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Network Operations Subcommittee

AMERICAN NATIONAL STANDARD

ANSI/SCTE 85-2 2017 (R2022)

HMS HE Optics Management Information Base (MIB)
Part 2: SCTE-HMS-HE-OPTICAL RECEIVER-MIB

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DOCUMENT TYPES AND TAGS

Document Type: Specification

Document Tags:

☐ Test or Measurement	☐ Checklist	☐ Facility
☐ Architecture or Framework	☐ Metric	☒ Access Network
☐ Procedure, Process or Method	☐ Cloud	☐ Customer Premises

DOCUMENT RELEASE HISTORY

Release	Date
SCTE 85-2 2003	*05/09/2003*
SCTE 85-2 2009	*07/10/2009*
SCTE 85-2 2017	*09/25/2017*
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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 85-2 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.

CONTENTS

SCOPE

This document is identical to SCTE 85-2 2009 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.

The MIB module is for representing general information about optical equipment present in the headend (or indoor) and is supported by an SNMP agent.

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NORMATIVE REFERENCE

IETF RFC2578, Structure of Management Information Version 2 (SMIv2)

IETF RFC2580, Conformance Statements for SMIv2

IETF RFC2737, Entity MIB (Version 2)

SCTE 38-11 , Hybrid Management Sub-layer Management Information Base (MIB) Part 11: SCTE-HMS-HEADENDIDENT-MIB

SCTE 83-1, HMS Inside Plant Management Information Base (MIB) Part 1: SCTE-HMS-HE-OPTICS-MIB

IETF RFC2573, SNMP Applications

IETF RFC1907, Management Information Base for Version 2 of the Simple Network Management Protocol (SNMPv2)

ANSI/SCTE 38-1, Hybrid Management Sublayer Management Information Blocks (MIB) Part 1: Property MIB

SCTE 84-1, HMS Common Inside Plant Management Information Base (MIB) Part 1: SCTE-HMS-HE-COMMON-MIB

INFORMATIVE REFERENCE

None

TERMS AND DEFINITIONS

This document defines the following terms:

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

REQUIREMENTS

This section defines the mandatory syntax of the SCTE-HMS-HE-OPTICAL-RECEIVER-MIB. It follows the IETF Simple Network Management Protocol (SNMP) for defining managed objects.

The syntax is given below:

-- Module Name: HMS113R6.MIB (SCTE 85-2)
-- SCTE Status: Adopted

SCTE-HMS-HE-OPTICAL-RECEIVER-MIB DEFINITIONS ::= BEGIN

IMPORTS
  Unsigned32, MODULE-IDENTITY, OBJECT-TYPE
    FROM SNMPv2-SMI
  MODULE-COMPLIANCE, OBJECT-GROUP
    FROM SNMPv2-CONF
  entPhysicalIndex
    FROM ENTITY-MIB
  HeTenthdB, HeTenthdBm, HeHundredthNanoMeter,
  HeOnOffControl, HeFaultStatus
    FROM SCTE-HMS-HEADENDIDENT-MIB -- see SCTE 38-11 (formerly HMS114)
  heOpticalReceiverGroup
    FROM SCTE-HMS-HE-OPTICS-MIB; -- see SCTE 83-1 (formerly HMS108)

heOpticalReceiverMIB MODULE-IDENTITY
  LAST-UPDATED "200302170000Z" -- February 17, 2003
  ORGANIZATION "SCTE HMS Working Group"
  CONTACT-INFO
    "   SCTE HMS Subcommittee, Chairman
      mailto:standards@scte.org
    "
  DESCRIPTION
    "The MIB module is for representing an optical receiver
    present in the headend (or indoor) and is supported by a
    SNMP agent."

    ::= { heOpticalReceiverGroup 1 }

heOpRxMIBObjects OBJECT IDENTIFIER ::= { heOpticalReceiverMIB 1 }

--   The Optical Receiver Input Table
heOpRxInputTable OBJECT-TYPE
  SYNTAX   SEQUENCE OF HeOpRxInputEntry

```
    MAX-ACCESS  not-accessible
    STATUS     current
    DESCRIPTION
        "A table containing information about the input (optical) section
        in optical receivers in a subsystem."
    ::= { heOpRxMIBObjects 1 }

heOpRxInputEntry OBJECT-TYPE
    SYNTAX     HeOpRxInputEntry
    MAX-ACCESS  not-accessible
    STATUS     current
    DESCRIPTION
        "A list of information about each optical section in an
        optical receiver."
    INDEX      { entPhysicalIndex, heOpRxInputIndex }
    ::= { heOpRxInputTable 1 }

HeOpRxInputEntry ::= SEQUENCE
{
    heOpRxInputIndex              Unsigned32,
    heOpRxInputPower              HeTenthdBm,
    heOpRxInputWavelengthControl       HeHundredthNanoMeter,
    heOpRxInputStatus             HeFaultStatus
}

heOpRxInputIndex OBJECT-TYPE
    SYNTAX     Unsigned32
    MAX-ACCESS  not-accessible
    STATUS     current
    DESCRIPTION
        "An arbitrary value which uniquely identifies
        the receiver input."
    ::= { heOpRxInputEntry 1 }

heOpRxInputPower OBJECT-TYPE
    SYNTAX     HeTenthdBm
    UNITS      "0.1 dBm"
```

MAX-ACCESS read-only
STATUS   current
DESCRIPTION
    "Receiver input power.

    This object must provide for the alarm management capabilities
    with a corresponding entry in the propertyTable of
    SCTE-HMS-PROPERTY-MIB (HMS026).

    An alarm shall be recorded as an entry in the currentAlarmTable
    of SCTE-HMS-PROPERTY-MIB (HMS026).

    A log record shall be added as an entry in the heCommonLogTable.

    An heCommonAlarmEvent notification shall be sent."
  ::= { heOpRxInputEntry 2 }

heOpRxInputWavelengthControl OBJECT-TYPE
  SYNTAX   HeHundredthNanoMeter
  UNITS   "0.01 nm"
  MAX-ACCESS read-write
  STATUS   current
  DESCRIPTION
    "Wavelength feeding the particular input of the receiver.
    Typical values might be 131000 (1310 nm) and 155000 (1550 nm).

    This object is used to calibrate the optical power reading
    and has no affect on the wavelength of light received."
  ::= { heOpRxInputEntry 3 }

heOpRxInputStatus OBJECT-TYPE
  SYNTAX   HeFaultStatus
  MAX-ACCESS read-only
  STATUS   current
  DESCRIPTION
    "The laser detector status.

The value is normal(1) if the optical input is at normal levels.

The value is fault(2) if the optical level is not at
the normal level.

This object must provide for the alarm management capabilities
with a corresponding entry in the discretePropertyTable of
SCTE-HMS-PROPERTY-MIB (HMS026).

An alarm shall be recorded as an entry in the currentAlarmTable
of SCTE-HMS-PROPERTY-MIB (HMS026).

A log record shall be added as an entry in the heCommonLogTable.

An heCommonAlarmEvent notification shall be sent."
   ::= { heOpRxInputEntry 4 }

```
--        The Optical Receiver Output Table
heOpRxOutputTable OBJECT-TYPE
   SYNTAX     SEQUENCE OF HeOpRxOutputEntry
   MAX-ACCESS  not-accessible
   STATUS     current
   DESCRIPTION
       "A table containing information about the output (RF) section
       in optical receivers in a subsystem."
   ::= { heOpRxMIBObjects 2 }

heOpRxOutputEntry OBJECT-TYPE
   SYNTAX     HeOpRxOutputEntry
   MAX-ACCESS  not-accessible
   STATUS     current
   DESCRIPTION
       "A list of information about each RF section in an
       optical receiver."
   INDEX     { entPhysicalIndex, heOpRxOutputIndex }
   ::= { heOpRxOutputTable 1 }
```

```
HeOpRxOutputEntry ::= SEQUENCE
{
    heOpRxOutputIndex        Unsigned32,
    heOpRxOutputControl      HeOnOffControl,
    heOpRxOutputGainType     INTEGER,
    heOpRxOutputPower        HeTenthdBm,
    heOpRxOutputRFPadLevel   HeTenthdB
}

heOpRxOutputIndex OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "An arbitrary value which uniquely identifies
        the receiver output."
    ::= { heOpRxOutputEntry 1 }

heOpRxOutputControl OBJECT-TYPE
    SYNTAX      HeOnOffControl
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Switches a particular receiver output either off(1) or on(2).

        A GET request shall return the current control state that is
        either off(1) or on(2)."
    ::= { heOpRxOutputEntry 2 }

heOpRxOutputGainType OBJECT-TYPE
    SYNTAX      INTEGER {
        constantPower(1),
        constantGain(2)
    }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
```

```
        "Controls the output gain type, which is either constant
        power or constant gain."
    ::= { heOpRxOutputEntry 3 }

heOpRxOutputPower OBJECT-TYPE
    SYNTAX     HeTenthdBm
    UNITS      "0.1 dBm"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "RF output power."
    ::= { heOpRxOutputEntry 4 }

heOpRxOutputRFPadLevel OBJECT-TYPE
    SYNTAX     HeTenthdB
    UNITS      "0.1 dB"
    MAX-ACCESS  read-write
    STATUS     current
    DESCRIPTION
        "RF Pad Attenuation Level."
    ::= { heOpRxOutputEntry 5 }

-- conformance information
heOpRxMIBConformance
        OBJECT IDENTIFIER ::= { heOpticalReceiverMIB 2 }

heOpRxMIBCompliances
        OBJECT IDENTIFIER ::= { heOpRxMIBConformance 1 }

heOpRxMIBGroups
        OBJECT IDENTIFIER ::= { heOpRxMIBConformance 2 }

-- compliance statements
heOpRxCompliance MODULE-COMPLIANCE
    STATUS  current
    DESCRIPTION
        "The minimum compliance statement for indoor optical receivers."
```

```
    MODULE
       MANDATORY-GROUPS { heOpRxInputMandatoryGroup
               }
    ::= { heOpRxMIBCompliances 1 }

heOpRxInputMandatoryGroup OBJECT-GROUP
    OBJECTS {
          heOpRxInputStatus,
          heOpRxInputWavelengthControl
          }
    STATUS  current
    DESCRIPTION
        "The main group defines objects which are common to all
        indoor optical receiver modules."
    ::= { heOpRxMIBGroups 1 }


heOpRxInputTableGroup OBJECT-GROUP
    OBJECTS {
          heOpRxInputPower,
          heOpRxInputWavelengthControl,
          heOpRxInputStatus
          }
    STATUS  current
    DESCRIPTION
        "This group defines all the objects which are defined
        in the input section of SCTE-HMS-HE-OPTICAL-RECEIVER-MIB
        MIB module."
    ::= { heOpRxMIBGroups 2 }

heOpRxOutputTableGroup OBJECT-GROUP
    OBJECTS {
          heOpRxOutputControl,
          heOpRxOutputGainType,
          heOpRxOutputPower,
          heOpRxOutputRFPadLevel
          }
    STATUS  current
```

DESCRIPTION
    "This group defines all the objects which are defined
    in the output section of SCTE-HMS-HE-OPTICAL-RECEIVER-MIB
    MIB module."
 ::= { heOpRxMIBGroups 3 }

END