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## S T A N D A R D S

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Network Operations Subcommittee

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AMERICAN NATIONAL STANDARD

ANSI/SCTE 85-2 2017

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

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## **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