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Ameritech Advanced Video Service Interface Specifications

(A technical description of the User/Network Interface for Ameritech's Advanced Video Service and certain similar video services)

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GENERAL

Ameritech's Advanced Video Service (AAVS), and certain similar video services provide uni- or bi-directional, point-to-point or multi-point, fiber transmission service capable of transmitting a

duplex video signal and up to four associated audio signals, subject to availability, for each video signal.

1. Purpose

This document describes the User/Network Interface specifications for Ameritech's Advanced Video Service and certain similar video services such as Ameritech Commercial Video Service (CVS) and Ameritech Custom Video Service (ACVS).

2. Change and Reissue

This is the third issue of this document. This document is being reissued to change the channel coding, clarify certain performance objectives and update some of the reference material.

3. Overview

Ameritech's Advanced Video Service, and certain similar video services provide uni- or bi-directional, point-to-point or point-to-multi-point, fiber-based video transmission that complies with the National Television Systems Committee (NTSC) 525 line/60 field video signal, AAVS transmits up to four associated audio signals, subject to availability. The audio signals are encoded and transmitted inband with their video signal, Mutli-point service will be routed through the video hub location where the video signals are switched to other video hub locations or to end-user customer locations.

This service and certain similar video services, provided via an Ameritech Video hub, will establish and maintain control of the video session. Once the session is established to the hub, this service will have the capability of transporting one NTSC video signal and up to four associated audio signals, subject to availability, to the end-user customer. Switching control of these service networks can be done by the customer over the public switched network using a dial-up modem or terminal arrangement.

4. Service Description

This service and certain similar video services provide a full motion, high-quality video channel, visually compatible to broadcast-quality transport service (TV1) as described in Telcordia (formerly Bellcore) Document (TR-TSV-000338, and up to four audio signals, subject to availability. Channel termination with the customer's baseband network, for delivery or receipt at the network interface, of baseband video and audio is provided with this service. The customer will be able to select one to four audio channels at 15 kHz. All channel terminations must be TV3.

Service sessions will initially to reserved and/or established using a dial-up arrangement over a standard telephone line.

A diagram of the service is shown in Figure 1.

5. Interface Requirements

The physical interconnection for the analog NTSC (TV3) video interface will be at a telephone company-provided 75 ohm coaxial cable jack panel, using customer-provided coaxial cable jumpers equipped with Bayonet Quick Connect (BNC) miniature coax connectors. The physical interconnection for the audio interface will be at the wire pairs terminated on a terminal block, or via a three-conductor “XLR” or equivalent connector.

The physical interconnection used for reserving and establishing sessions will be at the same telephone company-provided demarcation point used for providing local telephone service (e.g., POTS).

5.1. Network Channel Code

A TV3 Network Channel (NC) code as described in Section 3.2.1 of Telcordia (formerly Bell-core) Document GR-2904-CORE is a four-character representation of the channel parameters. It consists of two data elements: (1) two-characters positions that specify the type and quality of the channel, and (2) two-character positions that specify an available option code for this channel type.

The NC Code currently available for Ameritech Advanced Video Service and certain similar video services is shown in Table A.

NC CODE	OPTION CODE CHAR 3	OPTION CODE CHAR 4	
TZ	E	NONE	-
		CO Bridged	B
		Multichannel	C
		Two-Way	E
		Multiported	M
		E + M	N
		Split Screen	P
		B + S	Q
		P + S	R
		CO Switched	S

5.2. Network Channel Interface Code

The electrical interface of the Ameritech owned facilities is described by a Network Channel Interface (NCI) code. The TV3 NCI code, as described in Section 3.3 of Telcordia (formerly Bellcore) GR-2904-CORE, is comprised of five elements that are specified by the customer for each Point of Termination when ordering the service. These elements are:

1. The numbers of conductor codes for AAVS and ACVS can be one of four options:*

08 - for 1 video and 1-channel audio

12 - for 1 video and 2-channel audio

16 - for 1 video and 3-channel audio

20 - for 1 video and 4-channel audio

*Subject to availability

The number of conductor codes for CVS can be one of eight options:

A. For one-way service:

04 - for 1 video and 1-channel audio

06 - for 1 video and 2-channel audio

08 - for 1 video and 3-channel audio

10 - for video and 4-channel audio

B. For two-way service, the number of conductors required is doubled:

08 - for 1 video and 1-channel audio

12 - for 1 video and 2-channel audio

16 - for 1 video and 3-channel audio

20 - for 1 video and 4-channel audio

*Subject to availability

2. The protocol code will be the following option:

TV - Television Interface

3. The impedance code will be: 6 (75 ohms).

4. The protocol options can be one of the following options:

15 - 1 video plus 1 or 2 15-kHz audio signals

15A - 1 video plus 1 through 4 15-hKz audio signals

5. Transmission Level Point (TLP) direction of signal. Not required for AAVS or ACVS service, or for CVS when provisioned as two-way, default is two-way.

TLP/direction of signal for CVS will include the following options, if provisioned for one-way service.

- Transmit -0
- Transmit 0-

Valid combination elements are listed in Section 3.4 of Telcordia (formerly Bellcore) Document GR-2904-CORE.

5.3. Interface Specifications

5.3.1. Video Performance Objectives

PARAMETER	LIMITS
Amplitude response vs. Frequency (50 IRE unit sine wave)	
0.5 MHz	+6 to -6 IRE units
1.0 MHz	+6 to -6 IRE units
2.0 MHz	+8 ro -8 IRE units
3.0 MHz	+14 to -14 IRE units
3.58 MHz	+25 to -25 IRE units
Insertion gain	+3 dB to –3 dB
Differential gain	12 IRE units or 12%
Differential phase	10 deg.
Signal to weighted-random-noise ratio	
(10 kHz – 4.2 MHz)	48 dB

These service performance objectives apply to one video signal and accompanying audio signals switched thought the system on Ameritech-provided transport and switching. The interface to other transport or video networks is not defined here and will need to be considered on a case-by-case basis. Performance of multiple inputs combined into one input is not specified. Furthermore, video equipment that employs compression may need further treatment before being applied to the Ameritech Video network.

Above specifications apply to full field tests only. Transmission during the Vertical Blanking Interval is not guaranteed.

5.3.2. Audio Performance Objectives

Impedance	600 Ohms
Frequency Response	
(@ 1 kHz Ref. @0dBm)	
50 Hz to 15 Hz	+.5 to –6 dB
Maximum Steady-State Tone Levels Averaged over one second	0 dBm
Total Harmonic Distortion	10%
(THD + N)	

6. References

Primary References

Telcordia (formerly Bellcore) GR-2904-CORE, Generic Requirements for Commercial and Business

Quality Services - Transmission Parameter Limits and Interface Combinations, Issue 1, December 1995

Secondary References

Telcordia (formerly Bellcore) TR-TSV-000338, Television Special Access and Local Channel Services Transmission Parameters Limits and Interface Combinations, Issue 2, August 1993.

Document may be ordered from Ameritech by contacting the Document Order Center at (847) 248-4324.

7. Figure

Figure 1. AMERITECH ADVANCED VIDEO SERVICE