

SCTE | **STANDARDS**

Network Operations Subcommittee

AMERICAN NATIONAL STANDARD

ANSI/SCTE 112 2017 (R2022)

**HMS / DOCSIS[®] Transponder for
Outside Plant Power Supply**

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1.0 DOCUMENT TYPES AND TAGS

Document Type: Specification

Document Tags:

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|---|------------------------------------|--|
| <input type="checkbox"/> Test or Measurement | <input type="checkbox"/> Checklist | <input type="checkbox"/> Facility |
| <input type="checkbox"/> Architecture or Framework | <input type="checkbox"/> Metric | <input checked="" type="checkbox"/> Access Network |
| <input type="checkbox"/> Procedure, Process or Method | <input type="checkbox"/> Cloud | <input type="checkbox"/> Customer Premises |

2.0 DOCUMENT RELEASE HISTORY

Release	Date
SCTE 112 2005	12/16/2005
SCTE 112 2011	1/10/2011
SCTE 112 2017	11/6/2017
SCTE 112 2022	August 2022

Note: Standards that are released multiple times in the same year use: a, b, c, etc. to indicate normative balloted updates and/or r1, r2, r3, etc. to indicate editorial changes to a released document after the year.

Note: This document is a reaffirmation of SCTE 112 2017. No substantive changes have been made to this document. Information components may have been updated such as the title page, NOTICE text, headers, and footers.

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3.0 SCOPE

This document is identical to SCTE 112 2011 except for informative components which may have been updated such as the title page, NOTICE text, headers and footers. No normative changes have been made to this document.

This document contains the requirements for a “HMS / DOCSIS® Transponder for Outside Plant Power Supply.” The HMS / DOCSIS® transponder is defined to be a device where the DOCSIS component has been developed or modified specifically for the HMS / DOCSIS® application. This requirement leverages various HMS specifications and MIBS, as well as the DOCSIS® 1.1 specifications and MIBS.

4.0 NORMATIVE REFERENCES

The following documents contain provisions, which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreement based on this standard are encouraged to investigate the possibility of applying the most recent editions of the documents listed below.

4.1 SCTE References

4.1.1 ANSI/SCTE 25-2 2008, Hybrid Fiber/Coax Outside Plant Status Monitoring-MAC Layer

4.1.2 ANSI/SCTE 38-3 2008, Hybrid Fiber/Coax Outside Plant Status Monitoring SCTE-HMS-COMMON-MIB Management Information Base (MIB) Definition

4.1.3 ANSI/SCTE 38-8 2005, Hybrid Fiber/Coax Outside Plant Status Monitoring SCTE-HMS-DOWNLOAD-MIB Management Information Base (MIB) Definition

4.1.4 ANSI/SCTE 81 2007, Surge Withstand Test Procedure

4.1.5 ANSI/SCTE 48-2 2008, Test Procedure for Measuring Relative Shielding Properties of Active and Passive Coaxial Cable Devices Using H-P Magnetic Close Field Probe

4.1.6 ANSI/SCTE 23-1 2005, DOCSIS 1.1 Part 1: Radio Frequency Interface

4.2 Standards from other Organizations

4.2.1 (ANSI) IEEE Std C62.41.2 -2002/IEC 61000-4-2:2008 Electromagnetic compatibility (EMC)- Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test

5.0 COMPLIANCE NOTATION

“SHALL”	This word or the adjective “REQUIRED” means that the item is an absolute requirement of this specification.
“SHALL NOT”	This phrase means that the item is an absolute prohibition of this specification.
“SHOULD”	This word or the adjective “RECOMMENDED” means that there may exist valid reasons in particular circumstances to ignore this item, but the full implications should be understood and the case carefully weighed before choosing a different course.
“SHOULD NOT”	This phrase means that there may exist valid reasons in particular circumstances when the listed behavior is acceptable or even useful, but the full implications should be understood and the case carefully weighed before implementing any behavior described with this label.
“MAY”	This word or the adjective “OPTIONAL” means that this item is truly optional. One vendor may choose to include the item because a particular marketplace requires it or because it enhances the product, for example; another vendor may omit the same item.

6.0 DEFINITIONS AND ACRONYMS

CMTS: Cable Modem Termination System

DOCSIS®: Data Over Cable Service Interface Specifications¹

HMS: Hybrid Management Sublayer.

HMTS: Hybrid Management Termination System.

Management Information Base (MIB): the specification of information in a manner that allows standard access through a network management protocol.

NMS: Network Management System.

SNMP: Simple Network Management Protocol.

¹DOCSIS is a trademark of Cable Television Laboratories, Inc. (CableLabs[®])

7.0 INTRODUCTION

This document is a combination of the functional and protocol requirements detailed in the HMS and the DOCSIS[®] communication standards. In a system using “HMS / DOCSIS[®] Transponder for Outside Plant Power Supply,” rather than the “HMS Transponder for Outside Plant Power Supply” protocol, the physical communication layer to the Network Management System is replaced with the DOCSIS[®] communication layer. This eliminates the need for the HMTS in favor of using the CMTS. From a system perspective the “HMS / DOCSIS[®] Transponder for Outside Plant Power Supply” and CMTS is equivalent to an HMS Transponder for Power Supply and HMTS, offering the same SNMP communications and functional behavior to the management systems.

8.0 REQUIREMENTS

The device SHALL be compliant with the requirements in Appendix A and the MIBS listed in Section 2.1, with the following exceptions and qualifications:

8.1 ANSI/SCTE 38-3 2008

All MIB tables and variables SHALL be implemented as specified, but the following tables SHALL NOT be implemented:

8.1.1 commonMACGroup, EXCEPT for the commonPhysAddress object, which SHALL be implemented.

8.1.2 commonMulticastGroup

8.1.3 commonStatsGroup

8.1.4 commonRfGroup

8.2 ANSI/SCTE 25-2 2008

At a minimum, the following requirements of ANSI/SCTE 25-2 2008 SHALL be implemented:

8.2.1 Appendix A:

A.2: Time of day must be obtained

A.2.1 Integer representation

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A.3 Firmware download; optional method; See Section 6.3

A.5.1 Managed properties

A.5.2 Thresholds & operation

A.5.3 MIB

A.5.4 Alarm processing

A.8 Check code

8.3 ANSI/SCTE 38-8 2005

For the purposes of implementing firmware download, ANSI/SCTE 38-8 2005 and/or TFTP as implemented in the DOCSIS standard ANSI/SCTE 23-1 2005 SHALL be implemented.

8.4 Additional Trigger for Cold Start Trap

In the event of an IP address change the transponder SHALL issue a HMS Cold Start Trap.

8.5 Optional Features

The compliant device MAY support enterprise-specific MIBS.

APPENDIX A: ENVIRONMENTAL SPECIFICATIONS

A.1 Temperature

The device SHALL operate to specifications between -40 Deg C and +75 Deg C.

A.2 Surge

The device SHOULD comply with 6KV combination wave on the RF input as specified by IEEE C62.41 category B3. Refer to ANSI/SCTE 81 2007 for additional test set up details.

A.3 Shielding

The device SHOULD provide shielding equal or greater than that required and described in ANSI/SCTE 48-2 2008.

A.4 ESD

The device SHALL comply with IEC 61000-4-2, which specifies 8 KV Air discharge and 6 KV contact discharge.

A.5 Humidity

5 - 90 %, Non-condensing