

8. SNMP description

All version 4 EtherMPX devices provide a separate RJ45 connector at the rear side, marked as "MGMT". This is an Ethernet interface dedicated for management purposes over SNMP protocol. At the moment it utilizes only SNMP v1, but this will be enriched in future versions / upgrades.

The supported SNMP PDUs are shown below:

- GetRequest
- SetRequest
- GetNextRequest
- Response
- Trap

The EtherMPX MIB file is the same for Encoder and Decoder. The file contains 50 variables, which some are specific for Encoder devices, some are specific for Decoder devices, and some are valid for both device types.

If you try to issue an SNMP command that is not supported from the specific device type, you will get an error response.


Further down on the document, the whole structure of the MIB file is explained. Since there are no tables in the MIB file, multi-variable commands are not supported; i.e. you cannot issue a GetRequest with 2 (or more) variables in the same request. Instead, a series of GetRequest or GetNextRequest commands can be issued.

SNMP TRAP

EtherMPX issues a TRAP PDU every time the Silence Detector is activated.

• Defaults & Limitations:

- The default read-only community string is **sigmacom**
The default read-write community string is **ethermpx**

 **CAUTION!** You can change the community strings to your choice but they must be of fixed length 8 characters (no more & no less).

- Default IP address of the MGMT port is 192.168.1.16/24
- Variable "sysDeviceName" is used for the unique name you give to the device and it must be of fixed length 16 characters (no more & no less). This name is displayed in the LCD screen of the device.

- **SNMP integration:**

There are 2 ways of integrating an EtherMPX device in your third party SNMP management software. Either load the MIB file that came along with this documentation, or configure the OIDs manually like the example below. If you are configuring the OIDs manually, you can copy-paste them from MIB file but **don't forget to add .0** at the end of each one.

⚠ **Example:**

MIB file: **1.3.6.1.4.1.44467.1.4**
Custom OID: **1.3.6.1.4.1.44467.1.4.0**

The screenshot shows the configuration page for a sensor named "Sensor SNMP Custom". The interface includes a navigation bar with tabs for Overview, Live Data, 2 days, 30 days, 365 days, Historic Data, Log, Settings, Notifications, and Channels. A warning box contains the following text:

- It might not work to query data from a probe device via SNMP (querying localhost, 127.0.0.1, or ::1). Add this device to PRTG with the IP address that it has in your network and create the SNMP sensor on this device instead.
- Knowledge Base: How do I find out what OID I need to use for a custom sensor?
- For a general introduction to the technology behind SNMP, please see the manual section **Monitoring via SNMP**.

The configuration fields are as follows:

- Sensor Name:** SNMP Custom
- Parent Tags:** (empty)
- Tags:** snmpcustomsensor
- Priority:** ★★★★★
- OID VALUES**
 - OID Value:** 1.3.6.1.4.1.44467.1.4.0
 - Unit String:** #

At the bottom, there are "Save" and "Cancel" buttons.

To prevent misconfiguration of MGMT network settings, and hence losing contact with the device, a 2 step process has been implemented.

Variables **snmpAgentMask**, **snmpAgentGW**, **snmpAgentIP**, **snmpAgentDNS** are read-only.

If you need to change them, you must first change variables **snmpNewAgentMask**, **snmpNewAgentGW**, **snmpNewAgentIP**, and **snmpNewAgentDNS**. After you verify that everything is correct, then you must set the **snmpSetSettings** variable to **1**.

This will cause active variables to be overwritten with the "new" values and the MGMT engine of EtherMPX will reset for 25 seconds. This will not affect the audio part. After 25 sec you can connect to the new MGMT IP.

SIGMACOM-ETHERMPX-MIB file

```
--- © 2015 Sigmacom Broadcast - www.sigmacom.gr - info@sigmacom.gr  
--- SNMP V1
```

```
SIGMACOM-ETHERMPX-MIB DEFINITIONS ::= BEGIN
```

```
IMPORTS
```

```
    OBJECT-TYPE  
        FROM RFC-1212  
    TRAP-TYPE  
        FROM RFC-1215  
    enterprises, IpAddress, Gauge  
        FROM RFC1155-SMI;
```

```
--  
-- Node definitions  
--
```

```
-- 1.3.6.1.4.1.44467  
sigmacom OBJECT IDENTIFIER ::= { enterprises 44467 }
```

```
-- 1.3.6.1.4.1.44467.1  
etherMPX OBJECT IDENTIFIER ::= { sigmacom 1 }
```

```
-- 1.3.6.1.4.1.44467.1.1  
sysAudioAttenuation OBJECT-TYPE  
    SYNTAX Gauge  
    ACCESS read-write  
    STATUS mandatory  
    DESCRIPTION  
    "Decoder analog output attenuation. Range=255-14, step=1, attenuation(dB)=255-  
(value*0,5)."  
    ::= { etherMPX 1 }
```

```
-- 1.3.6.1.4.1.44467.1.2  
sysAudioBufferSize OBJECT-TYPE  
    SYNTAX Gauge  
    ACCESS read-write  
    STATUS mandatory  
    DESCRIPTION  
    "Decoder audio buffer. Range=1-24, step=1, latency(mS)=value*2,5. If  
LowLatencyOption, Range=1-58, step=1, latency(mS)=value*1,25"  
    ::= { etherMPX 2 }
```

```
-- 1.3.6.1.4.1.44467.1.3  
sysAudioFramesRxErr OBJECT-TYPE  
    SYNTAX Gauge  
    ACCESS read-only  
    STATUS mandatory  
    DESCRIPTION  
    "Ethernet frames with audio payload, but dropped by the device (possible causes: CRC  
errors, internal underrun / overrun, network collisions). Auto reset to zero when reaches  
value=268.435.456."  
    ::= { etherMPX 3 }
```

```
-- 1.3.6.1.4.1.44467.1.4  
sysAudioFramesRxOk OBJECT-TYPE  
    SYNTAX Gauge  
    ACCESS read-only  
    STATUS mandatory  
    DESCRIPTION  
    "Ethernet frames with audio payload that received OK. Auto reset to zero when reaches  
value=268.435.456."  
    ::= { etherMPX 4 }
```

```
-- 1.3.6.1.4.1.44467.1.5
```

```

sysAudioFramesTxErr OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Ethernet frames with audio payload, but dropped by the device (possible causes: CRC
errors, internal underrun / overrun, network collisions). Auto reset to zero when reaches
value=268.435.456."
        ::= { etherMPX 5 }

-- 1.3.6.1.4.1.44467.1.6
sysAudioFramesTxOk OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Ethernet frames with audio payload that transmitted OK. Auto reset to zero when
reaches value=268.435.456."
        ::= { etherMPX 6 }

-- 1.3.6.1.4.1.44467.1.7
sysAudioInputPort OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-write
    STATUS mandatory
    DESCRIPTION
        "Audio input interface of Encoder. Value=0(Digital), Value=1(Analog)."
```

```

        ::= { etherMPX 7 }

-- 1.3.6.1.4.1.44467.1.8
sysAudioInputType OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-write
    STATUS mandatory
    DESCRIPTION
        "Audio type to be transmitted. Must be the same in both Encoder and Decoder.
Value=0(L/R), Value=1(MPX)."
```

```

        ::= { etherMPX 8 }

-- 1.3.6.1.4.1.44467.1.9
sysLowLatencyOptionEnabled OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-write
    STATUS mandatory
    DESCRIPTION
        "Enable or disable Low Latency Option. Must be the same in both Encoder and Decoder.
Value=0(Disable), Value=1(Enable)."
```

```

        ::= { etherMPX 9 }

-- 1.3.6.1.4.1.44467.1.10
sysMulticastIp OBJECT-TYPE
    SYNTAX IpAddress
    ACCESS read-write
    STATUS mandatory
    DESCRIPTION
        "Definition of multicast IP for audio packets. Must be the same in both Encoder and
Decoder."
        ::= { etherMPX 10 }

-- 1.3.6.1.4.1.44467.1.11
sysRemoteIp OBJECT-TYPE
    SYNTAX IpAddress
    ACCESS read-write
    STATUS mandatory
    DESCRIPTION
        "Define in Encoder the IP address of target Decoder (used only for multicast
transmission)."
```

```

        ::= { etherMPX 11 }

-- 1.3.6.1.4.1.44467.1.12
sysStreamingType OBJECT-TYPE
    SYNTAX Gauge
```

```

        ACCESS read-write
        STATUS mandatory
        DESCRIPTION
"Define in Encoder the transmission type. Value=0(Unicast), value=1(Multicast)."  

        ::= { etherMPX 12 }

-- 1.3.6.1.4.1.44467.1.13
sysGateway OBJECT-TYPE
    SYNTAX IpAddress
    ACCESS read-write
    STATUS mandatory
    DESCRIPTION
"Define the IP gateway of the Audio_ETH interface."  

    ::= { etherMPX 13 }

-- 1.3.6.1.4.1.44467.1.14
sysIpAddress OBJECT-TYPE
    SYNTAX IpAddress
    ACCESS read-write
    STATUS mandatory
    DESCRIPTION
"Define the IP address of the Audio_ETH interface."  

    ::= { etherMPX 14 }

-- 1.3.6.1.4.1.44467.1.15
sysMacAddress OBJECT-TYPE
    SYNTAX OCTET STRING
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
"Display the MAC address of the Audio_ETH interface."  

    ::= { etherMPX 15 }

-- 1.3.6.1.4.1.44467.1.16
sysRxFramesErr OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
"Ethernet frames received, but dropped by the device (possible causes: CRC errors,  

internal underrun / overrun, network collisions). Auto reset to zero when reaches  

value=268.435.456."  

    ::= { etherMPX 16 }

-- 1.3.6.1.4.1.44467.1.17
sysRxFramesOk OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
"Ethernet frames received OK from the device (no CRC errors, no underruns / overruns,  

no network collisions). Auto reset to zero when reaches value=268.435.456."  

    ::= { etherMPX 17 }

-- 1.3.6.1.4.1.44467.1.18
sysSubnetMask OBJECT-TYPE
    SYNTAX IpAddress
    ACCESS read-write
    STATUS mandatory
    DESCRIPTION
"Define the IP subnet mask of the Audio_ETH interface."  

    ::= { etherMPX 18 }

-- 1.3.6.1.4.1.44467.1.19
sysTxFramesErr OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
"Ethernet frames that failed to be transmitted from the device (possible causes:  

internal underrun / overrun, or network collisions). Auto reset to zero when reaches  

value=268.435.456."  

    ::= { etherMPX 19 }

```

```

-- 1.3.6.1.4.1.44467.1.20
sysTxFramesOk OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Ethernet frames transmitted OK from the device (no internal underruns / overruns,
network collisions). Auto reset to zero when reaches value=268.435.456."
        ::= { etherMPX 20 }

-- 1.3.6.1.4.1.44467.1.21
sfnFramesErr OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Decoder only: number of PTP SYNC messages received, but rejected by the EtherMPX
algorithms. Possible causes: glitching Master Clock, heavy loaded network, many irrelevant Ethernet
packets that must be filtered out. Auto reset to zero when reaches value=268.435.456."
        ::= { etherMPX 21 }

-- 1.3.6.1.4.1.44467.1.22
sfnFramesMismatch OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Decoder only: the measured mismatch between the Master Clock and the local clock,
expressed in nanoseconds (nS). This value must be as low as possible to indicate that there is a
good sync with the Master Clock."
        ::= { etherMPX 22 }

-- 1.3.6.1.4.1.44467.1.23
sfnFramesOk OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Decoder only: number of SYNC messages received OK and took into account by the
EtherMPX algorithms to calculate and calibrate on-the-fly the sync parameters. Auto reset to zero
when reaches value=268.435.456."
        ::= { etherMPX 23 }

-- 1.3.6.1.4.1.44467.1.24
sfnLatencyAvg OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Decoder only: a 2-samples rolling average value of the measured latency towards the
Encoder, since last counter reset."
        ::= { etherMPX 24 }

-- 1.3.6.1.4.1.44467.1.25
sfnLatencyMax OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Decoder only: The highest measured latency towards the Encoder, since last counter
reset."
        ::= { etherMPX 25 }

-- 1.3.6.1.4.1.44467.1.26
sfnLatencyMin OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Decoder only: The lowest measured latency towards the Encoder, since last counter
reset."

```

```

        ::= { etherMPX 26 }

-- 1.3.6.1.4.1.44467.1.27
sfnLatencyNow OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Decoder only: The network latency as measured between local device and Master Clock
device. Updated every 30 sec."
        ::= { etherMPX 27 }

-- 1.3.6.1.4.1.44467.1.28
sfnAutoLatency OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-write
    STATUS mandatory
    DESCRIPTION
        "Decoder only: Auto compensate measured latency. Not recommended without PTP-aware
network elements. Value=0(Disable), value=1(Enable).".
        ::= { etherMPX 28 }

-- 1.3.6.1.4.1.44467.1.29
sfnClockSelection OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-write
    STATUS mandatory
    DESCRIPTION
        "Encoder only: Select internal TCXO or external 10MHz clock source. Use with extreme
caution, see User Manual. Value=0(Internal), value=1(External).".
        ::= { etherMPX 29 }

-- 1.3.6.1.4.1.44467.1.30
sfnOptionEnabled OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-write
    STATUS mandatory
    DESCRIPTION
        "Enable or disable SFN Option. Must be the same in both Encoder and Decoder.
Value=0(Disable), Value=1(Enable).".
        ::= { etherMPX 30 }

-- 1.3.6.1.4.1.44467.1.31
sfnUserLatency OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-write
    STATUS mandatory
    DESCRIPTION
        "Decoder only: user defined latency compensation with 100nS steps. Range 0-25000,
step=1, latency(nS)=value*100."
        ::= { etherMPX 31 }

-- 1.3.6.1.4.1.44467.1.32
sysSilenceDetectorMode OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-write
    STATUS mandatory
    DESCRIPTION
        "Operational mode of Silence Detector engine in Decoder. Value=0(Auto detect),
value=1(Force internal), value=2(Force external).".
        ::= { etherMPX 32 }

-- 1.3.6.1.4.1.44467.1.33
sysSilenceDetectorThreshold OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-write
    STATUS mandatory
    DESCRIPTION
        "Lowest audio level threshold that triggers countdown timer. Range=1-154, step=1,
level(dBu)=56-(Log10(value*2.0487)*20)).".
        ::= { etherMPX 33 }

```

```

-- 1.3.6.1.4.1.44467.1.34
sysSilenceDetectorTimeout OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-write
    STATUS mandatory
    DESCRIPTION
        "Initial value of countdown timer in Decoder, before switching to AUX input. Range=1-
220, step=1, time(Sec)=value*0,455."
    ::= { etherMPX 34 }

-- 1.3.6.1.4.1.44467.1.35
sysDeviceName OBJECT-TYPE
    SYNTAX OCTET STRING (SIZE(16))
    ACCESS read-write
    STATUS mandatory
    DESCRIPTION
        "Device name (Fixed size is 16 characters)."
    ::= { etherMPX 35 }

-- 1.3.6.1.4.1.44467.1.36
sysDspVersionMajor OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Display major version of DSP software."
    ::= { etherMPX 36 }

-- 1.3.6.1.4.1.44467.1.37
sysDspVersionRevision OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Display revision of DSP software."
    ::= { etherMPX 37 }

-- 1.3.6.1.4.1.44467.1.38
sysSerialNumber OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Device serial number."
    ::= { etherMPX 38 }

-- 1.3.6.1.4.1.44467.1.39
snmpManagerIP OBJECT-TYPE
    SYNTAX IpAddress
    ACCESS read-write
    STATUS mandatory
    DESCRIPTION
        "IP address of the SNMP manager that receives SNMP traps."
    ::= { etherMPX 39 }

-- 1.3.6.1.4.1.44467.1.40
snmpReadOnlyComString OBJECT-TYPE
    SYNTAX OCTET STRING (SIZE(8))
    ACCESS read-write
    STATUS mandatory
    DESCRIPTION
        "Read-Only Community String. Default is 'sigmacom'. Fixed size is 8 characters"
    ::= { etherMPX 40 }

-- 1.3.6.1.4.1.44467.1.41
snmpReadWriteComString OBJECT-TYPE
    SYNTAX OCTET STRING (SIZE(8))
    ACCESS read-write
    STATUS mandatory
    DESCRIPTION
        "Read-Write Community String. Default is 'ethermpx'. Fixed size is 8 characters"

```



```

        ::= { etherMPX 41 }

-- 1.3.6.1.4.1.44467.1.42
snmpAgentMask OBJECT-TYPE
    SYNTAX IpAddress
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
    "IP subnet mask of the Management_ETH interface."
    ::= { etherMPX 42 }

-- 1.3.6.1.4.1.44467.1.43
snmpAgentGW OBJECT-TYPE
    SYNTAX IpAddress
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
    "IP gateway of the Management_ETH interface."
    ::= { etherMPX 43 }

-- 1.3.6.1.4.1.44467.1.44
snmpAgentIP OBJECT-TYPE
    SYNTAX IpAddress
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
    "IP address of the Management_ETH interface."
    ::= { etherMPX 44 }

-- 1.3.6.1.4.1.44467.1.45
snmpAgentDNS OBJECT-TYPE
    SYNTAX IpAddress
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
    "DNS server for the Management_ETH interface."
    ::= { etherMPX 45 }

-- 1.3.6.1.4.1.44467.1.46
snmpNewAgentMask OBJECT-TYPE
    SYNTAX IpAddress
    ACCESS read-write
    STATUS mandatory
    DESCRIPTION
    "New IP subnet mask of the Management_ETH interface."
    ::= { etherMPX 46 }

-- 1.3.6.1.4.1.44467.1.47
snmpNewAgentGW OBJECT-TYPE
    SYNTAX IpAddress
    ACCESS read-write
    STATUS mandatory
    DESCRIPTION
    "New IP gateway of the Management_ETH interface."
    ::= { etherMPX 47 }

-- 1.3.6.1.4.1.44467.1.48
snmpNewAgentIP OBJECT-TYPE
    SYNTAX IpAddress
    ACCESS read-write
    STATUS mandatory
    DESCRIPTION
    "New IP address of the Management_ETH interface."
    ::= { etherMPX 48 }

-- 1.3.6.1.4.1.44467.1.49
snmpNewAgentDNS OBJECT-TYPE
    SYNTAX IpAddress
    ACCESS read-write
    STATUS mandatory
    DESCRIPTION
    "New DNS server for the Management_ETH interface."
    ::= { etherMPX 49 }

```

```
-- 1.3.6.1.4.1.44467.1.50
snmpSetSettings OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-write
    STATUS mandatory
    DESCRIPTION
        "IP assignment method. 0=DHCP, 1=STATIC. If STATIC is applied then snmp 'New'
variables will be activated"
    ::= { etherMPX 50 }
```

```
--
-- Trap definitions
--
```

```
silenceDetectorActivated TRAP-TYPE
    ENTERPRISE etherMPX
    ::= 1
```

```
END
```