

SERVICE BULLETIN ASM-SNMP

Product: Antenna System Monitor

Subject: SNMP

Date: 14th September 2017

Description

This Service Bulletin overviews the SNMP V2c northbound Trap and southbound GET request functionality supported by the ASM products using baseline 2.7 (and above) firmware. SNMP Community String value configuration and supporting SNMP Managers that require non 'null' returned values is available in baseline 2.8.3 (and above) firmware.

The Antenna System Monitor (ASM) SNMP Interface is defined by the following MIB files:

RF-INDUSTRIES-MIB.txt
RFI-AXM-ALARM-MIB.txt

The RFI-AXM-ALARM-MIB file provides details of the various objects (OIDs) within every trap that is sent whenever an alarm status change occurs. Updated MIB files are available for download.

Note: Every trap includes the following eleven objects:

Trap Objects

axmAlarmCustName

OID 1.3.6.1.4.1.32327.2.2.2.1.2.1

Syntax Text String

Description Provides the Customer Name string as configured on the User Data Configuration page.

axmAlarmSiteName

OID 1.3.6.1.4.1.32327.2.2.2.1.2.2

Syntax Text String

Description Provides the Site Name string as configured on the User Data Configuration page.



axmAlarmType

OID 1.3.6.1.4.1.32327.2.2.2.1.2.3

Syntax Integer 0..5

Description Identifies the type of alarm that this trap relates to. The data for some of the other objects will depend on the alarm type.

The possible Types (and integer values) are:

Restart (0)	The unit has just been restarted.
SystemStatus (1)	The summary alarm status has changed.
ChannelStatus (2)	An individual channel alarm status has changed.
CamStatus (3)	An Alarm Module input alarm status has changed.
AccessEvent (4)	Three or more consecutive login attempts have failed, resulting in a lockout state.
IsolTestStatus (5)	A change in Isolation test alarm status.

axmAlarmStatusBits

OID 1.3.6.1.4.1.32327.2.2.2.1.2.4

Syntax Integer 0..65535 (i.e. 16bits)

Description This is an integer value representing the status bits relevant to the alarm type. The various sets of status bits are detailed as follows;

ReStart

These bits will generally be the same as the System Status Bits, but because the system has only just restarted they will likely not be fully be up to date representing the true system status. They should therefore be ignored.

SystemStatus

The system summary status bits are:

0x0001 Lock detect fail for Receive synthesisers.
0x0002 Lock detect fail for Transmit synthesisers.
0x0004 One or more Tx Power level fails are present.
0x0008 One or more Tx VSWR fails are present.
0x0010 Rx Power level fail is present.
0x0020 System hardware alarms summary. See Hardware Alarm Bits below.
0x0040 Antenna Isolation test fail is present.
0x0080 One or more CAM/SAM External or General Purpose DI alarms are present.
0x0100 Rx Summary alarm.
0x0200 Tx Power summary alarm.
0x0400 Tx VSWR summary alarm.
0x0800 Not in use.
0x1000 Not in use.
0x2000 Receive Systems Module alarm.
0x4000 Alarm relay is active. As masked by Alarm Config.
0x8000 Summary alarm LED is active.

Hardware Alarm Bits

0x0001 Internal 5V rail is out of limit.
0x0002 Internal temperature exceeds 80 degrees.
0x0004 Internal hardware failure – I2C EEPROM.
0x0008 Internal hardware failure – SFLASH.
0x0010 Internal hardware failure – SD-Card.

Note: These are no presented separately, but any Hardware Alarm Bit(s) set will set the 0x0020 bit of the (above) System Status Bits



ChannelStatus

Note: Decoded from the following tables is based on determining a Rx or Tx message from the contents of the rest of the SNMP trap message.

Rx Status Bits

0x0001 Rx power level fail summary.
0x0002 Rx Antenna isolation loss fail summary.
0x0004 RxA level out of range (Rx-0 only).
0x0008 VCO lock fail.
0x0010 RxB level out of range (Rx-0 only).
0x0020 Any Rx signal still ON/OFF.
0x0040 RxE level out of range (Rx-0 only).
0x0080 RxA signal present.
0x0100 RxB signal present.
0x0200 RxE signal present.
0x0400 RxA enabled.
0x0800 RxB enabled.
0x1000 RxE enabled.
0x2000 RSM Present.

Tx Status Bits

0x0001 Tx power level fail.
0x0002 Internal use
0x0004 VSWR fail.
0x0008 VCO lock fail.
0x0010 Tx signal present.
0x0020 Tx signal still ON/OFF.
0x0040 Internal use.
0x0080 Rx signal present.

CamStatus

Alarm Module Status Bits

0x0000 Alarm not active.
0x0001 Alarm active.

AccessEvent

Access Event Bits

0x0000 (Always)

Note: This trap is only sent when the number of sequential login attempts is ≥ 3 .



IsolTestStatus

Isolation Test Status

0x0001 Not used.
0x0002 Rx Gain or Tx Rejection fail.
0x0004 RxA level out of range.
0x0008 VCO lock fail (Rx Gain only).
0x0010 RxB level out of range.
0x0020 Not used.
0x0040 RxE level out of range.
0x0080 Not used.
0x0100 Not used.
0x0200 Not used.
0x0400 RxA enabled.
0x0800 RxB enabled.
0x1000 RxE enabled.
0x2000 RSM Present.

axmAlarmDescription

OID 1.3.6.1.4.1.32327.2.2.2.1.2.5

Syntax Text String

Description This is a brief textual description of the alarm status. The included detail depends on the alarm type.

The following are examples:

Restart: System Restart

SystemStatus: SYS=FAIL, RX=OK, TXPWR=OK, TXVSWR=FAIL

If a CAM or SAM is present an "ALMMOD=" status is added.

If a Receive Systems Module is present a "RSM=" status is also added.

ChannelStatus: For a Rx channel: – PWR=OK(-97.5), VCO=OK, RX=ON

For a Rx Channel with Receive Systems Module:

- PWR=OK(A=-97.5,B=-95.3,E=-101.2), VCO=OK, RX=ON

For a Tx channel:

- PWR=OK(39.5), ILOSS=OK(1.5), VSWR=OK(1.52),VCO=OK, TX=ON

CamStatus: SAM Input, DI1-6 - Test IP-6, STATUS=FAIL

AccessEvent: System Access Lockout Alert, Source=10.3.5.119, Count=3

IsolTestStatus:

For Antenna Isolation:

- Ant Isolation,STATUS=OK(A=82.0,B=83.1,E=78.7 dB,900.000000 MHz)

For Rx System:

- Rx System,STATUS=OK(A=-0.1,B=-0.4,E=-1.3 dB,870.000000 MHz)

For Tx Rejection:

- Tx Rejection,STATUS=OK(A=95.1,B=97.8,E=91.4 dB,915.000000 MHz)

Note that 'A', 'B' and 'E' values are only included if a Receive Systems Module is in use.

axmAlarmState

OID 1.3.6.1.4.1.32327.2.2.2.1.2.6

Syntax Integer

Description The alarm status for this trap. A value of 1 represents OK, a value of 2 is FAIL.

axmAlarmDateTime

OID 1.3.6.1.4.1.32327.2.2.2.1.2.7

Syntax Date and Time

Description The time stamp for when this trap was sent.

axmAlarmSourceNumber

OID 1.3.6.1.4.1.32327.2.2.2.1.2.8

Syntax Integer

Description This identifies the source of the alarm event. This object, although included with every trap, is only relevant for the following alarm types:

ChannelStatus:

0 – RxPort 1 – TxPort-1 2 – TxPort-2 3 – TxPort-3 4 – TxPort-4

CamStatus:

Possible values are::

11 – Alarm Module 1	12 – Alarm Module 2	13 – Alarm Module 3	14 – Alarm Module 4
15 – Alarm Module 5	16 – Alarm Module 6	17 – Alarm Module 7	18 – Alarm Module 8
19 – Alarm Module 9	20 – Alarm Module 10		

IsolTestStatus:

21 – Antenna Isolation 22 – Rx System 23 – Tx Rejection

axmAlarmSourceText

OID 1.3.6.1.4.1.32327.2.2.2.1.2.9

Syntax Text String

Description The textual description for the axmAlarmSourceNumber.. This object, although included with every trap, is only relevant for the following alarm types:

ChannelStatus:

The port reference string as configured on the User Data Configuration page.

Examples are:

Rx Port
Tx Antenna 1

CamStatus:

The Alarm Module description.

Examples are:

SAM-1
CAM-3

IsolTestStatus:

The Isolation Test description.

Examples are:

Ant Isolation
Rx System
Tx Rejection



axmAlarmItemNumber

OID 1.3.6.1.4.1.32327.2.2.2.1.2.10

Syntax Integer

Description This identifies the specific item number within the above alarm source. This object, although included with every trap, is only relevant for the following alarm types:

ChannelStatus:

Possible values are 1 to 80 for the Rx Port, and 1 to 20 for Tx Ports.

CamStatus:

The Alarm Module input number.

Possible values are 1 to 4 for External Inputs, 1 to 4 or 11 to 20 for Digital Inputs 1 to 10

axmAlarmItemText

OID 1.3.6.1.4.1.32327.2.2.2.1.2.11

Syntax Text String

Description The textual description for the specific item. This object, although included with every trap, is only relevant for the following alarm types:

ChannelStatus:

The channel ID string as configured on the Channel Configuration page.

Examples are:

Ambulance 1
Fire Service 3

CamStatus:

The Alarm Module Input ID string as configured on the Alarm Module Configuration page.

Examples are:

Temperature
Door Open

IsolTestStatus:

The frequency that the specific Isolation Test was performed on.

For example:

960.000000 MHz



SNMP GET Requests

Any SNMP GET requests on the objects defined in the MIB and described above will return the current parameter value of the associated object (OID) sent with the GET.

An example of the response to GET commands sent to the ASM is as follows;

axmAlarmCustName.0	Not defined
axmAlarmSiteName.0	Not defined
axmAlarmType.0	SystemStatus(1)
axmAlarmStatusBits.0	49488
axmAlarmDescription.0	SYS=FAIL, RX=FAIL, TXPWR=OK, TXVSWR=OK, ALMMOD=OK
axmAlarmState.0	fail(2)
axmAlarmDateTime.0	2016-3-3,15:18:26.0
axmAlarmSourceNumber.0	RxPort(0)
axmAlarmSourceText.0	
axmAlarmItemNumber.0	0
axmAlarmItemText.0	

- END -