

## **SERVICE BULLETIN APM-SNMP**

### **Product: Advanced Power Monitor**

**Subject: SNMP**

**Date: 17<sup>th</sup> February 2021**

#### **Description**

This Service Bulletin overviews the SNMP V1 and V2c scalar and table OID-based northbound Trap and southbound GET request functionality supported by the APM products using baseline 2.85 (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.

Scalar OID traps described in the Scalar OID Trap Objects section of this document are sent when the 'Specific Trap' checkbox is unticked in the Configuration-Communications GUI page.

Table OID traps described in the Table OID GET Requests and Trap Objects section of this document are enabled when the 'Specific Trap' checkbox is ticked in the Configuration-Communications GUI page.

The Antenna System Monitor (APM) 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.

#### **Scalar OID Trap Objects**

The axmAlarmEntry object (1.3.6.1.4.1.32327.2.2.1.2) defines a trap and each trap includes the following 11 different objects;

##### **axmAlarmCustName**

OID 1.3.6.1.4.1.32327.2.2.1.2.1

Syntax                Text String

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

##### **axmAlarmSiteName**

OID 1.3.6.1.4.1.32327.2.2.1.2.2

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:

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

## axmAlarmStatusBits

OID 1.3.6.1.4.1.32327.2.2.2.1.2.4

Syntax Integer 0/1 (1 bit) or 0..255 (8 bits) or 0..65535 (i.e. 16 bits)

System Status – 16 bits  
Channel Rx Status – 16 bits  
Channel Tx Status – 8 bits  
CAM/SAM Status – 1 bit  
Isolation Test Status – 16 bits

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

Internal 5V rail is out of limit.

Internal hardware failure – SD-Card.

Note: These are not 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 Rx A level out of range (Rx-0 only).

0x0008 VCO lock fail.

0x0010 Rx B level out of range (Rx-0 only).

0x0020 Any Rx signal still ON/OFF.

0x0040 Rx E level out of range (Rx-0 only).

0x0080 Rx A signal present.

0x0100 Rx B signal present.

0x0200 Rx E signal present.

0x0400 Rx A enabled.

0x0800 Rx B enabled.

0x1000 Rx E enabled.

0x2000 RSM Present.

### Tx Status Bits

0x01 Tx power level fail.

0x02 Internal use

0x04 VSWR fail.

0x08 VCO lock fail.

0x10 Tx signal present.

0x20 Tx signal still ON/OFF.

0x40 Internal use.

0x80 Rx signal present.

## CamStatus

### Alarm Module Status Bits

0x0 Alarm not active.

0x1 Alarm active.

Note: Each trap refers to only one alarm input, as detailed by the axmAlarmSourceNumber and axmAlarmItemNumber objects.

## AccessEvent

### Access Event Bits

0x0000 (Always)

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



## IsolationTestStatus

### Isolation Test Status Bits

0x0001 Not used.  
0x0002 (Antenna Isolation), Rx Gain or Tx Rejection fail. See Note below  
0x0004 Rx A Level out of range (Not used by SNMP).  
0x0008 VCO Lock Fail (Not used by SNMP).  
0x0010 Rx B Level out of range (Not used by SNMP).  
0x0020 Not used.  
0x0040 Rx E Level out of range (Not used by SNMP).  
0x0080 Not used.  
0x0100 Not used.  
0x0200 Not used.  
0x0400 Rx A Enabled (Not used by SNMP).  
0x0800 Rx B Enabled (Not used by SNMP).  
0x1000 Rx E Enabled (Not used by SNMP).  
0x2000 RSM Present (Not used by SNMP).

Note: The axmAlarmSourceNumber is one of 21, 22 or 23 (as detailed in the Syntax Integer declaration for the axmAlarmSourceNumber object).

Note: The use of the IsolationTestStatus bits varies between SNMP and Manager Messages. Only bit 0x0002 is used for SNMP. In SNMP, bit 0x0002 will be set whenever there is either an Antenna Isolation, Rx Gain, or Tx Rejection alarm. The text of the next OID describes the fault, and the values measured.

## 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
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### **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, or 1 to 20 for Tx Ports.

**CamStatus:**

The Alarm Module input number.

Possible values are 1 to 4 for External Inputs, 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

## Scalar OID GET Requests

### 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 APM 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	

### Table OID GET Requests and Trap Objects

The MIB file defines a group of OIDs which belong to a particular table OID. Any SNMP GET request to a table OID will be a multi OID request and the APM will return the current parameter values for all the associated OIDs in that table.

The Alarm Status node (1.3.6.1.4.1.32327.2.2.2.1.3) has the following five table OID's. The first four OIDs have nine different objects, and the last OID has four different objects.

- Tx channel status (1.3.6.1.4.1.32327.2.2.2.1.3.1.1)
- Rx channel status (1.3.6.1.4.1.32327.2.2.2.1.3.2.1)
- Isolation test status (1.3.6.1.4.1.32327.2.2.2.1.3.3.1)
- CAM and SAM alarm status (1.3.6.1.4.1.32327.2.2.2.1.3.4.1)
- System status (1.3.6.1.4.1.32327.2.2.2.1.3.5.1)

#### **Tx channel status table entry OID objects (1.3.6.1.4.1.32327.2.2.2.1.3.1.1)**

Object name	OID	Syntax	Description
<b>statusTxChannelIndex</b>	1.3.6.1.4.1.32327.2.2.2.1.3.1.1.1	Integer(1..80)	A unique value for each Tx channel (instance/row)
<b>channelPort</b>	1.3.6.1.4.1.32327.2.2.2.1.3.1.1.2	Integer(1..4)	Information about the port number
<b>channelNumber</b>	1.3.6.1.4.1.32327.2.2.2.1.3.1.1.3	Integer(1..20)	Information about the channel number in a specific port
<b>channelForwardPwr</b>	1.3.6.1.4.1.32327.2.2.2.1.3.1.1.4	Integer(-2048..2047)	Information about Tx forward power level. This is in 1/10th of dBm
<b>channelInsertionLoss</b>	1.3.6.1.4.1.32327.2.2.2.1.3.1.1.5	Integer (0..4095)	Information about Tx combiner insertion loss This is in 1/10ths of a dB
<b>channelVswr</b>	1.3.6.1.4.1.32327.2.2.2.1.3.1.1.6	Integer (100..9999)	Information about Antenna VSWR. This is in 1/100ths units.
<b>channelStatus</b>	1.3.6.1.4.1.32327.2.2.2.1.3.1.1.7	Integer (0..255)	Value representing the Tx channel status bits
<b>channelState</b>	1.3.6.1.4.1.32327.2.2.2.1.3.1.1.8	Integer (1..4 )	State of the channel
<b>channelDescription</b>	1.3.6.1.4.1.32327.2.2.2.1.3.1.1.9	Text String	Textual description of Tx channel status bits





## Channel states

- 1 OK
- 2 Fail
- 3 Disabled / Not configured
- 4 Invalid Tx channel index

## Tx Channel Status Bits

- 0x01 Tx power level failed.
- 0x02 Internal Use only.
- 0x04 VSWR failed.
- 0x08 VCO lock failed.
- 0x10 Tx signal present.
- 0x20 Tx signal still ON/OFF.
- 0x40 Internal use.
- 0x80 Rx signal present.

An example of the Tx channel status table is;

SNMP Table - .iso.org.dod.internet.private.enterprises.rfiindustries.rfiPublic.rfiProducts.rfiAxMProduct.axmAlarmMIB.statusAlarmEntry.statusTxChannelNode.statusTxChannelTable									
S...	channelPort	channelNumber	channelForwardPwr	channelInsertionLoss	channelVswr	channelStatus	channelState	channelDescription	
1	TxPort1(1)	1	-334	563	1	33	fail(2)	PWR=FAIL(<- 10 ), LOSS=OK( 56.3 ), VSWR=OK( 1.00 ), VCO=OK, TX=OFF	
2	TxPort1(1)	2	-118	0	1	32	okay(1)	PWR=OK(<- 10 ), LOSS=OK( 0.0 ), VSWR=OK( 1.00 ), VCO=OK, TX=OFF	
3	TxPort1(1)	3	2047	2047	2047	0	disabled(3)		
4	TxPort1(1)	4	2047	2047	2047	0	disabled(3)		
5	TxPort1(1)	5	2047	2047	2047	0	disabled(3)		
6	TxPort1(1)	6	2047	2047	2047	0	disabled(3)		

**Note:** The levels will be reported as +2047 if the respective input is not enabled

## Rx channel status table entry OID objects (1.3.6.1.4.1.32327.2.2.2.1.3.2.1.1)

Object name	OID	Syntax	Description
statusRxChannelIndex	1.3.6.1.4.1.32327.2.2.2.1.3.2.1.1.1	Integer (1..80)	A unique value for each Rx channel (instance/row)
rxChannelPort	1.3.6.1.4.1.32327.2.2.2.1.3.2.1.1.2	Integer(0)	Information about the port number
rxChannelNumber	1.3.6.1.4.1.32327.2.2.2.1.3.2.1.1.3	Integer(1..80)	Information about the Rx channel number in a specific port
channelRxALevel	1.3.6.1.4.1.32327.2.2.2.1.3.2.1.1.4	Integer(-2048..2047)	Information about Rx (or RSM-RxA) power level. This is in 1/10ths of a dBm
channelRxBLevel	1.3.6.1.4.1.32327.2.2.2.1.3.2.1.1.5	Integer(-2048..2047)	Information about RSM-RxE power level. This is in 1/10ths of a dBm
channelRxELevel	1.3.6.1.4.1.32327.2.2.2.1.3.2.1.1.6	Integer(-2048..2047)	Information about RSM-RxE power level. This is in 1/10ths of a dBm
rxChannelStatus	1.3.6.1.4.1.32327.2.2.2.1.3.2.1.1.7	Integer(0..65535)	Information about Rx channel status bits
rxChannelState	1.3.6.1.4.1.32327.2.2.2.1.3.2.1.1.8	Integer(1..4)	An integer representing state of the Rx channel
rxChannelDescription	1.3.6.1.4.1.32327.2.2.2.1.3.2.1.1.9	Text String	Description of Rx channel status bits



## Channel states

- 1 OK
- 2 Fail
- 3 Disable/Not configured
- 4 Invalid Rx channel index

## Rx Channel Status Bits

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

An example of Rx channel status table is;

SNMP Table - .iso.org.dod.internet.private.enterprises.rfiIndustries.rfiPublic.rfiProducts.rfiAxMPProduct.axmAlarmMIB.statusAlarmEntry.statusRxChannelNode.statusRxChannelTable								
statusRxChannelL...	rxChannelPort	rxChannelNum...	channelRxALe...	channelRxBLe...	channelRxELevel	rxChanne...	rxChanne...	rxChannelDescription
1	RxPort(0)	1	-710	-1251	-1251	160	okay(1)	PWR=OK(A=-71.0,B=-125,E=-125); VCO=OK; RX=ON
2	RxPort(0)	2	-1251	-1251	2047	32	okay(1)	PWR=OK(A=-125,B=-125); VCO=OK; RX=OFF
3	RxPort(0)	3	-1251	2047	2047	32	okay(1)	PWR=OK(A=-125); VCO=OK; RX=OFF
4	RxPort(0)	4	2047	2047	2047	0	disabled(3)	
5	RxPort(0)	5	2047	2047	2047	0	disabled(3)	
6	RxPort(0)	6	2047	2047	2047	0	disabled(3)	

**Note:** The levels will be reported as +2047 if the respective input is not enabled

**Isolation test status table entry objects (1.3.6.1.4.1.32327.2.2.2.1.3.3.1.1)**

Object name	OID	Syntax	Description
isolChannelIndex	1.3.6.1.4.1.32327.2.2.2.1.3.3.1.1.1	Integer(0..40)	A unique value for each isolation test channel (instance/row)
isolTestSource	1.3.6.1.4.1.32327.2.2.2.1.3.3.1.1.2	Text string	Textual representation of test source
isolTestFreq	1.3.6.1.4.1.32327.2.2.2.1.3.3.1.1.3	Text string	Textual representation of test frequency
isolTestResultA	1.3.6.1.4.1.32327.2.2.2.1.3.3.1.1.4	Integer(-2048..2047)	Measurement results of antenna Isolation A/ RxA Gain/ TxA rejection levels. This is in 1/10ths of a dB
isolTestResultB	1.3.6.1.4.1.32327.2.2.2.1.3.3.1.1.5	Integer(-2048..2047)	Measurement results of antenna Isolation B/ RxB Gain/ TxB rejection levels. This is in 1/10ths of a dB
isolTestResultE	1.3.6.1.4.1.32327.2.2.2.1.3.3.1.1.6	Integer(-2048..2047)	Measurement results of antenna Isolation E/ RxE Gain/ TxE rejection levels. This is in 1/10ths of a dB
isolTestStatus	1.3.6.1.4.1.32327.2.2.2.1.3.3.1.1.7	Integer(0..65535)	Information about isolation test status bits
isolTestState	1.3.6.1.4.1.32327.2.2.2.1.3.3.1.1.8	Integer(1..4)	State of isolation test channel
isolTestDescription	1.3.6.1.4.1.32327.2.2.2.1.3.3.1.1.9	Text string	Textual description of isolation test status bits

**Isolation Channel Index**

- 0 Antenna Isolation,
- 1 - 20 Rx System Gain channels (1 - 20)
- 21 - 40 Tx Rejection channels (1 - 20)

**Isolation test channel states**

- 1 OK
- 2 Fail
- 3 Disable/Not configured
- 4 Invalid index

**Isolation Test Status Bits**

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

**Note:** The use of the IsolationTestStatus bits varies between SNMP and Manager Messages. Only bit 0x0002 is used for SNMP. In SNMP, bit 0x0002 will be set whenever there is either an Antenna Isolation, Rx Gain, or Tx Rejection alarm.



An example of isolation test status table is;

isoChannelIndex	isoTestSource	isoTestFreq	isoTestResultA	isoTestResultB	isoTestResultE	isoTestStatus	isoTestState	isoTestDescription
0	AntIsolation	480.000000 MHz	591	591	593	32	okay(1)	Ant Isolation,STATUS=OK(A=59 1,B=59 1,E=59 3 dB,480.000000 MHz)
1	RxSystem-1	480.000000 MHz	4	2	3	0	okay(1)	Rx System,STATUS=OK(A=0.4,B=0.2,E=0.3 dB,480.000000 MHz)
2	RxSystem-2	481.000000 MHz	1	2	2047	0	okay(1)	Rx System,STATUS=OK(A=0.1,B=0.2 dB,481.000000 MHz)
3	RxSystem-3	482.000000 MHz	3	2047	2047	0	okay(1)	Rx System,STATUS=OK(A=0.3 dB,482.000000 MHz)
4	RxSystem-4	483.000000 MHz	0	6	4	0	okay(1)	Rx System,STATUS=OK(A=0.0,B=0.0,E=0.4 dB,483.000000 MHz)
5	RxSystem-5	484.000000 MHz	-4	4	2047	0	okay(1)	Rx System,STATUS=OK(A=-0.4,B=0.4 dB,484.000000 MHz)
6	RxSystem-6	485.000000 MHz	-6	2047	2047	0	okay(1)	Rx System,STATUS=OK(A=-0.6 dB,485.000000 MHz)
7	RxSystem-7	486.000000 MHz	-11	4	-1	0	okay(1)	Rx System,STATUS=OK(A=-1.1,B=0.4,E=-0.1 dB,486.000000 MHz)
8	RxSystem-8	487.000000 MHz	-17	1	2047	0	okay(1)	Rx System,STATUS=OK(A=-1.7,B=0.1 dB,487.000000 MHz)
9	RxSystem-9	488.000000 MHz	-21	2047	2047	0	okay(1)	Rx System,STATUS=OK(A=-2.1 dB,488.000000 MHz)
10	RxSystem-10	480.500000 MHz	0	1	2	0	okay(1)	Rx System,STATUS=OK(A=0.0,B=0.1,E=0.2 dB,480.500000 MHz)
11	RxSystem-11		2047	2047	2047	0	disabled(3)	
12	RxSystem-12		2047	2047	2047	0	disabled(3)	
13	RxSystem-13		2047	2047	2047	0	disabled(3)	
14	RxSystem-14		2047	2047	2047	0	disabled(3)	
15	RxSystem-15		2047	2047	2047	0	disabled(3)	
16	RxSystem-16		2047	2047	2047	0	disabled(3)	
17	RxSystem-17		2047	2047	2047	0	disabled(3)	
18	RxSystem-18		2047	2047	2047	0	disabled(3)	
19	RxSystem-19		2047	2047	2047	0	disabled(3)	
20	RxSystem-20	494.000000 MHz	-17	-9	-15	0	okay(1)	Rx System,STATUS=OK(A=-1.7,B=-0.9,E=-1.5 dB,494.000000 MHz)
21	TxRejection-1	410.000000 MHz	-1	-1	-1	0	okay(1)	Tx Rejection,STATUS=OK(A=-0.1,B=-0.1,E=-0.1 dB,410.000000 MHz)
22	TxRejection-2	411.000000 MHz	893	1466	2047	2	fail(2)	Tx Rejection,STATUS=FAIL(A=89.3,B=> 146.6 dB,411.000000 MHz)
23	TxRejection-3	410.000000 MHz	-1	2047	2047	0	okay(1)	Tx Rejection,STATUS=OK(A=-0.1 dB,410.000000 MHz)
24	TxRejection-4		2047	2047	2047	0	disabled(3)	
25	TxRejection-5		2047	2047	2047	0	disabled(3)	
26	TxRejection-6		2047	2047	2047	0	disabled(3)	
27	TxRejection-7		2047	2047	2047	0	disabled(3)	
28	TxRejection-8		2047	2047	2047	0	disabled(3)	
29	TxRejection-9		2047	2047	2047	0	disabled(3)	
30	TxRejection-10	440.000000 MHz	-1	2047	2047	0	okay(1)	Tx Rejection,STATUS=OK(A=-0.1 dB,440.000000 MHz)
31	TxRejection-11		2047	2047	2047	0	disabled(3)	
32	TxRejection-12		2047	2047	2047	0	disabled(3)	
33	TxRejection-13		2047	2047	2047	0	disabled(3)	
34	TxRejection-14		2047	2047	2047	0	disabled(3)	
35	TxRejection-15		2047	2047	2047	0	disabled(3)	
36	TxRejection-16		2047	2047	2047	0	disabled(3)	
37	TxRejection-17		2047	2047	2047	0	disabled(3)	
38	TxRejection-18		2047	2047	2047	0	disabled(3)	
39	TxRejection-19		2047	2047	2047	0	disabled(3)	
40	TxRejection-20	440.000000 MHz	-1	-1	-1	0	okay(1)	Tx Rejection,STATUS=OK(A=-0.1,B=-0.1,E=-0.1 dB,440.000000 MHz)

**Note:** The levels will be reported as +2047 if the respective input is not enabled

## CAM and SAM status table entry objects (1.3.6.1.4.1.32327.2.2.2.1.3.4.1.1)

Object name	OID	Syntax	Description
moduleIndex	1.3.6.1.4.1.32327.2.2.2.1.3.4.1.1.1	Integer(1..10)	A unique value representing CAM/SAM module ID
moduleInfo	1.3.6.1.4.1.32327.2.2.2.1.3.4.1.1.2	Integer(0..4)	Module information bits
EXT-1	1.3.6.1.4.1.32327.2.2.2.1.3.4.1.1.3	Integer(-32768..32767)	External analog input voltage measurement in mV or Module Temperature in 1/10ths of a degree Fahrenheit
EXT-2	1.3.6.1.4.1.32327.2.2.2.1.3.4.1.1.4	Integer(-32768..32767)	External analog voltage measurement in 10 mV units
EXT-3	1.3.6.1.4.1.32327.2.2.2.1.3.4.1.1.5	Integer(-32768..32767)	External analog voltage measurement in 10 mV units
EXT-4	1.3.6.1.4.1.32327.2.2.2.1.3.4.1.1.6	Integer(-32768..32767)	External analog input voltage measurement in 10 mV units
moduleStatus	1.3.6.1.4.1.32327.2.2.2.1.3.4.1.1.7	Integer(0..65535)	Represents external and digital input alarm status bits. See below
moduleState	1.3.6.1.4.1.32327.2.2.2.1.3.4.1.1.8	Integer(1..4)	Represents state of alarm module. See below
moduleDescription	1.3.6.1.4.1.32327.2.2.2.1.3.4.1.1.9	Text string	Textual description of the module status and module Information



## CAM/SAM module states

- 1 OK
- 2 Fail
- 3 Disabled / Not configured
- 4 Invalid module Id

## Module Information Bits

- 0x1 Alarm module is present.
- 0x2 Alarm module is SAM.
- 0x4 Ext-1 value is degrees Celsius.
- 0x8 Spare.

## Module Status Bits

- 0x0001 Ext-1 input alarm active.
- 0x0002 Ext-2 input alarm active.
- 0x0004 Ext-3 input alarm active.
- 0x0008 Ext-4 input alarm active.
- 0x0010 DI-1 input alarm active.
- 0x0020 DI-2 input alarm active.
- 0x0040 DI-3 input alarm active.
- 0x0080 DI-4 input alarm active.
- 0x0100 DI-5 input alarm active.
- 0x0200 DI-6 input alarm active.
- 0x0400 DI-7 input alarm active.
- 0x0800 DI-8 input alarm active.
- 0x1000 DI-9 input alarm active.
- 0x2000 DI-10 input alarm active.

An example of CAM/SAM status table is;

SNMP Table - .iso.org.dod.internet.private.enterprises.rfiIndustries.rfiPublic.rfiProducts.rfiAxMProduct.axmAlarmMIB.statusAlarmEntry.statusCamSamNode.statusCamSamTable								
moduleIndex	moduleInfo	eXT-1	eXT-2	eXT-3	eXT-4	moduleStatus	moduleState	moduleDescription
almMod1(1)	1	0	0	0	0	8117	fail(2)	CAM Input; DI(1,2,4,5,6,7,8,9)-FAIL; EXT(1,3)-FAIL
almMod2(2)	0	32767	32767	32767	32767	0	disabled(3)	MODULE NOT PRESENT
almMod3(3)	0	32767	32767	32767	32767	0	disabled(3)	MODULE NOT PRESENT
almMod4(4)	0	32767	32767	32767	32767	0	disabled(3)	MODULE NOT PRESENT
almMod5(5)	0	32767	32767	32767	32767	0	disabled(3)	MODULE NOT PRESENT
almMod6(6)	0	32767	32767	32767	32767	0	disabled(3)	MODULE NOT PRESENT
almMod7(7)	0	32767	32767	32767	32767	0	disabled(3)	MODULE NOT PRESENT
almMod8(8)	0	32767	32767	32767	32767	0	disabled(3)	MODULE NOT PRESENT
almMod9(9)	3	4974	491	491	491	16123	fail(2)	SAM Input; DI(1,2,3,4,5,7,8,9,10)-FAIL; EXT(1,2,4)-FAIL
almMod10(10)	0	32767	32767	32767	32767	0	disabled(3)	MODULE NOT PRESENT

**Note:** The levels will be reported as +32767 if the respective input is not enabled.  
Analog values are applicable only for SAM module.

### System status table entry objects (1.3.6.1.4.1.32327.2.2.2.1.3.5.1.1)

Object name	OID	Syntax	Description
systemIndex	1.3.6.1.4.1.32327.2.2.2.1.3.5.1.1.1	Integer(0..1)	0 - System summary alarm status 1 - System login/access failure attempt status
systemStatus	1.3.6.1.4.1.32327.2.2.2.1.3.5.1.1.2	Integer(0..65535)	System summary status bits
systemState	1.3.6.1.4.1.32327.2.2.2.1.3.5.1.1.3	Integer(1,2,4)	State corresponding to "System summary alarm status" or "System login/access status"
systemDescription	1.3.6.1.4.1.32327.2.2.2.1.3.5.1.1.4	Text string	Textual description of the status

#### System states:

- 1 OK
- 2 Fail
- 4 Invalid index

#### System summary alarm status

##### System Status Bits

0x0001 Lock detect fail for Receive synthesisers.  
 0x0002 Lock detect failed for Transmit synthesisers.  
 0x0004 One or more Tx Power level failures are present.  
 0x0008 One or more Tx VSWR fails are present.  
 0x0010 Rx Power level failure is present.  
 0x0020 System hardware alarms summary. (See Hardware Alarm Bits)  
 0x0040 Antenna Isolation test failure present.  
 0x0080 One or more CAM/SAM External or General Purpose Digital Input 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 Alarms

Internal 5V rail is out of limit.  
 Internal hardware failure – SD-Card.

**Note:** These are not presented separately, but any Hardware Alarm Bit(s) will set the 0x0020 bit of the (above) System Status Bits.

#### System login/access status

**Note:** System status not applicable

An example of system status table is;

SNMP Table - .iso.org.dod.internet.private.enterprises.rfiIndustries.rfiPublic.rfiProducts.rfiAxMProduct.axmAlarmMIB.statusAlarmEntry.statusSystemNode.statusSystemTable			
systemIndex	systemStatus	systemState	systemDescription
SystemStatus(0)	58712	fail(2)	SYS=FAIL, RX=FAIL, TXPWR=OK, TXVSWR=FAIL, RSM=FAIL
SystemAccess(1)	0	fail(2)	System Access Lockout Alert, Source=192.168.1.110, 192.168.1.110



The SNMP features of the APM support monitoring by the Motorola UEM. An example of an APM being monitored by the UEM is shown here;

## General Information

Managed Resource: 184.10.128.71 [Edit](#)  
Subsystem: 184.10.128.0 [Edit](#)  
IP Address: 184.10.128.71  
Source: 184.10.128.71:FMT\_RFIAPM  
Type: RFI APM  
Class Name: DeviceManagedResource  
Managed: Yes

## + More Information

## + Relationships

## + Note

## - Objects

### ▼ Managed Resources

#### ▼ 184.10.128.71

Communication

Synchronization

ACCESS

Discovery

SUMMARY

#### ▼ ISOL-STATUS

Antisolation\_803.768750...

RxSystem-1\_804.768750...

RxSystem-2\_802.243750...

RxSystem-3\_799.481250...

TxRejection-1\_774.76875...

TxRejection-2\_774.26875...

TxRejection-3\_774.01875...

TxRejection-4\_773.76875...

TxRejection-5\_773.51875...

TxRejection-6\_772.24375...

TxRejection-7\_771.99375...

TxRejection-8\_769.48125...

#### ▼ RX-STATUS

PORT\_0\_CHANNEL\_1

PORT\_0\_CHANNEL\_2

PORT\_0\_CHANNEL\_3

PORT\_0\_CHANNEL\_4

PORT\_0\_CHANNEL\_5

PORT\_0\_CHANNEL\_6

PORT\_0\_CHANNEL\_7

PORT\_0\_CHANNEL\_8

#### ▼ TX-STATUS

PORT\_1\_CHANNEL\_1

PORT\_1\_CHANNEL\_2

PORT\_1\_CHANNEL\_3

PORT\_1\_CHANNEL\_4

PORT\_1\_CHANNEL\_5

PORT\_1\_CHANNEL\_6

PORT\_1\_CHANNEL\_7

PORT\_1\_CHANNEL\_8

- END -