ATIS-0100502.2005(S2020)

System M-NTSC Television Signals – Network Interface Specifications and Performance Parameters

AMERICAN NATIONAL STANDARD FOR TELECOMMUNICATIONS

As a leading technology and solutions development organization, the Alliance for Telecommunications Industry Solutions (ATIS) brings together the top global ICT companies to advance the industry's most pressing business priorities. ATIS' nearly 200 member companies are currently working to address the All-IP transition, 5G, network functions virtualization, big data analytics, cloud services, device solutions, emergency services, M2M, cyber security, network evolution, quality of service, billing support, operations, and much more. These priorities follow a fast-track development lifecycle — from design and innovation through standards, specifications, requirements, business use cases, software toolkits, open source solutions, and interoperability testing.

ATIS is accredited by the American National Standards Institute (ANSI). The organization is the North American Organizational Partner for the 3rd Generation Partnership Project (3GPP), a founding Partner of the oneM2M global initiative, a member of the International Telecommunication Union (ITU), as well as a member of the Inter-American Telecommunication Commission (CITEL). For more information, visit www.atis.org.

AMERICAN NATIONAL STANDARD

Approval of an American National Standard requires review by ANSI that the requirements for due process, consensus, and other criteria for approval have been met by the standards developer.

Consensus is established when, in the judgment of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Substantial agreement means much more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that a concerted effort be made towards their resolution.

The use of American National Standards is completely voluntary; their existence does not in any respect preclude anyone, whether he has approved the standards or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standards.

The American National Standards Institute does not develop standards and will in no circumstances give an interpretation of any American National Standard. Moreover, no person shall have the right or authority to issue an interpretation of an American National Standard in the name of the American National Standards Institute. Requests for interpretations should be addressed to the secretariat or sponsor whose name appears on the title page of this standard.

CAUTION NOTICE: This American National Standard may be revised or withdrawn at any time. The procedures of the American National Standards Institute require that action be taken periodically to reaffirm, revise, or withdraw this standard. Purchasers of American National Standards may receive current information on all standards by calling or writing the American National Standards Institute.

Notice of Disclaimer & Limitation of Liability

The information provided in this document is directed solely to professionals who have the appropriate degree of experience to understand and interpret its contents in accordance with generally accepted engineering or other professional standards and applicable regulations. No recommendation as to products or vendors is made or should be implied.

NO REPRESENTATION OR WARRANTY IS MADE THAT THE INFORMATION IS TECHNICALLY ACCURATE OR SUFFICIENT OR CONFORMS TO ANY STATUTE, GOVERNMENTAL RULE OR REGULATION, AND FURTHER, NO REPRESENTATION OR WARRANTY IS MADE OFMERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR AGAINST INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS. ATIS SHALL NOT BE LIABLE, BEYOND THE AMOUNT OF ANY SUM RECEIVED IN PAYMENT BY ATIS FOR THIS DOCUMENT, AND IN NO EVENT SHALL ATIS BE LIABLE FOR LOST PROFITS OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES. ATIS EXPRESSLY ADVISES THAT ANY AND ALL USE OF OR RELIANCE UPON THE INFORMATION PROVIDED IN THIS DOCUMENT IS AT THE RISK OF THE USER.

NOTE - The user's attention is called to the possibility that compliance with this standard may require use of an invention covered by patent rights. By publication of this standard, no position is taken with respect to whether use of an invention covered by patent rights will be required, and if any such use is required no position is taken regarding the validity of this claim or any patent rights in connection therewith. Please refer to [http://www.atis.org/legal/patentinfo.asp] to determine if any statement has been filed by a patent holder indicating a willingness to grant a license either without compensation or on reasonable and non-discriminatory terms and conditions to applicants desiring to obtain a license.

ATIS-0100502.2005(S2020), *System M-NTSC Television Signals – Network Interface Specifications and Performance Parameters*

Is an American National Standard developed by the ATIS **Network Performance, Reliability, and Quality of Service Committee (PRQC)**.

Published by
Alliance for Telecommunications Industry Solutions
1200 G Street, NW, Suite 500
Washington, DC 20005

ATIS-0100502.2005(S2020)

(Revision of T1.502-1998)

American National Standard for Telecommunications

SYSTEM M-NTSC TELEVISION SIGNALS – NETWORK INTERFACE SPECIFICATIONS AND PERFORMANCE PARAMETERS

Secretariat

Alliance for Telecommunications Industry Solutions

Approved November 3, 2005

American National Standards Institute, Inc.

Abstract

This standard defines network interface specifications and performance parameters and values for television transmission service channels supporting 525-line, system M-NTSC color or monochrome video signals and the associated audio signals.

FOREWORD

The information contained in this Foreword is not part of this American National Standard (ANS) and has not been processed in accordance with ANSI's requirements for an ANS. As such, this Foreword may contain material that has not been subjected to public review or a consensus process. In addition, it does not contain requirements necessary for conformance to the Standard.

The Alliance for Telecommunication Industry Solutions (ATIS) serves the public through improved understanding between carriers, customers, and manufacturers. The Network Performance, Reliability, and Quality of Service Committee (PRQC) -- formerly T1A1 -- develops and recommends standards, requirements, and technical reports related to the performance, reliability, and associated security aspects of communications networks, as well as the processing of voice, audio, data, image, and video signals, and their multimedia integration. PRQC also develops and recommends positions on, and foster consistency with, standards and related subjects under consideration in other North American and international standards bodies.

ANSI guidelines specify two categories of requirements: mandatory and recommendation. The mandatory requirements are designated by the word *shall* and recommendations by the word *should*. Where both a mandatory requirement and a recommendation are specified for the same criterion, the recommendation represents a goal currently identifiable as having distinct compatibility or performance advantages.

Suggestions for improvement of this document are welcome. They should be sent to the Alliance for Telecommunications Industry Solutions, PRQC Secretariat, 1200 G Street NW, Suite 500, Washington, DC 20005.

At the time it approved this document, PRQC, which is responsible for the development of this Standard, had the following members:

R. Wohlert, PRQC Chair
N. Seitz, PRQC Vice-Chair
S. Carioti, ATIS Disciplines
S. Barclay, ATIS Secretariat
C. Underkoffler, ATIS Chief Editor
Pierre Costa, PRQC Technical Editors

Organization Represented	Name of Representative
Alcatel USA Inc.	Ken Biholar
ASTRI	Jacky Chow
AT&T	Percy Tarapore
	Charles A. Dvorak (Alt.)
BellSouth Telecommunications	Archie McCain
	David M. Brady (Alt.)
C.S.I Telecommunications	Michael S. Newman
	Thomas G. Croda (Alt.)
Cingular Wireless LLC	Don Zelmer
	Marc Grant (Alt.)
Defense Info. Systems Agency	Chris Fitzgerald
Ericsson Incorporated	Mustafa Kocaturk
	Susana Sabater-Maroto (Alt.)
Harris Corporation	Marlis Humphrey
Intelsat	Mark T. Neibert
Lucent Technologies	Stuart O. Goldman
MCI	J. Martin Carroll
	Robert Schafer (Alt.)

Organization Represented	Name of Representative
National Communications System	An Nguyen
	Jean Trakinat (Alt.)
NTIA	Neal B. Seitz
Nortel Networks	Oscar Avellaneda
	Joseph A . Zebarth (Alt.)
Qwest	Steve Showell
	Michael Fargano (Alt.)
SBC Communications, Inc.	Randolph Wohlert
	Pierre Costa (Alt.)
Siemens Info & Comm Ntwks, Inc.	Suhas S. Gandhi
	David E. Francisco (Alt.)
Sprint Corporation	Mark L. Jones
Telcordia Technologies	Spilios Makris
	Cliff Halevi (Alt.)
Tellabs Operations, Inc.	William A. Walker
	Kevin Stodola (Alt.)
Verizon Communications	John Colombo
	Wendy Pugh (Alt.)

The **PRQC Quality of Service (QoS)** Task Force was responsible for the development of this document.

TABLE OF CONTENTS

TABLE OF FIGURES

TABLE OF TABLES

American National Standard for Telecommunications –

System M-NTSC Television Signals – Network Interface Specifications and Performance Parameters

1 SCOPE, PURPOSE, & APPLICATION

1.1 Scope

This standard covers interface and performance specifications of television transmission service channels. Hypothetical reference channels have been defined and utilized to apportion performance parameters. Television signals created or transmitted in accordance with other standards or make-ups may not necessarily be compatible with the specifications of this standard.

This standard specifies the performance of transmission service channels provided to convey 525-line, System M-National Television Systems Committee (NTSC) color or monochrome video signals and their associated audio signals only. This specification for television transmission service channels applies to both interface and performance parameters. The performance parameters are expressed as a function of the length between the endpoints of a channel or as a function of the facility type utilized. Performance definitions and measurement methods are provided if appropriate. Interface specifications are provided to facilitate compatibility between end users, service providers, and carriers.

The performance characteristics identified within this standard apply to the transmission quality between the defined interfaces. Those interfaces are: (1) between transmission service providers and end users; and (2) between the jurisdictions of one transmission service provider and another. This standard defines neither the interconnection nor the performance characteristics of specific apparatus or equipment.

1.2 Purpose

The purpose of this standard is to assure the uniform application of standard values of transmission parameters for television signals transported by portions of the telecommunications network. It is intended to provide a common understanding by both suppliers and their customers.

1.3 Application

The primary applications of this standard are for specifying and evaluating the performance of a transmission service provided by common carriers. These services are used to transport the audio and video portions of broadcast-quality television signals.