



ATIS-0900105.03.2012(2023)

**Synchronous Optical Network (SONET) –
Jitter and Wander at Network and
Equipment Interfaces**

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American National Standard for Telecommunications

**Synchronous Optical Network (SONET) –
Jitter and Wander at
Network and Equipment Interfaces**

Alliance for Telecommunications Industry Solutions

Approved May 30, 2013

American National Standards Institute, Inc.

Abstract

This revised standard describes the jitter specifications that are applicable to SONET network and equipment interfaces (OC-N and STS-N), and jitter and wander specifications that are applicable to certain SONET payload signals (e.g., DS1 and DS3). It also updates the jitter specifications to include the SONET OC-192 interface.

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American National Standard for Telecommunications –

Synchronous Optical Network (SONET) – Jitter and Wander at Network and Equipment Interfaces

1 Scope, Purpose, & Application

1.1 Scope

The North American telecommunications network is comprised of asynchronous and SONET networks. This standard describes the jitter specifications for SONET network and equipment interfaces, and jitter and wander specifications for certain asynchronous interfaces (i.e., primarily DS1 and DS3 interfaces) to SONET networks. The general jitter and wander specifications for asynchronous interfaces are described in ATIS-0900102.1993 (R2010), ATIS-0600403.1999 (R2012), and ATIS-0600404.2002 (R2011).

1.2 Purpose

Jitter and wander specifications are necessary to achieve satisfactory performance at network interconnections. OC-N and STS-N network and equipment interface jitter and wander specifications help ensure adequate performance at SONET network interfaces.

The jitter and wander specifications for asynchronous network interfaces described in ATIS-0900102.1993 (R2010), ATIS-0600403.1999 (R2012), and ATIS-0600404.2002 (R2011) apply at all of those interfaces in the network, including those that appear at the edges of SONET (sub)networks. However, due to certain characteristics of SONET signals and the mechanisms that are defined for transporting asynchronous signals within SONET signals, SONET transport can cause significantly more jitter and wander to appear on asynchronous signals exiting SONET networks than would normally be expected for other types of transport. It is therefore necessary to bound the payload output jitter and wander due to SONET such that the network jitter and wander limits can be maintained, and SONET can be deployed into today's telecommunications network.

2 Normative References

The following standards contain provisions, which, through reference in this text, constitute provisions of this American National Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and the parties to agreements based on this American National Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

ATIS-0900101.2006, *Synchronization Interface Standard*.¹

ATIS-0900102.1993 (R2010) *Digital Hierarchy – Electrical Interfaces*.²

ATIS-0900105.2008 (R2013), *Synchronous Optical Network (SONET) – Basic Description Including Multiplex Structure, Rates, and Formats*.³

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