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ACCESS SERVICE

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9. Interface Groups, Transmission Specifications and Channel Codes

9.1 Local Transport Interface Groups

Ten Interface Groups are provided for terminating the Local Transport at the customer's premises. Each Interface Group provides a specified premises interface code (e.g., two-wire, four-wire, DS1, etc.). At the option of the customer and where transmission facilities permit, the individual transmission path between the customer's premises and the first point of switching may be provided with optional features. (T)

As a result of the customer's access order and the type of Telephone Company transport facilities serving the customer's premises, the need for signaling conversions or two-wire to four-wire conversions, or the need to terminate digital or high frequency facilities in channel bank equipment may require that Telephone Company equipment be placed at the customer's premises. For example, if a voice frequency interface is ordered by the customer and the Telephone Company facilities serving the customer premises are digital, then Telephone Company channel bank equipment must be placed at the customer's premises in order to provide the voice frequency interface ordered by the customer.

Interface Group 1 is provided with Type C Transmission Specifications, and Interface Groups 2 through 10 are provided with Type A or B Transmission Specifications, depending on the Feature Group and whether the Access Service is routed directly or through an access tandem. All Interface Groups are provided with Data Transmission Parameters.

Only certain premise interface are available at the customer's premises. The premise interface codes associated with the Interface Groups may vary among Feature Groups. The various premise interface codes which are available with the Interface Groups, and the Feature Groups with which they may be used, are set forth in 9.1.11.

For each of the ten Interface Groups described following, the transmission path between the point of termination at the customer's

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9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)

9.1 Local Transport Interface Groups (Cont'd)

premises and the first point of switching may be compromised of any form or configuration of plant and equipment capable of and typically used in the telecommunications industry for the transmission of voice and associated telephone signals within the frequency bandwidth of 300 to 3000 Hz.

9.1.1 Interface Group 1 (USOC TPP1X)

Interface Group 1 provides a two-wire voice frequency transmission path at the point of termination at the customer's premises. Interface Group 1 is not provided in association with FGC and FGD when the first point of switching is an access tandem. In addition, Interface Group 1 is not provided in association with FGB, FGC or FGD when the first point of switching can only provide four-wire terminations.

The interface is provided with loop supervisory signaling. When the interface is associated with FGA, such signaling will be loop start or ground start signaling. When the interface is associated with FGB, FGC or FGD, such signaling will be reverse battery signaling. When FGB, FGC, or FGD access service is associated with a two-way calling interface, E&M signaling shall be used.

9.1.2 Interface Group 2 (USOC TTP2X)

Interface Group 2 provides four-wire voice frequency transmission at the point of termination at the customer's premises. The interface is provided with loop supervisory signaling. When the interface is associated with FGA, such signaling will be loop start or ground start signaling. When the interface is associated with FGB, FGC or FGD, such signaling, except for two-way calling which is E&M signaling, will be reverse battery signaling.

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9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)

9.1 Local Transport Interface Groups (Cont'd)

9.1.3 Interface Group 3 (USOC TPP3X)

Interface Group 3 provides group level analog transmission at the point of termination at the customer's premises. The interface is capable of transmitting electrical signals between the frequencies of 60 to 180 kHz, with the capability to channelize up to 12 voice frequency transmission paths. Certain frequencies within the bandwidth of the Interface Group are reserved for Telephone Company use, e.g., pilot and carrier group alarm tones. Before the first point of switching, the Telephone Company will provide multiplex equipment to derive 12 transmission paths with a frequency bandwidth of approximately 300 to 3000 Hz.

The interface is provided with SF supervisory signaling for each individual transmission control.

9.1.4 Interface Group 4 (USOC TPP4X)

Interface Group 4 provides supergroup level analog transmission at the point of termination at the customer's premises. The interface is capable of transmitting electrical signals between the frequencies of 312 to 552 kHz, with the capability to channelize up to 60 voice frequency transmission paths. Certain frequencies within the bandwidth of the Interface Group are reserved for Telephone Company use, e.g., pilot and carrier group alarm tones. Before the first point of switching, the Telephone Company will provide multiplex and channel bank equipment to derive 60 transmission paths with a frequency bandwidth of approximately 300 to 3000 Hz.

The interface is provided with SF supervisory signaling for each individual transmission channel.

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9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)

9.1 Local Transport Interface Groups (Cont'd)

9.1.5 Interface Group 5 (USOC TPP5X)

Interface Group 5 provides mastergroup level analog transmission at the point of termination at the customer's premises. The interface is capable of transmitting electrical signals between the frequencies of 564 to 3084 kHz, with the capability to channelize up to 600 voice frequency transmission paths. Certain frequencies within the bandwidth of the Interface Group are reserved for Telephone Company use, e.g., pilot and carrier group alarm tones. Before the first point of switching, the Telephone Company will provide multiplex and channel bank equipment to derive 600 transmission paths with a frequency bandwidth of approximately 300 to 3000 Hz.

The interface is provided with SF supervisory signaling for each individual transmission control.

9.1.6 Interface Group 6 (USOC TPP6X)

Interface Group 6 provides DS1 level digital transmission at the point of termination at the customer's premises. The interface is capable of transmitting electrical signals at a nominal 1.544 Mbps, with the capability to channelize up to 24 voice frequency transmission paths. Before the first point of switching, when analog switching utilizing analog terminations is provided, the Telephone Company will provide multiplex and channel bank equipment to derive 24 transmission paths with a frequency bandwidth of approximately 300 to 3000 Hz. When digital switching or analog switching with digital carrier terminations is provided, the Telephone Company will provide, at the first point of switching, a DS1 signal in D3/D4 format.

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ACCESS SERVICE

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9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)

9.1 Local Transport Interface Groups (Cont'd)

9.1.6 Interface Group 6 (USOC TPP6X) (Cont'd)

The interface is provided with bit stream supervisory signaling for each individual transmission channel.

9.1.7 Interface Group 7 (USOC TPP7X)

Interface Group 7 provides DS1C level digital transmission at the point of termination at the customer's premises. The interface is capable of transmitting electrical signals at a nominal 3.152 Mbps, with the capability to channelize up to 48 voice frequency transmission paths. Before the first point of switching, when analog switching utilizing analog terminations is provided, the Telephone Company will provide multiplex and channel bank equipment to derive up to 48 voice frequency transmission paths with a frequency bandwidth of approximately 300 to 3000 Hz. When digital switching or analog switching with digital carrier terminations is provided, the Telephone Company will provide, at the first point of switching, DS1 signals in the D3/D4 format.

The interface is provided with bit stream supervisory signaling for each individual transmission channel.

9.1.8 Interface Group 8 (USOC TPP8X)

Interface Group 8 provides DS2 level digital transmission at the point of termination at the customer's premises. The interface is capable of transmitting electrical signals at a nominal 6.312 Mbps, with the capability to channelize up to 96 voice frequency transmission paths. Before the first point of switching, when analog switching utilizing analog terminations is provided, the Telephone Company will provide

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9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)

9.1 Local Transport Interface Groups (Cont'd)

9.1.8 Interface Group 8 (USOC TPP8X) (Cont'd)

multiplex and channel bank equipment in its office to derive up to 96 transmission paths with a frequency bandwidth of approximately 300 to 3000 Hz. When digital switching, or analog switching with digital carrier terminations is provided, the Telephone Company will provide, at the first point of switching, DS1 signals in the D3/D4 format.

The interface is provided with bit stream supervisory signaling for each individual transmission channel.

9.1.9 Interface Group 9 (USOC TPP9X)

Interface Group 9 provides DS3 level digital transmission at the point of termination at the customer's premises. The interface is capable of transmitting electrical signals at a nominal 44.736 Mbps, with the capability to channelize up to 672 voice frequency transmission paths. Before the first point of switching, when analog switching utilizing analog terminations is provided, the Telephone Company will provide multiplex and channel bank equipment to derive up to 672 transmission paths with a frequency bandwidth of approximately 300 to 3000 Hz. When digital switching, or analog switching with digital carrier terminations is provided, the Telephone Company will provide, at the first point of switching, DS1 signals in D3/D4 format.

The interface is provided with bit stream supervisory signaling for each individual transmission channel.

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9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)

9.1 Local Transport Interface Groups (Cont'd)

9.1.10 Interface Group 10 (USOC TPPAX)

Interface Group 10 provides DS4 level digital transmission at the point of termination at the customer's premises. The interface is capable of transmitting electrical signals at a nominal 274.176 Mbps, with the capability to channelize up to 4032 voice frequency transmission paths. Before the first point of switching, when analog switching utilizing analog terminations is provided, the Telephone Company will provide multiplex and channel bank equipment to derive up to 4032 transmission paths with a frequency bandwidth of approximately 300 to 3000 Hz. When digital switching or analog switching with digital carrier terminations is provided, the Telephone Company will provide, at the first point of switching, DS1 signals in D3/D4 format.

The interface is provided with bit stream supervisory signaling for each individual transmission channel.

9.1.11 Available Premises Interface Codes

Following is a matrix showing which premises interface codes are available for each Interface Group as a function of the Telephone Company switch supervisory signaling and Feature Group.

Continued

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9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)

9.1 Local Transport Interface Groups (Cont'd)

9.1.11 Available Premises Interface Codes (Cont'd)

<u>Interface Group</u>	<u>Telephone Company Switch Supervisory Signaling</u>	<u>Premises Interface Code</u>	<u>Feature Group</u>			
			<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
1	LO	2LS2	X			
	LO	2LS3	X			
	GO	2GS2	X			
	GO	2GS3	X			
	LO, GO	2DX3	X			
	LO, GO	4EA3-E	X			
	LO, GO	4EA3-M	X			
	LO, GO	6EB3-E	X			
	LO, GO	6EB3-M	X			
	RV, EA, EB, EC	2DX3		X	X	X
	RV, EA, EB, EC	4EA3-E		X	X	X
	RV, EA, EB, EC	4EA3-M		X	X	X
	RV, EA, EB, EC	6EB3-E		X	X	X
	RV, EA, EB, EC	6EB3-M		X	X	X
	EA, EB, EC	6EC3			X	X
	RV	2RV3-0		X	X	X
	RV	2RV3-T		X	X	X
	2	LO, GO	4SF2	X		
LO, GO		4SF3	X			
LO		4LS2	X			
LO		4LS3	X			

Continued

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9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)

9.1 Local Transport Interface Groups (Cont'd)

9.1.11 Available Premises Interface Codes (Cont'd)

<u>Interface Group</u>	<u>Telephone Company Switch Supervisory Signaling</u>	<u>Premises Interface Code</u>	<u>Feature Group</u>			
			<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
2 (Cont'd)	LO	6LS2	X			
	GO	4GS2	X			
	GO	4GS3	X			
	GO	6GS2	X			
	LO, GO	4DX2	X			
	LO, GO	4DX3	X			
	LO, GO	6EA2-E	X			
	LO, GO	6EA2-M	X			
	LO, GO	8EB2-E	X			
	LO, GO	8EB2-M	X			
	LO, GO	6EX2-B	X			
	RV, EA, EB, EC	4SF2		X	X	X
	RV, EA, EB, EC	4SF3		X		
	RV, EA, EB, EC	4DX2		X	X	X
	RV, EA, EB, EC	4DX3		X	X	X
	RV, EA, EB, EC	6DX2			X	
	RV, EA, EB, EC	6EA2-E		X	X	X
	RV, EA, EB, EC	6EA2-M		X	X	X
	RV, EA, EB, EC	8EB2-E		X	X	X
	RV, EA, EB, EC	8EB2-M		X	X	X
	EA, EB, EC	8EC2-M			X	X
	RV	4RV2-0		X	X	X
	RV	4RV2-T		X	X	X
	RV	4RV3-0		X	X	
	RV	4RV3-T		X	X	

Continued

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9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)

9.1 Local Transport Interface Groups (Cont'd)

9.1.11 Available Premises Interface Codes (Cont'd)

<u>Interface Group</u>	<u>Telephone Company Switch Supervisory Signaling</u>	<u>Premises Interface Code</u>	<u>Feature Group</u>			
			<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
3	LO, GO	4AH5-B	X			
	RV, EA, EB, EC	4AH5-B		X	X	X
4	LO, GO	4AH6-C	X			
	RV, EA, EB, EC	4AH6-C		X	X	X
5	LO, GO	4AH6-D	X			
	RV, EA, EB, EC	4AH6-D		X	X	X
6	LO, GO	4DS9-15	X			
	LO, GO	4DS9-15L	X			
	RV, EA, EB, EC	4DS9-15		X	X	X
	RV, EA, EB, EC	4DS9-15L		X	X	X
7	LO, GO	4DS9-31	X			
	RV, EA, EB, EC	4DS9-32		X	X	X
	LO, GO	4DS9-31L	X			
	RV, EA, EB, EC	4DS9-31L		X	X	X
8	LO, GO	4DSO-63	X			
	LO, GO	4DSO-63L	X			
	RV, EA, EB, EC	4DSO-63		X	X	X
	RV, EA, EB, EC	4DSO-63L		X	X	X
9	LO, GO	4DS6-44	X			
	LO, GO	4DS6-44L	X			
	RV, EA, EB, EC	4DS6-44		X	X	X
	RV, EA, EB, EC	4DS6-44L		X	X	X

Continued

ACCESS SERVICE

9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)

9.1 Local Transport Interface Groups (Cont'd)

9.1.11 Available Premises Interface Codes (Cont'd)

<u>Interface Group</u>	<u>Telephone Company Switch Supervisory Signaling</u>	<u>Premises Interface Code</u>	<u>Feature Group</u>			
			<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
10	LO, GO	4DS6-27	X			
	LO, GO	4DS6-27L	X			
	RV, EA, EB, EC	4DS6-27		X	X	X
	RV, EA, EB, EC	4DS6-27L		X	X	X

9.2 Transmission Specifications for Switched Access Service

The Telephone Company will maintain existing transmission specifications on functioning service configurations installed prior to the effective date of this tariff except that service configurations having performance specifications exceeding the standards listed in this provision will be maintained at performance levels specified in this tariff.

The transmission specifications contained in this Section are immediate action limits. Acceptance limits are set forth in Technical Reference TR-NPL-000334. This Technical Reference also provides the basis for determining Switched Access Service maintenance limits.

9.2.1 Standard Transmission Specifications

Following are descriptions of the three Standard Transmission Specifications available with Switched Access Services. The specific applications in terms of the Switched Access Arrangements and Interface Groups with which the Switched Access Arrangement Standard Transmission Specifications are provided are set forth in Section 6.

(T)

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Continued

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ACCESS SERVICE

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9. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

9.2 Transmission Specifications for Switched Access Service (Cont'd)

9.2.1 Standard Transmission Specifications (Cont'd)

(A) Type A Transmission Specifications

Type A Transmission Specifications is provided with the following parameters:

(1) Loss Deviation

The maximum Loss Deviation of the 1004 Hz loss relative to the Expected Measured Loss (EML) is 2.0 dB.

(2) Attenuation Distortion

The maximum Attenuation Distortion in the 404 to 2804 Hz frequency band relative to the loss 1004 Hz is -1.0 dB to +3.0 dB.

(3) C-Message Noise

The maximum C-Message Noise for the transmission path at the route miles listed is less than or equal to:

<u>Route Miles</u>	<u>C-Message Noise</u>
less than 50	32 dBrnCO
51 to 100	34 dBrnCO
101 to 200	37 dBrnCO
201 to 400	40 dBrnCO
401 to 1000	42 dBrnCO

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9. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

9.2 Transmission Specifications for Switched Access Service (Cont'd)

9.2.1 Standard Transmission Specifications (Cont'd)

(A) Type A Transmission Specifications (Cont'd)

(4) C-Notch Noise

The maximum C-Notch Noise, utilizing a -16 dBmO holding tone, is less than or equal to 45 dBmCO.

(5) Echo Control

Echo Control, identified as Equal Level Echo Path Loss, and expressed as Echo Return Loss and Singing Return Loss, is dependent on the routing, i.e., whether the service is routed directly from the customer's point of termination (POT) to the end office or via an access tandem. It is equal to or greater than the following:

	<u>Echo Return Loss</u>	<u>Singing Return Loss</u>
POT to Access Tandem	21 dB	14 dB
POT to End Office		
- Direct	N/A	N/A
- Via Access Tandem	16 dB	11 dB

(6) Standard Return Loss

Standard Return Loss expressed as Echo Return Loss and Singing Return Loss on two-wire ports of a four-

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9. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

9.2 Transmission Specifications for Switched Access Service (Cont'd)

9.2.1 Standard Transmission Specifications (Cont'd)

(A) Type A Transmission Specifications (Cont'd)

(6) Standard Return Loss (Cont'd)

wire point of termination shall be equal to or greater than:

Echo Return Loss  
5 dB

Singing Return Loss  
2.5 dB

(B) Type B Transmission Specifications

Type B Transmission Specifications is provided with the following parameters:

(1) Loss Deviation

The maximum Loss Deviation of the 1004 Hz loss relative to the Expected Measured Loss (EML) is 2.5 dB.

(2) Attenuation Distortion

The maximum Attenuation Distortion in the 404 to 2804 Hz frequency band relative to the loss at 1004 Hz is -2.0 db to +4.0 dB.

(3) C-Message Noise

The maximum C-Message Noise for the transmission path at the route miles listed is less than or equal to:

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ACCESS SERVICE

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9. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

9.2 Transmission Specifications for Switched Access Service (Cont'd)

9.2.1 Standard Transmission Specifications (Cont'd)

(B) Type B Transmission Specifications (Cont'd)

(3) C-Message Noise (Cont'd)

<u>Route Miles</u>	<u>C-Message Noise*</u>	
	<u>Type B1</u>	<u>Type B2</u>
less than 50	32 dBrnCO	35 dBrnCO
51 to 100	33 dBrnCO	37 dBrnCO
101 to 200	35 dBrnCO	40 dBrnCO
201 to 400	37 dBrnCO	43 dBrnCO
401 to 1000	39 dBrnCO	45 dBrnCO

(4) C-Notch Noise

The maximum C-Notch Noise, utilizing a -16 dBmO holding tone, is less than or equal to 47 dBrnCO.

(5) Echo Control

Echo Control, identified as Impedance Balance for FGA and FGB and Equal Level Echo Path Loss for FGC and FGD, and expressed as Echo Return Loss (ERL), and Singing Return Loss (SRL), is dependent on the routing, i.e., whether the service is routed directly from the customer's point of termination (POT) to the end office or via an access tandem. The ERL and SRL also differ by Switched Access Service, type of termination, and type of transmission path. They are greater than or equal to the following:

\* For Feature Groups C and D only Type B2 will be provided. For Feature Groups A and B, Type B1 or B2 will be provided as set forth in Technical Reference TR-NPL-000334.

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9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)

9.2 Transmission Specifications for Switched Access Service (Cont'd)

9.2.1 Standard Transmission Specifications (Cont'd)

(B) Type B Transmission Specifications (Cont'd)

(5) Echo Control (Cont'd)

	<u>Echo Return Loss</u>	<u>Singing Return Loss</u>
POT to Access Tandem		
- Terminated in		
4-Wire trunk	21 dB	14 dB
POT to End Office		
- Terminated in		
2-Wire Trunk	16 dB	11 dB
POT to End Office		
- Direct	16 dB	11 dB
- Via Access Tandem		
- For FGB access	8 dB	4 dB
- For FGC access		
(Effective 4-Wire transmission path at end office.)	16 dB	11 dB
- For FGC access		
(Effective 2-Wire transmission path at end office)	13 dB	6 dB

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9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)

9.2 Transmission Specifications for Switched Access Service (Cont'd)

9.2.1 Standard Transmission Specifications (Cont'd)

(B) Type B Transmission Specifications (Cont'd)

(6) Standard Return Loss

Standard Return Loss expressed as Echo Return Loss and Singing Return Loss on two-wire ports of a four-wire point of termination shall be equal to or greater than:

Echo Return Loss  
5 dB

Singing Return Loss  
2.5 dB

(C) Type C Transmission Specification

Type C Transmission Specifications is provided with the following parameters:

(1) Loss Deviation

The maximum Loss Deviation of the 1004 Hz loss relative to the Expected Measured Loss (EML) is 3.0 dB.

(2) Attenuation Distortion

The maximum Attenuation Distortion in the 404 to 2804 Hz frequency band relative to the loss at 1004 Hz is -2.0 dB to +5.5 dB.

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9. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

9.2 Transmission Specifications for Switched Access Service (Cont'd)

9.2.1 Standard Transmission Specifications (Cont'd)

(C) Type C Transmission Specifications (Cont'd)

(3) C-Message Noise

The maximum C-Message Noise for the transmission path at the route miles listed is less than or equal to:

<u>Route Miles</u>	<u>C-Message Noise*</u>	
	<u>Type B1</u>	<u>Type B2</u>
less than 50	32 dBrnCO	38 dBrnCO
51 to 100	33 dBrnCO	39 dBrnCO
101 to 200	35 dBrnCO	41 dBrnCO
201 to 400	37 dBrnCO	43 dBrnCO
401 to 1000	39 dBrnCO	45 dBrnCO

(4) C-Notch Noise

The maximum C-Notch Noise, utilizing a -16 dBmO holding tone, is less than or equal to 47 dBrnCO.

(5) Echo Control

Echo Control, identified as Return Loss, and expressed as Echo Return Loss and Singing Return Loss, is dependent on the routing, i.e., whether the service is routed directly from the customer's point of termination (POT) to the end office or via an access tandem. It is equal to or greater than the following:

\* For Feature Groups C and D only Type C2 will be provided. For Feature Groups A and B, Type C1 or C2 will be provided as set forth in Technical Reference TR-NPL-000334.

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9. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

9.2 Transmission Specifications for Switched Access Service (Cont'd)

9.2.1 Standard Transmission Specifications (Cont'd)

(5) Echo Control (Cont'd)

	<u>Echo Return Loss</u>	<u>Singing Return Loss</u>
POT to Access Tandem	13 dB	6 dB
POT to End Office		
- Direct	13 dB	6 dB
- Via Access Tandem	8 dB	4 dB
(For FGB Only)		

9.2.2 Data Transmission Parameters

Two types of Data Transmission Parameters, i.e., Type DA and Type DB, are provided for the Switched Access Service Arrangements. The specific applications in terms of the Feature Groups with which they are provided are set forth in Section 6. In addition, the Combined Access Service Arrangement is provided with Data Transmission Parameters. Following are descriptions of each parameter:

(T)

(A) Data Transmission Parameters Type DA

(1) Signal to C-Notched Noise Ratio

The Signal to C-Notched Noise Ratio is equal to or greater than 33 dB.

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9. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

9.2 Transmission Specifications for Switched Access Service (Cont'd)

9.2.2 Data Transmission Parameters (Cont'd)

(A) Data Transmission Parameters Type DA (Cont'd)

(2) Envelope Delay Distortion

The maximum Envelope Delay Distortion for the frequency bands and route miles specified is:

604 to 2804 Hz

less than 30 route miles            500 microseconds

equal to or greater than  
30 route miles                        900 microseconds

1004 to 2404 Hz

less than 50 route miles            200 microseconds

equal to or greater than  
50 route miles                        400 microseconds

(3) Impulse Noise Counts

The Impulse Noise Counts exceeding 65 dBnCO threshold in 15 minutes is no more than 15 counts.

(4) Intermodulation Distortion

The Second Order (R2) and Third Order (R3) Intermodulation Distortion products are equal to or greater than:

Second Order (R2)                    33 dB  
Third Order (R3)                      37 dB

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9. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

9.2 Transmission Specifications for Switched Access Service (Cont'd)

9.2.2 Data Transmission Parameters (Cont'd)

(A) Data Transmission Parameters Type DA (Cont'd)

(5) Phase Jitter

The Phase Jitter over the 4-300 Hz frequency band is less than or equal to 5 peak-to-peak.

(6) Frequency Shift

The maximum Frequency Shift does not exceed -2 to +2 Hz.

(B) Data Transmission Parameters Type DB

(1) Signal to C-Notched Noise Ratio

The Signal to C-Notched Noise Ratio is equal to or greater than 30 dB.

(2) Envelope Delay Distortion

The maximum Envelope Delay Distortion for the frequency bands and route miles specified is:

604 to 2804 Hz

less than 50 route miles                      800 microseconds

equal to or greater than  
50 route miles                                      1000 microseconds

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9. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

9.2 Transmission Specifications for Switched Access Service (Cont'd)

9.2.2 Data Transmission Parameters (Cont'd)

(B) Data Transmission Parameters Type DB (Cont'd)

(2) Envelope Delay Distortion (Cont'd)

1004 to 2404 Hz

less than 50 route miles            320 microseconds

equal to or greater than  
50 route miles                        500 microseconds

(3) Impulse Noise Counts

The Impulse Noise Counts exceeding 67 dB<sub>rnCO</sub> threshold in 15 minutes is no more than 15 counts.

(4) Intermodulation Distortion

The Second Order (R2) and Third Order (R3) Intermodulation Distortion products are equal to or greater than:

Second Order (R2)                    31 dB  
Third Order (R3)                        34 dB

(5) Phase Jitter

The Phase Jitter over the 4-300 Hz frequency band is less than or equal to 7 peak-to-peak.

(6) Frequency Shift

The maximum Frequency Shift does not exceed -2 to +2 Hz.

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