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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 as set forth in 6.3.1 preceding.

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's 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.

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9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)**9.1 Local Transport Interface Groups (Cont'd)**

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 or Basic Serving Arrangement and whether the Access Service is routed directly or through an access tandem. All Interface Groups are provided with Data Transmission Parameters.

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

For each of the ten Interface Groups described following, the transmission path between the point of termination at the customer's premises and the first point of switching may be comprised 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

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, FGD, BSA-C and BSA-D when the first point of switching is an access tandem. In addition, Interface Group 1 is not provided in association with FGB, FGC, FGD, BSA-B, BSA-C or BSA-D when the first point of switching can only provide four-wire terminations.

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9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)**9.1 Local Transport Interface Groups (Cont'd)****9.1.1 Interface Group 1 ((Cont'd)**

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

9.1.2 Interface Group 2

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 or BSA-A, such signaling will be loop start or ground start signaling. When the interface is associated with FGB, FGC, FGD, BSA-B, BSA-C or BSA-D such signaling, except for two-way calling which is E&M signaling, will be reverse battery signaling.

9.1.3 Interface Group 3

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 channel.

As of December 30, 1993, Interface Group 3 is available to existing customers only.

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9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)**9.1 Local Transport Interface Groups (Cont'd)****9.1.4 Interface Group 4**

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.

As of December 30, 1993, Interface Group 4 is available to existing customers only.

9.1.5 Interface Group 5

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 channel.

As of December 30, 1993, Interface Group 5 is available to existing customers only.

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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**

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.

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

9.1.7 Interface Group 7

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 D3/D4 format.

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

As of December 30, 1993, Interface Group 7 is available to existing customers only.

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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**

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 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 D3/D4 format.

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

Interface Group 8 is provided on an Individual Case Basis.

9.1.9 Interface Group 9

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**

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.

Interface Group 10 is provided on an Individual Case Basis.

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. For explanations of these codes, see the Glossary of Channel Interface Codes in 9.3.1 following.

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> |
| 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-O | | X | X | X |
| | RV | 2RV3-T | | X | X | X |
| 2 | LO, GO | 4SF2 | X | | | |
| | LO, GO | 4SF3 | X | | | |
| | LO | 4LS2 | X | | | |
| | LO | 4LS3 | X | | | |
| | 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 | | | |

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> |
| 2(Cont'd) | 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-O | X | X | X | |
| | RV | 4RV2-T | X | X | X | |
| | RV | 4RV3-O | X | X | | |
| | RV | 4RV3-T | X | X | | |
| 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 |

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> |
| 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 |
| 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 |

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9. Interface Groups, Transmission Specifications, and Channel Codes (Cont'd)**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 GR-334-CORE, Issue 1. 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 6.2 preceding.

(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.

(x) GR-334-CORE, Issue 1, replaces TR-NPL-000334 in its entirety.

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

(4) C-Notch Noise

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

(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:

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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)**(A) Type A Transmission Specifications** (Cont'd)**(5) Echo Control** (Cont'd)

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

| <u>Echo Return Loss</u> | <u>Singing Return Loss</u> |
|-------------------------|----------------------------|
| 5 dB | 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 is the 404 to 2804 Hz frequency band relative to loss at 1004 Hz is -2.0 dB to +4.0 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)**(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 5 | 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, FGB, BSA-A and BSA-B and Equal Level Echo Path Loss for FGC, FGD, BSA-C and BSA-D 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 FGC, FGD, BSA-C and BSA-D only Type B2 will be provided. For FGA, FGB, BSA-A and BSA-B, Type B1 or B2 will be provided as set forth in Technical Reference GR-334-CORE, Issue 1.

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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 and BSA-B access | 8 dB | 4 dB |
| ▪ For FGC and BSA-C access | | |
| (Effective | | |
| 4-Wire trans- | | |
| mission path | | |
| at end office) | 16 dB | 11 dB |
| ▪ For FGC and BSA-C access | | |
| (Effective | | |
| 2-Wire trans- | | |
| mission path | | |
| at end office) | 13 dB | 6 dB |

(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:

| <u>Echo Return Loss</u> | <u>Singing Return Loss</u> |
|-------------------------|----------------------------|
| 5 dB | 2.5 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)**(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 loss at 1004 Hz is -2.0 dB to +5.5 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> | |
|--------------------|-------------------------|----------------|
| | <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.

* For FGC, FGD, BSA-C and BSA-D only Type C2 will be provided. For FGA, FGB, BSA-A and BSA-B, Type C1 or C2 will be provided set forth in Technical Reference GR-334-CORE, Issue 1.

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

| | <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 and BSA-B only) | | |

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9. Interface Groups, Transmission Specifications, and Channel Codes (Cont'd)**9.2 Transmission Specifications for Switched Access Service (Cont'd)****9.2.2 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 6.2 preceding. In addition, the Combined Access Service Arrangement is provided with Data Transmission Parameters. Following are descriptions of each parameter.

(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.

(2) Envelope Delay Distortion

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

| <u>604 to 2804 Hz</u> | |
|---|------------------|
| less than 30 route miles | 500 microseconds |
| equal to or greater than 30 route miles | 900 microseconds |

| <u>1004 to 2404 Hz</u> | |
|---|------------------|
| 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 a 65 dBmCO 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 Codes (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.

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9. Interface Groups, Transmission Specifications, and Channel Codes (Cont'd)9.2 Transmission Specifications for Switched Access Service (Cont'd)9.2.2 Data Transmission Parameters (Cont'd)(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:

| <u>604 to 2804 Hz</u> | |
|---|-------------------|
| less than 50 route miles | 800 microseconds |
| equal to or greater than 50 route miles | 1000 microseconds |

| <u>1004 to 2404 Hz</u> | |
|---|------------------|
| 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 a 67 dBrnCO 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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9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)**9.3 Channel Interface and Network Channel Codes**

This section explains the Channel Interface codes and Network Channel codes that the customer must specify when ordering Special Access Service. Included is an example which explains the specific characters of the code, a glossary of Channel Interface codes, impedance levels, Network Channel codes and compatible Channel Interfaces.

Example: If the customer specifies a NT Network Channel Code and a 2DS8-3 Channel Interface at the customer's premises, the following is being requested:

| | |
|------|---|
| NT = | Metallic Circuit with a Predefined Technical Specification Package (1) |
| 2 = | Number of physical wires at customer premises |
| DS = | 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) |

ACCESS SERVICE

9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)**9.3 Channel Interface and Network Channel Codes (Cont'd)****9.3.1 Glossary of Channel Interface Codes and Options**

| <u>Code</u> | <u>Option</u> | <u>Definition</u> |
|-------------|---------------|---|
| AB - | | accepts 20 Hz ringing signal at customer's point of termination |
| AC - | | accepts 20 Hz ringing signal at customer's end user's point of termination |
| 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) |
| CT - | | Centrex Tie Trunk Termination |
| DA - | | data stream in VF frequency band at customer's end user's point of termination |
| DB - | | data stream in VF frequency band at customer's point of termination |
| - | 10 | VF for TG1 and TG2 |
| - | 43 | VF for 43 Telegraph Carrier type signals, TG1 and TG2 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 customer's point of termination |
| DE - | | DATAPHONE Select-A-Station (and TABS) interface at the customer's end user's point of termination |
| DS - | | digital hierarchy interface |
| - | 15 | 1.544 Mbps (DS1) format per PUB 41451 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 |

ACCESS SERVICE

9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)**9.3 Channel Interface and Network Channel Codes (Cont'd)****9.3.1 Glossary of Channel Interface Codes and Options (Cont'd)**

| <u>Code</u> | <u>Option</u> | <u>Definition</u> |
|-------------|---------------|---|
| DS (Cont'd) | | |
| - | 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 | 6.312 Mbps (DS2) |
| - | 63L | 6.312 Mbps (DS2) with SF signaling |
| DU - | | digital access interface |
| - | 19 | 19.2 kbps |
| - | 24 | 2.4 kbps |
| - | 48 | 4.8 kbps |
| - | 56 | 56.0 kbps |
| - | 64 | 64 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 customer's point of termination |
| DY - | | duplex signaling interface at customer's end user's point of termination |
| EA - | E | type I E&M Lead Signaling. Customer at POT or customer's end user at POT originates on E Lead. |
| EA - | M | Type I E&M Lead Signaling. Customer at POT or customer's end user at POT originates on M Lead. |
| EB - | E | Type II E&M Lead Signaling. Customer at POT or customer's end user at POT originates on E Lead. |
| EB - | M | Type II E&M Lead Signaling. Customer at POT or customer's end user at POT originates on M Lead. |

ACCESS SERVICE

9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)**9.3 Channel Interface and Network Channel Codes (Cont'd)****9.3.1 Glossary of Channel Interface Codes and Options (Cont'd)**

| <u>Code</u> | <u>Option</u> | <u>Definition</u> |
|-------------|---------------|---|
| EC - | | Type III E&M signaling at customer POT |
| EX - | A | tandem channel unit signaling for loop start or ground start and customer supplies open end (dial tone, etc.) functions. |
| EX - | B | tandem channel unit signaling for loop start or ground start and customer supplies closed end (dial pulsing, etc.) functions. |
| GO - | | ground start loop signaling - open end function by customer or customer's end user. |
| GS - | | ground start loop signaling - closed end function by customer or customer's end user |
| IA - | | E.I.A. (25 pin RS-232) |
| LA - | | end user loop start loop 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 customer or customer's end user |
| LR - | | 20 Hz automatic ringdown interface at customer with Telephone Company provided PLAR |
| LS - | | loop start loop signaling - closed end function by customer or customer's end user |
| NO - | | no signaling interface, transmission only |
| PG - | | program transmission - no dc signaling |
| - | 1 | nominal frequency from 50 to 15000 Hz |
| - | 3 | nominal frequency from 200 to 3500 Hz |
| - | 5 | nominal frequency from 100 to 5000 Hz |
| - | 8 | nominal frequency from 50 to 8000 Hz |

ACCESS SERVICE

9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)**9.3 Channel Interface and Network Channel Codes (Cont'd)****9.3.1 Glossary of Channel Interface Codes and Options (Cont'd)**

| <u>Code</u> | <u>Option</u> | <u>Definition</u> |
|-------------|---------------|---|
| PR | | protective relaying* |
| RV - | O | reverse battery signaling, one way operation, originate by customer |
| | -T | reverse battery signaling, one way operation, terminate function by customer or customer's end user |
| SF - | | single frequency signaling with VF band at either customer POT or customer's end user POT |
| TF - | | telephotograph interface |
| TT - | | telegraph/teletypewriter interface at either customer POT or customer's end user POT |
| | -2 | 20.0 milliamperes |
| | -3 | 3.0 milliamperes |
| | -6 | 62.5 milliamperes |
| TV - | | television interface |
| | -1 | combined (duplexed) video and one audio signal |
| | -2 | combined (duplexed) video and two audio signals |
| | -5 | video plus one (or two) audio 5 kHz signal(s) or one (or two) two wire |

* Available only for the transmission of audio tone protective relaying signals used in the protection of electric power systems during fault conditions.

ACCESS SERVICE

9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)**9.3 Channel Interface and Network Channel Codes (Cont'd)****9.3.1 Glossary of Channel Interface Codes and Options (Cont'd)**

| <u>Code</u> | <u>Option</u> | <u>Definition</u> |
|-------------|---------------|---|
| - | 15 | video plus one (or two) audio 15 kHz signal(s) |
| WA - | | wideband bandwidth interface at customer's end user POT |
| - | 1 | limited bandwidth |
| - | 2 | nominal passband from 29000 to 44000 Hz |
| WB - | | wideband data interface at customer POT |
| - | 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 |
| WC - | | wideband data interface at customer's end user |
| - | 18 | POT 18.75 kbps, synchronous |
| - | 19 | for 12-wire interface: 19.2 kbps, synchronous |
| | | for 10-wire interface: up to 19.2 kbps, |
| | 23 | asynchronous 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, asyn- |
| WD - | | chronous wideband bandwidth interface at customer POT |
| - | 1 | nominal passband from 300 to 18000 Hz |
| - | 2 | nominal passband from 28000 to 44000 Hz |
| - | 3 | nominal passband from 29000 to 44000 Hz |

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9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)**9.3 Channel Interface and Network Channel Codes (Cont'd)****9.3.2 Impedance**

The nominal reference impedance with which the channel will be terminated for the purpose of evaluating transmission performance:

| <u>Value (ohms)</u> | <u>Code(s)</u> |
|---------------------|----------------|
| 110 | 0 |
| 150 | 1 |
| 600 | 2 |
| 900 | 3+ |
| 135 | 5 |
| 75 | 6 |
| 124 | 7 |
| Variable | 8 |
| 100 | 9 |

- + For those interface codes with a 4-wire transmission path at the customer's POT, rather than a standard 900 ohm impedance the code (3) denotes a customer provided transmission equipment termination. Such terminations were provided to customers in accordance with the F.C.C. Docket No. 20099 Settlement Agreement.

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9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)**9.3 Channel Interface and Network Channel Codes (Cont'd)****9.3.3 Digital Hierarchy Channel Interface Codes (4DS)**

Customers selecting the multiplexed four-wire DSX-1 or higher facility interface option at the customer designated premises will be requested to provide subsequent system and channel assignment data. The various digital bit rates in the digital hierarchy employ the channel interface code 4DS8, 4DS9, 4DS0 or 4DS6 plus the speed options indicated below:

| <u>Interface Code and Speed Option</u> | <u>Nominal Bit Rate (Mbps)</u> | <u>Digital Hierarchy Level</u> |
|--|------------------------------------|------------------------------------|
| 4DS8-15 | 1.544 | DS1 |
| 4DS9-31 | 3.152 | DS1C |
| 4DS0-63 | 6.312 | DS2 |
| 4DS6-44 | 44.736 | DS3 |
| 4DS6-27 | 274.176 | DS4 |

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9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)**9.3 Channel Interface and Network Channel Codes (Cont'd)****9.3.4 Service Designator/Network Channel Code Conversion Table**

The purpose of this table is to show the relationship between the service designator codes (e.g. VGC, MT2, etc.) and the network channel codes that are used for various administrative purposes.

| <u>Service Designator Code</u> | <u>Network Channel Code</u> |
|------------------------------------|---------------------------------|
| MTC | MQ |
| MT1 | NT |
| MT2 | NU |
| MT3 | NV |
| TGC | NQ |
| TG1 | NW |
| TG2 | NY |
| VGC | LQ |
| VG1 | LB |
| VG2 | LC |
| VG3 | LD |
| VG4 | LE |
| VG5 | LF |
| VG6 | LG |
| VG7 | LH |
| VG8 | LJ |
| VG9 | LK |
| VG10 | LN |
| VG11 | LP |
| VG12 | LR |
| APC | PQ |
| AP1 | PE |
| AP2 | PF |
| AP3 | PJ |
| AP4 | PK |
| TVC | TQ |
| TV1 | TV |
| TV2 | TW |

ACCESS SERVICE

9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)**9.3 Channel Interface and Network Channel Codes** (Cont'd)**9.3.4 Service Designator/Network Channel Code Conversion Table** (Cont'd)

| <u>Service Designator Code</u> | <u>Network Channel Code</u> |
|------------------------------------|---------------------------------|
| WA1 | WJ |
| WA1T | WQ |
| WA2 | WL |
| WA2A | WR |
| WA3 | WN |
| WA4 | WP |
| WD1 | WB |
| WD2 | WE |
| WD3 | WF |
| DA1 | XA |
| DA2 | XB |
| DA3 | XG |
| DA4 | XH |
| HCO | HS |
| HC1 | HC |
| HC1C | HD |
| HC2 | HE |
| HC3 | HF |
| HC4 | HG |

ACCESS SERVICE

9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)**9.3 Channel Interface and Network Channel Codes (Cont'd)****9.3.5 Compatible Channel Interfaces**

The following tables show the channel interface codes (CIs) which are compatible:

(A) MetallicCompatible CIs

| | |
|--------|--------|
| 4AH5-B | 2DC8-1 |
| 4AH5-B | 24C8-2 |
| 4AH6-C | 2DC8-1 |
| 4AH6-C | 2DC8-2 |
| 4AH6-D | 2DC8-1 |

Compatible CIs

| | |
|--------|--------|
| 4AH6-D | 2DC8-2 |
| 2DC8-1 | 2DC8-2 |
| 2DC8-3 | 2DC8-3 |
| 4DS9-* | 2DC8-1 |
| 4DS9-* | 2DC8-2 |

(B) Telegraph GradeCompatible CIs

| | |
|--------|--------|
| 4AH5-B | 10IA8 |
| 4AH5-B | 2TT2-2 |
| 4AH5-B | 4TT2-2 |
| 4AH5-B | 2TT2-6 |
| 4AH5-B | 4TT2-6 |
| 4AH6-C | 10IA8 |
| 4AH6-C | 2TT2-2 |
| 4AH6-C | 4TT2-2 |
| 4AH6-C | 2TT2-6 |
| 4AH6-C | 4TT2-6 |
| 4AH6-D | 10IA8 |
| 4AH6-D | 2TT2-2 |
| 4AH6-D | 4TT2-2 |
| 4AH6-D | 2TT2-6 |

Compatible CIs

| | |
|----------|--------|
| 4AH6-D | 4TT2-6 |
| 2DB2-10 | 10IA8 |
| 2DB2-10 | 2TT2-2 |
| 2DB2-10 | 4TT2-2 |
| 2DB2-43+ | 10IA8 |
| 2DB2-43+ | 2TT2-2 |
| 2DB2-43+ | 2TT2-6 |
| 2DB2-43+ | 4TT2-2 |
| 4DB2-10 | 10IA8 |
| 4DB2-10 | 2TT2-2 |
| 4DB2-10 | 4TT2-2 |
| 4DB2-43+ | 10IA8 |
| 4DB2-43+ | 2TT2-6 |

Compatible CIs

| | |
|----------|--------|
| 4DB2-43+ | 4TT2-2 |
| 4DS9-* | 10IA8 |
| 4DS9-* | 2TT2-2 |
| 4DS9-* | 4TT2-2 |
| 4DS9-* | 2TT2-6 |
| 4DS9-* | 4TT2-6 |
| 2TT2-2 | 2TT2-2 |
| 2TT2-3 | 2TT2-2 |
| 2TT2-3 | 4TT2-2 |
| 2TT2-6 | 2TT2-6 |
| 2TT2-6 | 4TT2-2 |
| 4TT2-2 | 4TT2-2 |
| 4TT2-6 | 2TT2-6 |

* See 7.5.3 preceding for explanation.

+ Supplemental Channel Assignment information required.

ACCESS SERVICE

9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)9.3 Channel Interface and Network Channel Codes (Cont'd)9.3.5 Compatible Channel Interfaces (Cont'd)(C) Voice GradeCompatible CIsCompatible CIsCompatible CIs

4AB2 4AB2

4AB2 4AC2

4AB3 4AC2

4AB2 2AC2

4AB3 2AC2

2AB2 2AC2

2AB3 2AC2

4AB2 4SF2

4AB3 4SF2

4AH6-D 4AC2

4AH6-D 2AC2

4AH6-C 4AC2

4AH6-C 2AC2

4AH5-B 4AC2

4AH5-B 2AC2

4AH6-D 2CT3

4AH6-C 2CT3

4AH5-B 2CT3

4AH6-D 6DA2

4AH6-D 4DA2

4AH6-D 2DA2

4AH6-C 6DA2

4AH6-C 4DA2

4AH6-C 2DA2

4AH5-B 6DA2

4AH5-B 4DA2

4AH5-B 2DA2

4AH6-D 4DE2

4AH6-C 4DE2

4AH5-B 4DE2

4AH6-D 2DE2

4AH6-C 2DE2

4AH5-B 2DE2

4AH6-D 4DX3

4AH6-C 4DX3

4AH5-B 4DX3

4AH6-D 4DX2

4AH6-C 4DX2

4AH5-B 4DX2

4AH6-D 9DY2

4AH6-D 9DY3

4AH6-D 6DY2

4AH6-D 6DY3

4AH6-D 4DY2

4AH6-D 2DY2

4AH6-C 9DY2

4AHG-C 9DY3

4AH6-C 6DY2

4AH6-C 6DY3

4AH6-C 4DY2

4AH6-C 2DY2

4AH5-B 9DY2

4AH5-B 9DY3

4AH5-B 6DY2

4AH5-B 6DY3

4AH5-B 4DY2

4AH5-B 2DY2

4AH6-D 9EA2

4AH6-D 9EA3

4AH6-D 6EA2-E

4AH6-D 6EA2-M

4AH6-D 4EA2-E

4AH6-D 4EA2-M

4AH6-C 9EA2

4AJ7-C 9EA3

4AH6-C 6EA2-E

ACCESS SERVICE

9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)9.3 Channel Interface and Network Channel Codes (Cont'd)9.3.5 Compatible Channel Interfaces (Cont'd)(C) Voice Grade (Cont'd)

| <u>Compatible CIs</u> | | <u>Compatible CIs</u> | | <u>Compatible CIs</u> | |
|-----------------------|--------|-----------------------|------|-----------------------|------|
| 4AH6-C | 6EA2-M | 4AH6-D | 6GS2 | 4AH6-D | 2LO2 |
| 4AH6-C | 4EA2-E | 4AH6-D | 4GS2 | 4AH6-C | 2LO3 |
| 4AH6-C | 4EA2-M | 4AH6-D | 2GS3 | 4AH6-C | 2LO2 |
| 4AH5-B | 9EA2 | 4AH6-D | 2GS2 | 4AH5-B | 2LO3 |
| 4AH5-B | 9EA3 | 4AH6-C | 6GS2 | 4AH5-B | 2LO2 |
| 4AH5-B | 6EA2-E | 4AH6-C | 4GS2 | | |
| 4AH5-B | 6EA2-M | 4AH6-C | 2GS3 | 4AH6-B | 4LR2 |
| 4AH5-B | 4EA2-E | 4AH6-C | 2GS2 | 4AH6-D | 2LR2 |
| 4AH5-B | 4EA2-M | 4AH5-B | 6GS2 | 4AH6-C | 4LR2 |
| | | 4AH5-B | 4GS2 | 4AH6-C | 2LR2 |
| 4AH6-D | 8EB2-E | 4AH5-B | 2GS3 | 4AH5-B | 4LR2 |
| 4AH6-D | 8EB2-M | 4AH5-B | 2GS2 | 4AH5-B | 2LR2 |
| 4AH6-D | 6EB2-E | | | | |
| 4AH6-D | 6EB2-M | 4AH6-D | 2LA2 | 4AH6-D | 6LS2 |
| 4AH6-C | 8EB2-E | 4AH6-C | 2LA2 | 4AH6-D | 4LS2 |
| 4AH6-C | 8EB2-M | 4AH5-B | 2LA2 | 4AH6-D | 2LS2 |
| 4AH6-C | 6EB2-E | | | 4AH6-D | 2LS3 |
| 4AH6-C | 6EB2-M | 4AH6-D | 2LB2 | 4AH6-C | 6LS2 |
| 4AH5-B | 8EB2-E | 4AHG-C | 2LB2 | 4AH6-C | 4LS2 |
| 4AH5-B | 8EB2-M | 4AH5-B | 2LB2 | 4AH6-C | 2LS2 |
| 4AH5-B | 6EB2-E | | | 4AH6-C | 2LS3 |
| 4AH5-B | 6EB2-M | 4AH6-D | 2LC2 | 4AH5-B | 6LS2 |
| | | 4AH6-C | 2LC2 | 4AH5-B | 4LS2 |
| | | 4AH5-B | 2LC2 | 4AH5-B | 2LS2 |
| 4AH6-D | 2GO2 | | | | |
| 4AH6-D | 2GO3 | | | | |
| 4AH6-C | 2GO2 | | | | |
| 4AH6-C | 2GO2 | | | | |
| 4AH5-B | 2GO2 | 4AH6-D | 2LO3 | 4AH5-B | 2LS3 |
| 4AH5-B | 2GO3 | | | | |

ACCESS SERVICE**9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)****9.3 Channel Interface and Network Channel Codes (Cont'd)****9.3.5 Compatible Channel Interfaces (Cont'd)****(C) Voice Grade (Cont'd)**

| <u>Compatible CIs</u> | | <u>Compatible CIs</u> | | <u>Compatible CIs</u> | |
|-----------------------|--------|-----------------------|--------|-----------------------|--------|
| 4AH6-D | 4NO2 | 4AH6-D | 4TF2 | 2CT3 | 8EB2-E |
| 4AH6-D | 2NO2 | 4AJ7-D | 2TF2 | 2CT3 | 8EB2-M |
| 4AH6-C | 4NO2 | 4AH6-C | 4TF2 | | |
| 4AH6-C | 2NO2 | 4AH6-C | 2TF2 | 2CT3 | 6482-E |
| 4AH5-B | 4NO2 | 4AH5-B | 4TF2 | 2CT3 | 6EB2-M |
| 4AH5-B | 2NO2 | 4AH5-B | 2TF2 | | |
| | | | | 2CT3 | 6EB3-E |
| | | | 2CT3 | 4DS9-* | |
| | | | | 2CT3 | 8EC2 |
| | | 2CT3 | 6DX2 | | |
| | | 2CT3 | 4DX2 | 2CT3 | 4SF2 |
| | | 2CTS | 4DX3 | 2CT3 | 4SF3 |
| 4AH6-D | 4PR2 | 2CT3 | 9DY3 | 6DA2 | 6DA2 |
| 4AH6-D | 2PR2 | 2CT3 | 6DY3 | 6DA2 | 4DA2 |
| 4AH6-C | 4PR2 | 2CT3 | 9DT2 | 4DA2 | 4DA2 |
| 4AH6-C | 2PR2 | 2CT3 | 6DY2 | | |
| 4AH5-B | 4PR2 | 2CT3 | 4DY3 | 4DB2 | 6DA2 |
| 4AH5-B | 2PR2 | 2CT3 | 2DY2 | 4DB2 | 4DA2 |
| | | | | 4DB2 | 2DA2 |
| 4AH6-D | 4RV2-T | 2CT3 | 9EA3 | 2DB3 | 2DA2 |
| 4AH6-D | 2RV2-T | 2CT3 | 9EA2 | 2DB2 | 2DA2 |
| 4AH6-C | 4RV2-T | 2CT3 | 6EA2-E | 4DB2 | 4DB2 |
| 4AH6-C | 2RV2-T | 2CT3 | 6EA2-M | 4DB2 | 4NO2 |
| 4AH5-B | 4TV2-T | 2CT3 | 4EA2-E | 4DB2 | 2NO2 |
| 4AH5-B | 2RV2-T | 2CT3 | 4EA2-M | 2DB2 | 2NO2 |
| 4AH6-D | 4SF2 | | | 4DB2 | 4PR2 |
| 4AH6-C | 4SF2 | | | 4DB2 | 2PR2 |
| 4AH5-B | 4SF2 | | | 2DB2 | 2PR2 |
| 4AH6-D | 4SF3 | | | | |
| 4AH6-C | 4SF3 | | | | |
| 4AH5-B | 4SF3 | | | | |

* See 9.3.3 preceding for explanation.

ACCESS SERVICE

9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)**9.3 Channel Interface and Network Channel Codes (Cont'd)****9.3.5 Compatible Channel Interfaces (Cont'd)****(C) Voice Grade (Cont'd)**Compatible CIs

4DD3 4DE2
 4DD3 2DE2

4DS8-* 4AC2
 4DS8-* 2AC2

4DS8-* 6DA2
 4DS8-* 4DA2
 4DS8-* 2DA2

4DS8-* 4DE2
 4DS8-* EDE2

4DS8-* 4DX3
 4DS8-* 4DX2

Compatible CIs

4DS8-* 9DY3
 4DS8-* 9DY2
 4DS8-* 6DY3
 4DS8-* 6DY2
 4DS8-* 4DY2
 4DS8-* 2DY2

4DS8-* 9EA2
 4DS8-* 9EA3
 4DS8-* 6EA2-E
 4DS8-* 6EA2-M
 4DS8-* 4EA2-E
 4DS8-* 4EA2-E

* See 9.3.3 preceding for explanation.

ACCESS SERVICE

9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)9.3 Channel Interface and Network Channel Codes (Cont'd)9.3.5 Compatible Channel Interfaces (Cont'd)(C) Voice Grade (Cont'd)Compatible CIsCompatible CIsCompatible CIs

4DS8-* 8EB2-E
 4DS8-* 8EB2-M
 4DS8-* 6EB2-E
 4DS8-* 6EB2-M

4DS8-* 4NO2
 4DS8-* 2NO2
 4DS8-* 4PR2
 4DS8-* 2PR2

4DX3 9DY2
 4DX2 6DY3
 4DX3 6DY3
 4DX2 6DY2
 4DX3 6DY2
 4DX2 4DY2
 4DX3 4DY2
 4DX2 2DY2
 4DX3 2DY2

4DS8-* 2GO2
 4DS8-* 2GO3
 4DS8-* 6GS2
 4DS8-* 4GS2
 4DS8-* 2GS2
 4DS8-* 2GS3

4DS8-* 4RV2-T
 4DS8-* 2RV2-T
 4DS8-* 4SF2
 4DS8-* 4SF3

6DX2 9EA3
 6DX2 9EA2
 6DX2 6EA2-E
 6DX2 6EA2-M
 6DX2 4EA2-E
 6DX2 4EA2-M
 4DX2 9EA2
 4DX3 9EA2
 4DX2 9EA3
 4DX3 9EA3
 4DX2 6EA2-E
 4DX3 6EA2-E
 4DX2 6EA2-M
 4DX3 6EA2-M
 4DX2 4EA2-E
 4DX3 4EA2-E
 4DX2 4EA2-M
 4DX3 4EA2-M

4DS8-* 2LA2
 4DS8-* 2LB2

4DS8-* 4TF2
 4DS8-* 2TF2

8DS8-* 2LC2
 4DS8-* 2LO2
 4DS8-* 2LO3

4DX2 4DX2
 4DX3 4DX2
 4DX3 4DX3

4DS8-* 4LR2
 4DS8-* 2LR2

6DX2 9DY3
 6DX2 9DY2
 6DX2 6DY3
 6DX2 6DY2
 6DX2 4DY2
 6DX2 2DY2
 4DX2 9DY3
 4DX3 9DY3
 4DX2 9DY2

4DS8-* 6LS2
 4DS8-* 4LS2
 4DS8-* 2LS2
 4DS8-* 2LS3

*

See 9.3.3 preceding for explanation.

ACCESS SERVICE**9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)****9.3 Channel Interface and Network Channel Codes (Cont'd)****9.3.5 Compatible Channel Interfaces (Cont'd)****(C) Voice Grade (Cont'd)**

| <u>Compatible CIs</u> | | <u>Compatible CIs</u> | | <u>Compatible CIs</u> | |
|-----------------------|--------|-----------------------|--------|-----------------------|------|
| 6DX2 | 8EB2-E | 4DX2 | 6LS2 | 9DY2 | 6DY3 |
| 6DX2 | 8EB2-M | 4DX3 | 6LS2 | 9DY3 | 4DY2 |
| 6DX2 | 6EB2-E | 4DX3 | 4LS2 | 9DY2 | 4DY2 |
| 6DX2 | 6EB2-M | 4DX2 | 4LS2 | 9DY2 | 2DY2 |
| 4DX2 | 8EB2-E | 4DX3 | 2LS3 | 9DY3 | 2DY2 |
| 4DX2 | 8EB2-M | 4DX2 | 2LS3 | 6DY3 | 6DY3 |
| 4DX3 | 8EB2-E | 4DX3 | 2LS2 | 6DY3 | 6DY2 |
| 4DX3 | 8EB2-M | 4DX2 | 2LS2 | 6DY2 | 6DY2 |
| 4DX2 | 6EB2-E | 2DX3 | 2LS2 | 6DY3 | 4DY2 |
| 4DX2 | 6EB2-M | 2DX3 | 2LS3 | 6DY3 | 2DY2 |
| 4DX3 | 6EB2-E | | | 6DY2 | 4DY2 |
| 4DX3 | 6EB2-M | 4DX3 | 4RV2-T | 6DY2 | 2DY2 |
| | | 4DX2 | 4RV2-T | 4DY2 | 2DY2 |
| 4DX2 | 2LA2 | 4DX3 | 2RV2-T | 4DY2 | 4DY2 |
| 4DX3 | 2LA2 | 4DX2 | 2RV2-T | | |
| 2DX3 | 2LA2 | | | 6EA2-E | 4AC2 |
| | | 6DX2 | 4SF2 | 6EA2-M | 4AC2 |
| 4DX2 | 2LB2 | 4DX2 | 4SF2 | 6EA2-E | 2AC2 |
| 4DX3 | 2LB2 | 4DX3 | 4SF2 | 6EA2-M | 2AC2 |
| 2DX3 | 2LB2 | 4DX2 | 4SF3 | | |
| | | 4DX3 | 4SF3 | 9EA2 | 9DY3 |
| 4DX2 | 2LC2 | | | 9EA2 | 9DY2 |
| 4DX3 | 2LC2 | 9DY3 | 9DY3 | 9EA2 | 6DY3 |
| 2DX3 | 2LC2 | 9DY3 | 9DY2 | 9EA2 | 6DY2 |
| | | 9DY2 | 9DY2 | 9EA2 | 4DY2 |
| 4DX2 | 2LO3 | 9DY3 | 6DY3 | 9EA2 | 2DY2 |
| 4DX3 | 2LO3 | 9DY3 | 6DY2 | 9EA3 | 9DY3 |
| 2DX3 | 2LO3 | 9DY2 | 6DY2 | | |

ACCESS SERVICE

9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)**9.3 Channel Interface and Network Channel Codes (Cont'd)****9.3.5 Compatible Channel Interfaces (Cont'd)****(C) Voice Grade (Cont'd)**Compatible CIsCompatible CIsCompatible CIs

| | | | | | |
|--------|------|--------|--------|--------|--------|
| 9EA3 | 9DY2 | 4EA2-M | 9DY2 | 4EA3-E | 9EA2 |
| 9EA3 | 6DY3 | 4EA2-M | 6DY3 | 4EA3-E | 9EA3 |
| 9EA3 | 6DY2 | 4EA2-M | 6DY2 | 4EA2-M | 4EA2-M |
| 9EA3 | 4DY2 | 4EA2-M | 4DY2 | | |
| 9EA3 | 2DY2 | 4EA2-M | 2DY2 | 9EA2 | 8EB2-E |
| 6EA2-E | 9DY3 | | | 9EA2 | 8EB2-M |
| 6EA2-E | 9DY2 | 9EA2 | 9EA2 | 9EA2 | 6EB2-E |
| 6EA2-E | 6DY3 | 9EA2 | 9EA3 | 9EA2 | 6EB2-M |
| 6EA2-E | 6DY2 | 9EA2 | 6EA2-E | 9EA3 | 8EB2-E |
| 6EA2-E | 4DY2 | 9EA2 | 6EA2-M | 9EA3 | 8EB2-M |
| 6EA2-E | 2DY2 | 9EA2 | 4EA2-E | 9EA3 | 6EB2-E |
| 6EA2-M | 9DY3 | 9EA2 | 4EA2-M | 9EA3 | 6EB2-M |
| 6EA2-M | 9DY2 | 9EA3 | 9EA3 | 6EA2-E | 8EB2-E |
| 6EA2-M | 6DY3 | 9EA3 | 6EA2-E | 6EA2-E | 8EB2-M |
| 6EA2-M | 6DY2 | 9EA3 | 6EA2-M | 6EA2-E | 6EB2-E |
| 6EA2-M | 4DY2 | 9EA3 | 4EA2-E | 6EA2-E | 6EB2-M |
| 6EA2-M | 2DY2 | 9EA3 | 4EA2-M | 6EA2-M | 8EB2-E |
| 4EA2-E | 9DY3 | 6EA2-E | 6EA2-E | 6EA2-M | 8EB2-M |
| 4EA2-E | 9DY2 | 6EA2-E | 6EA2-M | 6EA2-M | 6EB2-E |
| 4EA3-E | 9DY3 | 6EA2-M | 6EA2-M | 6EA2-M | 6EB2-M |
| 4EA3-E | 9DY2 | 6EA2-E | 4EA2-E | 4EA2-E | 8EB2-E |
| 4EA3-E | 6DY3 | 6EA2-E | 4EA2-M | 4EA2-E | 8EB2-M |
| 4EA3-E | 6DY2 | 6EA2-M | 4EA2-E | 4EA3-E | 8EB2-E |
| 4EA3-E | 4DY2 | 6EA2-M | 4EA2-M | 4EA3-E | 8EB2-M |
| 4EA3-E | 2DY2 | 4EA2-E | 4EA2-E | 4EA2-E | 6EB2-E |
| 4EA2-E | 6DY3 | 4EA3-E | 6EA2-E | 4EA2-E | 6EB2-M |
| 4EA2-E | 6DY2 | 4EA3-E | 6EA2-M | 4EA3-E | 6EB2-E |
| 4EA2-E | 4DY2 | 4EA3-E | 4EA2-E | 4EA3-E | 6EB2-M |
| 4EA2-E | 2DY2 | 4EA3-E | 4EA2-M | 4EA2-M | 8EB2-E |
| 4EA2-M | 9DY3 | 4EA2-E | 4EA2-M | | |

ACCESS SERVICE

9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)9.3 Channel Interface and Network Channel Codes (Cont'd)9.3.5 Compatible Channel Interfaces (Cont'd)(C) Voice Grade (Cont'd)Compatible CIsCompatible CIsCompatible CIs

4EA2-M 8EB2-M
 4EA2-M 6EB2-E
 4EA2-M 6EB2-M

9EA3 43F2
 9EA2 4SF2
 6EA2-E 4SF3

6EB3-E 9DY2
 6EB3-E 9DY3
 6EB2-E 6DY2

6EA2-E 2LA2
 6EA2-M 2LA2

6EA2-M 4SF3
 6EA2-E 4SF2
 6EA2-M 4SF2

6EB3-E 6DY2
 6EB2-E 6DY3
 6EB3-E 6DY3

6EA2-E 2LB2
 6EA2-M 2LB2

4EA3-E 4SF2
 4EA2-E 4SF2
 4EA2-M 4SF2

6EB2-E 4DY2
 6EB3-E 2DY2
 6EB3-E 4DY2

6EA2-E 2LC2
 6EA2-M 2LC2

6EA2-M 4SF2
 4EA3-E 4SF2
 4EA2-E 4SF2

6EB2-M 9DY2
 6EB2-M 9DY3
 6EB2-M 6DY2

6EA2-E 2LO3
 6EA2-M 2LO3

8EB2-E 4AC2
 8EB2-M 4AC2
 8EB2-E 2AC2

6EB2-M 6DY3
 6EB2-M 4DY2
 6EB2-E 2DY2

6EA2-E 6LS2
 6EA2-M 6LS2

8EB2-E 9DY3
 8EB2-E 9DY2
 8EB2-E 6DY3

6EB2-M 2DY2
 6EB2-M 9DY3
 6EB2-E 2DY2

6EA2-E 4LS2
 6EA2-M 4LS2

8EB2-E 6DY2
 8EB2-E 4DY2
 8EB2-E 2DY2

6EB2-M 6DY3
 6EB2-M 4DY2
 6EB2-E 2DY2

6EA2-E 2LS2
 6EA2-M 2LS2

8EB2-E 2DY2
 8EB2-M 9DY3
 8EB2-M 9DY2

6EB2-E 4EA2-E
 6EB2-M 4EA2-M
 6EB2-E 4EA2-M

6EA2-E 2LS3
 6EA2-M 2LS3

8EB2-M 6DY3
 8EB2-M 6DY2
 8EB2-M 4DY2

8EB2-E 8EB2-E
 8EB2-E 8EB2-M
 8EB2-M 8EB2-M

6EA2-E 4RV2-T
 6EA2-M 4RV2-T

8EB2-E 6DY2
 8EB2-M 4DY2
 8EB2-M 2DY2

8EB2-E 8EB2-E
 8EB2-E 8EB2-M
 8EB2-M 8EB2-M

6EA2-E 2RV2-T
 6EA2-M 2RV2-T

6EB2-E 9DY2
 6EB2-E 9DY3

8EB2-E 6EB2-E
 8EB2-E 6EB2-M

ACCESS SERVICE**9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)****Channel Interface and Network Channel Codes (Cont'd)****9.3****Compatible Channel Interfaces (Cont'd)****9.3.5****Voice Grade (Cont'd)**

(C)

Compatible CIs**Compatible CIs****Compatible CIs**

| | | | | | |
|--------|--------|--------|--------|--------|--------|
| 8EB2-M | 6EB2-E | 8EB2-E | 4RV2-T | 8EC2 | 8EB2-M |
| 8EB2-M | 6EB2-M | 8EB2-M | 4RV2-T | 8EC2 | 6EB2-E |
| 6EB2-E | 6EB2-E | 8EB2-E | 2RV2-T | 8EC2 | 6EB2-M |
| 6EB2-E | 6EB2-M | 8EB2-M | 2RV2-T | | |
| 6EB3-E | 8EB2-E | | | 8EC2 | 4SF2 |
| 6EB3-E | 8EB2-M | 8EB2-E | 4SF2 | 6EX2-B | 2GO3 |
| 6EB2-M | 6EB2-M | 8EB2-M | 4SF2 | 6EX2-A | 6GS2 |
| | | 8EB2-E | 4SF3 | 6EX2-A | 4GS2 |
| 8EB2-E | 2LA2 | 8EB2-M | 4SF3 | 6EX2-A | 2GS2 |
| 8EB2-M | 2LA2 | 6EB3-E | 4SF2 | 6EX2-A | 2GS3 |
| | | 6EB2-E | 4SF2 | | |
| 8EB2-E | 2LB2 | 6EB2-M | 4SF2 | 6EX2-B | 2LA2 |
| 8EB2-M | 2LB2 | | | | |
| | | 8EC2 | 9DY2 | 6EX2-B | 2LB2 |
| 8EB2-E | 2LC2 | 8EC2 | 9DY3 | | |
| 8EB2-M | 2LC2 | 8EC2 | 6DY2 | 6EX2-B | 2LC2 |
| | | 84C2 | 6DY3 | | |
| 8EB2-E | 2LO3 | 8EC2 | 4DY2 | 6EX2-B | 2LO2 |
| 8EB2-M | 2LO3 | 8EC2 | 2DY2 | 6EX2-B | 2LO3 |
| 8EB2-E | 6LS2 | 8EC2 | 9EA2 | 6EX2-B | 4LR2 |
| 8EB2-M | 6LS2 | 8EC2 | 9EA3 | 6EX2-B | 2LR2 |
| 8EB2-E | 4LS2 | 8EC2 | 6EA2-E | | |
| 8EB2-M | 4LS2 | 8EC2 | 6EA2-M | 6EX2-A | 6LS2 |
| 8EB2-E | 2LS2 | 8EC2 | 4EA2-E | 6EX2-A | 4LS2 |
| 8EB2-M | 2LS2 | 8EC2 | 4EA2-M | 6EX2-A | 2LS2 |
| 8EB2-E | 2LS3 | | | 6EX2-A | 2LS3 |
| 8EB2-M | 2LS3 | 8EC2 | 8EB2-E | | |

ACCESS SERVICE**9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)****9.3 Channel Interface and Network Channel Codes (Cont'd)****9.3.5 Compatible Channel Interfaces (Cont'd)****(C) Voice Grade (Cont'd)**

| <u>Compatible CIs</u> | | <u>Compatible CIs</u> | | <u>Compatible CIs</u> | |
|-----------------------|------|-----------------------|------|-----------------------|------|
| 6EX2-A | 4SF2 | 6LO2 | 6LS2 | 4LR2 | 4SF2 |
| 6EX2-B | 4SF2 | 6LO2 | 4LS2 | 4LR3 | 4SF2 |
| | | 6LO2 | 2LS2 | | |
| 6GO2 | 6GS2 | 6LO2 | 2LS3 | 6LS2 | 2LA2 |
| 6GO2 | 4GS2 | 4LO2 | 6LS2 | 4LS2 | 2LA2 |
| 6GO2 | 2GS2 | 4LO2 | 4LS2 | 4LS3 | 2LA2 |
| 6GO2 | 2GS3 | 4LO3 | 6LS2 | 2LS2 | 2LA2 |
| 4GO2 | 6GS2 | 4LO3 | 4LS2 | 2LS3 | 2LA2 |
| 4GO3 | 6GS2 | 4LO3 | 2LS3 | | |
| 4GO2 | 4GS2 | 4LO3 | 2LS2 | 6LS2 | 2LB2 |
| 4GO3 | 4GS2 | 4LO2 | 2LS2 | 4LS2 | 2LB2 |
| 4GO2 | 2GS2 | 4LO2 | 2LS3 | 4LS3 | 2LB2 |
| 4GO2 | 2GS3 | 2LO3 | 2LS3 | 2LS2 | 2LB2 |
| 4GO3 | 2GS2 | 2LO3 | 2LS2 | 2LS3 | 2LB2 |
| 4GO3 | 2GS3 | 2LO2 | 2LS2 | | |
| 2GO2 | 2GS2 | 2LO2 | 2LS3 | 6LS2 | 2LC2 |
| 2GO3 | 2GS2 | | | 4LS2 | 2LC2 |
| 2GO2 | 2GS3 | 6LO2 | 4SF2 | 4LS3 | 2LC2 |
| 2GO3 | 2GS3 | 4LO2 | 4SF2 | 2LS2 | 2LC2 |
| | | 4LO3 | 4SF2 | 2LS3 | 2LC2 |
| 6GO2 | 4SF2 | | | | |
| 4GO2 | 4SF2 | 4LR2 | 4LR1 | 6LS2 | 2LO3 |
| 4GO3 | 4SF2 | 4LR3 | 2LR2 | 6LS2 | 2LO2 |
| | | 4LR2 | 4LR2 | 4LS2 | 2LO2 |
| 6GS2 | 2GO2 | 4LR2 | 2LR2 | 4LS2 | 2LO3 |
| 4GS2 | 2GO2 | 2LR2 | 2LR2 | 4LS3 | 2LO2 |
| 4GS3 | 2GO2 | 2LR3 | 2LR2 | 4LS3 | 2LO3 |
| 4GS2 | 2GO3 | | | | |

ACCESS SERVICE**9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)****9.3 Channel Interface and Network Channel Codes (Cont'd)****9.3.5 Compatible Channel Interfaces (Cont'd)****(C) Voice Grade (Cont'd)**Compatible CIsCompatible CIsCompatible CIs

| | | | | | |
|--------|--------|------|--------|------|--------|
| 6LS2 | 4SF2 | 4SF3 | 9DY2 | 4SF3 | 2LA2 |
| 4LS3 | 4SF2 | 4SF2 | 9DY3 | | |
| | | 4SF3 | 6DY3 | 4SF2 | 2LB2 |
| 4NO2 | 6DA2 | 4SF2 | 6DY3 | 4SF3 | 2LB2 |
| 4NO2 | 4DA2 | 4SF2 | 6DY3 | | |
| 4NO2 | 2DA2 | 4SF3 | 6DY2 | 4SF2 | 2LC2 |
| 2NO2 | 2DA2 | 4SF2 | 4DY2 | 4SF3 | 2LC2 |
| | | 4SF3 | 4DY2 | | |
| 4NO2 | 4DE2 | 4SF3 | 2DY2 | 4SF2 | 2LO3 |
| 4NO2 | 2DE2 | 4SF2 | 2DY2 | 4SF3 | 2LO3 |
| 4NO2 | 4NO2 | 4SF3 | 9EA2 | 4SF2 | 2LR2 |
| 4NO2 | 2NO2 | 4SF3 | 9EA3 | 4SF3 | 4LR2 |
| 2NO2 | 2NO2 | 4SF3 | 4EA2-E | 4SF3 | 2LR2 |
| 2NO3 | 2NO2 | 4SF3 | 4EA2-M | | |
| | | | | 4SF3 | 6LS2 |
| 2NO3 | 2PR2 | 4SF3 | 6EB2-E | 4SF2 | 4LS2 |
| | | 4SF3 | 6EB2-M | 4SF3 | 4LS2 |
| 4RV2-0 | 4RV2-T | 4SF3 | 2GO3 | 4SF2 | 2LS2 |
| 4RV2-0 | 2RV2-T | 4SF3 | 6GS2 | 4SF2 | 2LS3 |
| 4RV2-0 | 2RV2-T | 4SF2 | 6GS2 | 4SF3 | 2LS2 |
| | | 4SF2 | 6GS2 | 4SF3 | 2LS3 |
| 4RV2-0 | 4SF2 | 4SF3 | 4GS2 | | |
| | | 4SF2 | 2GS2 | 4SF3 | 4RV2-T |
| 4SF2 | 4AC2 | 4SF2 | 2GS3 | 4SF2 | 4RV2-T |
| 4SF2 | 2AC2 | 4SF3 | 2GS2 | 4SF2 | 2RV2-T |
| | | 4SF3 | 2GS3 | 4SF3 | 2RV2-T |
| 4SF3 | 9DY3 | | | | |
| 4SF2 | 9DY2 | 4SF2 | 2LA2 | 4SF3 | 4SF3 |

ACCESS SERVICE

9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)**9.3 Channel Interface and Network Channel Codes (Cont'd)****9.3.5 Compatible Channel Interfaces (Cont'd)****(C) Voice Grade (Cont'd)****Compatible CIs**

| | |
|------|------|
| 4SF3 | 4SF2 |
| 4SF2 | 4SF2 |

| | |
|------|------|
| 4TF2 | 4TF2 |
| 4TF2 | 2TF2 |
| 2TF3 | 2TF2 |

ACCESS SERVICE**9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)****9.3 Channel Interface and Network Channel Codes (Cont'd)****9.3.5 Compatible Channel Interfaces (Cont'd)****(D) Program Audio**Compatible CIsCompatible CIsCompatible CIs

| | | | | | |
|--------|--------|----------|--------|----------|--------|
| 4AH5-B | 2PG1-3 | 4AH6-D | 2PG1-3 | 4DS8-I5F | 2PG2-5 |
| 4AH5-B | 2PG1-5 | 4AH6-D | 2PG1-5 | 4DS8-I5G | 2PG2-8 |
| 4AH5-B | 2PG1-8 | 4AH6-D | 2PG1-8 | 4DS8-15H | 2PG2-1 |
| 4AH5-B | 2PG2-3 | 4AH6-D | 2PG2-3 | 2PG2-1 | 2PG1-1 |
| 4AH5-B | 2PG2-5 | 4AH6-D | 2PG2-5 | 2PG2-1 | 2PG2-I |
| 4AH5-B | 2PG2-8 | 4AH6-D | 2PG2-8 | 2PG2-3 | 2PGI-3 |
| 4AH6-C | 2PG1-3 | 4DS8-15E | 2PG1-3 | 2PG2-3 | 2PG2-3 |
| 4AH6-C | 2PG1-5 | 4DS8-15F | 2PG1-5 | 2PG2-5 | 2PG1-5 |
| 4AH6-C | 2PG1-8 | 4DS8-15G | 2PG1-8 | 2PG2-5 | 2PG2-5 |
| 4AH6-C | 2PG2-3 | 4DS8-15H | 2PG1-1 | 2PG2-8 | 2PG1-8 |
| 8AH6-C | 2PG2-5 | 4DS8-15E | 2PG2-3 | 2PG2-8 | 2PG2-8 |

(E) Video Digital Transport ServiceTV-1 AnalogCompatible CIs

| | |
|-----------|-----------|
| 02TV7.15 | 02TV7.15 |
| 04TV6.15 | 04TV6.15 |
| | 04TV6.15A |
| 04TV6.15A | 04TV6.15A |
| | 04TV6.15 |
| 04TV6.20A | 04TV6.20A |
| | 04TV6.20 |
| 04TV7.15 | 04TV7.15 |
| 04TV7.15A | 04TV7.15A |
| 04TV7.20A | 04TV7.20A |
| 06TV6.15 | 06TV6.15 |
| | 06TV6.15A |
| 06TV6.15A | 06TV6.15A |
| | 06TV6.15 |
| 06TV6.20A | 06TV6.20A |
| 06TV7.15 | 06TV7.15 |
| 08TV6.15A | 08TV6.15A |
| 10TV6.15A | 10TV6.15A |
| 10TV6.20A | 10TV6.20A |

ACCESS SERVICE

9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)**9.3 Channel Interface and Network Channel Codes (Cont'd)****9.3.5 Compatible Channel Interfaces (Cont'd)****(F) Wideband Analog**Compatible CIs

4AH5-B 4AH5-B
 4AH6-C 4AH5-B
 4AH6-C 4AH6-C

4AH6-D
 4AH6-D
 4AH6-C

Compatible CIs

4AH6-D 4AH6-D

4AH5-B 4AH5-B
 4AH6-C 4AH5-B
 4DU8-A,B, or C

4AH6-D 4DU8-A,B, or C

Compatible CIs

4WD5-I 4WA5-1
 4WD5-2 4WA5-I
 4WD5-3 4WA5-2

4DS8-15
 4DU8-A,B, or C

(G) Wideband DataCompatible CIs

8WB5-18S 12WC6-18
 8WB5-19A 10WC6-19
 8WB5-19S 12WC6-19

Compatible CIs

8WB5-23A 10WC6-23
 8WB5-23S 12W6-23S
 8WB5-40S 12W6-40

Compatible CIs

8WB5-50A 10WC6-50
 8WB5-50S 12WB6-50

ACCESS SERVICE

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

9.3

Compatible Channel Interfaces (Cont'd)

9.3.5

Digital Data

(H)

Digital Data

(1)

Compatible CIsCompatible CIsCompatible CIs

| | | | | | |
|----------|----------|----------|---------|----------|---------|
| | | | 4DS8-15 | | 6DU5-48 |
| 4DS8-15 | 4DU8-15+ | 4DS8-15 | 6DU5-56 | 4DU5-96 | 4DU5-96 |
| 4DS8-15 | 4DU8-24 | 4DS8-15 | 6DU5-96 | 6DU5-24 | 6DU5-24 |
| 4DS8-15 | 4DU8-48 | 4DU5-24 | 4DU5-24 | 6DU5-48 | 6DU5-48 |
| 4DS8-15 | 4DU8-56 | 4DU5-48 | 4DU5-48 | 6DU5-56 | 6DU5-56 |
| 4DS8-15 | 6DU5-96 | 4DU8-56 | 4DU5-56 | 6DU5-96 | 6DU5-96 |
| 4DS8-15 | 6DU5-24 | 4DS9-15 | 4DU5-19 | 4DS6-44A | 4DU5-19 |
| 4DS9-15B | 4DU5-64 | 4DS6-44A | 4DU5-64 | | |

Available only as a cross connect of two digital circuits at appropriate digital speeds at a Telephone Company hub.

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ACCESS SERVICE

9. Interface Groups, Transmission Specifications and Channel Codes (Cont'd)9.3 Channel Interface and Network Channel Codes (Cont'd)9.3.5 Compatible Channel Interfaces (Cont'd)(I) High CapacityCompatible CIsCompatible CIs

| | | | | |
|----------|---------------|--------------------|---------------|---------------|
| 4DSO-63 | 4DSO-63 | | 4DS8-15 | 4DU8-8 |
| 4DSO-63 | 6DU8-A,B or C | 4DS8-15J | 4DS8-15J | 6DU8-A |
| 4DSO-63 | 4DU8-A,B or C | 4DS8-15K | 4DU8-A | |
| 4DS6-27 | 4DS6-27 | | 6DU8-B | |
| 4DS6-27 | 6DU8-A,B or C | 4DS8-15K | 4DS8-15K | 4DU8-B |
| 4DS6-27 | 4DU8-A,B or C | 4DS8-15K | 6DU8-C | |
| 4DS6-44 | 4DS6-44 | | 4D78-C | |
| 4DS6-44 | 6DU8-A,B or C | 4DS9-31 | 4DS9-31 | 4DS9-31 |
| 4DS6-44 | 4DU8-A,B or C | 4DS9-4DU8-A,B or C | 6DU8-A,B or C | |
| 4DS8-15 | 4DS8-15+ | | 4DU9-A,B or C | 4DU8-A,B or C |
| 4DS8-15 | 6DU8-B | | 4DS9-15 | 4DU5-19 |
| 4DS6-44A | 4DU5-19 | | 4DS9-15B | 4DU5-64 |
| 4DS6-44A | 4DU5-64 | | | |

Available only as a cross connect of two individual circuits of 1.544 Mbps facilities at a Telephone Company hub.

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