to 50.0 kbps, asynchronous
	WD -	wideband bandwidth interface at IC POI
	1	nominal passband from 300 to 18,000 Hz
	2	nominal passband from 28,000 to 44,000 Hz
	3	nominal passband from 29,000 to 44,000 Hz

7. Special Access Service (Cont'd)

7.3 Facility Interface Codes (Cont'd)

. 7.3.2 Impedance

. The nominal reference impedance with which the IC or end user will terminate the channel for the purpose of evaluation transmission performance:

Value (ohms)	Code(s)
110	0
150	1
600	2
900	3 {1}
1200	4
135	5
75	6
124	7
Variable	8
100	9

. 7.3.3 Digital Hierarchy Facility Interface Codes (4DS9- {1})

. This facility interface is available only to IC's that select the multiplexed four-wire DSX-1 or higher facility interface option at the IC terminal location and provide subsequent system and channel assignment data. The various digital bit rates in the digital hierarchy employ the facility interface code 4DS9 plus the speed options indicated below:

Interface Code And Speed Option	Nominal Bit Rate (Mbps)	Digital Hierarchy Level
4DS9-15	1.544	DS1
4DS9-15L	1.544	DS1
4DS9-31	3.152	DS1C
4DS9-31L	3.152	DS1C
4DS0-63	6.312	DS2
4DS0-63L	6.312	DS2
4DS6-44	44.736	DS3
4DS6-44L	44.736	DS3
4DS6-27	274.176	DS4
4DS6-27L	274.176	DS4

{1} For those interface codes with a 4-wire transmission path at the POI at the IC's terminal location, rather than a standard 900 ohm impedance the code (3) denotes an IC provided transmission equipment termination. Such terminations were provided to ICs in accordance with the F.C.C. Docket No. 20099 Settlement Agreement.

7. Special Access Service (Cont'd)

7.4 Rate Regulations

. This section contains the specific regulations governing the rates and charges that apply for Special Access Service.

. 7.4.1 Types of Rates and Charges

. There are two types of rates and charges. These are monthly recurring rates and nonrecurring charges. In addition, there are three types of nonrecurring charges. The rates and charges are described as follows:

(A) Monthly Rates

. Monthly rates are flat recurring rates that apply each month or fraction thereof that a Special Access Service is provided. For billing purposes, each month is considered to have 30 days.

(B) Nonrecurring Charges

Nonrecurring charges are one-time charges that apply for a specific work activity (i.e., installation or change to an existing service). The three types of nonrecurring charges that apply for Special Access Service are: installation of service, installation of feature(s) and function(s), and service rearrangements.

(1) Installation of Service

Nonrecurring charges apply to each service installed. When multiple identical services (i.e., services between the same locations and for the same customer) are ordered and installed at the same time, there is a charge for the first service installed and a lower charge for each additional identical service installed. Nonrecurring charges for the installation of all services apply per service termination (i.e., IC terminal location and end user premises). The nonrecurring charges for these services are set forth in the rate schedule with the facility interface combinations in Section 16.3(A)(7) following.

. In addition, there is a separately stated nonrecurring charge associated with the installation of Voice Grade Service (i.e., VG1-13) which varies by the specific performance desired (e.g., VG2, VG3, etc.). These nonrecurring charges, which apply per two-point service or each section of a multipoint service, are set forth in the rate schedule in Section 16.3(A)(7) following.

7. Special Access Service (Cont'd)

. 7.4 Rate Regulations (Cont'd)

. 7.4.1 Types of Rates and Charges (Cont'd)

. (B) Nonrecurring Charges (Cont'd)

. (2) Installation of Features and Functions

. Nonrecurring charges apply for the installation of the various features and functions available with Special Access Service. For some features and functions there is a lower charge if installed coincident with the service and a higher charge if installed subsequent to the installation of the service.

. (3) Service Rearrangements

. Nonrecurring charges apply for service rearrangements. Service rearrangements are changes to existing services that do not result in a change to any of the following: (1) address of the IC terminal location, (2) address of the end users premises or (3) type of service. Changes of this nature constitute a discontinuance and start of service

Service Rearrangement Charges are based on the nonrecurring (i.e., installation) charge of the service being changed. Following are the service rearrangements that are allowable for Special Access Service and the appropriate levels of charging.

Type of Charge	Level of Charging
Change from two-wire to four-wire or from-four-wire to two-wire	Full nonrecurring charge associated with the facility interface combination for the service being changed
Change in facility interface that does not result in a change to any other rate element (e.g., 2LS2 to 2GS2)	1/2 of the nonrecurring charge associated with the facility interface combination for the service being changed
Change in facility interface that re-sults in changes to other rate element(s) (e.g., 4GS2 to 4DS9-15)	Full nonrecurring charge associated with the facility interface combination for the service being changed

7. Special Access Service (Cont'd)

7.4 Rate Regulations (Cont'd)

7.4.1 Types of Rates and Charges (Cont'd)

(B) Nonrecurring Charges (Cont'd)

(3) Service Rearrangements (Cont'd)

In cases where multiple service rearrangements or a move and a service rearrangement are requested on a single order, the total charge (i.e., the Service Rearrangement Charge or the Service Rearrangement Charge and the Move Charge) will never exceed the full nonrecurring charge for the basic service.

7.4.2 Surcharge for Special Access Service

(A) General

In addition to the rates and charges described in Section 7.4.1 preceding, there is a monthly surcharge of $25.00 that applies to two-point Sub-voice grade, Voice grade and equivalent voice grade Special Access Services (e.g., the surcharge for a group level service would be $300.00 or 12 x $25.00). For multipoint services, the $25.00 surcharge applies for each end user location on the service.

This surcharge compensates the Telephone Company for use of the local exchange network when Special Access Service is connected to a PBX or equivalent device which is capable of interconnecting the Special Access Services with local exchange service. The Telephone Company will automatically bill the appropriate surcharge on each Special Access Service installed irrespective of whether the interconnection capability exists in the customer's premises equipment or in a Centrex-CO type switch unless the service is exempt from the surcharge as set forth in (B) following.

(B) Exceptions to the Surcharge Application

There are two means by which the customer may be exempted from the monthly surcharge. First, if the customer certifies that the Special Access Service is terminated in a device not capable of interconnecting the service with local exchange service, no surcharge will apply. Second, if the customer certifies that the Special Access Service is associated with a Switched Access Service in the same LATA that is subject to Carrier Common Line Charges, no surcharge will apply.

7. Special Access Service (Cont'd)

7.4 Rate Regulations (Cont'd)

7.4.2 Surcharge for Special Access Service (Cont'd)

(C) Certification

The certification will be in the form of a written notification to the Telephone Company. The notification may be provided; (1) at the time the service is ordered or (2) at such time as the service is reterminated to a device not capable of interconnecting to the local exchange network or (3) at such time as the Special Access Service becomes associated with a Switched Access Service that is subject to Carrier Common Line Charges.

If a written certification is not received at the time an order for service is placed, the surcharge will be applied. Exempt status will become effective on the date certification is received by the Telephone Company. {1}

(D) Crediting the Surcharge

The Telephone Company will cease billing the surcharge when certification that the service has become exempt from the surcharge as set forth in (C) preceding is received. If the status of the service was changed prior to receipt of the exemption certification, the Telephone Company will credit the customer's account based on the effective date of the change specified by the customer in the letter of certification.

7.4.3 Minimum Periods

Special Access Service is provided for a minimum period of one month. An exception to the minimum period exists for part-time and occasional Video and Program Audio Services which may be ordered and paid for on a daily basis.

{1} For services which were installed prior to June 1, 1984, and where the certification is received no later than December 31, 1984, the effective date may be made retroactive to a date no earlier than June 1, 1984.

7. Special Access Service (Cont'd)

7.4 Rate Regulations (Cont'd)

7.4.4 Moves

A move involves a change in the physical location of one of the following:

- The point of interface at the IC terminal location
- The IC terminal location
- The network interface at the end user premises
- The end user premises

The charges for the move are dependent on whether the move is to a new location within the same building or to a different building.

(A) Moves Within the Same Building

When the move is to a new location within the same building, the charge for the move will be an amount equal to one half of the nonrecurring (i.e., installation) charge for the service termination affected, i.e., the IC terminal location or the end user premises. There will be no change in the minimum period requirements. If a move is made at the same time a service rearrangement is made, the total charge will never exceed a full nonrecurring charge of the basic service.

(B) To a Different Building

Moves to a different building will be treated as a discontinuance and start of service and all associated nonrecurring charges will apply. New minimum period requirements will be established for the new services. The IC will also remain responsible for satisfying all outstanding minimum period charges for the discontinued service.

7. Special Access Service (Cont'd)

. 7.4 Rate Regulations (Cont'd)

. 7.4.5 Rate Application Exception Rules

(A) Intrabuilding Access Services

Intrabuilding cable facilities, provided by the Telephone Company to connect two IC terminal locations or an IC terminal location and an end user premises in the same public building, will be rated as an Access Connection and an appropriate facility interface combination. The Channel Mileage and Special Access Line rate elements will not apply to this type of service.

(B) IC Terminal Location to IC Terminal Location

. When two IC terminal locations are connected together via Special Access Service, the IC will be billed as though the service were connecting an IC terminal location and an end user premises, i.e., Access Connection, Channel Mileage, Features and Functions (facility interface combination) and Special Access Line. One of the IC terminal locations will be treated as an end user premises.

(C) End User to End User

. When two end user premises are connected together via Special Access Service, the IC will be billed as though the service were connecting an IC terminal location and an end user premises, i.e., Access Connection, Channel Mileage, Features and Functions (facility interface combination) and Special Access Line. The end user premises at which the service connects to intrastate service will be treated as an IC terminal location.

7. Special Access Service (Cont'd)

7.4 Rate Regulations (Cont'd)

7.4.6 Mileage Measurement

The mileage to be used to determine the monthly rate for the Channel Mileage is calculated on the airline distance between the serving wire centers involved (i.e., IC serving wire center, Hub serving wire center, or end user serving wire center). The V&H coordinates method is used to determine mileage. This method is explained in the NATIONAL EXCHANGE CARRIER ASSOCIATION Tariff F.C.C. NO. 4 Serving Wire Center Information (V & H Coordinates).

Mileage is shown in Section 16.2 following in terms of mileage bands. To determine the charges to be billed, first compute the mileage using the V&H coordinates method, then find the band into which the computed mileage falls and apply the rates shown for that band to the actual number of miles. There are two rates that apply for each mileage band, i.e., a fixed rate for the band and a rate per mile.

When more than one Exchange Telephone Company is involved, the application of the Channel Mileage rate will be as specified in Section 2.4.8 preceding.

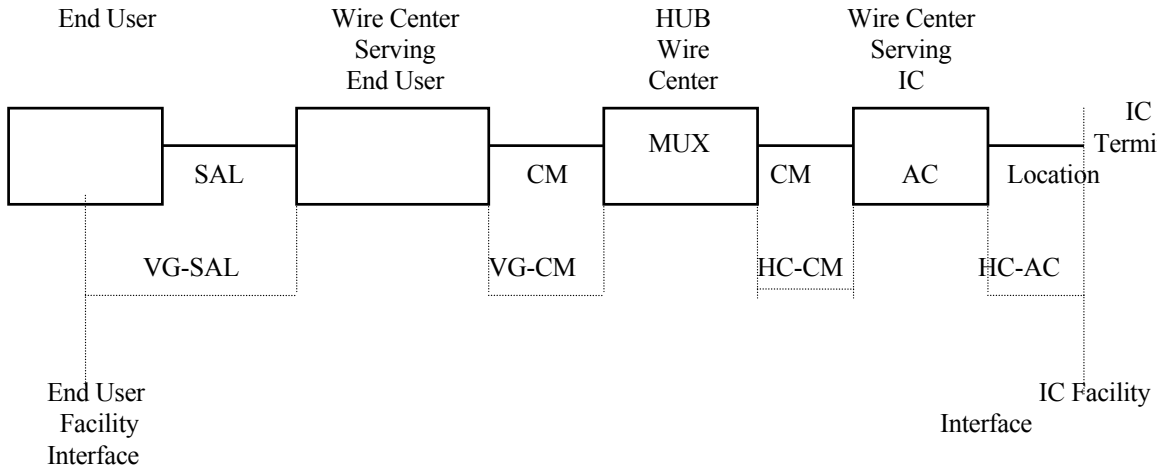
When Hubs are involved, mileage rates are computed separately for each section of the Channel Mileage, i.e., IC serving wire center to Hub, Hub to Hub, and/or Hub to end user serving wire center.

7. Special Access Service (Cont'd)

7.4 Rate Regulations (Cont'd)

7.4.7 Facility Hubs

An IC has the option of ordering high capacity analog or digital facilities (i.e., Group, Supergroup, DS1, DS1C, DS2, DS3 or DS4) to a facility Hub for channelizing to individual services requiring lower capacity facilities (e.g., Voice, Program Audio, etc.).



AC - Access Connection
CM - Channel Mileage
SAL - Special Access Line
MUX - Multiplexing Equipment
HC - High Capacity
VG - Voice Grade

The Telephone Company will designate the facility Hub locations. Different locations may be designated as Hubs for different facility capacities, e.g., multiplexing from digital to digital may occur at one location while multiplexing from digital to analog may occur at a different location. The IC will choose the desired Hub from a list that the Telephone Company will make available.

Some of the types of multiplexing provided include the following:

- from higher to lower bit rate
- from higher to lower bandwidth
- from digital to Voice Grade Service
- from digital to Program Audio Service

7. Special Access Service (Cont'd)

. 7.4 Rate Regulations (Cont'd)

. 7.4.7 Facility Hubs (Cont'd)

. The transmission performance for the end to end service provided from the IC terminal location to the end user premises will be that of the lower capacity or bit rate. For example, when a 1.544 Mbps service is multiplexed to voice frequency channels, the transmission performance will be voice grade, not high capacity.

. The Telephone Company will commence billing the monthly rate for the Access Connection and the Channel Mileage for the high capacity facility to the Hub as soon as it is provided, even though individual services utilizing those facilities may not be ordered and installed until a later date. If the IC has designated the type of multiplexing to be provided, the nonrecurring charge for the multiplexer will be billed to the IC at that time and the billing for the monthly rate will begin.

. Individual service rates (by service type) will apply for the facility interface combination, the Special Access Line, Special Access Service Surcharge, and additional Channel Mileage (if required) for each channelized service. These will be billed to the IC as each individual service is installed.

. 7.4.8 Shared Use Analog and Digital High Capacity Services

. Shared use occurs when Special Access Service and Switched Access Service are provided over the same Wideband Analog or High Capacity facilities through a common interface. The facility will be ordered and rated as Special Access Service until such time as the customer chooses to use a portion of the available capacity for providing Switched Access Service. At that time the customer must place an order for Switched Access Service, designating a specific channel assignment for the service. As each individual channel is activated for Switched Access Service, the Special Access rates will be reduced accordingly (e.g., 1/12th for a group level services, 1/24th for a DS1 service, etc.).

7. Special Access Service (Cont'd)

7.4 Rate Regulations (Cont'd)

7.4.9 Features and Functions

(A) Optional Features and Functions

(1) Voice Grade Services

(a) Conditioning:

Conditioning provides more specific transmission characteristics for data or telephoto services. There are two types of data conditioning, C-Type and DA-Type. C-Type conditioning controls attenuation distortion and envelope delay distortion; DA-Type conditioning controls the signal to C-notched noise ratio and intermodulation distortion. Telephoto conditioning controls attenuation distortion and envelope delay distortion.

Conditioning is charged for on a per two-point service or each section (i.e., mid link or end link. The parameters listed for each type of conditioning apply from point of interface to network interface. For two-point services, the parameters apply to each service. For multipoint services, the parameters apply to any path between any two service terminal points. C-Type and DA-Type conditioning are available only for data services. C-Type and DA-Type conditioning may be combined on the same service.

(1) C-Type Conditioning

For the additional control of attenuation distortion and envelope delay distortion on data services.

Attenuation Distortion (Frequency Response)
Relative to 1004 Hz

Frequency Range (Hz)	Variation (db)
400 - 2800	-1.0 to +2.0
300 - 3000	-1.0 to +3.0
300 - 3200	-2.0 to +6.0

7. Special Access Service (Cont'd)

. 7.4 Rate Regulations (Cont'd)

. 7.4.9 Features and Functions (Cont'd)

. (A) Optional Features and Functions (Cont'd)

. (1) Voice Grade Services (Cont'd)

. (a) Conditioning: (Cont'd)

. (1) C-Type Conditioning (Cont'd)

Envelope Delay Distortion	
Frequency Range (Hz)	Variation (microseconds)
1000 - 2600	100
800 - 2600	200
600 - 2600	300
500 - 2800	600
500 - 3000 (available with VG5-10)	3000

See Section 16.3(D)(1)(a)(1) for Rates and Charges.

. (2) DA-Type Conditioning:

. For the control of signal to C-notched noise ratio and intermodulation distortion on data services. DA type conditioning is available for two-point services or three-point multi-point services.

7. Special Access Service (Cont'd)

7.4 Rate Regulations (Cont'd)

7.4.9 Features and Functions (Cont'd)

(A) Optional Features and Functions (Cont'd)

(1) Voice Grade Services (Cont'd)

(a) Conditioning: (Cont'd)

(2) DA-Type Conditioning: (Cont'd)

The signal to C-notched noise ratio and intermodulation distortion parameters for DA-Type conditioning are:

- Signal to C-Notched Noise Ratio is equal to or greater than 32dB.
- Intermodulation distortion:
- Signal to second order modulation products (R2) is equal to or greater than 38 dB.
- Signal to third order modulation products (R3) is equal to or greater than 42 dB.

When a service equipped with DA type conditioning is used for voice communications the quality of the voice transmission may not be satisfactory. (available with VG6, 7, 10)

See Section 16.3(D)(1)(a)(2) for Rates and Charges.

(b) Improved Return Loss for effective two-wire transmission at the end user premises. This option is applicable to all interfaces except E&M, SF & DX when the impedance code 2 is specified. The Improved Return Loss parameters are set forth in the Transmission Performance descriptions of the services with which this option is available. (available with VG2, 3, 7)

See Section 16.3(D)(1)(b) for Rates and Charges.

7. Special Access Service (Cont'd)

7.4 Rate Regulations (Cont'd)

7.4.9 Features and Functions (Cont'd)

(A) Optional Features and Functions (Cont'd)

(1) Voice Grade Services (Cont'd)

(c) Improved Return Loss at four-wire point of interface, applicable to each two-wire leg. The Improved Return Loss parameters are set forth in the Transmission Performance descriptions of the services with which this option is available. (available with VG1-3, 5-10)

See Section 16.3(D)(1)(c) for Rates and Charges.

(d) IC specified end user premises receive level within a range acceptable to the Telephone Company on effective four-wire transmission. (available with VG2, 3, 7, 8 & 9)

See Section 16.3(D)(1)(d) for Rates and Charges.

(2) Program Audio Services

(a) Gain Conditioning:
Control of 1004 Hz AML at
initiation of service to 0 dB +
0.5 dB. (available with AP1-11)

See Section 16.3(D)(2)(a) for Rates and Charges.

(b) Stereo - provision of a pair of
gain/phase equalized channels
for stereo applications.
(additional AP channel must be
ordered separately). (available
with AP4)

See Section 16.3(D)(2)(b) for Rates and Charges.

7. Special Access Service (Cont'd)

. 7.4 Rate Regulations (Cont'd)

. 7.4.9 Features and Functions (Cont'd)

. (A) Optional Features and Functions (Cont'd)

. (3) Digital Data Access Services

. Loop Transfer Arrangement - an arrangement that affords the end user an additional measure of protection to its access channel(s) on a 1xN basis. This arrangement is only available from a Telephone Company designated digital hub. A key activated control service is required to operate the transfer arrangement. This control service must be separately ordered from the appropriate Telephone Company Intra-LATA tariff. (available with DA1, 2, 3 & 4)

. See Section 16.3(D)(3)(a) for Rates and Charges.

. (4) High Capacity Services

. (a) Automatic Protection Switching: Switching equipment placed at both ends of a duplicate stand-by service to automatically switch the standby service to the active state in the event of service failure. Duplicate 1.544 Mbps Service must also be ordered.

. See Section 16.3(D)(4) for Rates and Charges.

. 7.4.10 Special Access Lines

. Optional Feature

. Hybrid:
. Provides conversion from 4-wire SAL to 2-wire termination at end user premises. Required to meet effective four-wire performance with a 2-wire end user premises facility interface.

. See Section 16.4 for Rates and Charges.

{1} See Section 7.4.2 preceding for application of Special Access Service Surcharge.

7. Special Access Service (Cont'd) (C)

. 7.4 Rate Regulations (Cont'd)

7.4.11 Broadband Discount for Qualifying Schools

In compliance with Pennsylvania PUC Docket Number P-00951005F1000, Company shall offer school customers a thirty percent (30%) discount on the applicable tariffed distance sensitive per mile rate element, and waive the associated non-recurring charges for intrastate Broadband services that are used for educational purposes. Broadband is defined in the Act as "A communications channel using any technology and having a bandwidth equal to or greater than 1.544 MB per second in the downstream direction and equal to or greater than 128 KB per second in the upstream direction.

Requirements
School customers must meet the federal E-rate qualifying criteria and agree to enter into a three (3) year term contract. (C)