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AMERITECH SERVICES NETWORK CHANNEL AND NETWORK CHANNEL INTERFACE CODES

GENERAL AVAILABILITY

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1. INTRODUCTION

This publication will serve as a user guide for Exchange and InterLATA Access Services. It provides a list of code combinations formerly in various tariff documents. This document provides currently available code combinations and eliminates typographical errors or technically not feasible combinations formerly reflected in the tariff documents. Technical specifications, and customized options may be found in the applicable references listed in the table of contents.

1.1. Reason for Reissue

TR 80 is being re-issued to incorporate SONET and Microcell NC NCI code information, update the NCI Availability Tables and to correct minor typographical errors.

1.2. Overview

This document addresses InterLATA Special Access and Switched Access. A future issue will include IntraLATA Access codes.

As subsequent volumes are published, additional details, i.e., sub-groupings of codes applicable to finite channel descriptions will be shown. An example for Voice Grade follows.

A. This volume will show all compatible Voice Grade Network Interface codes within the Voice Grade service offerings, i.e., Voice Grade One through Voice Grade Twelve.

B. The Voice Grade volume will not only separate interface codes by the individual voice grade types but will delineate any differences by channel conditioning. This means that an analog data type interface code (which could be mixed in with other voice type interfaces) would be shown with Network Channel modifiers which require "data" conditioning.

Questions Regarding Technical Content May Be Directed to:

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1.3.

2. GENERAL

The Network Channel (NC) Code is an encoded description of the channel that is provided by an Ameritech operating company (AOC). In the InterLATA access, this channel is from the Point of Termination (POT) at the InterLATA customer Point of Presence (POP) to an AOC Central Office (CO) for Switched Access or from the POP to an End User (EU) location or CO Centrex. In the Exchange Access, this channel is from an EU (customer) location to another EU (customer) location, or an EU location to an AOC Central Office, both end points of the circuit being within the same LATA.

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 the transmission level point(s) reflecting the physical and electrical characteristics at the channel end point in the central office or at the meet point between the LEC and their customer, which includes both an EU and Interexchange Carriers.

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Interface specifications are intended to help achieve compatibility between the network channel being utilized and the customer's POT.

The NC code is a four-character code consisting of two (2) elements.

Channel Service Code - (character positions 1 and 2) is a two-character alpha, or alphanumeric code that describes the channel service type in an abbreviated form. The Channel Service Code must be specified. Within each broad service code, e.g., Voice Grade, Metallic, there are individual channel services. Table 1 displays the service groupings and the current InterLATA Service Code.

Optional Feature Code - (character positions 3 and 4) is a two-character alpha, or alphanumeric code that represents the option codes available for each channel service code. Varying combinations of this code will allow the InterLATA customer to specify the technical performance of the requested channel, identify the type of feature group and WATS access line and to specify access tariff options such as bridging, effective four wire, multiplexing, etc.

All four-character positions of an NC code must be filled to retain its four-character structure. A hyphen (-) may be used in the NC code to convey intelligence regarding a specific feature.

The NCI code is a maximum twelve (12)-character code comprised of five (5) data elements and two (2) delimiters.

Total Wires or Conductors - (character positions 1 and 2) is an assigned two-character numeric code that represents the total number of physical conductors (i.e., transmission/signaling wires {fibers} required at the interface). Values are defined in Table 4-1.

Protocol (character positions 3 and 4) is an assigned two-character alpha code that defines requirements for the interface regarding signaling/transmission. Currently defined values are listed in Table 2, Section 4.

Impedance - (character position 5) is an assigned one-character alpha or numeric code representing the nominal reference impedance that will terminate the channel for the purpose of evaluating transmission performance. Values are defined in Table 3, Section 4. Character position 6 and 10 are delimiters (see figure 1).

Protocol Options - (character positions 7, 8 and 9) is an assigned, one-to-three character numeric/ alphanumeric code that describes additional restrictions (e.g., bandwidth, signaling orientation) on the protocol to be used. Values are defined in Table 2, Section 4.

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Transmission Level Point(s) - (character positions 11 and 12) is an assigned one-or-two character alpha code corresponding to a value for the transmission level point(s) (TLP) from either the AOC or customer end. Values are defined in Table 4, Section 4.

Character Position 11 defines the TLP signal level when transmitting from the AOC to the customer (IC/EU). This equates to the signal level received by the customer at the interface.

Character Position 12 defines the TLP signal level when transmitting from the customer to the AOC. This equates to the signal level received by the AOC at the interface.

2.1. NCI Availability Categories

Standard. The standard interface combinations are those that are preferred for ease of fully autonomous design, maintenance, and/or administration. Interface pairs should be selected from these standard combinations. They are currently available where AOC facilities permit, and they should be viewed as the long-term replacement for transitional interface combinations.

Historical. These codes are published for informational purposes only. They may be available under special arrangement with the AOC.

3. NETWORK CHANNEL DECODE

The following tables show the codes for Channel Service, the first two characters of the four-character NC code structure.

SPECIAL ACCESS SERVICE					
Service Designator Code	**Network Channel Code**	**Service Designator Code**	**Network Channel Code**	**Service Designator Code**	**Network Channel Code**
METALLIC SERVICES	Program Audio	VOICE-GRADE Services	.	.	.
MTC	MQ	APC	PQ	VGC	.
MT1	NT	AP1	PE	VG1	LB

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MT2	NU	AP2	PF	VG2	LC
MT3	NV	AP3	PJ	VG3	LD
.	.	AP4	PK	VG4	LE
TELE- GRAPH	.	.	VG5	LF	.
TGC	NQ	Television	VG6	LG	.
TG1	NW	TVC	TQ	VG7	LH
TG2	NY	TV1	TV	VG8	LJ
.	.	TV1D	TZ	VG9	LK
.	.	TV2	TW	VG10	LN
Wideband Analog	.	.	VG11	LP	.
WA1	WJ*	Direct Digital	.	VG12	LR
WA1T	WQ*	DA1	XA (DSS)	.	.
WA2	WL*	DA2	XB (DSS)	DIGITAL SERVICES	.
WA2A	WR*	DA3	XG (DDS)	Ameritech Base Rate	.
WA3	WN*	DA4	XH (DDS)	DA1 2.4	XA
WA4	WP*	.	.	DA2 4.8	XB
.	.	Interconnect uses existing NC codes	DA3 9.6	XG	.
Wideband Data	.	.	DA4 56	XH	.
WD1	WB	SONET	.	DA5 19	XC
WD2	WE	OC-3	OB	DA6 64	XD
WD3	WF	OC-12	OD	DAL (PSDS)	XH
.	.	OC-48	OF	.	.
Micorcell	.	.	Ameritech High Capacity	.	.

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ANALOG	WA	.	.	HCO	HS
DIGITAL	WD	.	.	HC1	HC
.	.	.	.	HC1	HX (Frctional)
.	.	.	.	HC2	HF
.	.	.	.	HC3	HF (Optical)

*Service limited to circuits in place as of 8/11/88. Associated NCI codes are shown only in the Wideband Sections 6.3 and 6.4, but not with other services.

SWITCHED ACCESS SERVICE	
Feature Group	**Network Channel Code**
A	SB, SD
B	SB, SD
C	SB, SD
D	SB, SD, SH, SJ

DEDICATED NETWORK ACCESS LINE (DNAL)	
DNAL Type	**Network Channel Code**
Analog	L(x)*
Digital	XH, YN

*See Table 3-1 for complete listings of NC Codes.

4. NCI DECODE

NCI TOTAL WIRES (PHYSICAL CONDUCTORS)	
PHYSICAL CONDUCTORS	.
(Character Positions 1 and 2)	.
Data Value	**Code**
1 Conductors	01
2 Conductors	02

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3 Conductors	03
4 Conductors	04
5 Conductors	05
6 Conductors	06
7 Conductors	07
8 Conductors	08
9 Conductors	09
10 Conductors	10
11 Conductors	11
12 Conductors	12

NCI PROTOCOLS AND PROTOCOL OPTIONS					
Protocol Codes Character Position	**Option Codes Character Position**	.	.	.	.
3	**4**	**7**	**8**	**9**	**Definition of Protocol and Option**
A	B	.	.	.	Connects an IC to an access service for the transmission of voice and 20-Hz ringdown (pushbutton) signaling
A	C	.	.	.	Connects end-user premises station to an access service for the transmission of voice and 20 Hz ringdown (pushbutton) signaling
.	.	R	.	.	Two-digit code select
B	B	.	.	.	CO Bridging--Direct Bridge (Bunch Block) used on low speed data service
B	D	.	.	.	Central Office Bridge--Digital Services (DDS/Ameritech Base Rate)

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.	.	1	9	.	19.2 Kb/s Data Rate
.	.	2	4	.	2.4 Kb/s Data Rate
.	.	4	8	.	4.8 Kb/s Data Rate
.	.	5	6	.	56 Kb/s Data Rate
.	.	9	6	.	9.6 Kb/s Data Rate
B	F	.	.	.	Central Office Bridge--Split Frequency Bridge
.	.	A	*	.	400 Hz Lo-Pass
.	.	B	*	.	1300 Hz Lo-Pass
.	.	C	*	.	1370 Hz Lo-Pass
.	.	D	*	.	1650 Hz Hi-Pass
.	.	E	*	.	1925 Hz Hi-Pass
.	.	F	*	.	Customer to specify Lo-Pass
.	.	G	*	.	1300 Hz Hi-Pass
.	.	H	*	.	1810 Hz Hi-Pass
.	.	J	*	.	1460 Hz Lo-Pass
.	.	K	*	.	Customer to specify Hi-Pass
B	L	.	.	.	CO Bridging--Bridgelifter
B	M	.	.	.	CO Bridging--3-State (McCulloh) Bridge
B	P	.	.	.	CO Bridging Audio Program (non-Broadcast)
B	R	.	.	.	CO Bridging--Resistive Type
.	C	F	.	.	Resistive Type: Conference Operation
	S	P	.	.	Resistive Type: Split Path Operation
.	.	.	.	.	An independent path is provided for each direction of transmission

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.	S	P	L	.	Resistive Type: Split Path Operation
.	.	.	.	.	An independent path is provided for each direction of transmission, zero buss level required
B	S	.	.	.	CO Bridging Dataphone Select-A-Station (DSAS)
C	C	.	.	.	Contact Closure LEC provided dry contact closure toward interface
C	S	.	.	.	Digital cross-connect system (DCS) termination
.	.	3	3	.	3/3 DCS
.	.	3	3	R	3/3 DCS Customer Reconfigurable
.	.	3	1	.	3/1 DCS
.	.	3	1	R	3/1 DCS Customer Reconfigurable
.	.	3	0	.	3/0 DCS
.	.	3	0	R	3/0 DCS Customer Reconfigurable
.	.	1	1	.	1/1 DCS
.	.	1	1	R	1/1 DCS Customer Reconfigurable
.	.	1	0	.	1/0 DCS
.	.	1	0	R	1/0 DCS Customer Reconfigurable
.	.	R	.	.	DS0 Customer Reconfigurable
C	T	.	.	.	Connects an end user to a theoretical CO CENTREX tie trunk equipment
C	X	.	.	.	DS1 Termination on a digital switch
D	A	.	.	.	Connects end-user premises to an access service suitable for the transmission of data and/or control supervisory signals
.	.	D	.	.	Customer provided D. C. power

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.	.	L	.	.	Line powered (sealing current) DST
.	.	S	.	.	Sealing current option for 4W transmission
.	.	X	.	.	Simplex supervision (can be provided by line power or battery power)
D	B	.	.	.	Connects an IC to an access service suitable for the transmission of data and/or control supervisory signals
.	.	1	0	.	Frequency shift (108 data set type)
.	.	4	3	.	43A1 to 43B1 carrier format
D	C	.	.	.	Direct current or voltage
.	.	1	.	.	Monitoring interfaced with series RC combination (McCulloh format)
.	.	2	.	.	Telephone Company energized alarm signal
.	.	3	.	.	Metallic facilities (DC continuity) for direct current/low speed data (30 baud)
.	.	4	.	.	LEC facilities for DC attributes
D	D	.	.	.	Connects an IC customer to an access service suitable for the transmission of data or tones
D	E	.	.	.	Connects a EU customer to an access service suitable for the transmission of data or tones
D	M	.	.	.	Data stream in VF frequency band at CO locations, interface at data modem at CO
.	.	1	.	.	300 bps 103J type modem operation

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.	.	2	.	.	1200 bps 212A type modem operation
.	.	3	.	.	1200 bps 202T type modem operation
.	.	4	.	.	2400 bps 201B type modem operation
.	.	5	.	.	4800 bps 208A type modem operation
.	.	6	.	.	9600 bps CCITT V.29 type modem
.	.	7	.	.	4800 bps CCITT V.27 type modem
.	.	8	.	.	2400 bps CCITT V.22 type modem
.	.	#	P	.	Packet network w/specified bit rate, if required # = Valid with any of the above codes
.	.	8	P	A	Modem operation CCITT V.22 bis (2-wire at 2400 bps) Asynchronous, Packet Switch Interconnect
.	.	8	P	B	Modem operation CCITT V.22 bis (2-wire at 2400 bps) Asynchronous incorporating error-correction procedures per CCITT V.42, Packet Switch Interconnect
.	.	8	P	S	Modem operation CCITT V.22 (2-wire at 2400 bps) Synchronous, Packet Switch Interconnect
.	.	9	P	A	Modem operation CCITT V.32 (2-wire at 9600 bps) Asynchronous, Packet Switch Interconnect
.	.	9	P	B	Modem operation CCITT V.32 (2-wire at 9600 bps) Asynchronous incorporating error-correction procedures per CCITT V.42, Packet Switch Interconnect

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.	.	9	P	S	Modem operation CCITT V.32 (2-wire at 9600 bps) Synchronous, Packet Switch Interconnect
.	.	A	P	A	Combined modem operation CCITT V.22 bis and V.32 (2-wire at 9600 bps) Asynchronous, Packet Switch Interconnect
.	.	A	P	B	Combined modem operation CCITT V.22 bis and V.32 (2-wire at 9600 bps) Asynchronous incorporating error-correction procedures per CCITT V.42, Packet Switch Interconnect
.	.	A	P	S	Combined modem operation CCITT V.22 bis and V.32 (2-wire at 9600 bps) Synchronous, Packet Switch Interconnect
D	N	.	.	.	Data stream in VF frequency band at CO locations, interface at packet switch port at CO
.	.	1	.	.	300 bps 103J type modem operation
.	.	2	.	.	1200 bps 212A type modem operation
.	.	3	.	.	1200 bps 202T type modem operation
.	.	4	.	.	2400 bps 201B type modem operation
.	.	5	.	.	4800 bps 208A type modem operation
.	.	6	.	.	9600 bps CCITT V.29 type modem
.	.	7	.	.	4800 bps CCITT V.27 type modem
.	.	8	.	.	2400 bps CCITT V.22 type modem

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.	.	#	P	.	Packet network with specified bit rate, if required # = Valid with any of above codes
D	O	.	.	.	Digital interface at the digital signal level zero (DS0)
.	.	A	.	.	DS0A at 2400 bps
.	.	B	.	.	DS0A at 4800 bps
.	.	C	.	.	DS0A at 9600 bps
.	.	D	.	.	DS0A at 19200 bps
.	.	E	.	.	DS0A at 56000 bps
.	.	F	.	.	DS0A at 64000 bps
D	S	.	.	.	Digital Hierarchy Interface
.	.	1	5	.	1.544 Mbps (DS1) SF format per TR-NPL-000342
.	.	1	5	B	1.544 Mbps (DS1) SF format per TR-NPL-000342 and B8ZS clear channel capability
.	.	1	5	E	8-bit PCM encoded in one 64 Kbps of the DS1 signal
.	.	1	5	F	8-bit PCM encoded in two 64 Kbps of the DS1 signal
.	.	1	5	G	8-bit PCM encoded in three 64 Kbps of the DS1 signal
.	.	1	5	H	1 4/11 PCM encoded in six 64 Kbps of the DS1 signal
.	.	1	5	J	1.544 Mpbs (DS1) free-framing format per PUB41451 (only available to United States Government Agencies)
.	.	1	5	K	1.544 Mbps (DS1) pre-ANSI extended superframe (ESF) format per TR-NPL-000342

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.	.	1	5	L	1.544 Mbps with SF signaling on analog end of (subject to availability)
.	.	1	5	S	1.544 Mbps (DS1) pre-ANSI ESF format per 000342 and B8ZS clear channel capability
.	.	1	K	.	Same as 15K with ANSI T1.403 ESF
.	.	1	S	.	Same as 15S with ANSI T1.403 ESF
.	.	4	4	.	44.736 Mbps, (DS3) M 2/3 Format
.	.	4	4	A	1-DS3 or 45 Mbps transmission bit rate
.	.	4	4	B	2-DS3 or 90 Mbps transmission bit rate
.	.	4	4	C	3-DS3 or 135 Mbps transmission bit rate
.	.	4	4	D	4-DS3 or 180 Mbps transmission bit rate
.	.	4	4	E	6-DS3 or 270 Mbps transmission bit rate
.	.	4	4	F	9-DS3 or 405 Mbps transmission bit rate
.	.	4	4	G	12-DS3 or 540 Mbps transmission bit rate
.	.	4	4	H	18-DS3 or 810 Mbps transmission bit rate
.	.	4	4	J	36-DS3 or 1620 Mbps transmission bit rate
.	.	4	4	L	44.736 Mbps, (DS3), single frequency
.	.	E	A	.	E&M signaling

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.	.	G	O	.	Ground-start loop signaling-open end
.	.	G	S	.	Ground-start loop signaling-closed end
.	.	L	O	.	Loop-start loop signaling-open end
.	.	L	S	.	Loop-start loop signaling-closed end
.	.	N	O	.	Transmission only-no signaling
D	U	.	.	.	Digital Access Interface
.	.	2	4	.	2.4 Kbs
.	.	2	4	S	2.4 Kbps with secondary channel
.	.	4	8	.	4.8 Kbps
.	.	4	8	S	4.8 Kbps with secondary channel
.	.	9	6	.	9.6 Kbps
.	.	9	6	S	9.6 Kbps with secondary channel
.	.	1	9	.	19.2 Kbps
.	.	1	9	S	19.2 Kbps with secondary channel
.	.	5	6	.	56 Kbps
.	.	5	6	S	56 Kbps with secondary channel
.	.	6	4	.	64 Kbps
.	.	1	6	.	160 Kbps with time compression multiplexing
.	.	A	N	.	1.544 Mbps (DS1) free-framing format per PUB41451 (only available to U.S. Government Agencies) without line power
.	.	B	N	.	1.544 Mbps (DS1) SF format per TR-NPL-000054, without line power

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.	.	C	N	.	1.544 Mbps (DS1) pre-ANSI ESF format per TR-NPL-000054, without line power
.	.	D	N	.	1.544 (DS1) SF format per TR-NPL-000054, with B8ZS clear channel capability and without line power
.	.	S	N	.	1.544 Mbps (DS1) pre-ANSI ESF format per TR-NPL-000054, with B8ZS clear channel capability and without line power
.	.	1	K	N	Same as CN with ANSI T1.403 ESF
.	.	1	S	N	Same as SN with ANSI T1.403 ESF
D	X	.	.	.	Connects a customer to an access service suitable for the transmission of voice using DX signaling
.	.	X	.	.	Simplex reversal (4-wire)
D	Y	.	.	.	Duplex signaling (DX). Connects end users' grandfathered switching system, described in Part 68 of the FCC rules and regulations, to an access circuit.
E	A	.	.	.	Type I, E&M lead signaling
.	.	E	.	.	IC or end user originates on E lead
.	.	M	.	.	IC or end user originates on M lead
E	B	.	.	.	Type II, E&M lead signaling
.	.	E	.	.	IC or end user originates on E lead
.	.	M	.	.	IC or end user originates on M lead
E	C	.	.	.	Type III, E&M signaling
E	X	.	.	.	Back-to-back carrier arrangement with tandem signaling
.	.	A	.	.	LEC has closed end

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.	.	B	.	.	LEC supplies dial tone
F	A	.	.	.	Analog Fiber Interface
.	.	8	.	.	824 to 894 MHz Passband
F	C	.	.	.	Fiber Optic Interface
.	.	8	.	.	824 to 894 MHz passband
.	.	1	0	.	Up to 100 Mpbs transmission bit rate
.	.	5	4	.	12-DS3 transmission bit rate
.	.	1	2	.	24-DS3 transmission bit rate
.	.	.	.	X	Dim fiber with specified bit rate, one end powered.
.	.	.	B	.	SONET: OC-3
.	.	.	D	.	SONET: OC-12
.	.	.	H	.	SONET: OC-48
G	O	.	.	.	Ground start signaling open-end (switch) function presented by IC at interface to the Telephone Company Access Service
.	.	X	.	.	Simplex reversal (4-wire)
G	S	.	.	.	Ground-start signaling closed-end (station) function presented by IC or end user at interface to LEC access service
.	.	C	.	.	Centrex foreign exchange trunk termination
.	.	M	.	.	C O answering service concentrator
.	.	X	.	.	Simplex reversal (4-wire)
I	A	.	.	.	E.I.A. (25 Pin RS 232)
L	A	.	.	.	Type A registered port
L	B	.	.	.	Type B registered port
L	C	.	.	.	Type C registered port

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L	O	.	.	.	Loop start signaling open-end (switch) function presented by the customer at interface to the LEC access service
.	.	X	.	.	Simplex reversal
L	R	.	.	.	Private Line Automatic Ringdown (PLAR) with PLAR equipment provided by the LEC
.	.	A	.	.	D4 PLAR channel unit signaling format
.	.	B	.	.	D3 PLAR channel unit signaling format
L	S	.	.	.	Loop-start signaling-closed end (station) function presented by the customer at the interface to the LEC access service
.	.	M	.	.	C O answering service concentrator
.	.	X	.	.	Simple reversal
N	O	.	.	.	Connects customer to an access service suitable for voice transmission with no signaling provided by the LEC
.	.	S	.	.	Sealing current option for 4W transmission
.	.	X	.	.	Simplex reversal (4-wire)
.	.	17	.	.	Loopback @ 1713 Hz**
.	.	17P	.	.	Loopback @ 1713 Hz and Line Power**
.	.	19	.	.	Loopback @ 1913 Hz**
.	.	19P	.	.	Loopback @ 1913 Hz and Line Power**
.	.	24	.	.	Loopback @ 2413 Hz**

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P	G	.	.	.	Program transmission - no DC signaling
.	.	1	.	.	Nominal frequency from 50 to 15000Hz
.	.	2	.	.	Non-equalized
.	.	3	.	.	Nominal frequency from 200 to 3500Hz
.	.	5	.	.	Nominal frequency from 100 to 5000Hz
.	.	8	.	.	Nominal frequency from 50 to 8000Hz
P	R	.	.	.	Connects end-user premises protective relaying terminal equipment to an access service suitable for the one-way transmission of control signals (voice frequency tones) for protective relaying
.	.	3	1	.	3/1 mux
.	.	3	0	.	3/0 mux
.	.	1	0	.	1/0 mux, e.g., D4- or D5- type bank
Q	B	.	.	.	Manual Cross-Connect Termination with no subrating capabilities
.	.	3	3	.	DS3 to DS3 cross-connect
.	.	1	1	.	DS1 to DS1 cross-connect
.	.	L	L	.	LGX bay, fiber cross-connection
Q	C	.	.	.	Manual cross-connect DS0/Voice termination
.	.	D	X	O	Connects a customer to an access service suitable for the transmission of voice using DX signaling
.	.	E	1	A	Type I E&M signaling IC or End User originates on the E lead

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.	.	E	2	A	Type II E&M signaling IC or End User originates on the E lead
.	.	M	1	A	Type I E&M signaling IC or End User originates on the M lead
.	.	M	2	A	Type II E&M signaling IC or End User originates on the M lead
.	.	M	3	A	Type III E&M signaling
.	.	R	V	O	Reverse batter originating loop closure provided by AC to the AP; Battery provided by AC to AP
.	.	R	V	T	Reverse batter originating loop closure provided by AP to the End User; Battery provided by End User to AP
.	.	O	O	B	GO Ground start loop signaling - open end
.	.	O	O	C	GS Ground start loop signaling - closed end
.	.	O	O	D	LO Loop start loop signaling - open end
.	.	O	O	E	LS Loop start loop signaling - closed end
.	.	O	O	F	NO Transmission only - no signaling
.	.	O	O	J	2.4 Kbps digital service
.	.	O	O	K	4.8 Kbps digital service
.	.	O	O	L	9.6 Kbps digital service
.	.	O	O	M	19.2 Kbps digital service
.	.	O	O	P	56.0 Kbps digital service
.	.	O	O	Q	64.0 Kbps digital service
.	.	O	O	R	Electronic Business Service
.	.	O	O	S	ISDN Base Rate (2B1Q)
.	.	O	O	T	Coin - Tone controlled

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.	.	O	O	U	Coin - Battery controlled
R	V	.	.	.	Reverse battery (trunk signaling) at interface
.	.	O	.	.	Loop closure provided by IC to the LEC provided by LEC to IC
.	.	T	.	.	Loop closure provided by LEC to end user provided by end user to LEC
S	M	.	.	.	Mapping for SONET Terminal Multiplexer
.	.	X	.	.	Optical bandwidth in 155.520 Mbps increments (OC-3)*
.	.	.	X	.	Qty signals at 51.840 Mbps (OC-1/STS-1)*
.	.	.	.	X	Qty Signals at 6.912 Mbps (VTG)*
.	.	.	.	.	*see Table 10-2
S	N	.	.	.	Mapping for SONET OC-48 Terminal
.	.	X	.	.	QTY Signals Dropped at 622.080 Mbps (OC-12)
.	.	.	X	.	QTY Signals Dropped at 155.520 Mbps (OC-3)
.	.	.	.	X	QTY Signals Dropped at 51.850 Mbps (OC-1/STS
S	O	.	.	.	SONET Optical (transmitter characteristics)
.	.	B	U	.	LR1-SLM*, Unidirectional
.	.	C	U	.	IR1-MLM*, Unidirectional
.	.	E	U	.	SR-MLM/LED*, Unidirectional
.	.	.	.	.	*see TA-1374
S	T	.	.	.	Synchronous Transport (electrical OC equiv.)

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.	.	A	.	.	STS-1
.	.	B	.	.	STS-3
.	.	C	.	.	STS-3c
.	.	D	.	.	STS-12c
T	A	.	.	.	Central Office Transfer Arrangement
.	.	C	.	.	Common
.	.	N	C	.	Normally closed
.	.	N	O	.	Normally open
T	F	.	.	.	Telephotograph interface
T	T	.	.	.	Telegraph/teletypewriter interface
.	.	2	.	.	20.0 milliamperes
.	.	3	.	.	3.0 milliamperes
.	.	6	.	.	62.5 milliamperes
T	V	.	.	.	Television interface
.	.	1	.	.	Combined video and one 15 KHz audio signal
.	.	2	.	.	Combined video and two 15 KHz audio signals
.	.	4	.	.	Combined video and four 15 KHz audio signals
.	.	5	.	.	Video plus one (or two) two wire 5 Hz audio signal(s)
.	.	6	.	.	Combined video and three 15 KHz audio signals
.	.	1	5	.	Video plus one (or two) two wire 15 KHz audio signal(s)
.	.	1	5	A	Video plus one through four two wire 15KHz audio signals
V	T	.	.	.	Virtual Tributary

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.	.	1	.	.	VT1 (1.736 Mbps)
.	.	2	.	.	VT2
.	.	3	.	.	VT3
.	.	6	.	.	VT6 or VTG (6.192 Mbps)
W	A	.	.	.	Wideband bandwidth interface at end user's premises
.	.	1	***	.	Nominal passband from 10 Hz to 20,000 Hz
.	.	2	***	.	Nominal passband from 29,000 to 44,000 Hz
.	.	8	.	.	824-894 MHz passband
W	B	.	.	.	Wideband data interface at IC terminal location
.	.	1	8	S***	18.75 Kbps, synchronous
.	.	1	9	A***	Up to 19.2 Kbps, asynchronous
.	.	1	9	S***	19.2 Kbps, synchronous
.	.	2	3	A***	Up to 230.4 Kbps, asynchronous
.	.	2	3	S***	230.4 Kbps, synchronous
.	.	4	0	S***	40.8 Kbps, synchronous
.	.	5	0	A***	Up to 50.0 Kbps, asynchronous
.	.	5	0	S***	50.0 Kbps, synchronous
W	C	.	.	.	Wideband data interface at end user's premises
.	.	1	8	***	18.75 Kbps, synchronous
.	.	1	9	***	For 12-wire interface: 19.2 Kbps, synchronous
.	.	.	.	.	For 10-wire interface: up to 19.2 Kbps asynchronous
.	.	2	3	***	Up to 230.4 Kbps, asynchronous
.	.	2	3	S***	230.4 Kbps, synchronous

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.	.	4	0	***	40.8 Kbps, synchronous
.	.	5	0	***	For 12-wire interface: 50.0 Kbps, asynchronous
.	.	.	.	***	For 10-wire interface: Up to 50.0 Kbps, asynchronous
W	D	.	.	.	Wideband bandwidth interface at IC terminal location
.	.	1	.	***	Nominal passband from 300 to 18,000 Hx
.	.	2	.	***	Nominal passband from 28,000 to 44,000 Hz
.	.	3	.	***	Nominal passband from 29,000 to 44,000 Hz

*Filters can be designated in positions 7 and 8, if required.

**Not an orderable feature. Indicates customer preference if equipment placed at premises interface.

***Service limited to circuits in place as of 8/11/88.

NCI IMPEDANCE	
IMPEDANCE IN OHMS (Character Position 5)	.
Data Value	**Code**
110	0
150	1
600	2
900	3
1200	4
135	5
75	6
124	7
VARIABLE	8

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100	9
50 (COAXIAL)	C
FIBER	F
RADIO	Z

NCI TRANSMISSION LEVELS	
NETWORK CHANNEL INTERFACE (NCI) CODE TRANSMISSION LEVEL POINT - TRANSMISSION LEVEL POINT CODE (Character Positions 11 and 12)	
Data Value	**Code**
−16.0	A
−15.0	B
−14.0	C
−13.0	D
−12.0	E
−11.0	F
−10.0	G
−9.0	H
FRACTIONAL TLP (see ASR)	I
−8.0	J
−7.0	K
−6.0	L
−5.0	M
−4.0	N
NONE THIS DIRECTION (one-way service)*	O
−3.0	P
−2.0	Q
−1.0	R
0.0	S
+1.0	T

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+2.0	U
+3.0	V
+4.0	W
+5.0	X
+6.0	Y
+7.0	Z
LEC SPECIFIED	-
Recommended/Default	BLANK

*Also used in non-analog services to indicate directionality.

5. NCI PROTOCOL CODE AVAILABILITY

5.1. Special Access

Special Access is documented in a number of Bellcore Documents. The current issues are listed below. The purpose of this document to list the offerings supported by Ameritech.

TR-NWT-000335, Voice Grade Special Access, Issue 3, May 1993

TR-NPL-000336 Metallic & Telegraph Grade Special Access, Issue 1, Oct. 1987

TR-NPL-000337 Program Audio Special Access & Local Channel Services, Issue 1, Jul. 1987

TR-TSV-000338 TV Special Access & Local Channel Services, Issue 2, Aug. 1993

TR-NPL-000339 Wideband Analog, Special Access Service, Issue 1, Oct. 1987

TR-NPL-000340 Wideband Data, Special Access Service, Issue 1, Oct. 1987

TR-NWT-000341 Digital Data, Special Access Service, Issue 2, Feb. 1993

TR-INS-000342 Hi Capacity Digital, Special Access Service, Issue 1, Feb. 1991

Interconnection is a special class of Special Access. This service allows a Competitive Access Provider to interconnect within an Ameritech Central Office (CO) to any Tariffed Special Access Service. Unique Central Office Interfaces have been created to accommodate this and other

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similar connecting arrangements. A listing of all CO interfaces is in Table 12-1. Interconnection will primarily use the QB and QC protocols. They do not meet the same interface technical parameters in all cases as their equivalent equipment type or EU/IC NCI codes. Their "general" NCI/protocol equivalence is shown below.

QA 31 = CO Mux, DS3 to DS1 QB 33 = DSX-3 QA 10 = CO Mux, DS1 to DS0/Voice QB 11 = DSX-1

QC OOx = DS0, analog and digital services. See Tables 12-1 or 4-2. 5.1.1 Availability Table 5-1 displays a cross reference, or availability between service categories and the various Network Channel Interface Protocol codes.

Special Access NCI Protocol Code Availability							
PROTOCOL	**MET**	**VG1**	**VG2**	**VG3**	**VG4**	**VG5**	**G6**
AB	.	.	X	.	.	.	.
AC	.	.	X	.	.	.	.
CC	.	.	.	X	.	.	.
CS	.	X	X	X	X	X	X
CT	.	.	.	X	.	.	.
DA	.	.	.	.	.	X	X
DB	X	.	.	.	.	X	X
DC	X	.	.	X	.	.	.
DD	.	.	.	.	.	X	.
.DE	.	.	.	.	.	X	.
DM	.	.	.	.	.	.	X
DO	.	.	.	.	.	.	.
DS	.	X	X	X	X	X	X
DU	.	X	X	X	X	X	X
EA	.	.	.	X	.	.	.
EB	.	.	.	X	.	.	.
EC	.	.	.	X	.	.	.

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EX	.	.	X	X	.	.	.
FC	.	X	X	X	X	X	X
GO	.	X	X	X	.	.	.
GS	.	X	X	X	.	.	.
IA	X	.	.	.	.	.	.
LA	.	.	X	.	.	.	.
LB	.	.	X	.	.	.	.
LC	.	.	X	.	.	.	.
LO	.	X	X	X	.	.	.
LR	.	.	X	.	.	.	.
LS	.	X	X	X	.	.	.
NO	.	X	X	X	X	X	X
PG	.	.	.	.	.	.	.
PR	.	.	.	.	.	.	.
QA	.	.	.	.	.	.	.
QB		.	X	X	X	X	X
QC	.	X	X	X	X	X	X
RV	.	.	.	X	.	.	.
SF	.	.	X	X	.	.	.
TF	.	.	.	.	.	.	.
TT	X	.	.	.	.	.	.
TV	.	.	.	.	.	.	.

Special Access NCI Protocol Code Availability (Continued)

PROTOCOL	VG7	VG8	VG9	VG10	VG11	VG12	PGM	TV
AB	.	.	.	.	.	.	.	.
AC	.	.	.	.	.	.	.	.

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CC	.	.	.	.	.	.	.	.
CS	X	X	X	X	X	X	X	X
CT	X	X	.	.	.	.	.	.
DA	.	.	.	X	.	.	.	.
DB	.	.	.	X	.	.	.	.
DC	.	.	.	.	.	.	.	.
DD	.	.	.	.	.	.	.	.
DE	.	.	.	.	.	.	.	.
DM	.	.	.	X	.	.	.	.
DO	.	.	.	.	.	.	.	.
DS	X	X	X	X	X	X	X	X
DU	X	X	X	X	X	X	X	.
EA	X	X	X	.	.	.	.	.
EB	X	X	X	.	.	.	.	.
EC	X	X	X	.	.	.	.	.
EX	X	.	.	.	.	.	.	.
FC	X	X	X	X	X	X	X	X
GO	X	.	.	.	.	.	.	.
GS	X	.	.	.	.	.	.	.
IA	.	.	.	.	.	.	.	.
LA	X	.	.	.	.	.	.	.
LB	X	.	.	.	.	.	.	.
LC	X	.	.	.	.	.	.	.
LO	X	.	.	.	.	.	.	.
LR	X	.	.	.	.	.	.	.
LS	X	X	.	.	.	.	.	.
NO	X	.	X	X	.	X	.	.
PG	.	.	.	.	.	.	X	.

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PR	.	.	.	.	.	X	.	..
QA	.	.	.	.	.	.	.	.
QB	X	X	X	X	X	X	X	X
QC	X	X	X	X	X	X		
RV	X.	.	.	.	.	.	.	.
SF	X	X	X	.	.	.	.	.
TF	.	.	.	.	X	.	.	.
TT	.	.	.	.	.	.	.	.
TV	.	.	.	.	.	.	.	X

Special Access NCI Protocol Code Availability			
PROTOCOL	**WB ALG**	**WB DIG**	**DIG SVC**
WA	X	.	.
WD	X	.	.
WB	.	X	.
WC	.	X	.
CS	.	.	X
DO	.	.	X
DS	.	.	X
DU	.	.	X
FC	.	.	X
QA	.	.	.
QB	.	.	.
QC	.	.	.
SO	.	.	.
SM	.	.	.
ST	.	.	.

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Special Access NCI Protocol Code Availability				
PROTOCOL	**HICAP**	**INT CONN**	**SONET**	**MICROCELL**
WA	.	.	.	X
WD	.	.	.	.
WB	.	.	.	.
WC	.	.	.	.
CS	X	.	.	.
DO	.	.	.	.
DS	X	.	.	.
DU	X	.	.	.
FC	X	.	X	X
QA	.	X	.	.
QB	.	X	.	.
QC	.	X	.	.
SO	.	.	X	.
SM	.	.	X	.
ST	.	.	X	.

5.2. Switched Access

In the Bellcore technical document (TR-NPL-000334), eleven interface groups are defined. Five are supported within the Ameritech region. Brief descriptions of all eleven interface groups are found in Section 5.2.2 Some specific non-standard interfaces are available. These exceptions are shown in Section 6 of the Ameritech Access Tariff (FCC # 2).

It is recognized that this document does not clearly define Switched ISDN or SS7 service connections. As standards are issued they will be reflected in this document.

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5.2.1. Interface Groups - General

Only certain premises NCI codes are available at the customer location. The interfaces vary by types of service. The various premises protocols which are available within the supported interface groups are presented in table 5-2, and in more detail (with feature groups) in Section 11.

Each interface group provides a specified premises interface, e.g., two-wire, four-wire, DS1, etc. Various groups offer different transmission specifications. Please see TR-NPL-000334 for those specifications and any details on interface groups not presented in this document.

Switched Access NCI Protocol Code Availability					
.	.	**Interface Groups**	.	.	.
Premises Protocol	**1**	**2**	**6**	**9**	**11**
02DX	X	.	.	.	.
04EA	X	.	.	.	.
06EA	.	X	.	.	.
06EB	X	.	.	.	.
08EB	.	X	.	.	.
06EC	X	.	.	.	.
08EC	.	X	.	.	.
02GS	X	.	.	.	.
04GS	.	X	.	.	.
02LS	X	.	.	.	.
04LS	.	X	.	.	.
02NO	X	X	.	.	.
02RV	X	.	.	.	.
04RV	.	X	.	.	.
04SF	.	X	.	.	.
04DS*	X	.	X	.	.
04DU*	.	.	X	.	.

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04DS*	.	.	.	X	.
02FC*	.	.	.	.	X

*See 9.3 for explanation

5.2.2. Interface Group Definitions

A. Interface Group 1 provides a two-wire voice frequency (analog) transmission interface at the customer's premises.

B. Interface Group 2 provides a four-wire voice frequency (analog) transmission interface at the customer's premises.

C. Interface Group 3 is not available in Ameritech and is not presented in this document.

D. Interface Group 4 is not available in Ameritech and is not presented in this document.

E. Interface Group 5 is not available in Ameritech and is not presented in this document.

F. Interface Group 6 provides DS1 level digital transmission at the point 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.

G. Interface Group 7 is not available in Ameritech and is not presented in this document.

H. Interface Group 8 is not available in Ameritech and is not presented in this document.

I. Interface Group 9 provides DS3 level digital transmission at the point 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 (or 28 DS1 paths).

J. Interface Group 10 is not available in Ameritech and is not presented in this document.

K. Interface Group 11 provides DS3 level digital transmission via an optical interface at the point of termination at the customer's premises. This interface is capable of transmitting asynchronous optical signals at multiples of the DS3 bit rate at either 12 or 24 DS3 equivalent channel capacities. This interface is only available in conjunction with Shared Use facilities, where the customer's Special Access Facilities are provided with an optical interface.

Before the first point of switching, when analog switching using analog terminations is provided, the customer must order an Ameritech DS3 to Ameritech DS1 multiplexer and an Ameritech DS1

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to voice/base rate multiplexer to derive up to 672 transmission paths of a frequency bandwidth of approximately 300 to 3000 Hz per equivalent DS3 channel. Before the first point of switching when digital switching, or analog switching with digital carrier terminations is provided, the customer must order an Ameritech DS3 to DS1 multiplexer to derive up to 28 DS1 transmission paths in D3/D4 format per equivalent DS3 channel.

Exchange/IntraLATA (Future)

6. METALLIC, TELEGRAPH, WIDE BAND ANALOG, WIDE BAND DATA AND MICROCELL NCI COMPATIBILITY TABLES

6.1. Introduction

6.1.1. Metallic Services

Compatible CIs	**Compatible CIs**	**Compatible CIs**	.	.	.
04CS*	02DC8-1	02DC8-3	02DC8-3	04DU*	02DC8-2
04CS*	02DC8-2	04DS*	02DC8-1	02FC*	02DC8-1
02DC8-3	02DC8-3	04DS*	02DC8-2	02FC*	02DC8-1
02DC8-1	02DC8-2	04DU*	02DC8-1	.	.

*See 9.3 for explanation.

6.1.2. Telegraph Grade Services

Compatible CIs	**Compatible CIs**	**Compatible CIs**	.	.	.
04CS*	02TT2-2	04DB2-10	04TT2-2	04DU-*	10IA8
04CS*	02TT2-6	04DB2-10	10IA8	02FC*	02TT2-2
04CS*	04TT2-2	04DB2-43**	02TT2-6	02FC*	02TT2-6
04CS*	04TT2-6	04DB2-43**	04TT2-2	02FC*	04TT2-2
04CS*	10IA8	04DB2-43**	10IA8	02FC*	04TT2-6
.	.	04DS-*	02TT2-2	02FC*	10IA8

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02DB2-10	02TT2-2	04DS-*	02TT2-6	02TT2-2	02TT2-2
02DB2-10	04TT2-2	04DS-*	04TT2-2	02TT2-3	02TT2-2
02DB2-10	10IA8	04DS-*	04TT2-6	02TT2-3	04TT2-2
02DB2-43**	02TT2-2	04DS-*	10IA8	02TT2-6	02TT2-6
02DB2-43**	02TT2-6	04DU-*	02TT2-2	02TT2-6	04TT2-2
02DB2-43**	04TT2-2	04DU-*	02TT2-6	04TT2-2	04TT2-2
02DB2-43**	10IA8	04DU-*	04TT2-2	04TT2-6	02TT2-6
04DB2-10	02TT2-2	04DU-*	04TT2-6	.	.

*See 9.3 for explanation.

**Supplemental Channel Assignment information required.

*6.1.3. Wideband Analog Services**

*Wideband Analog and Wideband Data Services are limited to circuits in place as of August 11, 1988.

Compatible CIs	**Compatible CIs**	**Compatible CIs**	.	.	.
04WD5-1	04WA5-1	04WD5-2	04WA5-1	04WD5-3	04WA5-2

*6.1.4. Wideband Data Services**

*Wideband Analog and Wideband Data Services are limited to circuits in place as of August 11, 1988.

Compatible CIs	**Compatible CIs**	**Compatible CIs**	.	.	.
08WB5-18S	12WC6-18	08WB5-23A	10WC6-23	08WB5-50A	10WC6-50
08WB5-19A	10WC6-19	08WB5-23S	12WC6-23S	08WB5-50S	12WC6-50
08WB5-19S	12WC6-19	08WB5-40S	12WC6-40	.	.

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6.1.5. Microcell Services

Compatible CIs	Compatible CIs	.	.
02FCF-8	04WAC-8	02FAF-8	04WAC-8

7. ANALOG VOICE GRADE NCI COMPATIBILITY TABLES

7.1. Introduction

7.1.1. Direct Analog Service

Compatible CIs	Compatible CIs	Compatible CIs	.	.	.
02AC2	04DS*	04CS*	04GS2	04DB2	04PR2
04AB2	02AC2	04CS*	04LR2	04DD2	02DE2
04AB2	04AC2	04CS*	04LS2	04DD2	04DE2
04AC2	04DS*	04CS*	04NO2	04DE2	04DS*
02CC8	02DC8-4	04CS*	04PR2	04DE2	04NO2
02CT3	04DS*	04CS*	04RV2-T	04DS*	02GO2
02CT3	04EA2-E	04CS*	04TF2	04DS*	02GO3
02CT3	04EA2-M	04CS*	06DA2	04DS*	02GS2
02CT3	06EA2-E	04CS*	06EA2-E	04DS*	02GS3**
02CT3	06EA2-M	04CS*	06EA2-M	04DS*	02LA2
02CT3	08EB2-E	04CS*	06GS2	04DS*	02LB2
02CT3	08EB2-M	04CS*	06LS2	04DS*	02LC2
02CT3	08EC2	04CS*	08EB2-E	04DS*	02LO2
04CS*	02CT3	04CS*	08EB2-M	04DS*	02LO3
04CS*	02DA2	04CS*	08EC2	04DS*	02LR2
04CS*	02DE2	04CT2	04DS*	04DS*	02LS2

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04CS*	02GO3	04CT2	04EA2-E	04DS*	02LS3**
04CS*	02GS2	04CT2	04EA2-M	04DS*	02NO2
04CS*	02GS3***	04CT2	06EA2-E	04DS*	02PR2
04CS*	02LO2	04CT2	06EA2-M	04DS*	02RV2-O
04CS*	02LO3	04CT2	08EB2-E	04DS*	02RV2-T
04CS*	02LA2	04CT2	08EB2-M	04DS*	02TF2
04CS*	02LB2	04CT2	08EC2	04DS*	04EA2-E
04CS*	02LC2	02DA2	04DB2	04DS*	04EA2-M
04CS*	02LR2	02DA2	04DS*	04DS*	04GS2
04CS*	02LS2	02DA2	04NO2	04DS*	04LR2
04CS*	02LS3**	02DB2	02NO2	04DS*	04LS2
04CS*	02NO2	02DB2	02PR2	04DS*	04NO2
04CS*	02PR2	02DE2	04DS*	04DS*	04PR2
04CS*	02RV2-O	02DE2	04NO2	04DS*	04RV2-T
04CS*	02RV2-T	04DA2	02DB2	04DS*	04TF2
04CS*	02TF2	04DA2	04DA2	04DS*	06EA2-E
04CS*	04CT2	04DA2	04DB2	04DS*	06EA2-M
04CS*	04DA2	04DA2	04DM2,2	04DS*	06EB2-E
04CS*	04DB2	04DA2	04DS*	04DS*	06EB2-M
04CS*	04DE2	04DA2	04NO2	04DS*	06LS2
04CS*	04EA2-E	04DB2	04DS*	04DS*	08EB2-E
04CS*	04EA2-M	04DB2	04NO2	04DS*	08EB2-M
04DU*	02CT3	06DA2	04DS*	08EB2-E	08EB2-M
04DU*	02DA2	06DA2	04NO2	08EB2-M	02RV2-T
04DU*	02DE2	06DA2	06DA2	08EB2-M	04RV2-T
04DU*	02GO3	04EA2-E	04EA2-E	08EB2-M	06EB2-E
04DU*	02GS2	04EA2-E	04EA2-M	08EB2-M	06EB2-M
04DU*	02GS3***	04EA2-E	06EB2-E	08EB2-M	08EB2-M

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04DU*	02LO2	04EA2-E	06EB2-M	08EC2	04EA2-E
04DU*	02LO3	04EA2-E	08EB2-E	08EC2	04EA2-M
04DU*	02LA2	04EA2-E	08EB2-M	08EC2	06EA2-E
04DU*	02LB2	04EA2-M	06EB2-E	08EC2	06EA2-M
04DU*	02LC2	04EA2-M	06EB2-M	08EC2	06EB2-E
04DU*	02LR2	04EA2-M	08EB2-E	08EC2	06EB2-M
04DU*	02LS2	04EA2-M	08EB2-M	08EC2	08EB2-E
04DU*	02LS3**	06EA2-E	02RV2-O	08EC2	08EB2-M
04DU*	02NO2	06EA2-E	02RV2-T	02FC*	02CT3
04DU*	02PR2	06EA2-E	04EA2-E	02FC*	02DA2
04DU*	02RV2-O	06EA2-E	04EA2-M	02FC*	02DE2
04DU*	02RV2-T	06EA2-E	04RV2-T	02FC*	02GO3
04DU*	02TF2	06EA2-E	06EA2-E	02FC*	02GS2
04DU*	04CT2	06EA2-E	06EA2-M	02FC*	02GS3***
04DU*	04DA2	06EA2-E	06EB2-E	02FC*	02LO2
04DU*	04DB2	06EA2-E	06EB2-M	02FC*	02LO3
04DU*	04DE2	06EA2-E	08EB2-E	02FC*	02LA2
04DU*	04EA2-E	06EA2-E	08EB2-M	02FC*	02LB2
04DU*	04EA2-M	06EA2-M	02RV2-O	02FC*	02LC2
04DU*	04GS2	06EA2-M	02RV2-T	02FC*	02LR2
04DU*	04LR2	06EA2-M	04EA2-E	02FC*	02LS2
04DU*	04LS2	06EA2-M	04EA2-M	02FC*	02LS3**
04DU*	04NO2	06EA2-M	04RV2-T	02FC*	02NO2
04DU*	04PR2	06EA2-M	06EA2-M	02FC*	02PR2
04DU*	04RV2-T	06EA2-M	06EB2-E	02FC*	02RV2-O
04DU*	04TF2	06EA2-M	06EB2-M	02FC*	02RV2-T
04DU*	06DA2	06EA2-M	08EB2-E	02FC*	02TF2
04DU*	06EA2-E	06EA2-M	08EB2-M	02FC*	04CT2

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04DU*	06EA2-M	06EB2-E	06EB2-E	02FC*	04DA2
04DU*	06GS2	06EB2-E	06EB2-M	02FC*	04DB2
04DU*	06LS2	06EB2-M	06EB2-M	02FC*	04DE2
04DU*	08EB2-E	08EB2-E	02RV2-T	02FC*	04EA2-E
04DU*	08EC2	08EB2-E	06EB2-E	02FC*	04GS2
06DA2	04DA2	08EB2-E	06EB2-M	02FC*	04LR2
06DA2	04DB2	08EB2-E	08EB2-E	02FC*	04LS2
02FC*	04NO2	04LS2	02LBS	04QC-OOA	04EA2-M
02FC*	04PR2	04LS2	02LC2	04QC-OOC	04GS2
02FC*	04RV2-T	04LS2	02LO2	04QC-OOE	04LS2
02FC*	04TF2	04LS2	02LO3	04QC-OOF	04NO2
02FC*	06DA2	02NO2	02DA2	04QC-OOC	04RV2-T
02FC*	06EA2-E	02NO2	02NO2	04QC-OOE	04RV2-T
02FC*	06EA2-M	02NO2	04DA2	04QC-OOF	04TF2
02FC*	06GS2	02NO2	06DA2	04QC-OOF	06DA2
02FC	06LS2	02NO3	02NO2	04QC-OOA	06EA2-E
02FC	08EB2-E	02NO3	02PR2	04QC-OOA	06EA2-M
02FC	08EB2-M	04NO2	02DA2	04QC-OOC	06GS2
02FC	08EC2	04NO2	02DE2	04QC-OOE	06LS2
02GO2	02GS2	04NO2	02NO2	04QC-OOA	08EB2-E
02GO2	02GS3***	04NO2	04DA2	04QC-OOA	08EB2-M
02GO3	02GS2	04NO2	04DE2	04QC-OOA	08EC2
02GO3	02GS3***	04NO2	04NO2	02RV2-O	02RV2-T
02GS3	06EAS-M	04NO2	06DA2	04RV2-O	02RV2-T
04GO2	02GS2	04QC-OOF	02DA2	04RV2-O	04RV2-T
04GO2	02GS3***	04QC-OOF	02DE2	04RV2-O	04SF2
04GO2	04GS2	04QC-OOB	02GO3	02TF3	02TF2
04GS2	02GO2	04QC-OOC	02GS2	04TF2	02TF2

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04GS2	02GO3	04QC-OOC	02GS3***	04TF2	04TF2
04GS2	04GO2	04QC-OOD	02LO2	.	.
04GS2	06EB2-M	04QC-OOD	02LO3	.	.
02LO2	02LS2	04QC-OOC	02LA2	.	.
02LO2	02LS3***	04QC-OOE	02LA2	.	.
02LO3	02LS2	04QC-OOC	02LB2	.	.
02LO3	02LS3***	04QC-OOE	02LB2	.	.
02LR2	02LR2	04QC-OOC	02LC2	.	.
02LR3	02LRS	04QC-OOE	02LC2	.	.
02LS2	02LA2	04QC-OOE	02LS2	.	.
02LS2	02LB2	04QC-OOE	02LS3	.	.
02LS2	02LC2	04QC-OOF	02NO2	.	.
02LS3**	02LA2	04QC-OOB	02RV2-O	.	.
02LS3**	02LB2	04QC-OOD	02RV2-O	.	.
02LS3**	02LC2	04QC-OOC	02RV2-T	.	.
04LO2	02LS2	04QC-OOE	02RV2-T	.	.
04LO2	02LS3***	04QC-OOF	02TF2	.	.
04LO2	04LS2	04QC-OOF	04DA2	.	.
04LR2	02LR2	04QC-OOF	04DB2	.	.
04LR2	04LR2	04QC-OOF	04DE2	.	.
04LS2	02LA2	04QC-OOA	04EA2-E	.	.

*See 9.4 for explanation.

**The "M" option as described in Table 4-2 preceding is also available with this combination (i.e., 2LS3-M).

***The "C" and "M" options as described in Table 4-2 preceding are also available with this combination (i.e., 2GS3-C or 2GS3-M).

7.1.2. Dedicated Access Line (DAL)

These codes are used with WATS service.

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Premises Interface Code	Premises Interface Code	Premises Interface Code
06EA2-M	06EB2-M	02GS2
02GS3	04GS2	02LS2
02LS3	04LS2	.

7.1.3. Ameritech DS-1 DAL

These codes are used with WATS service.

Premises Interface Code

04DS # - #

04DU # - #

02FC # - #

Voicegrade Services - Exchange Access. To be added in a FUTURE issue.

Analog Historical Interface Codes

The following codes are considered as Historical or as part of Transitional Interface combinations at the time of divestiture (1983-1984). They are shown here for reference only and are defined in TR-NWT-000335, Issue 3, May 1993.

02AB2	04GS3	04TF3
02AB3	04LO2	06DX2
02DY2	04LO3	06DY2
02LR3	04LR3	06DY3
02RV2-O	04LS3	06EB3-E
02RV2-T	04RV3-T	06EB3-M
04AB3	04SF2	06EX2-A
04AH5-B	04SF2-AB	06EX2-B

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04AH6-C	04SF2-EA	06GO2
04AH6-D	04SF2-GO	06GS2
04DX2	04SF2-GS	06LO2
04DX3	04SF2-LB	06LS2
04DY2	04SF2-LO	09DY2
04EA3-E	04SF2-LS	09DY3
04EA3-M	04SF3	09EA2
04GO3	.	09EA3

8. PROGRAM AND VIDEO/TELEVISION NCI COMPATIBILITY TABLES

8.1. Introduction

8.1.1. Program Audio

Compatible CIs	**Compatible CIs**	**Compatible CIs**	.	.	.
04CS- # - #	02PG1-3	04DS- # - #	02PG1-1	02FC- # - #	02PG1-5
04CS- # - #	02PG2-3	04DS- # - #	02PG2-1	02FC- # - #	02PG2-5
04CS- # - #	02PG1-5	04DU- # - #	02PG1-3	02FC- # - #	02PG2-8
04CS- # - #	02PG2-5	04DU- # - #	02PG2-3	02FC- # - #	02PG1-8
04CS- # - #	02PG1-8	04DU- # - #	02PG1-5	02PG2-1	02PG2-1
02PG2-1	02PG1-1	04DU- # - #	02PG2-5	02PG2-3	02PG1-3
04CS- # - #	02PG2-8	04DU- # - #	02PG1-8	02PG2-3	02PG2-3
04CS- # - #	02PG1-1	04DU- # - #	02PG2-8	02PG2-5	02PG1-5
04CS- # - #	02PG2-1	04DU- # - #	02PG1-1	02PG2-5	02PG2-5
04DS- # - #	02PG1-3	04DU- # - #	02PG2-1	02PG2-8	02PG2-8
04DS- # - #	02PG2-3	02FC- # - #	02PG1-1	02PG2-8	02PG1-8

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04DS- # - #	02PG1-5	02FC- # - #	02PG2-1	.	.
04DS- # - #	02PG2-5	02FC- # - #	02PG1-3	.	.
04DS- # - #	02PG1-8	02FC- # - #	02PG2-3	.	.
04DS- # - #	02PG2-8	.	.	.	.

8.1.2. Video/Television

Compatible CIs	**Compatible CIs**	**Compatible CIs**	.	.	.
TV2 Service	.	1 Audio Channel	02TV6-1	04TV6-15	.
04TV6-5	04TV6-5	02DS6-44A	02TV6-1	02TV6-1	04TV6-15A
06TV6-5	06TV6-5	02DS6-44A	04TV6-15	.	.
.	.	02DS6-44A	04TV6-15A	.	.
TV1/TVID Service	02TV6-1	02TV6-1	.	.	.
2 Audio Channels	02TV6-2	02TV6-2	06TV6-15	06TV6-15A	.
02DS6-44A	02TV6.2	02TV6-2	06TV6-15	06TV6-15A	06TV6-15A
02DS6-44A	06TV6.15	02TV6-2	06TV6-15A	.	.
02DS6-44A	06TV6.15A	06TV6-15	06TV6-15	.	.
.	.	02TV6-6	08TV6-15A	02DS6-44A	10TV6-15A
3 Audio Channels	08TV6-15A	08TV6-15A	02TV6-4	02TV6-4	.
02DS6-44A	02TV6.6	.	.	02TV6-4	10TV6-15A
02DS6-44A	08TV6-15A	4 Audio Channels	10TV6-15A	10TV6-15A	.
02TV6-6	02TV6-6	02DS6-44A	02TV6-4	.	.

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9. DIGITAL NCI COMPATIBILITY TABLES

9.1. Introduction

9.2. Direct Digital Service

Compatible CIs	Compatible CIs	Compatible CIs	.	.	.
04DS9-1K	04DU5-24	04DS9-1S	04DU5-96	04DS9-15B	04DU5-48
04DS9-1K	04DU5-24S	04DS9-1S	04DU5-96S	04DS9-15B	04DU5-48
04DS9-1K	04DU5-48	04DS9-15	04DS9-15*	04DS9-15B	04DU5-56
04DS9-1K	04DU5-48S	04DS9-15	04DU5-24	04DS9-15B	04DU5-56S
04DS9-1K	04DU5-56	04DS9-15	04DU5-24S	04DS9-15B	04DU5-96
04DS9-1K	04DU5-56S	04DS9-15	04DU5-24S	04DS9-15B	04DU5-96S
04DS9-1K	04DU5-96	04DS9-15	04DU5-48	04DU5-24	04DU5-24
04DS9-1K	04DU5-96S	04DS9-15	04DU5-48S	04DU5-24S	04DU5-24S
04DS9-1S	04DU5-24	04DS9-15	04DU5-56	04DU5-48	04DU5-48
04DS9-1S	04DU5-24S	04DS9-15	04DU5-56S	04DU5-48S	04DU5-48S
04DS9-1S	04DU5-48	04DS9-15	04DU5-96	04DU5-56	04DU5-56
04DS9-1S	04DU5-48S	04DS9-15	04DU5-96S	04DU5-56S	04DU5-56S
04DS9-1S	04DU5-56	04DS9-15B	04DU5-24	04DU5-96	04DU5-96
04DS9-1S	04DU5-56S	04DS9-15B	04DU5-24	04DU5-96S	04DU5-96S

*Available only as a cross connect of two digital DS0 channels at appropriate digital speeds at a Telephone Company DDS Hub.

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9.3. Digital DNAL Service

Compatible CIs	Compatible CIs	Compatible CIs
04DU5-56	04DS # - #	.
04DU5-56S	04DS # - #	.
04DU5-64*	04DS # - #	.

*May require Clear Channel Capable (CCC) Hi-Cap transport.

9.4. Ameritech Base Rate Service

Compatible CIs	Compatible CIs	Compatible CIs	.	.	.
04CS-*	04DO-A	04DS-*	04DU5-24	04DU5-56	04DU5-56
04CS-*	04DO-B	04DS-*	04DU5-24S	04DU5-56S	04DU5-56S
04CS-*	04DO-C	04DS-*	04DU5-48	04DU5-64	04DU5-64
04CS-*	04DO-D	04DS-*	04DU5-48S	04DU5-96	04DU5-96
04CS-*	04DO-E	04DS-*	04DU5-56	04DU5-96S	04DU5-96S
04CS-*	04DO-F**	04DS-*	04DU5-56S	02FC*	04DU5-19
04CS-*	04DU5-19	04DS-*	04DU5-96	02FC*	04DU5-24
04CS-*	04DU5-24	04DS-*	04DU5-96S	02FC*	04DU5-24S
04CS-*	04DU5-24S	04DS-*	04DU5-64**	02FC*	04DU5-48
04CS-*	04DU5-48	04DU-*	04DO-A	02FC*	04DU5-48S
04CS-*	04DU5-48S	04DU-*	04DO-B	02FC*	04DU5-56
04CS-*	04DU5-56	04DU-*	04DO-C	02FC*	04DU5-56S
04CS-*	04DU5-56S	04DU-*	04DO-D	02FC*	04DU5-96

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04CS-*	04DU5-96	04DU-*	04DO-E	02FC*	04DU5-96S
04CS-*	04DU5-96S	04DU-*	04DO-F**	02FC*	04DU5-64**
04CS-*	04DU5-64**	04DU*	04DU5-19	02FC*	04DO-A
02DU5-16	02DU5-16	04DU*	04DU5-24	02FC*	04DO-B
04DO-A	04DU5-24	04DU*	04DU5-24S	02FC*	04DO-C
04DO-B	04DU5-48	04DU*	04DU5-48	02FC*	04DO-D
04DO-C	04DU5-96	04DU*	04DU5-48S	02FC*	04DO-E
04DO-D	04DU5-19	04DU*	04DU5-56	02FC*	04DO-F**
04DO-E	04DU5-56	04DU*	04DU5-56S	04QB33	04DO-A
04DO-F	04DU5-64	04DU*	04DU5-96	04QB33	04DO-B
04DS-*	04DO-A	04DU*	04DU5-96S	04QB33	04DO-C
04DS-*	04DO-B	04DU*	04DU5-64**	04QB33	04DO-D
04DS-*	04DO-C	04DU5-19	04DU5-19	04QB33	04DO-E
04DS-*	04DO-D	04DU5-24	04DU5-24	04QB33	04DO-F**
04DS-*	04DO-E	04DU5-24S	04DU5-24S	04QB33	04DU5-19
04DS-*	04DO-F**	04DU5-48	04DU5-48	.	.
04DS-*	04DU5-19	04DU5-48S	04DU5-48S	.	.
04QB33	04DU5-24	04QB11	04DU5-19	02QBLL	04DO-F**
04QB33	04DU5-24S	04QB11	04DU5-24	02QBLL	04DU5-19
04QB33	04DU5-48	04QB11	04DU5-24S	02QBLL	04DU5-24
04QB33	04DU5-48S	04QB11	04DU5-48	02QBLL	04DU5-24S
04QB33	04DU5-56	04QB11	04DU5-48S	02QBLL	04DU5-48
04QB33	04DU5-56S	04QB11	04DU5-56	02QBLL	04DU5-48S
04QB33	04DU5-96	04QB11	04DU5-56S	02QBLL	04DU5-56
04QB33	04DU5-96S	04QB11	04DU5-96	02QBLL	04DU5-56S
04QB33	04DU5-64**	04QB11	04DU5-96S	02QBLL	04DU5-96
04QB11	04DO-A	04QB11	04DU5-64**	02QBLL	04DU5-96S
04QB11	04DO-B	02QBLL	04DO-A	02QBLL	04DU5-64**

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04QB11	04DO-C	02QBLL	04DO-B	04QC-OOJ	04DO-A
04QB11	04DO-D	02QBLL	04DO-C	04QC-OOK	04DO-B
04QB11	04DO-E	02QBLL	04DO-D	04QC-OOL	04DO-C
04QB11	04DO-F**	02QBLL	04DO-E	.	.
04QC-OOM	04DO-D	04QC-OOM	04DU5-19	04QC-OOP	04DU5-56
04QC-OOP	04DO-E	04QC-OOJ	04DU5-24	04QC-OOL	04DU5-96
04QC-OOQ	04DO-F**	04QC-OOK	04DU5-48	04QC-OOQ	04DU5-64**

*See 9.4 for explanation.

**Requires Clear Channel Capable (CCC) HiCap interface.

9.5. Digital Hierarchy High Capacity Network Channel Interface Codes

Customers selecting multiplex four-wire DS1 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 network channel interface codes plus the speed options indicated below:

All of the following code and speed options are shown specifically or generically, in other sections of this document. If shown generically, they are indicated as 4CS # - # , 4DS # - # , 04DU # - # , or 02FC # - # .

Electrical Interface Code and Speed Option	Nominal Bit Rate (Mbps)	Digital Hierarchy Level
04DS9-15	1.544	DS1
04DS9-15B	1.544	DS1
04DS9-15M	1.544	DS1
04DS9-15K	1.544	DS1
04DS9-15S	1.544	DS1
04DS9-1K	1.544	DS1
04DS9-1S	1.544	DS1

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04DS6-44	44.736	DS3
04CS9-15	1.544	DS1
04CS9-15B	1.544	DS1
04CS9-15K	1.544	DS1
04CS9-15S	1.544	DS1
04CS9-1K	1.544	DS1
04CS9-1S	1.544	DS1
04DU9-AN	1.544	DS1
04DU9-BN	1.544	DS1
04DU9-CN	1.544	DS1
04DU9-DN	1.544	DS1
04DU9-1KN	1.544	DS1
04DU9-1SN	1.544	DS1

Optical Interface Code and Speed Option	**Nominal Bit Rate (Mbps)**	**Digital Hierarchy Level**
02FCF-54	540.0*	12 x DS3
02FCF-12	1200.0*	24 x DS3

*Plus manufacturer's overhead communications channel.

9.5.1. Ameritech DS1 and Ameritech 384 Service

Compatible CIs	**Compatible CIs**	**Compatible CIs**	.	.	.
04CS # - #	02FC # - #	04CS9-15	04DU9-BN	04DS9-15B	04DU9-DN
04CS # - #	02QBF-LL	04CS9-15B	04CS9-15B	04DS9-15J	04DS9-15J
04CS # - #	04CS # - #	04CS9-15B	04DS9-15B	04DS9-15K	04DS9-15K

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04CS # - #	04QA9-10	04CS9-15B	04DU9-DN	04DS9-15K	04DU9-CN
04CS # - #	04QB9-11	04CS9-15K	04CS9-15K	04DS9-15S	04DS9-15S
04CS9-1K	04CS9-1K	04CS9-15K	04DS9-15K	04DS9-15S	04DU9-SN
04DS # - #	02FC # - #	04CS9-15K	04DU9-CN	04DU # - #	02FC # - #
04DS # - #	02QBF-LL	04CS9-15S	04CS9-15S	04DU # - #	02QBF-LL
04DS # - #	04QA9-10	04CS9-15S	04DS9-15S	04DU # - #	04QA9-10
04DS # - #	04QB9-11	04CS9-15S	04DU9-SN	04DU # - #	04QB9-11
04CS9-1K	04DS9-1K	04DS9-1K	04DS9-1K	04DU9-1KN	04DU9-1KN
04CS9-1K	04DU9-1KN	04DS9-1K	04DU9-1KN	04DU9-1SN	04DU9-1SN
04CS9-1S	04CS9-1S	04DS9-1S	04DS9-1S	04DU9-AN	04DU9-AN
04CS9-1S	04DS9-1S	04DS9-1S	04DU9-1SN	04DU9-BN	04DU9-BN
04CS9-1S	04DU9-1SN	04DS9-15	04DS9-15	04DU9-CN	04DU9-CN
04CS9-15	04CS9-15	04DS9-15	04DU9-BN	04DU9-DN	04DU9-DN
04CS9-15	04DS9-15	04DS9-15B	04DS9-15B	04DU9-SN	04DU9-SN

9.5.2. Ameritech DS3 Service

Compatible CIs	**Compatible CIs**	**Compatible CIs**	.	.	.
04CS6-44	02QBF-LL	04DS6-44	04QB6-33	02FCF-54	04QA6-30
04CS6-44	04QA6-30	02FCF-12	02QBF-LL	02FCF-54	04QA6-31
04CS6-44	04QA6-31	02FCF-12	04QA6-30	02FCF-54*	04DS#-#
04CS6-44	04QB6-33	02FCF-12	04QA6-31	02FCF-54*	04DS6-44
04DS6-44	02QBF-LL	02FCF-12*	04CS # - #	02FCF-12	04QB6-33
04DS6-44	04QA6-30	02FCF-12*	04DS6-44	02FCF-54	04QB6-33
04DS6-44	04QA6-31	02FCF-54	02QBF-LL	.	.

*All codes compatible with 4DS6-44 are also compatible with 2FCF-54 and 2FCF-12.

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9.5.3. Digital Hierarchy Historical High Capacity Network Channel Interface Codes

These codes are categorized as "Historical" by Ameritech.

04CS9-15L	04DU8-C	04DU9-D
04DS9-15L	04DU9-A	04DU9-S
04DU8-A	04DU9-B	04DU9-1K
04DU8-B	04DU9-C	04DU9-1S

10. SONET ACCESS

10.1. Introduction

SONET (Synchronous Optical NETwork) provides a standard optical interface. Ameritech document AM TR-NIS-000111 provides technical information. SONET NCI codes are compatible with all lower rate services. When a SONET interface exists at a POT, a lower rate (Voice, DS0, DS1, DS3) interface may be compatible. The user must provide subsequent lower rate STS/VT channel assignments.

In as much as SONET is a Standard fiber interface, whenever a compatibility table in sections six through nine show an FC protocol (02FC # - #), any of the SONET NCI codes could be inserted, depending upon availability.

10.2. SONET NC Codes

Channel Code	**Third Character Point-To-Point**	**Fourth Character**
OB = OC-3	A = Loop Timing	- = None
OD = OC-12	B = External Timing	.
OF = OC-48	.	.

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JI = STS-1	- = None	- = None
.	B = VT2 Structured	.
.	C = VT3 Structured	.
.	D = VT6 Structured	.
JJ = STS-3	C = Concatenated	- = None
.	.	A = ATM Termination
.	**Rings**	.
OB = OC-3	F = External Timing	- = None
OD = OC-12	G = Line Timing	.
OF = OC-48	H = Thru Timing	.

10.3. SONET NCI Protocol Details (also see Table 4-2)

To identify services to be dropped at a SONET terminal (Point-to-Point or Ring), SONET Mapping codes have been created. Since various terminals on a ring may be configured (add/drop) different services, each location could have a different mapping configuration and may be identified as multi-point locations; each with appropriate location identification and mapping code. The architecture for SONET mapping codes are in Table 10-2. These codes are in addition to those shown in Table 4-2.

SONET TERMINAL MULTIPLEX MAPPING NCI **Character Positions:**			
3.4.5	Option 7	Option 8	Option 9
.	155.520 Mbps.*	51.840 Mbps	6.192 Mbps**
SM8	A = 0	0 = 0	1 = 7
.	B = 1	1 = 1	2 = 14
.	C = 2	2 = 2	3 = 21
.	D = 3	3 = 3	4 = 28
.	E = 4	4 = 4	5 = 35

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.	.	5 = 5	6 = 42
.		6 = 6	7 = 49
.	.	7 = 7	8 = 56
.	.	8 = 8	9 = 63
.	.	9 = 9	A = 70
.	.	A = 10	B = 77
.	.	B = 11	C = 84
.	.	C = 12	.
3.4.5	Option 7	Option 8	Option 9
.	622.080 Mbps*	155.520 Mbps	51.840 Mbps**
SN8	A = 0	0 = 0	4 = 12
.	B = 1	4 = 4	8 = 24
.	C = 2	8 = 8	C = 36
.	D = 3	C = 12	G = 48
.	E = 4	G = 16	.

*Optical bandwidth expressed in 155.520 Mbps increments.

**Quantity VT Groups. One VTG contains 4 VT1.5 signals, i.e., 4-DS1s (1.544 Mbps each).

SAMPLE MULTIPLEX MAPPING CODES	
OC3	.
SM8. A3	3 DS-3
SM8. A03	21 VT Grp (84 DS1s)
SM8. A12	1 DS3, 14 VT Grp (56 DS1s)
SM8. A21	2 DS3, 7 VT Grp (28 DS1s)
OC-12	.
SM8. AC	12 DS3
SM8. B9	1 OC3, 9 DS3

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SM8. 66	2 OC3, 6 DS3
SM8. D3	3 OC3, 3 DS3
SM8. E	4 OC3
OC-48	.
SN8. AOG	48 DS3
SN8. B48	1 OC12, 4 OC3, 24 DS3
SN8. C08	2 OC12, 24 DS3
SN8. 4D	3 OC12, 4 OC3
SN8. E	4 OC12

10.4. SONET NCI Compatibility Tables

In the SONET NCI code, the first two characters (representing the number of conductors) also represents a protection scheme. Assuming a two-way service, each direction requires a single fiber, and thus "02" conductor code tells us that it is an unprotected service. Likewise, an "04" code indicates a fully protected SONET (fiber) interface.

Also, it is possible to have a "one-way" service, as for broadcast only. The TLP field would be used to indicate directionality, showing whether it is transmitting or receiving at a particular interface. For such a "broadcast" interface, a "01" code would be unprotected: whereas a "02" code with an "O" TLP code (no transmission in one path) would indicate a protected broadcast service.

/02/04 FCF*	04 DS6.44
01/02/04 FCF*	04 DS9.**
01/02/04 FCF*	02/04SO.
01/02/04 FCF*	04 ST.***
01/02/04 FCF*	02/04SM.****

*Valid SONET codes, i.e., B, D or H

**Valid DS1 codes, see table 4-2

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***Valid STS rates, see table 4-2

****Valid SONET mapping codes, see table 10-2

11. SWITCHED ACCESS NCI COMPATIBILITY TABLES

11.1. Introduction

11.2. Premises Interface to Feature Group Codes (by Interface Group)

.	Switch	Premises	Feature Group	.	.	.
Interface Group	**Supervisory Signaling**	**Interface Code**	**A**	**B**	**C**	**D**
1	LO	02LS2	X	.	.	.
.	LO	02LS3	X	.	.	.
.	GO	02GS2	X	.	.	.
.	GO	02GS3	X	.	.	.
.	RV, EA, EB, EC	04EA3-*	.	X	X	X
.	RV, EA, EB, EC	06EB3-*	.	X	X	X
.	EA, EB, EC	06EC3.	.	.	X	X
.	RV	02RV3-**	.	X	X	X
.	CCS	02NO2	.	.	.	X
2	LO	04LS2	X	.	.	.
.	GO	04GS2	X	.	.	.
.	LO, GO	06EX2-*	X	.	.	.
.	RV, EA, EB, EC	06EA2-*	.	X	X	X
.	RV, EA, EB, EC	08EB2-*	.	X	X	X

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.	EA, EB, EC	08EC2-M	.	.	X	X
.	RV	04RV2-**	.	X	X	X
.	RV	04RV3-*	.	X	X	.
.	CCS	04NO2	.	.	.	X
.	.	DU?(FGB)	.	.	.	.
6	LO, GO	04DS9-15	X	.	.	.
.	LO, GO	04DS9-15L	X	.	.	.
.	RV, EA, EB, EC	04DS9-15	.	X	X	X
.	RV, EA, EB, EC	04DS9-15L	.	X	X	X
.	RV, EA, EB, EC	04DS9-15S	.	X	X	X
.	RV, EA, EB, EC	04DS9-1S	.	X	X	X
.	RV, EA, EB, EC	04CX9.15	.	.	.	.
.	CCS (DFG only)	.	.	.	.	.
.	CCS	04DS9-15	.	.	.	X
.	CCS	04DS9-15B	.	.	.	X
.	CCS	04DS9-15S	.	.	.	X
.	CCS	04DS9-1S	.	.	.	X
9	LO, GO	04DS6-44	X	.	.	.
.	LO, GO	04DS6-44L	X	.	.	.
.	RV, EA, EB, EC	04DS6-44	XXX	.	.	.
.	RV, EA, EB, EC	04DS6-44L	.	X	X	X
.	CCS	04DS6-44	.	.	.	X
11	LO, GO	02FCF-54	X	.	.	.
.	LO, GO	02FCF-12	X	.	.	.
.	RV, EA, EB, EC	02FCF-54	.	X	X	X
.	RV, EA, EB, EC	02FCF-12	.	X	X	X
.	CCS	02FCF-54	.	.	.	X
.	CCS	02FCF-12	.	.	.	X

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*Either E or M protocol option.

**Either O or T protocol option.

11.3. Historical Switched Service Interface Codes

The following Premises Facility Interface Codes are not currently offered by Ameritech Services. Explanation of these codes may be found in GR-334-CORE, Issue 1, June 1994. They may be available by special arrangement:

02DX3

04DX2

04DX3

06DX2

06EX2

04GS3

06GS3

04LS3

06LS2

04SF3

12. CO TERMINATION NCI CODES

Central Office NCI Code Summary		
Network Channel Interface (NCI) Codes Central Office (CO) Terminations Protocol Codes and Options (Positions 3, 4 and 7, 8, 9)	.	.

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Code	Option	Definition
BF	.	CO Bridge - Split-Frequency Bridge
.	A	400 Hz Lo-Pass
.	B	1300 Hz Lo-Pass
.	C	1370 Hz Lo-Pass
.	D	1460 Hz Lo-Pass
.	E	Customer to specify Lo-Pass
.	F	1300 Hz Hi-Pass
.	G	1650 Hz Hi-Pass
.	H	1810 Hz Hi-Pass
.	J	1925 Hz Hi-Pass
.	K	Customer to Specify Hi-Pass
BL	.	CO Bridging - Bridgelifter
BM	.	CO Bridging - 3-State (McCulloh) Bridge
BP	.	CO Bridging - Audio Program (Non-Broadcast)
BR	.	CO Bridge
.	CF	CO Bridge - Conference Operation
.	SP	CO Bridge - Split-Path Operation
.	.	An independent 2-wire path is provided for each direction of transmission
BS	.	CO Bridging - Dataphone Select-a-Station (DSAS)
CS	.	Digital Cross-Connect System (DCS) Termination
CX	.	DS1 Digital Switch Termination
DM	.	Data Stream in VF Band at CO Location
.	.	(Data Modem at CO)
.	1 P*	300 Bps 103J-type Modem Operation

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.	2 P*	1200 Bps 212A-type Modem Operation
.	3 P*	1200 Bps 202T-type Modem Operation
.	4 P*	2400 Bps CCITT V.26 and 201C Compatible
.	5 P*	4800 Bps 208A-type Modem Operation
.	6P*	9600 Bps CCITT V.29 Compatible
.	7P*	4800 Bps CCITT V.27 bis Compatible
.	8P*	2400 Bps CCITT V.22 bis Compatible
DN	.	Data stream in VF frequency band at CO locations, interface at packet switch port at
.	1	CO
.	2	300 Bps 103J-type Modem Operation
.	3	1200 Bps 212A-type Modem Operation
.	4	1200 Bps 202T-type Modem Operation
.	5	2400 Bps 2018-type Modem Operation
.	6	4800 Bps 208A-type Modem Operation
.	7	9600 Bps CCITT V.29-type modem
.	8	4800 Bps CCITT V.27-type modem
.	P	2400 Bps CCITT V.22-type modem
.	.	Packet network w/specified bit rate, if required
QA	.	Termination at a Multiplexer
.	3 1	3/1 mux
.	3 0	3/0 mux
.	1 0	1/0 mux, e.g., D4-or D5- type bank
QB	.	Manual Cross-Connect Termination
.	3 3	DS3 to DS3 cross-connect
.	1 1	DS1 to DS1 cross-connect
.	0 0	MDF cross-connection

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.	L L	LGX bay, fiber cross-connection
QC	O O	Manual Cross-Connect Termination DS0/Voice
.	D X O	Connects a customer to an access service suitable for the transmission of voice using DX signaling
.	E 1 A	Type I E&M signaling IC or End User originates on the E lead
.	E 2 A	Type II E&M signaling IC or End User originates on the E lead
.	M 1 A	Type I E&M signaling IC or End User originates on the M lead
.	M 2 A	Type II E&M signaling IC or End User originates on the M lead
.	M 3 A	Type III E&M signaling
.	R V O	Reverse batter originating loop closure provided by AC to the AP; Battery provided by
.	.	AC to AP
	R V T	Reverse batter terminate loop closure provided by AP to the End User; Battery
.	.	provided by End User to AP
.	A	E&M Signaling
.	B	GS Loop Signaling Open End
.	C	GS Loop Signaling Closed End
.	D	LS Loop Signaling Open End
.	E	LS Loop Signaling Closed End
.	F	Transmission Only No Signaling
.	J	2.4 Kbps Digital Service
.	K	4.8 Kbps Digital Service
.	L	9.6 Kbps Digital Service

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.	M	19.2 Kbps Digital Service
.	P	56.0 Kbps Digital Service
.	Q	64.0 Kbps Digital Service
	R	Electronic Business Service
.	S	ISDN Base Rate (2B1Q)
TA	.	CO - Transfer Arrangement
.	C	Common
.	NC	Normally Connected
.	NO	Normally Open

*DM protocol code can be used for any application, except when option code is followed by a P: The P denotes Packet Switch Termination.

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