ILLINOIS SMALL COMPANY EXCHANGE CARRIER ASSOCIATION

By Alan Anderson, President 2305 West Monroe, Suite 4 Springfield, Illinois 62704 and: December 30, 1993

ACCESS SERVICE

ILLINOIS C.C. NO. 1 Section 15 1st Revised Page 1 Cancels Original Page 1 Effective: January 1, 1994

15. Access Service Interfaces and Transmission Specifications

15.1 contains Switched Access Service Options (which are comprised of Interface Groups, Supervisory Signaling, Entry Switch Receive Level and Local Transport Termination) and Transmission Specifications. 15.2 describes Special Access Service Network Channel (NC) codes and Network Channel Interface (NCI) codes. 15.3 contains Interface Group, Premises Interface Code and Standard Transmission Specifications applicable to Directory Access Service.

15.1 Switched Access Service

Ten Interface Groups are provided for terminating the Local Transport Entrance Facility at the customer's designated premises. Each Interface Group provides a specified premises interface (e.g., two-wire, four-wire, DS1, etc.) Where transmission facilities permit, and at the option of the customer, the Entrance Facility may be provided with optional features as set forth in 15.1.1 following.

As a result of the customer's access order and the type of Telephone Company transport facilities serving the customer designated 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 designated premises. For example, if a voice frequency interface is ordered by the customer and the Telephone Company facilities serving the customer designated premises are digital, then Telephone Company channel bank equipment must be placed at the customer designated premises in order to provide the voice frequency interface ordered by the customer.

15.1.1 <u>Local Transport Interface Groups</u>

Interface Groups are combinations of technical parameters which describe the Telephone Company handoff at the point of termination at the customer designated premises. The technical specifications concerning the available interface groups are set forth in (A) through (D) following.

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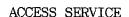






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15. Access Service Interfaces and Transmission Specifications (Cont'd)

15.1 Switched Access Service (Cont'd)

15.1.1 <u>Local Transport Interface Groups (Cont'd)</u>

Interface Group 1 is provided with Type C Transmission Specifications, as set forth in 15.1.2(C) following, and Interface Groups 2 through 10 are provided with Type A or B Transmission specifications, as set forth respectively in 15.1.2(E) and (F) following, depending on the Feature Group and whether the Access Service is routed directly or though an access tandem. All Interface Groups are provided with Data Transmission Parameters.

Only certain premises interfaces are available at the customer designated premises. The premises interfaces associated with the Interface Groups may vary among Feature Groups.

(A) Interface Group 1

Interface Group 1, except as set forth in the following, provides two-wire voice frequency transmission at the point of termination at the customer designated premises. The interface is capable of transmission of voice and associated telephone signals within the frequency bandwidth of approximately 300 to 3000 Hz.

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 provides only four-wire terminations.



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ACCESS SERVICE

Access Service Interfaces and Transmission Specifications (Cont'd)

15.1 <u>Switched Access Service</u> (Cont'd)

15.1.1 Local Transport Interface Groups (Cont'd)

(A) <u>Interface Groups 1</u> (Cont'd)

The transmission path between the point of termination at the customer designated premises and the customer's serving wire center may be comprised of any form or configuration of plant 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.

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.

(B) Interface Group 2

Interface Group 2 provides four-wire voice frequency transmission at the point of termination at the customer designated premises. The interface is capable of transmission of voice and associated telephone signals within the frequency bandwidth of approximately 300 to 3000 Hz.

The transmission path between the point of termination at the customer designated premises and the customer's serving wire center may be comprised of any form or configuration of plant capable of and typically used in the telecommunications industry for the transmission of voice and associated telephone signals within the frequency bandwidth of approximately 300 to 3000 Hz.

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15. Access Service Interfaces and Transmission Specifications (Cont'd)

15.1 Switched Access Service (Cont'd)

15.1.1 <u>Local Transport Interface Groups (Cont'd)</u>

(B) <u>Interface Group 2</u> (Cont'd)

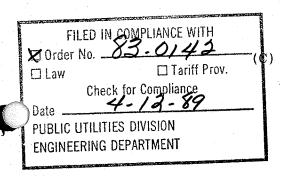
The interface is provided with loop supervisory signaling. When the interface is associated with FGA, such signaling will be loop start or ground start signaling. When the interface is associated with FGB, FGC or FGD, such signaling, except for two-way calling which is E&M signaling, will be reverse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

Interface Groups 3 through 5

Interface Groups 3 through 5 provide analog transmission at the point of termination at the customer designated premises. The various interfaces are capable of transmitting electrical signals at the frequencies illustrated following, with the capability to channelize voice frequency transmission paths. Certain frequencies within the bandwidth of the Interface Groups 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 the transmission paths of frequency bandwidth of approximately 300 to 3000 Hz.

The interfaces are provided with individual transmission path SF supervisory signaling.

Interface Group dentification No.	Transmission Frequency Bandwidth	Analog Hierarchy Level	Maximum No. of Channelized Voice Freq. Trans. Paths
3	60 - 108 kHz	Group	12
4	312 - 552 kHz	Supergroup	60
5	546 - 3084 kHz	Mastergroup	600



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- 15. Access Service Interface and Transmission Specifications (Cont'd)
 - 15.1 Switched Access Service (Cont'd)
 - 15.1.1 <u>Local Transport Interface Groups</u> (Cont'd)
 - (D) Interface Groups 6 through 10

Interface Groups 6 through 10 provide digital transmission at the point of termination at the customer designated premises. The various interfaces are capable of transmitting electrical signals at the nominal bit rates illustrated following, with the capability to channelize 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 transmission paths of a frequency bandwidth of approximately 300 to 3000 Hz. When digital switching of analog switching with digital carrier terminations is provided, the Telephone Company will provide, a DS1 signal(s) in D3/D4 format.

The interfaces are provided with individual transmission path bit stream supervisory signaling.

Interface Group Identification No.	Nominal Bit Rate (Mbps)	Digital <u>Hierarchy Level</u>	Max. No. of Channelized Voice Freq. Trans. Path	
6	1.544	DS1	24	(T)
7	3.152	DS1C	48	
8	6.312	DS2	96	
9	44.736	DS3	672	
10	274.176	DS4	4032	



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15. Access Service Interface and Transmission Specifications (Cont'd)

15.1 <u>Switched Access Service</u> (Cont'd)

15.1.1 <u>Local Transport Interface Groups</u> (Cont'd)

(E) <u>Local Transport Optional Features</u>

Where transmission facilities permit, the Telephone Company will, at the option of the customer, provide the following features in association with Local Transport. An Access Order Charge as Specified in 17.4.1(A) following is applicable on a per order basis when nonchargeable optional features are added subsequent to the installation of service (with the exception of the addition of 64 Clear Channel Capability to an existing service).

(C) (C)

When the 64 Clear Channel Capability optional feature is installed on an existing facility, the addition will be treated as a discontinuance and start of servoce and all associated nonrecurring charges will apply.

(N)

(N)

Customer Specified Entry Switch Receive Level

Customer Specified Entry Switch Receive Level allows the customer to specify the receive transmission level at the first point of switching. The range of transmission levels which may be specified is described in Technical Reference TR-NPL-000334. This feature is available with Interface Groups 2 through 10 for Feature Groups A and B.

Customer Specification of Local Transport Termination

Customer Specification of Local Transport Termination allows the customer to specify, for Feature Group B routed directly to and end office or access tandem, a four-wire termination of the Local Transport at the first point of switching in lieu of a Telephone Company selected two-wire termination. This option is available only when the Feature Groups B arrangement is provided with Type B Transmission Specifications.

Supervisory Signaling

Supervisory Signaling allows the customer to order an optional supervisory signaling arrangement for each transmission path provided where the transmission parameters permit, and where signaling conversion is required by the customer to meet its signaling capability.



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ACCESS SERVICE

- 15. Access Service Interface and Transmission Specifications (Cont'd)
 - 15.1 Switched Access Service (Cont'd)
 - 15.1.1 Local Transport Optional Features (Cont'd)
 - (E) Local Transport Optional Features (Cont'd)

64 Clear Channel Capability allows the customer to transport voice or data signals over a 64 Kbps channel with no constraints on the quantity or sequence of ones and zero bits. This option employs the bipolar 8 Zero Suppression (B8ZS) technique to permit customers to use the full 64 Kbps bandwidth of a DS0 channel. It is only available in suitably equipped electronic end offices as identified in NATIONAL EXCHANGE CARRIER ASSOCIATION, INC. TARIFF No. 4. 64 Clear Channel Capability, as described in Technical Reference GR-334-CORE, is available with Interface Groups 6 and 9 for Feature Groups C and D with Signaling System 7 (SS7) signaling.

The Interface Groups, as described in (A) through (D) preceding, represent industry standard arrangement. Where transmission parameters permit, the customer may select the following optional signaling arrangement place of the signaling arrangements standardly associated with the Interface Groups.

For Interface Groups 1 and 2 associated with FGB, FGC or FGD

DX Supervisory Signaling, E&M Type I Supervisory Signaling, E&M Type II Supervisory Signaling, or **E&M Type III Supervisory Signaling**

For Interface Group 2 associated with FGB, FGC or FGD and in addition to the preceding

> SF Supervisory Signaling, or **Tandem Supervisory Signaling**

For Interface Groups 3 through 5

Optional Supervisory Signaling Not Available

For Interface Groups 6 through 10

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- 15. Access Service Interface and Transmission Specifications (Cont'd)
 - 15.1 <u>Switched Access Service</u> (Cont'd)
 - 15.1.1 <u>Local Transport Optional Features</u> (Cont'd)
 - (E) <u>Local Transport Optional Features</u> (Cont'd)

These Interface Groups may, at the option of the customer, be provided with individual transmission path SF supervisory signaling where such signaling is available in Telephone Company central offices. Generally such signaling is available only where the first point of switching provides an analog (i.e., non-digital) interface to the transport termination.

These optional Supervisory Signaling arrangements are not available in combination with the SS7 optional feature as described in 6.8.2(C)(2) preceding.

Additionally, in (F) following, there is a matrix of available Premises Interface Codes as a function of Interface Group, Telephone Company Switch Supervisory Signaling and Feature Group.

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15. Access Service Interface and Transmission Specifications (Cont'd)

15.1 <u>Switched Access Service</u> (Cont'd)

15.1.1 Local Transport Interface Groups (Cont'd)

(F) <u>Available Premises Interface Codes</u>

Following is a matrix showing premises interface codes which are available for each Interface Group. Their availability is a function of the Telephone Company switch supervisory signaling and Feature Group. For explanations of these codes, see the Parameter Codes and Options as set forth in 15.2.2(A) following.

Interface	Telephone Company	Premises		Feature	e Grou	ıp	
Group	Switch Supervisory Signaling	Interface Code	<u>A</u>	<u> B</u>	<u>C</u>	D	
1	LO	2LS2	X:				
- -	LO	2LS3	X				
	GO	2GS2	X				
	GO	2GS3	X				
	LO, GO	2DX3	3				(T)
	LO, GO	4EA3-E	3				(T)
	LO, GO	4EA3-M	3				(T)
	LO, GO	6EB3-E	3				(T)
	LO, GO	6EB3-M	3				(T)
	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	
	EA, EB, EC	6EC3			X	X	
	RV 25, 26	2RV3-0		X	X	X	
	RV	2RV3-T	•	X	X	X	
	SS7	2NO2			X	X	
	10.00	4550	•	7			
2	LO, GO	4SF2		ζ,			
	LO, GO	4SF3		ζ,			
	LO	4LS2 4LS3		ζ ζ	*		
	LO COMP	6LS2		ζ			
		Wind OLSZ					
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15. Access Service Interfaces and Transmission Specifications (Cont'd)

15.1 Switched Access Service (Cont'd)

15.1.1 Local Transport Interface Groups (Cont'd)

(F) Available Premises Interface Codes (Cont'd)

Interface	Telephone Company	Premises	Featu	ıre Gr	oup	
	Switch Supervisory Signaling	Interface Code		3 C		
Group	Switch Supervisory Dignaring					
2 (Cont'd)) GO	4GS2	X			
- (, GO	4GS3	X			
	GO	6GS2	X			
	LO, GO	4DX2	X			
	LO, GO	4DX3	X			
	I.O. GO	6EA2-E	X			
FILED IN COMPLIANCE	LO, GO	6EA2-M	X			
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APR 6 1993	RV, EA, EB, EC	4SF2		х х	X	
APR 6 1993	RV, EA, EB, EC	4SF3		X		
THE DIV	ISION RV, EA, EB, EC	4DX2		х х	×	
BLIC UTILITIES DIV	ent RV, EA, EB, EC	4DX3		X		
Engineering Department	RV, EA, EB, EC	6DX2		Х		
	RV, EA, EB, EC	6EA2-E		х х	Х	
	RV, EA, EB, EC	6EA2-M		х х	X	
	RV, EA, EB, EC	8EB2-E		х х	x	
	WEN RV, EA, EB, EC	8EB2-M		х х	x	
DECE	EA, EB, EC	8EC2-M		X		
107		4RV2-O		х х		
MAR 291	1993 RV	4RV2-T		x x		
MIMIL W.		4RV3-0		x x		
LLINOIS COMMERCE	RV COMMISSION	4RV3-T		X X		
CHIEF CLERK'S	S OFFICE GGZ	4NO2		X 2		(N)
CHIEF OLLING	SUFFICE SS7	41102				(,
·	LO, GO	4AH5-B	X			
3	RV, EA, EB, EC	4AH5-B		х х	Х	
	SS7	4AH5-B		3		(N)
	55/	Trais 2		_	-	
	LO, GO	4AH6-C	X			
4		4AH6-C		x x	X X	
	RV, EA, EB, EC	4AH6-C			X X	(N)
	SS7	4AHO C		-	·	,
£	LO, GO	4AH6-D	X			
5	RV, EA, EB, EC	4AH6-D	X	x 2	K	
		4AH6-D	•		x x	(N)
	SS7			_	· -	•

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15. Access Service Interfaces and Transmission Specifications (Cont'd)

15.1 Switched Access Service (Cont'd)

15.1.1 Local Transport Interface Groups (Cont'd)

(F) Available Premises Interface Codes (Cont'd)

		•		_	_		
Interface	Telephone Company	Premises		ture			
Group	Switch Supervisory Signaling	Interface Code	<u>A</u>	В	С	<u>D</u>	
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	
	SS7	4DS9-15			X	X	(N)
7	LO, GO	4DS9-31	Х				
· .	LO, GO	4DS9-31L	×				
	RV, EA, EB, EC	4DS9-31		X	X	X	
	RV, EA, EB, EC	4DS9-31L		X	X	X	
	SS7	4DS9-31			Х	X	(N)
							• •
8	LO, GO	4DSO-63	X				
	LO, GO	4DSO-63L	Х				
	RV, EA, EB, EC	4DSO-63		X	X	X	
	RV, EA, EB, EC	4DSO-63L		X	X	X	
	SS7	4DSO-63			X	X	(N)
	557	1250					
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	
	SS7	4DS6-44		••	X	X	(N)
	557	4000 44			41	••	. (21)
10	TO CO	4DS6-27	X				
10	LO, GO	4DS6-27L	X				
	LO, GO	4DS6-27		Х	х	x	
	RV, EA, EB, EC			X	X	X	
	RV, EA, EB, EC	4DS6-27L			X	X	(N)
	SS7	4DS6-27			Λ	•	(14)



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PUBLIC UTILITIES DIVISION Engineering Department



ILLINOIS SMALL COMPANY EXCHANGE CARRIER ASSOCIATION By Alan Anderson, President P.O. Box 730, 300 East Monroe Street Springfield, Illinois 62705 ILLINOIS C.C. NO. 1 Section 15 Original Page 11 Effective: April 1, 1989

ACCESS SERVICE

15. Access Service Interfaces and Transmission Specifications (Cont'd)

15.1 Switched Access Service (Cont'd)

15.1.2 Standard Transmission Specifications

Descriptions of the transmission specifications available with each Feature Group as a function of the Interface Group selected by the customer, are set forth in (A) through (D) following. Descriptions of each of these Standard Transmission Specifications and the two Data Transmission Parameters mentioned are set forth respectively in (E) through (G) and 15.1.3(A) and (B) following:

(A) Feature Group A

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FGA is provided with either Type B or Type C Transmission Specifications. The specifications for the associated parameters are guaranteed to the first point of switching. Type C Transmission Specifications are provided with Interface Group 1 and Type B is provided with Interface Groups 2 through 10. Type DB Data Transmission Parameters are provided with FGA to the first point of switching.

(B) Feature Group B



ILLINGIS COMMERCE COMMISSION CHIEF CLERICS OFFICE FGB is provided with either Type B or Type C Transmission Specifications. The specifications for the associated parameters are guaranteed to the end office when routed directly or to the first point of switching when routed via an access tandem. Type C Transmission Specifications are provided with Interface Group 1 and Type B is provided with Interface Groups 2 through 10. Type DB Data Transmission Parameters are provided with FGB to the first point of switching.

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15. Access Service Interfaces and Transmission Specifications (Cont'd)

15.1 Switched Access Service (Cont'd)

15.1.2 <u>Standard Transmission Specifications</u> (Cont'd)

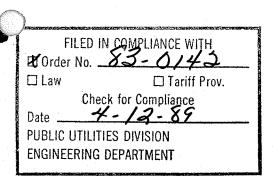
(C) Feature Group C

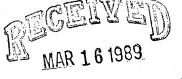
FGC is provided with either Type B or Type C Transmission Specifications as follows:

- When routed directly to the end office either Type B or Type C is provided.
- When routed to an access tandem only Type B is provided.
- Type B or Type C is provided on the transmission path from the access tandem to the end office.

Type C Transmission Specifications are provided with Interface Group 1 when routed directly to an end office. Type B is provided with Interface Groups 2 through 10, whether routed directly to an end office or to an access tandem.

Type DB Data Transmission Parameters are provided with FGC for the transmission path between the customer designated premises and the end office when directly routed to the end office, and between the customer designated premises and the access tandem and between the access tandem and the end office when routed via an access tandem.





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15. Access Service Interface and Transmission Specifications (Cont'd)

15.1 Switched Access Service (Cont'd)

15.1.2 Standard Transmission Specifications (Cont'd)

(D) Feature Group D

FGD is provided with either Type A, Type B or Type C Transmission Specifications as follows:

- When routed to the end office either Type B or C is provided.
- When routed to an access tandem only Type A is provided.
- Type A is provided on the transmission path from the access tandem to the end office.

Type C Transmission Specifications are provided with Interface Group 1. Type A and Type B Transmission Specifications are provided with Interface Groups 2 through

Type DB Data Transmission Parameters are provided with FGD for the transmission path between the customer designated premises and the end office when directly routed to the end office. Type DA Data Transmission Parameters are provided for the transmission path between the customer designated premises and the access tandem and between the access tandem and the end office when routed via an access tandem.

(E) 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. Order No. FILEDING

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Springfield, Illinois 62705 Issued: March 16, 1989

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15. Access Service Interfaces and Transmission Specifications (Cont'd)

15.1 Switched Access Service (Cont'd)

15.1.2 Standard Transmission Specifications (Cont'd)

(E) 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 at 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:

Route Miles	C-Message Noise
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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(4)C-Notch Noise

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

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ILLINOIS C.C. NO. 1

Section 15



ACCESS SERVICE

- 15. Access Service Interfaces and Transmission Specifications (Cont'd)
 - 15.1 Switched Access Service (Cont'd)
 - 15.1.2 Standard Transmission Specifications (Cont'd)
 - Type A Transmission Specifications (Cont'd)
 - Echo Control (5)

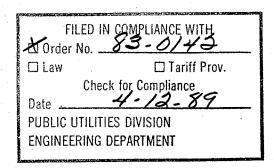
Echo Control, identified as Equal Level Echo Path Loss, and expressed as Echo Return Loss and Singing Return Loss, is dependent on the routing, i.e., whether the service is routed directly from the customer's point of termination (POT) to the end office or via an access tandem. It is equal to or greater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

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

Standard Return Loss (6)

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	Singing Return Loss
5 dB	2.5 dB





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- Access Service Interface and Transmission Specifications (Cont'd) 15.
 - Switched Access Service (Cont'd) 15.1
 - Standard Transmission Specifications (Cont'd)
 - (F) **Type B Transmission Specifications**

Type B Transmission Specifications are 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 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:

C-Message Noise*			
Type B1	Type B2		
32 dBrnCO	35 DbrnCO		
33 dBrnCO	37 dBrnCO		
35 dBrnCO	40 dBrnCO		
37 dBrnCO	43 dBrnCO		
39 dBrnCO	45 dBrnCO		
	Type B1 32 dBrnCO 33 dBrnCO 35 dBrnCO 37 dBrnCO		

C-Notch Noise (4)

The maximum C-Notch Noise, utilizing a -16 dBm0 holding tone is less than or equal to 47 dBrnCO.



PUBLIC UTILITIES DIVISION LLINOIS COMMETICE COMMISSION For Feature Groups C and D only Type B2 will be provide in the Groups A and B, Type ILE GLEBKS DEFICE (C) provided as set forth in Technical Reference GR-334-CORE.



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ACCESS SERVICE

15. Access Service Interfaces and Transmission Specifications (Cont'd)

15.1 Switched Access Service (Cont'd)

15.1.2 <u>Standard Transmission Specifications</u> (Cont'd)

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

(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 Feature Group, type of terminations, and type of transmission path. They are greater than or equal to the following:

	Echo	Singing
	Return Loss	Return Loss
POT to Access Tandem - Terminated in 4-Wire trunk	21 dB	14 dB
- Terminated in	21 06	14 UB
2-Wire trunk	16 dB	11 dB
POT to End Office		
- Direct - Via Access Tandem	16 dB	11 dB
For FGB access For FGC access (Effective 4-Wire trans-	8 dB	4 dB
mission path at end office) For FGC access (Effective 2-Wire trans- mission path	16 dB	11 dB
at end office)	13 dB	6 dB



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ILLINOIS C.C. NO. 1 Section 15

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ACCESS SERVICE

- Access Service Interfaces and Transmission Specifications (Cont'd) 15.
 - 15.1 Switched Access Service (Cont'd)
 - Standard Transmission Specifications (Cont'd) 15.1.2
 - Type B Transmission Specifications (Cont'd)
 - (6) Standard Return Loss

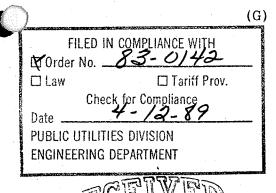
Standard Return Loss, expressed as Echo Return Loss and Singing Return Loss, on two-wire ports of a four-wire point of termination shall be equal to or greater than:

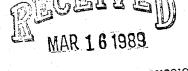
Echo Return Loss

Singing Return Loss

5 dB

2.5 dB





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Type C Transmission Specifications

Type C Transmission Specifications are 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.

Attenuation Distortion (2)

The maximum Attenuation Distortion in the 404 to 28-04 Hz frequency band relative to loss at 1004 Hz is -2.0 db to +5.5 dB.



- 15. Access Service Interface and Transmission Specifications (Cont'd)
 - 15.1 Switched Access Service (Cont'd)
 - 15.1.2 Standard Transmission Specifications (Cont'd)
 - (G) Type C Transmission Specifications (Cont'd)
 - (3) <u>C-Message Noise</u>

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

	C-Message Noise*					
Route Miles	Type C1	Type C2				
less than 50	32 dBmCO	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) <u>C-Notch Noise</u>

The maximum C-Notch Noise, utilizing a -16 dBm0 holding tone is less than or equal to 47 dBrnCO.

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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 GR-334-CORE.

(C)

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ACCESS SERVICE

15. Access Service Interfaces and Transmission Specifications (Cont'd)

15.1 Switched Access Service (Cont'd)

15.1.2 <u>Standard Transmission Specifications (Cont'd)</u>

(G) 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:



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

15.1.3 Data Transmission Parameters

Two types of Data Transmission Parameters, i.e., Type DA and Type DB, are provided for the Feature Group arrangements. Type DB is provided with Feature Groups A, B and C and also with Feature Group D when Feature Group D is directly routed to the end office. Type DA is only provided with Feature Group D and only when routed via an access tandem. Following are descriptions of each.

(A) Data Transmission Parameters Type DA

(1) Signal to C-Notched Noise Ratio

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

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ACCESS SERVICE

15. Access Service Interfaces and Transmission Specifications (Cont'd)

15.1 Switched Access Service (Cont'd)

15.1.3 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 50 route miles equal to or greater than 50 route miles

500 microseconds

900 microseconds

1004 to 2404 Hz

less than 50 route miles equal to or greater than 50 route miles

200 microseconds

400 microseconds

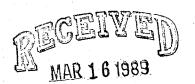
(3) Impulse Noise Counts

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

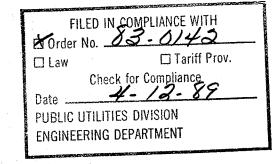
(4) Intermodulation Distortion

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

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



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- 15. Access Service Interface and Transmission Specifications (Cont'd)
 - 15.1 <u>Switched Access Service</u> (Cont'd)
 - 15.1.3 <u>Data Transmission Parameters</u> (Cont'd)
 - (A) <u>Data Transmission Parameters Type DA</u> (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) <u>Data Transmission Parameters Type DB</u>
 - (1) Signal to C-Notched Noise Ratio

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

(T)

(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 equal to or greater than 50 route miles 800 microseconds

1000 microseconds

1004 to 2404 Hz



less than 50 route miles equal to or greater than 50 route miles

320 microseconds

500 microseconds

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ACCESS SERVICE

15. Access Service Interfaces and Transmission Specifications (Cont'd)

15.1 Switched Access Service (Cont'd)

15.1.3 Data Transmission Parameters (Cont'd)

- (B) Data Transmission Parameters Type DB (Cont'd)
 - (3) Impulse Noise Counts

The Impulse Noise Counts exceeding a 67 dBrnCO threshold in 15 minutes is no more than 15 counts.

(4) <u>Intermodulation Distortion</u>

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

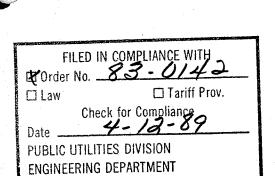
Second Order (R2) 31 dB Third Order (R3) 34 dB

(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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ILLINOIS SMALL COMPANY EXCHANGE CARRIER ASSOCIATION

By Alan Anderson, President 2305 West Monroe, Suite 4 Springfield, Illinois 62704 ssued: December 30, 1993

ACCESS SERVICE

ILLINOIS C.C. NO. 1 Section 15 1st Revised Page 24 **Cancels Original Page 24** Effective: January 1, 1994

15. Access Service Interfaces and Transmission Specifications (Cont'd)

15.2 Special Access Service

This section explains and lists the codes that the customer must specify when ordering Special Access Service, Switched Access Entrance Facilities, and Voice Grade and High Capacity Direct Trunked Transport. These codes provide a standardized means to relate the services being ordered to Special Access Service offerings contained in Section 7. preceding.

(C)

When ordering, the type of Special Access Service or Switched Access Entrance Facility or Direct Trunked Transport is described by two code sets, the Network Channel (NC) code and the Network Channel Interface (NCI) codes.

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The Network Channel (NC) code consists of two elements. Element One is a Channel Service Code (character positions 1 and 2) that describes the channel service type in an abbreviated form. Element two is an Optional Feature Code (character positions 3 and 4) that identifies option codes available for each channel service code. such as C-conditioning or Improved Return Loss.

The network Channel Interface (NCI) is used to identify interface specifications associated with a particular channel. This code describes the total wires, protocol, impedance, protocol options and transmission level point(s) reflecting physical and electrical characteristics between the Telephone Company and the customer.

On the following 3 pages are examples which explain the specific characters of the codes and which reference matrices and charts used in developing the codes. Included in the matrices are Service Designator (SD) codes which are used to identify variations of service within service types (e.g., TG1 = Telegraph). The SD and NC codes are displayed as components of the matrices designated as Technical Specifications packages in (A) through (G) following. Through the use of these matrices, SD codes may be converted to NC codes for service ordering purposes.

A chart is also provided in 15.2.2(A) following which contains information necessary to develop NCI codes.

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ACCESS SERVICE

15. Access Service Interface and Transmission Specifications (Cont'd)

15.2 Special Access Service (Cont'd)

Comprehensive lists of allowed Network Channel (NC) and Network Channel Interface (NCI) codes are contained in this Special Report SR-STS-000307. However, not all services contained in the Special Report may be offered by the Telephone Company at this time.

(C)

Lastly, 15.2.2(C) following provides a list of compatible Network Channel Interfaces inasmuch as the Network Channel Interfaces associated with a given service need not be the same, but all must be compatible.

Example No. 1: If the customer wishes to order a 4-wire voice grade circuit with 600 Ohms impedance, capable of data transmission, and with improved return loss, the customer might specify the following.

> NC LG-R

NCI 04DB2

NC Code:

LG = Voice Grade Channel Service, VG6

-R = Improved Return Loss



NCI Code:

04 = Number of physical wires and CDP

DB = Data Stream in VF frequency band at the customer designated main terminal location

2 = 600 Ohms impedance

(LLINOIS COMMERCE COMMISSION SECNCI (Secondary NCI Code)

04 = Number of physical wires at CDP

DA = Data Stream in VG frequency at the customer designated secondary terminal location

2 = 600 Ohms impedance

S = Sealing current option for 4-wire transmission

In the above example the NCI (Network Channel Interface) code is the interface requested at the customer's POT (Point of Termination) and the SECNCI 6 - 6 4.35 (Secondary Network Channel Interface) code represents the interface at the end CIPCY NON COMPLIANCE STREET STREET CHARGE

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ACCESS SERVICE

15. <u>Access Service Interface and Transmission Specifications</u> (Cont'd)

15.2 Special Access Service (Cont'd)

<u>Example No. 2</u>: If the customer wishes to order a FX circuit to a station, with 600 Ohms impedance, loop start signaling, which is 4-wire at the CDP and 2-wire at the end-user, the customer might specify:

<u>NC</u>

NCI 04L02 SECNI 021 S2

NC Code:

LC = Voice Grade Channel Service, VG2

-- = No Optional Features

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CHIEF CLERK'S OFFICE

NCI Code:

04 = Number of physical wires at CDP

LO = Loop start, loop signaling - open end

2 = 600 Ohms impedance

SECNCI (Secondary NCI Code)

02 = Number of physical wires at CDP

LS = Loop start signaling - closed end

2 = 600 Ohms impedance

<u>Example No. 3</u>: If the customer wishes to order a 1.544 Mbps Hi-cap facility with no channel options such as CO multiplexing, the customer might specify the following:

<u>NC</u> HC-- NCI 04DS9-15 <u>SECNI</u> 04DS9-15

NC Code:

HC = High Capacity Channel Service, HC1

-- = No Optional Features

Order No.

Tariff ProNCI, SECNCI Code:

04 = Number of physical wires and CDP

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DS = Digital hierarchy interface

9 = 100 Ohms impedance

15 = 1.544 Mbps (DS1) format

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The preceding three examples use information contained in Special Report SR-STS-000307.

(C)

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ACCESS SERVICE

15. Access Service Interface and Transmission Specifications (Cont'd)

15.2 Special Access Service (Cont'd)

15.2.1 Network Channel (NC) Codes



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In order to determine the NC code appropriate for the service to be ordered, the type of Special Access Service the customer wishes must be identified. This identification is accomplished by a Service Designator (SD) code. The broad categories of Service Designator codes (e.g., VG, MT, TG, etc.) are set forth in Section 7. preceding. Variations within service type (e.g., VG1, MTC, TG2, etc.) are described in the various Technical Publications cited in (A) through (H) following.

(C)

Having determined the specific service type to be ordered and its SD code, and having used the appropriate Technical Publication, the customer should match the SD code to the NC code using the following matrices. Once the NC code has been determined, the Network Channel Interface (NCI) code may be developed using the information set forth in 15.2.2. following and the guidelines concerning specific parameters available for each service type as set forth in the specified Technical Publication.

(A) <u>Technical Specifications Packages Metallic Service</u>

SD Code	MTC*	<u>MT1</u>	MT2	MT3
NC Code	MQ	NT	<u>NU</u>	NV
<u>Parameter</u>				
DC Resistance				
Between Conductors	X	X	X	
Loop Resistance	X			X
Shunt Capacitance	X			X
Optional Features and Functions				
Three Premises Bridging	X	X		X
Series Bridging	X		X	

The technical specifications are described in Technical Reference TR-NPL-000336.

All parameters are available within ranges selected by the customer where technically feasible.

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2060 W. Iles, Suite A Springfield, Illinois 62704



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> ued by: ISCECA 2060 W

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Springfield, Illinois 62705

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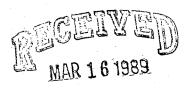
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ACCESS SERVICE

- 15. Access Service Interfaces and Transmission Specifications (Cont'd)
 - 15.2 Special Access Service (Cont'd)
 - 15.2.1 Network Channel (NC) Codes (Cont'd)
 - (B) <u>Technical Specifications Packages Telegraph Grade</u> Service

		Package	
SD Code NC Code	TGC*	TG1 NW	TG2 NY
Parameter			
Telegraph Distortion	X	X	X
Optional Features and Functions			
Telegraph Bridging	X	X	X

The technical specifications are described in Technical Reference TR-NPL-000336



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* All parameters are available within ranges selected by the customer where technically feasible.

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ACCESS SERVICE

15. Access Service Interface and Transmission Specifications (Cont'd) FILED IN COMPLIANCE WITH Order No. 90-0421 Tariff Prov. ☐ Law CHECK FOR COMPLIANCE

15.2 Special Access Service (Cont'd)

15.2.1 Network Channel (NC) Codes (Cont'd)

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(C)	Technical Specifications Packages Voice Grade Service
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(C)	<u>Tecl</u>	nnica	l Spec	cificat	ions	Packa	iges V	oice/	Grad	e Serv	<u>ice</u>					artment
						D.	1	- VO							•	
SD Code	<u>C*</u>	1	2	3	4	<u>5</u>	ackag 6	<u>e vu</u> 7	<u>8</u>	0	10	11	12	337		•
NC Code	LQ	<u>LB</u>	LC	_	LE	<u>L</u> F	LG	LH	<u>LJ</u>	9 <u>LK</u>	<u>10</u> LN	<u>LP</u>	<u>12</u> <u>LR</u>	W SE		
Parameter																
Attenuation																
Distortion	X	X	\mathbf{X}	X	X	X	X	X	\mathbf{X}_{\cdot}	X	X	\mathbf{X}	X	\mathbf{X}		
C-Message Noise	X	X	X	X	X	\mathbf{X}	\mathbf{X}	X	X	X	\mathbf{X}	X	X	X		
Echo Control	\mathbf{X}	X	X	X		X		X	X			X	X	X		
Envelope Delay																
Distortion	X						X	X	X	X	X	X	Х	X		
Frequency Shift	X						X	X	X	X	X	X	X	X		
Impulse Noise	X					X	X	X	X	X	X	X	X	X		
Intermodulation										1.		21	4 2	2 X		
Distortion	X						X	X	X	X	X	X		Х		
Loss Deviation	X	X	X	X	X	\mathbf{x}	X	X	X	X	X	X	х	X		
Phase Hits, Gain							. 22	21	21	71	71	71.	Λ			
Hits, and Dropouts	\mathbf{X}^{-}														•	
Phase Jitter	X						X	X	Х	X	X	X		X		
Signal-to-C	- 11						1	Λ.	-	Λ	Л	Λ		Λ		
Message Noise				٠	X											
Signal-to-C					Λ											
Notch Noise	X						X	X	X	X	Х	X	X	X		

The technical specifications for these parameters (except for dropouts, phase hits, and gain hits) are described in Technical References GR-334-CORE and TR-TSY-000335. The technical specifications for dropouts, phase hits, and gain hits are described in Technical Reference PUB 41004, Table 4.



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The desired parameters are selected by the customer from the list of available parameters.

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ACCESS SERVICE

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15. Access Service Interfaces and Transmission Specifications Checkrifer Compliance

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15.2 Special Access Service (Cont'd)

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X

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X

X

X

15.2.1 Network Channel (NC) Codes (Cont'd)

Technical Specifications Packages Voice Grade Service (C) (Cont'd)

Package VG-SD Code HALINGIS COMMERCE COMMISSION COM LB LC LD LE $\underline{\mathrm{LF}}$ <u>LG</u> LH LJ LK LN LP

CHIEF CLOPETONAL Features and Functions

Arrangement

Signaling Capability X

Transfer Arrangement X X

Central Office Bridging Capability X X X X X X X Central Office Multiplexing X X Conditioning: . C-Type X X X X X X X Improved Attenuation Distortion X X X X X X X Improved Envelope Delay Distortion X X X X X X X . Sealing Current X X . Data Capability X X X X Telephoto Capability X X Customer Specified Premises Receive Level X X X X X X Improve Return Loss for Effective Four-Wire Transmission $X \quad X \quad X \quad X \quad X$ X X X X X X X X For Effective Two-Wire Transmission X X X X Improve Two-Wire Voice Transmission X PPSN Interface Arrangement X X Selective Signaling

X

Χ

 $\mathbf{X} \quad \mathbf{X}$

 $X \quad X \quad X$

ILLINOIS SMALL COMPANY EXCHANGE CARRIER ASSOCIATION By Alan Anderson, President P.O. Box 730, 300 East Monroe Street Springfield, Illinois 62705 Issued: April 17, 1991

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Effective: April 19, 1991

ACCESS SERVICE

15. Access Service Interfaces and Transmission Specifications (Cont'd)

15.2 Special Access Service (Cont'd)

15.2.1 Network Channel (NC) Codes (Cont'd)

(D) <u>Technical Specifications Packages Program Audio</u> Service

	<u>-</u>	Package					
SD Code	APC*	APl	AP2	AP3	AP4		
NC Code	PQ	PE	PF	PJ	PK		
Parameter							
Actual Measured Loss	х	X	Х	х	X		
Amplitude Tracking	Х						
Crosstalk	X ·	X	X	Х	Х		
Distortion Tracking	X						
Gain/Frequency							
Distortion	X	X	Х	Х	X		
Group Delay	X						
Noise	X	X	X ·	X	X		
Phrase Tracking	Х						
Short-Term Gain					*		
Stability	X						
Short-Term Loss	X						
Total Distortion	X	X	X	X	X		
Optional Features					·		
and Functions							
Central Office Bridging							
Capability	х	х	х	Х	X		
Gain Conditioning	X	x	X	X	X		
Stereo	X				X		
-							

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The technical specifications are described in Technical Reference TR-NPL-000337 and associated Addendum.

(C)

The desired parameters are selected by the customer from the list of available parameters.

ILLINOIS SMALL COMPANY EXCHANGE CARRIER ASSOCIATION By Alan Anderson, President

P.O. Box 730, 300 East Monroe Street Springfield, Illinois 62705

Issued: March 16, 1989

ILLINOIS C.C. NO. 1 Section 15

Original Page 32 Effective: April 1, 1989

ACCESS SERVICE

15. Access Service Interfaces and Transmission Specifications (Cont'd)

15.2 Special Access Service (Cont'd)

15.2.1 Network Channel (NC) Codes (Cont'd)

(E) Technical Specifications Packages Video Service

]	Package	
. · · · · · · · · · · · · · · · · · · ·	SD Code	TVC*	TV1	TV2
)	iC Code	TQ	TV	TW
Video Parameters				
Insertion Gain		X	X	X
Field-Time Distortion		X	X	X
Line-Time Distortion		X	X	X
Short-Time Distortion		X	X	X
Chrominance-Luminance Gair				
Inequality	•	X	\mathbf{X}^{-1}	X
Chrominance-Luminance Dela	y			
Inequality		X	\mathbf{X}	X
Amplitude/Frequency Charac		X	X	. X
Luminance Non-Linear Disto	rtion	X	X	X
Chrominance Non-Linear Gai	n ·			
Distortion		X	X	X
Chrominance Non-Linear Pha	se			
Distortion		X	X	X
Transient Synchronizing Si	gnal			
Non-Linearty		X	X	X
Dynamic Gain Distortion				
- Picture Signal		X	X	X
- Synchronizing Signa	.1	X	X	X
Differential Gain		X	X	X
Differential Phase		X	X	X
Chrominance-Luminance Inte	rmodulation	X	X	· X

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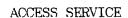
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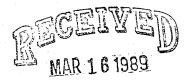
Effective: April 1, 1989



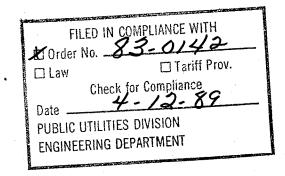
- 15. Access Service Interfaces and Transmission Specifications (Cont'd)
 - 15.2 Special Access Service (Cont'd)
 - 15.2.1 Network Channel (NC) Codes (Cont'd)
 - (E) <u>Technical Specifications Packages Video Service</u> (Cont'd)

		Package	
SD Code	TVC*	<u>TV1</u>	<u>TV2</u>
NC Code	TQ	TV	TW
Audio Channel Parameters			
Associated with Video Service			
Insertion Gain	X	X	X
Amplitude/Frequency Characteristic	Χ .	X	X
Total Harmonic Distortion & Noise	X	X	X
Maximum Steady-State Test Levels	X	X	X
Gain Differential Between Channels	X	X	
Phase Differential Between Channels	X	\mathbf{X}	
Crosstalk	X	- X	X
Audio-To-Video Time Differential	X	X	X

The technical specifications are described in Technical Reference TR-NPL-000338.



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* The desired parameters are selected by the customer from the list of available parameters.

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ACCESS SERVICE

15. Access Service Interface and Transmission Specifications (Cont'd)

JUN 1 5 1998

15.2 Special Access Service (Cont'd)

15.2.1 Network Channel (NC) Codes (Cont'd)

PUBLIC UTILITIES DIVISION Engineering Department

(F) <u>Technical Specifications Packages Digital Data Service</u> (Cont'd)

(T)

The Telephone Company will provide a channel capable of meeting a monthly average performance equal to or greater than 99.875% error-free second (if provided through Digital Data hub) while the channel is in service, if it is measured through a CSU equivalent which is designed, manufactured, and maintained to conform with specifications contained in Technical Reference PUB 62310.

Optional Features and Functions/Non-Hubbed

Public Packet Data Arrangement

X

*

(T)

X

Voltages which are compatible with Digital Data Service are delineated Technical Reference TR-NWT-000341.

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Issued: June 5, 1998

Issued by:

ISCECA Tariff Administrator

2060 W. Iles, Suite A Springfield, Illinois 62704 ILLINOIS SMALL COMPANY EXCHANGE CARRIER ASSOCIATION By Alan Anderson, President P.O. Box 730, 300 East Monroe Street Springfield, Illinois 62705 Issued: December 10, 1992

ILLINOIS C.C. NO. 1
Section 15
1st Revised Page 35
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Effective: December 13, 1992

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(N)

ACCESS SERVICE

15. Access Service Interfaces and Transmission Specifications (Cont'd)

15.2 Special Access Service (Cont'd)

15.2.1 Network Channel (NC) Codes (Cont'd)

(G) Technical Specifications Packages High Capacity Service

	Package					
SD Code	HCO	HC1	HC1C	HC2	HC3	
NC Code	HS_	HC	HD	HE	HF	HG
Parameters						
Error-Free Seconds		x				
Optional Features and Functions						
Automatic Loop Transfer		x				
Central Office						
Multiplexing:						
DS4 to DS1						X
DS3 to DS1					X	
DS2 to DS1				X		
DS1C to DS1			X :			
DS1 to Voice		X				
DS1 to DSO		X				
DSO to Subrate*	X					
Transfer Arrangement		X				
Clear Channel Capabilit	Y	x				

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ILLINOIS COMMERCE COMMISSION CHIEF CLERK'S OFFICE A channel with technical specifications package HCl will be capable of an error-free second performance of 98.75% over a continuous 24 hours period as measured at the 1.544 Mbps rate through a CSU equivalent which is designed, manufactured, and maintained to conform with the specifications contained in Technical Reference PUB 62411.



Available only on a channel of 1.544 Mbps facility to a Telephone Company hub.

(N)

ACCESS SERVICE

- 15. Access Service Interface and Transmission Specifications (Cont'd)
 - 15.2 Special Access Service (Cont'd)
 - 15.2.1 Network Channel (NC) Codes (Cont'd)



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(H) <u>Technical Specifications Packages Synchronous Optical Channel Service</u>

					Package	
SD Cod NC Cod			OC3 OB	OC12 OD		
<u>Parameters</u>						
Error-Free Sound	ds		\mathbf{x}	X	e can the later	شد
Optional Feature and Functions					Order No. 2000 Tariff E	YOV.
Customer Premis	ses				SEP 1 4 1998	
Multiplexing:					2Eb 1 4, 1999	
OC12	to	OC3		\mathbf{X}	IPITA STATE	ION
OC12	to	OC3c		X	PUBLIC UTILITIES DIVISI	.O14
OC12	to	DS3		X	PUBLIC UTILITIES DE Engineering Department	,
OC12	to	DS1		X		
OC3	to	STS-1	X			
OC3	to	DS3	X			
OC3	to	DS1	X			
	••	D 01	21			
Central Office						
Multiplexing:						
OC12	to	OC3		X		
OC12	to	OC3c		X		
OC3	to	DS3	X	Α .		
OC3		DS3	X			
UCS	to	ופע	Λ			

Technical specifications are delineated in Technical Reference GR-253-CORE, GR-1374-CORE, ANSI T1.102-1993 and ANSI T1.105-1995.

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ACCESS SERVICE

15. Access Service Interfaces and Transmission Specifications (Cont'd)

15.2 Special Access Service (Cont'd)

15.2.2 <u>Network Channel Interface (NCI) Codes</u>

The electrical interface with the Telephone Company for Special Access Services, is defined by an interface code. There are interface codes for both the customer designated premises and the point of termination. Three examples of NCI codes are found in 15.2 preceding.



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THE PERSON NAMED IN THE PE	Check for Compliance Date 4-12-89 PUBLIC UTILITIES DIVISION ENGINEERING DEPARTMENT	



ACCESS SERVICE

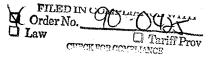
- 15. Access Service Interface and Transmission Specifications (Cont'd)
 - 15.2 Special Access Service (Cont'd)
 - 15.2.2 Network Channel Interface (NCI) Codes (Cont'd)
 - (A) Parameter Codes and Options

<u>Parameter</u>

Code	Option	<u>Definition</u>	
AB - AC - AH -		accepts 20 Hz ringing signal at customer's point of termination accepts 20 Hz ringing signal at customer's end user's point of termination analog high capacity interface	
. All -	В	60kHz to 108 kHz (12 channels)	
	Č	312 kHz to 552 khz (60 channels)	
-	-	564 kHz to 3084 kHz (600 channels)	
CT -		Centrex Tie Trunk Termination	
CS -		digital hierarchy interface at Digital Cross Connect System (DCS)	
-	15	1.544 Mbps (DS1) ANSI Extended Superframe (ESF) Format and B8ZS Clear Channel Capability.	(T)
- ·	15A		(T)
-	15B		. ,
		Capability	
-	15K	1.544 Mbps (DS1) Extended Superframe (ESF)	
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 -	i	DATAPHONE Select-A-Station (and TABS) interface at the customer's	
		end user's point of termination	



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2305 West Monroe, Suite 4 Springfield, Illinois 62704 May 24, 1995

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ACCESS SERVICE

15. Access Service Interfaces and Transmission Specifications (Cont'd)

15.2 Special Access Service (Cont'd)

15.2.2 Network Channel Interface (NCI) Codes (Cont'd)

(A) Parameter Codes and Options (Cont'd)

Parameter (Cont'd)

			~ 61 111 ~	
	Code	Option	<u>Definition</u>	
	DS -		digital hierarchy interface	
	_	15	1.544 Mbps (DS1) format per PUB 62411	
		13	plus D4	
		15E	8-bit PCM encoded in one 64 kbps of the	
		134	DS1 signal	*
	_	15F	8-bit PCM encoded in two 64 kbps of the	
		131	DS1 signal	
	_	15G	8-bit PCM encoded in three 64 kbps of the	е
			DS1 signal	
TANCE WITH	· ·	15H	14/11-bit PCM encoded in six 64 kbps of	
FILED IN COMPLIANCE WITH			the DS1 signal	
O Tariff Prov.		15J	1.544 Mbps format per PUB 62411	
CHECK FOR COMPLIANCE	- · · · · · · · · · · · · · · · · · · ·	15K	1.544 Mbps format per PUB 62411 plus	
DEC 15 1992			extended framing format	
DEC 19 1995		15L	1.544 Mbps (DS1) with SF signaling	
- THEION	_	27	274.176 Mbps (DS4)	
PUBLIC UTILITIES DIVISION Public utilities Division	_	27L	274.176 Mbps (DS4) with SF signaling	
Engineering Department	_	31	3.152 Mbps (DS1C)	
	-	31L	3.152 Mbps (DS1C) with SF signaling	
	<u>-</u>	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	
STATE STATE OF THE PROPERTY OF	DU -		digital access interface	
	_	24	2.4 kbps	
OFFIGE 3 GILL		48	4.8 kbps	
100	-	19	19.2 Kbps	(N)
DEC 1 0 1992	<u>-</u>	56	56.0 kbps	
· ·	-	96	9.6 kbps	
ILLINOIS COMMERCE COMMISSION OF THE CLERK'S OFFICE	- ΜC	64	64.0 Kbps	(N)
ILLINOIS COMMERCE OFFICE	· -	A	1.544 Mbps format per PUB 62411	
CHIEF OLL	_	В	1.544 Mbps format per PUB 62411 plus D4	
	- ,	С	1.544 Mbps format per PUB 62411 plus	
			extended farming format	•
	-	1KN	1.544 Mbps ANSI Extended Superframe	(Ņ)
			(ESF) Format without line power	
	-	1SN	1.544 Mbps ANSI Extended Superframe	
			(ESF)Format with B8ZS Clear Channel	
		e.	Capability and without line power	(N)
				(M)

Certain regulations formerly appearing on this page can now be found on 1st Revised Page 39.

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ACCESS SERVICE

15. Access Service Interface and Transmission Specifications (Cont'd)

15.2 <u>Special Access Service</u> (Cont'd)

15.2.2 Network Channel Interface (NG) Codes (Cont. d.)

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(A)	Parameter Codes and Options (Cont'd)
	Parameter Codes and Options (Cont'd) SEP 1 4 1998
Parameter (Cont	'd)

Parameter (Cont'd)	TOTAL TOTAL DIVISION			
Code	<u>Option</u>	PUBLIC UTILITIES DIVISION Engineering Department Engineering Department			
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.			
EC -		Type III E&M signaling at customer POT			
EX -	Α	tandem channel unit signaling for loop start or ground start and customer supplies open end (dial tone, etc.) functions.			
EX -	В	tandem channel unit signaling for loop start or ground start and customer supplies closed end (dial pulsing, etc.)			
FC -		functions.			
rc -	ъ		N)		
	B D	OC3, OC3c OC12	 .		
GO -	υ		N)		
		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			
LS -		Telephone Company provided PLAR loop start loop signaling - closed end function by customer or customer's end user			
NO -		no signaling interface, transmission only			

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ACCESS SERVICE

- 15. Access Service Interface and Transmission Specifications (Cont'd)
 - 15.2 Special Access Service (Cont'd)
 - Network Channel Interface (NCI) Codes (Cont'd)
 - (A) Parameter Codes and Options (Cont'd)



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Parameter (Cont'd	l)
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Code	<u>Option</u>	Definition Law CHECK FOR COL	Tariff Pro
PG -		program transmission - no dc signaling	Side
_	1	nominal frequency from 50 to 15000 Hz SEP 1 4 19	98
-	3	nominal frequency from 200 to 3500 Hz	
· -	5	nominal frequency from 100 to 5000 Hz PUBLIC UTILITIE	SDIVISION
- '.	8	nominal frequency from 50 to 8000 Hz Engineering De	partment
PR -		protective relaying*	
RV -	0	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's	
		end user POT	
SO -		SONET Optical	(N) (M)
· -	AB	Long Range Multilongitudinal Mode (LR1-MLM)	1 1
		Bidirectional Ring	
	AU	LR1-MLM Unidirectional Ring	
-	BB	Long Range Single Longitudinal Mode (LR1-SLM)	
		Bidirectional Ring	
	BU	LR1-SLM Unidirectional Ring	
-	CB	Intermediate Range Multilongitudinal Mode (IR1-MLM)	
		Bidirectional Ring	
	CU .	IR1-MLM Unidirectional Ring	
÷ .	DB	Intermediate Range Single Longitudinal Mode (IR1-SLM)	1 1
		Bidirectional Ring	
	DU	IR1-SLM Unidirectional Ring	
- .	EB	Short Range Multilongitudinal Mode Light Emitting Diode	
		(SR-MLM/LED) Bidirectional Ring	
	EU	SR-MLM/LED Unidirectional Ring	
-	FB	Short Range Multilongitudinal Mode (SR-MLM)	
		Bidirectional Ring	1 1,
-	FU	SR-MLM Unidirectional Ring	(N)(M)

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

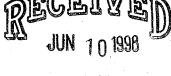
(M) Certain material previously appearing on 1st Revised Page 15-40 now appears on Original Page 15-40.1.

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Springfield, Illinois 62704



ACCESS SERVICE

- 15. Access Service Interface and Transmission Specifications (Cont'd)
 - 15.2 <u>Special Access Service</u> (Cont'd)
 - 15.2.2 <u>Network Channel Interface (NCI) Codes</u> (Cont'd)
 - (A) Parameter Codes and Options (Cont'd)



ILLINOIS COMMERCE COMMISSION CHIEF CLERK'S OFFICE

Parameter (Cont'd)

<u>Code</u>	<u>Option</u>	<u>Definition</u>	
ST -		Synchronous Transmission Signal (STS)	(N)
· <u>-</u>	A	STS1	(N)
TF -		telephotograph interface	(M)
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	1
TV -		television interface	
	1	combined (diplexed) video and one audio signal	
-	2	combined (diplexed) video and two audio signals	
• • •	5	video plus one (or two) audio 5 kHz signal(s) or one (or two) two wire	
	15	video plus one (or two) audio 15 kHz signal(s)	(M)

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(M) Certain material formerly found on 1st Revised Page 15-40 now appears on this page.

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ACCESS SERVICE

- 15. Access Service Interface and Transmission Specifications (Cont'd)
 - 15.2 Special Access Service (Cont'd)
 - 15.2.2 Network Channel Interface (NCI) Codes (Cont'd)

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(B) Impedance

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

Value (ohms)	Code(s)		
110	0		
150	1		
600	2		
900	3+		
135	5		
75	6		
124	7	*	
Variable	8		
100	9		
Fiber	F		(N)
Radio	R		(N)

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SEP 1 4 1998

+ For those interface codes with a 4-wire transmission path at the cus**tone interface** polytical representation of the code (3) denotes a customer provided **Engine State** of equipment termination. Such terminations were provided to customers in accordance with the F.C.C. Docket No. 20099 Settlement Agreement.

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ACCESS SERVICE

15. Access Service Interfaces and Transmission Specifications (Cont'd)

15.2 Special Access Service (Cont'd)

15.2.2 Network Channel Interface (NCI) Codes (Cont'd)

(C) Compatible Network Channel Interfaces

The following tables show the Network Channel Interface codes (NCIs) which are compatible:

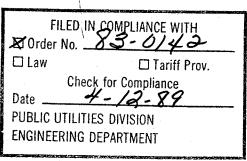
(1) Metallic

2DC8-1 2DC8-2 2DC8-3 2DC8-3

4DS8- 2DC8-1 4DS8- 2DC8-2

2) Telegraph Grade

Compatible	e CIs	Compatible CIs	
2DB2-10	10IA8 2TT2-2 4TT2-2	4DB2-10	10IA8 2TT2-2 4TT2-2
2DB2-43*	10IA8 2TT2-2 2TT2-6 4TT2-2	4DB2-43*	10IA8 2TT2-6 4TT2-2 4TT2-2
2TT2-2 2TT2-3	2TT2-2 2TT2-2	4DS8-	10IA8 2TT2-2 2TT2-6 4TT2-2
2TT2-6	4TT2-2 2TT2-6 4TT2-6	4TT2-2	4TT2-6 4TT2-2
		4TT2-6	2TT2-6





ILLINIOIS COMMERCE COMMISSION CHIEF CLERK'S OFFICE ILLINOIS SMALL COMPANY EXCHANGE CARRIER ASSOCIATION
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ACCESS SERVICE

15. Access Service Interfaces and Transmission Specifications (Cont'd)

15.2 Special Access Service (Cont'd)

15.2.2 Network Channel Interface (NCI) Codes (Cont'd)

(C) Compatible Network Channel Interfaces (Cont'd)

(3) Voice Grade

9DY3

9EA2

9EA3

Compatil	ole CIs	Compatib	ole CIs	Compatib.	le CIs
2AB2	2AC2	2DB2	2DA2	2LR2	2LR2
2AB3	2AC2	2DB3	2DA2	2LR3	2LR2
2CT3	2DY2 4DS8 4DX2 4DX3 4DY2 4EA2-E	2DX3	2LA2 2LB2 2LC2 2LO3 2LS2 2LS3	2LS 2LS2	2GS 2LS 4GS 4LS 2LA2
	4EA2-M 4SF2 4SF3 6DX2	2GO2	2GS2 2GS3	2LS3	2LB2 2LC2 2LA2
	6DY2 6DY3 6EA2-E	2GO3	2GS2 2GS3		2LB2 2LC2
	6EA2-M 6EB2-E 6EB2-M	2GS	2GS 2LS 4GS	2NO2	2DA2 2NO2
	6EB3-E 8EB2-E 8EB2-M	2LO2	4LS 2LS2	2NO3	2NO2 2PR2
	8EC2 9DY2		2LS3	2TF3	2TF2

2LO3

2LS2

2LS3

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ACCESS SERVICE

15. Access Service Interfaces and Transmission Specifications (Cont'd)

15.2 Special Access Service (Cont'd)

15.2.2 Network Channel Interface (NCI) Codes (Cont'd)

(C) Compatible Network Channel Interfaces (Cont'd)

(3) <u>Voice Grade</u> (Cont.'d)

	Compat	ompatible CIs Compatible CI		ble CIs	Compatib	le CIs
	4AB2	2AC2 4AB2 4AC2 4SF2				
	4AB3	2AC2 4AC2 4SF2				
	4AC2	2AC2 4AC2				
			4DS8-	2AC2 2DA2 2DY2	4DS8-	4DG2 4LR2 4LS2
	4DA2	4DA2		2GO2 2GO3 2GS2		4NO2 4PR2 4RV2-T
FILED IN COMPLIANCE WITH Order No. 3-0/43 Law Tariff Prov. Check for Compliance Date 4-13-89	41B2 —	2DA2 2NO2 2PR2 4DA2 4DB2 4NO2		2GS3 2LA2 2LB2 2LC2 2LC2 2LO2 2LO3		4SF2 4SF3 4TF2 6DA2 6DY2 6DY3
PUBLIC UTILITIES DIVISION ENGINEERING DEPARTMENT		4PR2 6DA2		2LR2 2LS2 2LS3		6EA2-E 6EA2-M 6EB2-E
Receive the contract of the co	4DD3	2DE2 4DE2		2NO2 2PR2 2RV2-T		6EB2-M 6GS2 6LS2 8EB2-E
RECEL	VIII			2TF2 4AC2 4DA2 4DE2		8EB2-H 9DY2 9DY3
MAR 16		305		4DX2 4DX3 4DY2		9EA2 9EA3
CHEF CLERK	S OFFICE			4EA2-E 4EA2-M		

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Access Service Interfaces and Transmission Specifications (Cont'd)

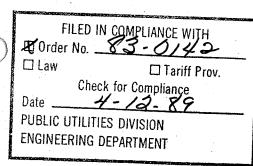
15.2 Special Access Service (Cont'd)

15.2.2 Network Channel Interface (NCI) Codes (Cont'd)

Compatible Network Channel Interfaces (Cont'd)

(3) <u>Voice Grade</u> (Cont'd)

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





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ACCESS SERVICE

15. Access Service Interfaces and Transmission Specifications (Cont'd)

15.2 Special Access Service (Cont'd)

15.2.2 <u>Network Channel Interface (NCI) Codes</u> (Cont'd)

(C) Compatible Network Channel Interfaces (Cont'd)

(3) Voice Grade (Cont'd)

8EB2-E 8EB2-M

9DY2

9DY3

Compati	ble CIs	Compati	ble CIs	Compati	ble CIs
4EA2-E	2DY2	4EA3-E	2DY2	4GO2	2GO2
	4DY2		4DY2		2GO3
	4EA2-E		4EA2-E		2GS2
	4EA2-M		4EA2-M		2GS3
	4SF2		4SF2		4GS2
	6DY2		6DY2	•	4SF2
	6DY3		6DY3		6GS2
	6EB2-E		6EA2-E		
	6EB2-M		6EA2-M	4GO3	2GO2
	8EB2-E		6EB2-E		2GS2
	8EB2-M		6EB2-M		2GS3
	9DY2		8EB2-E		4GS2
	9DY3		8EB2-M		4SF2
			9DY2		6GS2
4EA2-M	2DY2		9DY3		
	4DY2		9EA2		
	4EA2-M		9EA3	4GS	2GS
	4SF2			,	2LS
	6DY2				4GS
	6DY3				4LS
ov.	6EB2-E				
	6EB2-M				
1					

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Access Service Interfaces and Transmission Specifications (Cont'd)

15.2 Special Access Service (Cont'd)

Network Channel Interface (NCI) Codes (Cont'd) 15.2.2

(C) Compatible Network Channel Interfaces (Cont'd)

(3) Voice Grade (Cont'd)

	Compat	ible CIs	Compatib	ole CIs	Compati	ble CIs
	4LO2	2LS2 2LS3 4LS2 4SF2 6LS2	4LS3	2LA2 2LB2 2LC2 2LO2 2LO3 4SF2	4SF2	2LO3 2LR2 2LS2 2LS3 2RV2-T 4AC2
oeceived	4LO3	2LS2 2LS3 4LS2 4SF2 6LS2	4NO2	2DA2 2DE2 2NO2 4DA2 4DE2		4DY2 4LS2 4RV2-T 4SF2 6DY2 6DY3
MAR 16 1989 ILLINOIS COMMERCE COMMISSION OFFICE	4LR2	2LR2 4LR2 4SF2	4RV2-0	4NO2 6DA2 2RV2-T		6GS2 9DY2 9DY3
CHIEF CLERK'S OFFICE	4LR3	2LR2 4LR2 4SF2	11112	4RV2-T 4SF2	4SF3	2DY2 2GO3 2GS2 2GS3
	4LS	2GS 2LS 4GS 4LS	4SF2	2AC2 2DY2 2GS2 2GS3 2LA2		2LA2 2LB2 2LC2 2LO3 2LR2
FILED IN COMPLIANCE WI	4LS2	2LA2 2LB2 2LC2 2LO2 2LO3		2LB2 2LC2		

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Compatible CIs

2DY2 4DY2

6EA2-M

6DY3



ACCESS SERVICE

15. Access Service Interfaces and Transmission Specifications (Cont'd)

15.2 Special Access Service (Cont'd)

4SF3

Compatible CIs

2LS2

2LS3

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Network Channel Interface (NCI) Codes (Cont'd) 15.2.2

(C) Compatible Network Channel Interfaces (Cont'd)

Compatible CIs

4DA2

6DA2

(3) Voice Grade (Cont'd)

6DA

			ODITE		1010
	2RV2-T				6DY2
	4DY2	6DX2	2DY2		6DY3
	4EA2-E		4DY2	*	
14.	4EA2-M		4EA2-E	6EA2-E	2AC2
	4GS2		. •		
	4LR2		4EA2-M		2DY2
	4LS2		4SF2		2LA2
	4RV2-T		6DY2		2LB2
	4SF2		6DY3		2LC2
	4SF3		6EA2-E		2LO3
	6DY2		6EA2-M		2LS2
LED IN COMPLIANCE WITH	6DY3		6EB2-E		2LS3
No. 83-0142	6EB2-E		6EB2-M		2RV2-T
☐ Tariff Prov.	6EB2-M		8EB2-E		4AC2
Check for Compliance	6GS2		8EB2-M		4DY2
4-12 89	6LS2		9DY2		4EA2-E
74-0	9DY2		9DY3		4EA2-M
ITILITIES DIVISION	9DY3		9EA2		4LS2
RING DEPARTMENT	9EA2		9EA3		4RV2-T
	9EA3		* 4		4SF2
		6DY2	2DY2		4SF3
4TF2	2TF2		4DY2		6DY2
	4TF2		6DY2		6DY3
		* * *			6EA2-E



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ACCESS SERVICE

15. Access Service Interfaces and Transmission Specifications (Cont'd)

15.2 Special Access Service (Cont'd)

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15.2.2 Network Channel Interface (NCI) Codes (Cont'd)

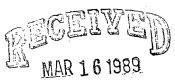
(C) Compatible Network Channel Interfaces (Cont'd)

(3) Voice Grade (Cont'd)

Compati	ble CIs	Compati	ble CIs	Compatib	le CIs
6EA2-E	6EB2-E 6EB2-M 6LS2 8EB2-E 8EB2-M 9DY2 9DY3	6EA2-M	6DY2 6DY3 6EA2-M 6EB2-E 6EB2-M 6LS2 8EB2-E 8EB2-M	6EB3-E	2DY2 4DY2 4EA2-E 4EA2-M 4SF2 6DY2 6DY3 6EA2-E
6EA2-M	2AC2 2DY2 2LA2		9DY2 9DY3		6EA2-M 8EB2-E 8EB2-M
H	2LB2 2LC2 2LO3 2LS2 2LS3	6EB2-E	2DY2 4DY2 4SF2 6DY2 6DY3		9DY2 9DY3 9EA2 9EA3
rov.	2RV2-T 4AC2 4DY2 4EA2-E 4EA2-M		6EB2-E 6EB2-M 9DY2 9DY3	6EX2-A	2GS2 2GS3 2LS2 2LS3 4GS2
	4LS2 4RV2-T 4SF2 4SF3	6EB2-M	2DY2 4DY2 4SF2 6DY2 6DY3 6EB2-M 9DY2		4LS2 4SF2 6GS2 6LS2

9DY3

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ACCESS SERVICE

- Access Service Interfaces and Transmission Specifications (Cont'd)
 - 15.2 Special Access Service (Cont'd)
 - Network Channel Interface (NCI) Codes (Cont'd) 15.2.2
 - Compatible Network Channel Interfaces (Cont'd) (C)
 - (3) Voice Grade (Cont'd)

Compati	ble CIs	Compati	ble CIs	Compatible CIs		
6EX2-B	2GO3	8EB2-E	2AC2	8EB2-M	2AC2	
	2LA2		2DY2		2DY2	
	2LB2		2LA2		2LA2	
	2LC2		2LB2		2LB2	
	2LO2		2LC2		2LC2	
	2LO3		2LO3		2LO3	
	2LR2		2LS2		2LS2	
	4LR2		2LS3		2LS3	
	4SF2		2RV2-T		2RV2-T	
			4AC2		4AC2	
6GO2	2GO2		4DY2		4DY2	
	2GS2		4LS2		4LS2	
	2GS3		4RV2-T		4RV2-T	
	4GS2		4SF2		4SF2	
	4SF2		4SF3		4SF3	
	6GS2		6DY2		6DY2	
			6DY3		6DY3	
6L02	2LS2		6EB2-E		6EB2-E	
	2LS3		6EB2-M		6EB2-M	
	4LS2		6LS2	•	6LS2	
	4SF2		8EB2-E		8EB2-M	
	6LS2		8EB2-M		9DY2	
			9DY2		9DY3	
6LS2	2LA2		9DY3			
	2LB2					
100	2LC2					
الأع المرا	2LO2					
	2LO3					
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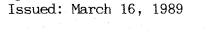
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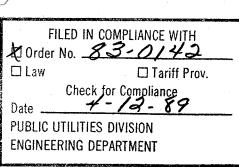
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ACCESS SERVICE

- 15. Access Service Interfaces and Transmission Specifications (Cont'd)
 - 15.2 Special Access Service (Cont'd)
 - 15.2.2 Network Channel Interface (NCI) Codes (Cont'd)
 - (C) Compatible Network Channel Interfaces (Cont'd)
 - (3) Voice Grade (Cont'd)

Compatible CIs	Compatil	ole CIs	Compatible CIs		
8EC2 2DY2 4DY2 4EA2-E 4EA2-M 4SF2 6DY2	9DY2	2DY2 4DY2 6DY2 6DY3 9DY2	9EA3	2DY2 4DY2 4EA2-E 4EA2-M 6DY2 6DY3	
6DY3 6EA2-E 6EA2-M 6EB2-E 6EB2-M 8EB2-E	9DY3	2DY2 4DY2 6DY2 6DY3 9DY2 9DY3		6EA2-E 6EA2-M 6EB2-E 6EB2-M 8EB2-E 8EB2-M 9DY2	
9DY2 9DY3 9EA2 9EA3	9EA2	2DY2 4DY2 4EA2-E 4EA2-M 6DY2 6DY3 6EA2-E		9DY3 9EA3	
1 Mission		6EA2-M 6EB2-E 6EB2-M 8EB2-E 8EB2-M 9DY2 9DY3			
195 195		9EA2 9EA3			





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- 15. Access Service Interfaces and Transmission Specifications (Cont'd)
 - 15.2 Special Access Service (Cont'd)
 - 15.2.2 <u>Network Channel Interface (NCI) Codes (Cont'd)</u>
 - (C) <u>Compatible Network Channel Interfaces</u> (Cont'd)
 - (4) Program Audio

Compatil	Compatible CIs			Compatible CIs		
2PG2-1	2PG1-1 2PG2-1		4DS8-15E	2PG1-3 2PG2-3		
2PG2-3	2PG1-3 2PG2-3	·	4DS8-15F	2PG1-5 2PG2-5		
2PG2-5	2PG1-5 2PG2-5		4DS8-15G	2PG1-8 2PG2-8		
2PG2-8	2PG1-8 2PG2-8		4DA8-15H	2PG1-1 2PG2-1		

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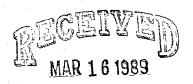
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15. Access Service Interfaces and Transmission Specifications (Cont'd)

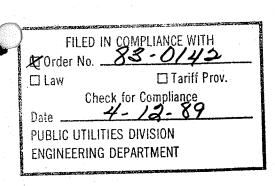
15.2 Special Access Service (Cont'd)

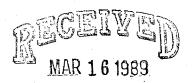
15.2.2 Network Channel Interface (NCI) Codes (Cont'd)

(C) Compatible Network Channel Interfaces (Cont'd)

(5) Video

Compatible CIs			Compatible CIs			
	2TV6-1	4TV6-15 4TV7-15	4TV7-5	4TV6-5 4TV7-5		
	2TV6-2	6TV6-15 6TV7-15	4TV7-15	4TV6-15 4TV7-15		
	2TV7-1	4TV6-15 4TV7-15	6TV6-5	6TV6-5 6TV7-5		
	2TV7-2	6TV6-15 6TV7-15	6TV6-15	6TV6-15 6TV7-15		
	4TV6-5	4TV6-5 4TV7-5	6TV7-5	6TV6-5 6TV7-5		
	4TV6-15	4TV6-15 4TV7-15	6TV7-15	6TV6-15 6TV7-15		





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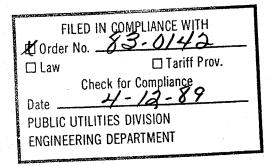
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ACCESS SERVICE

- 15. Access Service Interfaces and Transmission Specifications (Cont'd)
 - 15.2 Special Access Service (Cont'd)
 - 15.2.2 <u>Network Channel Interface (NCI) Codes (Cont'd)</u>
 - (C) <u>Compatible Network Channel Interfaces</u> (Cont'd)

(6) Digital Data

Compatible CIs		Compatib	le CIs	Compatible CIs		
4DS8-15	4DS8-15+ 4DU5-24	4DU5-24	4DU5-24	6DU5-24	6DU5-24	
	4DU5-48 4DU5-56	4DU5-48	4DU5-48	6DU5-48	6DU5-48	
	4DU5-96 6DU5-24	4DU5-96	4DU5-96	6DU5-56	6DU5-56	
	6DU5-48 6DU5-96	4DU5-56	4DU5-56	6DU5-96	6DU5-96	





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

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ACCESS SERVICE

- 15. Access Service Interface and Transmission Specifications (Cont'd)
 - 15.2 <u>Special Access Service</u> (Cont'd)
 - 15.2.2 Network Channel Interface (NCI) Codes (Cont'd)
- ILLINOIS COMMERCE COMMISSION CHIEF CLERK'S OFFICE
- (C) <u>Compatible Network Channel Interfaces</u>
 - (7) High Capacity

Compatible CIs		Compatible CIs	
4DS0-63	4DS0-63 4DU8-A,B or C 6DU8-A,B or C	4DS8-15J	4DU8-A 6DU8-A
4DS6-27	4DS6-27 4DU8-A,B or C 6DU8-A,B or C	4DS8-15K	4DU8-B 4DU8-C 6DU8-B 6DU8-C
4DS6-44	4DS6-44 4DU8-A,B or C 6DU8-A,B or C	4DS8-31	4DS8-31 4DU-A,B or C 6DU8-A,B or C
4DS8-15	4DS8-15+ 4DU8-B 6DU8-8	4DU8-A,B or C	4DU8-A,B or C

(8) Synchronous Optical Channel Service

Compatible CIs	Compatible CIs		
4DS9-1S 4DU9-1S	2SOF-A 2SOF-A	(C)	
4DS9-1K 4DU0-1K	2SOF-B 2SOF-B	.	
	2SOF-C 2SOF-C		
	2SOF-D 2SOF-D	l	
	2SOF-E 2SOF-E		
DE COMPLIANCE VIE	2SOF-F 2SOF-F	(C)	

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PUBLIC UTILITIES DIVISION Engineering Department



Issued: June 10, 1998

Issued by: ISCECA Tariff Administrator

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ACCESS SERVICE

- 15. Access Service Interface and Transmission Specifications (Cont'd)
 - 15.2 Special Access Service (Cont'd)
 - 15.3.1 Interface Group and Premise Interface Codes

When Directory Access Service is combined with Feature Group B, C or D Switched Access Service, the Premises Interface Code for the combination will be the available Premises Interface Code provided for the Feature Group B, C or D Switched Access Service ordered by the customer. Premises Interface Codes are described in 15.1.1(G) preceding.

When Directory Access Service is provided as a separate trunk group (not in combination with Switched Access Service) Interface Groups 2 through 10 as set forth in 15.1.1 preceding are available. Only the following Premises Interface Codes are available when Directory Access service is provided as a separate trunk group:

4DS9-15	6EA2-E	4RV2-0
4DS9-31	6EA2-M	4AH5-B
4DS0-63	4SF3	4AH6-C
4DS6-44		4AH6-D
4DS6-27		



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ISCECA Tariff Administrator

2305 West Monroe, Suite 4 Springfield, Illinois 62704 May 24, 1995

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Transmission



15. Access Service Interfaces and Transmission Specifications (Cont'd)

15.3 <u>Directory Access Service</u> (Cont'd)

15.3.2 Standard Transmission Specifications

Following is a matrix illustrating the transmission specifications available with Directory Access Service. Descriptions of the Standard Transmission Specifications, Type A and B, are set forth respectively in 15.1.2(E) and (F) preceding.

Directory Access Service Provided in	Specifications	
Combination with Switched Access Service	Type A	Type B
- Feature Group B (Interface Groups 2 through 10)		X
- Feature Group C		X
- Feature Group D	X	:
Directory Access Service Not Combined with Switched Access Service		
- Routed Direct to DA location (Interface Groups 2 through 10)		X
- Routed via an access tandem (Interface Groups 2 through 10)	X	



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