MICROSENS

Quadruple Transponder Module

Overview

Quadruple Transponder Module is a part of MICROSENS 10G Transport Platform, a high performance and flexible carrier-class transmission system. The 10G Transport Platform enables increasing transport capacities in CWDM, DWDM and SDH networks. The use of wide range TDM modules permits to reduce the number of necessary wavelengths and to decrease the overall cost of the application. Ethernet over SDH modules enable using existing SONET/SDH infrastructure for IP transmission.

The general features of the system:

- 19" 2U Chassis with 5 module slots and management card
- Max. 5x single size modules i.e. 2x double size + 1x single size module
- Hot swappable modules & power supplies
- Redundant power supplies with -48 VDC input (opt. 230 VAC)
- Exchangeable air- and filter module
- Wide range of functional xWDM and TDM modules available

The functional modules of 10G Transport Platform include:

- TDM 8x GBE or 8x GFC to 10G/OC-192/STM-64
- TDM 5x GBE or 5x 2GFC to OC-192/STM-64
- TDM 4x OC-48/STM-16 to 10G/OC-192/STM-64
- TDM 2x GBE and 2x GFC to OC-48/STM-16
- 10G transponder with 3R, XFP and fixed Laser Versions
- 10G protocol converter 10G LAN to 10G WAN (OC-192/STM-64)
- DWDM MUX/DeMUX, OADMs, EDFAs

Introduction

The Quadruple Transponder Module is a 10G Transport Platform allowing four times the same functionnality: Media conversation and Retiming, Reshaping and Retransmission of the signal from 155 Mb/s up to 4.25 Gb/s.

Features

- 4 Media Converter
- Signal repeater with 3R functions:
  - Retiming
  - Reshaping
  - Retransmitting
- Supports the following protocols:
  - OC-3/STM1
  - OC-12/STM4
  - OC-48/STM16
  - GbE
  - 1GFC
  - 2GFC
  - 4GFC
  - Fast Ethernet
  - OC-3/STM1-FEC
  - OC-12/STM4-FEC
  - OC-48/STM16-FEC
- SFP for Line 1A, 1B, 1C ,1D, 2A, 2B, 2C and 2D physical interface
- DDM (Digital Diagnostic Monitoring) information from SFP

System description

The block diagram for the MS430584M is given in Figure 1.
The MS430584M includes four times the same functionality. The Technical Specification will discuss about the first media converter (Line 1A and Line 2A). All the features of the first media converter are also available on the three other ones (Line 1B and 2B, Line 1C and 2C and Line 1D and 2D).

The MS430584M is a bi-directional device that offers media convertion/regeneration functionality:

- From one interface input signal (Line 1A or Line 2A) to one interface output signal (Line 2A or Line 1A).

The MS430584M includes also several sections composed of:

- Controller block, providing interfacing to the chassis controller board hosting the SNMP Agent.

- Power supplies: generates different internal power supplies from the -48V of the chassis backplane

- Front panel LEDs indicating the status of the interfaces and the MS430584M common functions
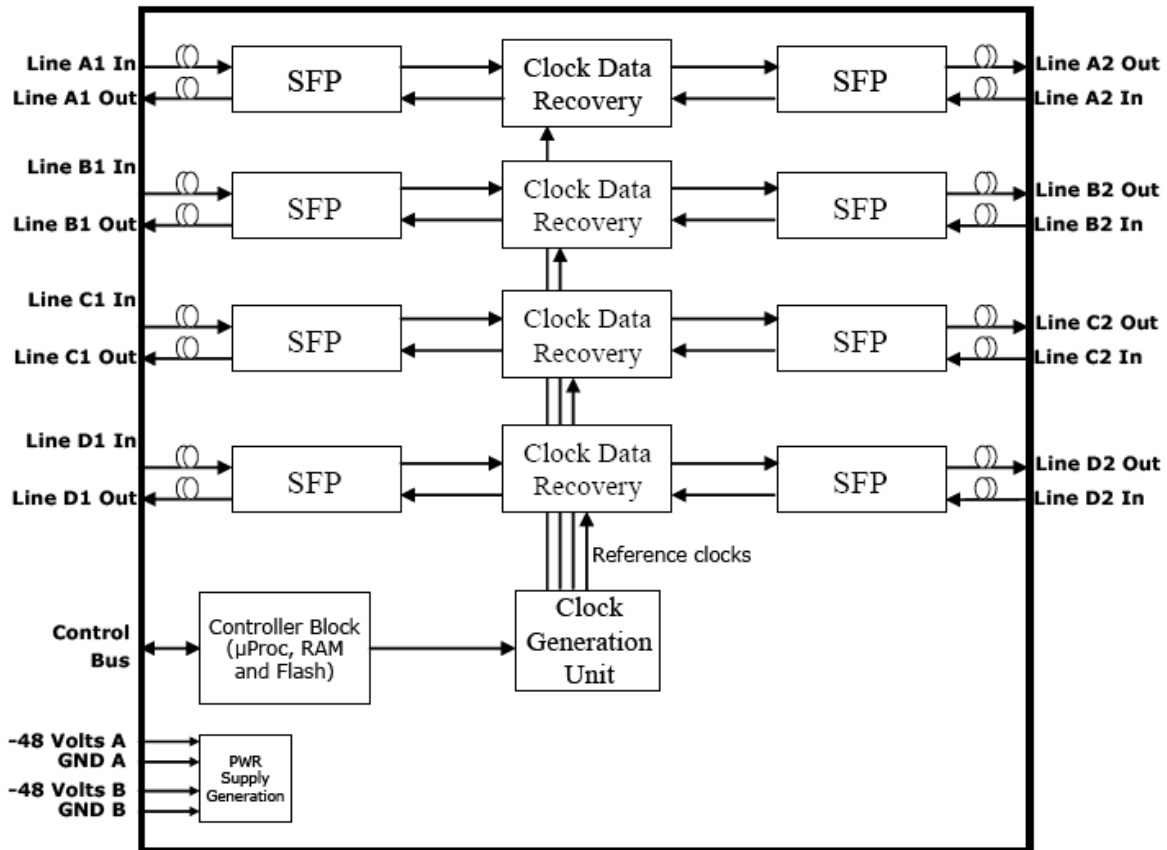

Figure 1: MS430584M Block diagram.

Media converter / Regeneration description

The received signal is first converted from optical signal to electrical signal through the SFP interface. Then the electrical signal is converted to an optical signal through the second SFP interface. These two conversions (optical to electrical and then electrical to optical) perform a retiming, reshaping and retransmission of the optical signal from the Line 1A (or Line 2A) input to the Line 2A (or Line 1A) output. Upon the SFP type used on Line 1A and Line 2A, it is possible to perform, together with the signal regeneration, a media convertion (850nm to 1310nm, CWDM to DWDM, etc…)

The following alarms are provided to the controller block:

- Line 1A and Line 2A Loss of incoming Signal

- Line 1A and Line 2A Laser Shutdown

The following measures are provided to the controller block:

- SFP temperature in °C

- SFP voltage in V

- SFP receive power in dBm

- SFP transmit power in dBm

- SFP laser pump current (bias) in mA

Clock Generation Unit

The Clock Generation Unit provides the reference clock to the Line 1A and Line 2A optical interfaces according to the parameter given by the Controller Block. The reference clock is internal to the MS430584M and has a stability of +/- 50 ppm. The Clock Generation Unit can provide a reference clock from 125 Mb/s up to 4.25 Gb/s. Therefore the MS430584M can support the following protocols:

Protocol	Bitrate
Fast Ethernet	125 Mb/s
OC-3/STM1	155.52 Mb/s
OC-3/STM1-FEC	166.62 Mb/s
OC-12/STM4	622.08 Mb/s
OC-12/STM4-FEC	666.51 Mb/s
1GFC	1.0625 Gb/s
GbE	1.25 Gb/s
2GFC	2.125 Gb/s
OC48/STM16	2.448 Gb/s
OC48/STM16-FEC	2.666 Mb/s
4GFC	4.25 Mb/s

Each media converter of the MS430584M can be independently configured to work with different bit rate.

Controller Block

The controller block is composed of a microprocessor associated with Flash and RAM memories. The controller block collects information from different functional blocks and configures the HW according to a configuration file received. The raw information (alarms, monitoring, inventory …) generated by the HW are processed by the microprocessor and delivered to the MICROSENS Chassis Management Board as high level consolidated data.

Out of Service and In Service states

Individual line
An individual command is accessible to set a single line Out of Service. When a line is Out of Service, the following information is provided

- Local OS: The local line port is Out of Service

An Out of Service port has the following behaviour

- The SFP Laser is be shut down

- All the alarms of this port are masked (except Local OS).

- All the SFP measures of this line port are disabled (the value is set to 0).

When the line port is In Service, all the disabled features previously named are enabled again and the alarms are unmasked.

MS430584M
A command is accessible to set the complete MS430584M Out of Service. In that case, the eight ports are set Out of Service.

Interface Specifications

Line 1A and Line 2A interfaces are provided by SFP transceivers. The optical characteristics are therefore given in the data sheet of the SFPs plugged into the MS430584M module.

SNMP User Manual

Configuration

Access Configuration
Certain aspects of the line 1 and line 2 are user modifiable. In the following procedures the modifications are indicated at bit level.

Take note of your SNMP manager's requirements.

For example setting the bits 6, 3, 2 and 0 to 1 will yield the following values:

15	14	13	12		11	10	9	8		7	6	5	4		3	2	1	0	Bit Number
0	0	0	0		0	0	0	0		0	1	0	0		1	1	0	1	Binary
									4D										Hexadecimal
									77										Decimal

Line 1 optical interface Configuration

Three objects are dedicated to the Line 1 of each Media Converter (A, B, C ,D) optical interface configuration:

> ms430584mCfgline1TrscvCtrlA
> ms430584mCfgline1TrscvCtrlB
> ms430584mCfgline1TrscvCtrlC
> ms430584mCfgline1TrscvCtrlD

This allows the configuring of the initialisation of the Line 1 SFP laser state.

> ms430584mCfgline1OosModeA
> ms430584mCfgline1OosModeB
> ms430584mCfgline1OosModeC
> ms430584mCfgline1OosModeD

This allows the configuring of the initialisation of the Line 1 service state.

> ms430584mCfgline1ProtocolA
> ms430584mCfgline1ProtocolB
> ms430584mCfgline1ProtocolC
> ms430584mCfgline1ProtocolD

This allows the configuring of the initialisation of the Line 1 and Line 2 bitrate.

Location: \microsens\modulems430584m\ms430584mConfig\ms430584mCfgStartup\ ms430584mtableline1Startup\

The following table details the meaning of each bit as well the default values:

ms430584mCfgline1TrscvCtrlA			
Bit	**Default value**	**Bit Name**	**Description**
Bit 0	0	Line 1 SFP Laser Off	Line 1 SFP Laser state: 0: SFP Laser ON 1: SFP Laser OFF
Bit 7-1	0000000	Reserved	Set to Default value
Bit 15-8	00000000	Reserved	Set to Default value

ms430584mCfgline1OosModeA			
Bit	**Default value**	**Bit Name**	**Description**
Bit 0	0	Line 1 Service state	Line 1 Service state 0: In Service 1: Out of Service
Bit 7-1	0000000	Reserved	Set to Default value
Bit 15-8	00000000	Reserved	Set to Default value

ms430584mCfgline1ProtocolA			
Bit	**Default value**	**Bit Name**	**Description**
Bit 3-0	0000	Line 1 and Line 2 bitrate	Line 1 and Line 2 bitrate 0: 1.25 Gb/s (GbE) 1: 1.0625 Gb/s (1GFC) 2: 2.125 Gb/s (2GFC) 4: 2.488 Gb/s (OC-48/STM16) 9: 155.52 Mb/s (OC-3/STM1) 10: 622.08 Mb/s (OC-12/STM4) 11: 2,5 Mb/s (2GbE) 12: 4.25 Mb/s (4GFC) 14: 125 Mb/s (Fast Ethernet)
Bit 7-4	0000	Reserved	Set to Default value
Bit 15-8	00000000	Reserved	Set to Default value

Line 2 optical interface Configuration
Two objects are dedicated to the Line 2 of each Media Converter (A, B, C ,D) optical interface configuration:

    ms430584mCfgline2TrscvCtrlA
    ms430584mCfgline2TrscvCtrlB
    ms430584mCfgline2TrscvCtrlC
    ms430584mCfgline2TrscvCtrlD

This allows the configuring of the initialisation of the Line 2 SFP laser state.

    ms430584mCfgline2OosModeA
    ms430584mCfgline2OosModeB
    ms430584mCfgline2OosModeC
    ms430584mCfgline2OosModeD

This allows the configuring of the initialisation of the Line 2 service state.

Location: \microsens\modulems430584m\ms430584mConfig\ms430584mCfgStartup\ms430584mtableline2Startup\

The following table details the meaning of each bit as well as the default values:

ms430584mCfgline2TrscvCtrlA			
Bit	**Default value**	**Bit Name**	**Description**
Bit 0	0	Line 2 SFP Laser Off	Line 2 SFP Laser state: 0: SFP Laser ON 1: SFP Laser OFF
Bit 7-1	0000000	Reserved	Set to Default value
Bit 15-8	00000000	Reserved	Set to Default value

ms430584mCfgline2OosModeA			
Bit	**Default value**	**Bit Name**	**Description**
Bit 0	0	Line 2 Service state	Line 2 Service state 0: In Service 1: Out of Service
Bit 7-1	0000000	Reserved	Set to Default value
Bit 15-8	00000000	Reserved	Set to Default value

How to modify the Configuration

The following procedure outlines how to modify any configuration. This can be performed at any time, keeping in mind that the cold reset will affect the traffic.

This is module type dependant. Consu lt the table in the Description section to determine if it is applicable or not.

The following modifications may be achieved by using control objects in:

...\microsens\modulems430584m\ms430584mcontrolsWrite\

However modifications made in this way are lost following a reset.

The Line and Client configuration modification can be performed at the same time and applied at the same time with one reset. Traffic implications will depend on your choice of reset.

Procedure

- Ensure that the correct module is selected for management. Consult the object:

  mgnt2GigmSelectedBoard

  Location:…\microsens\mgnt2\mgnt2SNMPAgentData\

  mgnt2ModulesManagement\
- Change if necessary.
- Determine a value corresponding to the configuration profile you require.
- Perform an SNMP SET to write the value corresponding to the required configuration profile into the SNMP agent.
- Perform a SET to "on" the object:

  ms430584mCfgWriteConfiguration.

  Location: ...\microsens\modulems430584m\ms430584mConfig\

  This will load the new configuration from the SNMP agent to the modules RAM.

- Transfer the new configuration into the module using the object:

    ms430584mCtrlConfFlash
    Location:...\microsens\modulems430584m\ms430584mcontrolsWrite\
    ms430584mCtrlOther\ms430584mCtrlsynth0\

    This saves the configuration of the module as configuration2 in the flash memory.

- Restart the module using a cold reset or by powering down/up to apply the configuration modification. Reset information can be found in the Software management section.

At that point, configuration 2 becomes the default configuration of the module.

End

Management

Inventory
Accessing the inventory allows the user to obtain information on the modules current hardware and software status. The objects described below may be found in:

    …\microsens\modulems430584m\ms430584mri\

Before consulting the inventory ensure that the correct module is selected. Consult the object:
    mgnt2GigmSelectedBoard
    Location…\microsens\mgnt2\mgnt2SNMPAgentData\mgnt2Modules
    Management\

Change if necessary.

The following are inventory examples:

    ms430584mRinvHwPlatform

This object returns information relating to the hardware platform.

    MS HW PLATFORM
    Vendor: microsens
    Mnemonic: MS430584M
    Part Number: 2MS00072AAAA01
    Serial Number: 000010
    Date Code (yymmddww): 06160104

ms430584mRinvReloadInventory
Setting this object triggers an inventory read from the module to the agent, (refresh).

    ms430584mRinvSwPlatform
    Module software package description.
    SW PACKAGE
    Mnemonic: MS430584M

Part Number: 5MS07000AAAA01
Release date(yymmdd): 060509
SW Part Number: 3SW07001AAAA
Version Number: 02
Release date(yymmdd): 060510

ms430584mRinvLine1Table
This object returns information relating to the Line 1A, 1B, 1C and 1D SFPs in the Module with the following headings:

Vendor:
Part Number:
Revision Level:
Serial Number:
Date Code (yymmdd):

The table index counts from line 0. The index 0 stands for Line 1A, index 1 stands for Line 1B, etc…

ms430584mRinvLine2Table
This object returns information relating to the Line 2 SFP in the Module with the following headings:

Vendor:
Part Number:
Revision Level:
Serial Number:
Date Code (yymmdd):

The table index counts from line 0. The index 0 stands for Line 2A, index 1 stands for Line 2B, etc…

Alarms
In order to retrieve Alarm status information a polling mechanism must be put in place. The appearance of a trap message signals the occurrence of an Alarm. The following table lists the possible module alarms and recommended actions:

Name	Description	ACTION
ms430584mAlmConfTableSave	Module configuration Save: This OID is at 1 during the saving of a new configuration table in the module Flash memory.	No Action, Information only
ms430584mAlmInvUpload	Inventory Upload: This OID is at 1 during the uploading of Module inventory information.	No Action, Information only
ms430584mAlmConfTableLoad	Module configuration Load: This OID is at 1 during the loading of configuration tables in the modules RAM.	No Action, Information only
ms430584mAlmCorrelatOff	Not used: This OID, when set, indicates that alarm correlation is not being performed.	No Action, Information only

Name	Description	ACTION
ms430584mAlmModuleGlobFailure	Module Failure: This OID is set on detection of a failure originating from the Module	Correlate all alarms. If Alarm persists change the module.
ms430584mAlmDefFuseA	Fuse A fail: This OID indicates that the fuse of the power input A is in fail condition	Correlate all alarms. If Alarm persists change the module.
ms430584mAlmDefFuseB	Fuse B Fail: This OID indicates that the fuse of the power input B is in fail condition	Correlate all alarms. If Alarm persists change the module.
ms430584mAlmLine1TxPwLowWngPortn	Line 1 SFP Tx Power Low warning: Warning indicating that the SFP output power of port is lower than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine1TxPwrHighWngPortn	Line 1 SFP Tx Power High warning: Warning indicating that the SFP output power of port is higher than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine1TxBiasLowWngPortn	Line 1 SFP Bias Low warning: Warning indicating that the SFP laser bias current of port is lower than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine1TxBiasHighWngPortn	Line 1 SFP Bias High warning: Warning indicating that the SFP laser bias current of port is higher than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine1VccLowWngPortn	Line 1 SFP Power Supply Low warning: Warning indicating that the SFP power supply of port is lower than the threshold value written in the SFP EEPROM	Correlate all warnings and Alarms. Carry out necessary maintenance procedures.
ms430584mAlmLine1VccHighWngPortn	Line 1 SFP Power Supply High warning: Warning indicating that the SFP power supply of port is higher than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine1TempLowWngPortn	Line 1 SFP Temp Low warning: Warning indicating that the SFP temperature of port is lower than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine1TempHighWngPortn	Line 1 SFP Temp High warning: Warning indicating that the SFP temperature of port is higher than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine1RxPwrLowWngPortn	Line 1 SFP Rx Power Low warning: Warning indicating that the SFP input power of port is lower than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.

Name	Description	ACTION
ms430584mAlmLine1RxPwrHighWngPortn	Line 1 SFP Rx Power High warning: Warning indicating that the SFP input power of port is higher than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine1TxPwrLowAlaPortn	Line 1 SFP Tx Power Low: Alarm indicating that the SFP output power of port is lower than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine1Line1TxPwrHighAlaPortn	Line 1 SFP Tx Power High: Alarm indicating that the SFP output power of port is higher than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine1TxBiasLowAlaPortn	Line 1 SFP Bias Low: Alarm indicating that the SFP laser bias current of port is lower than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine1TxBiasHighAlaPortn	Line 1 SFP Bias High: Alarm indicating that the SFP laser bias current of port is higher than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine1VccLowAlaPortn	Line 1 SFP Power Supply Low: Alarm indicating that the SFP power supply of port is lower than the threshold value written in the SFP EEPROM	Correlate all warnings and Alarms. Carry out necessary maintenance procedures.
ms430584mAlmLine1VccHighAlaPortn	Line 1 SFP Power Supply High: Alarm indicating that the SFP power supply of port is higher than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine1TempLowAlaPortn	Line 1 SFP Temp Low: Alarm indicating that the SFP temperature of port is lower than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine1TempHighAlaPortn	Line 1 SFP Temp High: Alarm indicating that the SFP temperature of port is higher than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine1RxPwrLowAlaPortn	Line 1 SFP Rx Power Low: Alarm indicating that the SFP input power of port is lower than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine1RxPwrHighAlaPortn	Line 1 SFP Rx Power High: Alarm indicating that the SFP input power of port is higher than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.

Name	Description	ACTION
ms430584mAlmLine1SfpAbsentPortn	Line 1 SFP not plugged: This OID indicates that the SFP module is not present in the Line 1 port.	Plug in the Optical Module. If Alarm persists change the optical component.
ms430584mAlmLine1DdmAbsentPortn	DDM supported on Line 1 SFP: This OID indicates that the Line 1 SFP module does not support the Digital Diagnostic Monitoring function	If SFP supports DDM change the SFP, else ignore.
ms430584mAlmLine1HwFailAccPortn	Line 1 HW Fail: This OID indicates a failure on Line 1 port, most probably caused by a HW issue.	Correlate relevant alarms. Carry out necessary maintenance procedures.
ms430584mAlmLine1LsdPortn	Line 1 SFP optical TX ON: This OID indicates the Line 1 SFP transmitter output has shut down.	No action information only.
ms430584mAlmLine1LocalOosPortn	Local Line 1 port In Service: This OID indicates that the local Line 1 port is In Service (1) or Out of Service (2)	No action information only.
ms430584mAlmLine1DwCaisPortn	Line 1 AIS inserted: This OID indicates a CAIS has been inserted on the output Line 1 port.	No action information only.
ms430584mAlmLine1SfpDdmWarningPortn	Warning on Line 1 SFP DDM: This OID indicates a warning is being received from the Line 1 SFP DDM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine1SfpDdmAlmPortn	Alarm on Line 1 SFP DDM: This OID indicates an alarm is being received from the Line 1 SFP DDM	Correlate all alarms. Carry out necessary maintenance procedures.
ms430584mAlmLine1FailAccPortn	Line 1 Access Fail: This OID indicates a failure on the Line 1 port	Correlate relevant alarms. Carry out necessary maintenance procedures.
ms430584mAlmLine1LasFailPortn	Line 1 SFP Tx Failed: This OID indicates that the transmitter fails for the SFP plugged into the Line 1 port (this alarm reports the transmitter failure alarm generated by the SFPs)	Correlate relevant alarms. If Alarm persists replace the Client SFP.
ms430584mAlmLine1LosPortn	Loss of Optical signal on Line 1: This OID indicates that no signal is present on the SFP of the Line 1 port	Check client status. Carry out necessary maintenance procedures.
ms430584mAlmLine1LosCdrPortn	Loss Of Signal on CDR On Line 1: ?????????	Check client status. Carry out necessary maintenance procedures.
ms430584mAlmLine1ErrSigCdrPortn	Error Signal on CDR On Line 1: ??????????	Check client status. Carry out necessary maintenance procedures.
ms430584mAlmLine1CaisIndicPortn	CAIS inserted by GW on Line 1: This OID indicates a Line 1 AIS has been inserted in the downstream Line 1 port	No action information only.

Name	Description	ACTION
ms430584mAlmLine2TxPwLowWngPortn	Line 2 SFP Tx Power Low warning: Warning indicating that the SFP output power of port is lower than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine2TxPwrHighWngPortn	Line 2 SFP Tx Power High warning: Warning indicating that the SFP output power of port is higher than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine2TxBiasLowWngPortn	Line 2 SFP Bias Low warning: Warning indicating that the SFP laser bias current of port is lower than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine2TxBiasHighWngPortn	Line 2 SFP Bias High warning: Warning indicating that the SFP laser bias current of port is higher than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine2VccLowWngPortn	Line 2 SFP Power Supply Low warning: Warning indicating that the SFP power supply of port is lower than the threshold value written in the SFP EEPROM	Correlate all warnings and Alarms. Carry out necessary maintenance procedures.
ms430584mAlmLine2VccHighWngPortn	Line 2 SFP Power Supply High warning: Warning indicating that the SFP power supply of port is higher than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine2TempLowWngPortn	Line 2 SFP Temp Low warning: Warning indicating that the SFP temperature of port is lower than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine2TempHighWngPortn	Line 2 SFP Temp High warning: Warning indicating that the SFP temperature of port is higher than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine2RxPwrLowWngPortn	Line 2 SFP Rx Power Low warning: Warning indicating that the SFP input power of port is lower than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine2RxPwrHighWngPortn	Line 2 SFP Rx Power High warning: Warning indicating that the SFP input power of port is higher than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine2TxPwrLowAlaPortn	Line 2 SFP Tx Power Low: Alarm indicating that the SFP output power of port is lower than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.

Name	Description	ACTION
ms430584mAlmLine2Line2TxPwrHighAlaPortn	Line 2 SFP Tx Power High: Alarm indicating that the SFP output power of port is higher than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine2TxBiasLowAlaPortn	Line 2 SFP Bias Low: Alarm indicating that the SFP laser bias current of port is lower than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine2TxBiasHighAlaPortn	Line 2 SFP Bias High: Alarm indicating that the SFP laser bias current of port is higher than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine2VccLowAlaPortn	Line 2 SFP Power Supply Low: Alarm indicating that the SFP power supply of port is lower than the threshold value written in the SFP EEPROM	Correlate all warnings and Alarms. Carry out necessary maintenance procedures.
ms430584mAlmLine2VccHighAlaPortn	Line 2 SFP Power Supply High: Alarm indicating that the SFP power supply of port is higher than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine2TempLowAlaPortn	Line 2 SFP Temp Low: Alarm indicating that the SFP temperature of port is lower than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine2TempHighAlaPortn	Line 2 SFP Temp High: Alarm indicating that the SFP temperature of port is higher than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine2RxPwrLowAlaPortn	Line 2 SFP Rx Power Low: Alarm indicating that the SFP input power of port is lower than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine2RxPwrHighAlaPortn	Line 2 SFP Rx Power High: Alarm indicating that the SFP input power of port is higher than the threshold value written in the SFP EEPROM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine2SfpAbsentPortn	Line 2 SFP not plugged: This OID indicates that the SFP module is not present in the Line 2 port.	Plug in the Optical Module. If Alarm persists change the optical component.
ms430584mAlmLine2DdmAbsentPortn	DDM supported on Line 2 SFP: This OID indicates that the Line 2 SFP module does not support the Digital Diagnostic Monitoring function	If SFP supports DDM change the SFP, else ignore.

Name	Description	ACTION
ms430584mAlmLine2HwFailPortn	Line 2 HW Fail: This OID indicates a failure on Line 2 port, most probably caused by a HW issue.	Correlate relevant alarms. Carry out necessary maintenance procedures.
ms430584mAlmLine2LsdPortn	Line 2 SFP optical TX ON: This OID indicates the Line 2 SFP transmitter output has shut down.	No action information only.
ms430584mAlmLine2LocalOosPortn	Local Line 2 port In Service: This OID indicates that the local Line 2 port is In Service (1) or Out of Service (2)	No action information only.
ms430584mAlmLine2DdmWarningPortn	Warning on Line 2 SFP DDM: This OID indicates a warning is being received from the Line 2 SFP DDM	Correlate all warnings. Carry out necessary maintenance procedures.
ms430584mAlmLine2DdmAlmPortn	Alarm on Line 2 SFP DDM: This OID indicates an alarm is being received from the Line 2 SFP DDM	Correlate all alarms. Carry out necessary maintenance procedures.
ms430584mAlmLine2FailPortn	Line 2 Access Fail: This OID indicates a failure on the Line 2 port	Correlate relevant alarms. Carry out necessary maintenance procedures.
ms430584mAlmLine2LasFailPortn	Line 2 SFP Tx Failed: This OID indicates that the transmitter fails for the SFP plugged into the Line 2 port (this alarm reports the transmitter failure alarm generated by the SFPs)	Correlate relevant alarms. If Alarm persists replace the Client SFP.
ms430584mAlmLine2LosPortn	Loss of Optical signal on Line 2: This OID indicates that no signal is present on the SFP of the Line 2 port	Check client status. Carry out necessary maintenance procedures.
ms430584mAlmLine2LosCdrPortn	Loss Of Signal on CDR On Line 2: ?????????	Check client status. Carry out necessary maintenance procedures.
ms430584mAlmLine2ErrSigCdrPortn	Error Signal on CDR On Line2: ??????????	Check client status. Carry out necessary maintenance procedures.
ms430584mAlmLine2CaisIndicPortn	CAIS inserted by GW on Line 2: This OID indicates a Line 2 AIS has been inserted in the downstream Line 2 port	No action information only.

Traps

A trap is an unsolicited, asynchronous event that the MGNT generates to indicate a status change; e.g.: a trap is generated on the detection of a start of an alarm and an end of an alarm.

It is important to set the IP address of t he manager correctly in order to receive the traps.

There are two types of trap:

- Line 1 traps originating from Line 1 problems.
- Line 2 traps originating from Line 2 problems.

These are further categorised as follows:

Critical: –Traffic affecting, demanding immediate attention.
Urgent: –Indicating that maintenance is required.
Non-urgent: – Warning, information, non traffic affecting origin DDM.

The binding information that accompanies a trap is for information only and should be used to make the alarm polling more efficient.

The following table lists the possible traps originating from a MS430584M and their contributingalarms.

MS430584M Traps		
Name **Description**	**Bindings**	**Action**
ms430584mLine1TrapNotUrgentGoesOn Not urgent Line 1 fault is activated	ms430584mAlmLine1DdmWarningPortn ms430584mtrapPortNumber ms430584mtrapBoardNumber	Consult Alarms. Correlate warnings originating from the line. Carry out necessary maintenance procedures.
ms430584mLine1TrapNotUrgentGoesOff Not urgent Line 1 fault disappeared	ms430584mAlmLine1DdmWarningPortn ms430584mtrapPortNumber ms430584mtrapBoardNumber	No Action.
ms430584mLine1TrapUrgentGoesOn Urgent Line 1 fault is activated	ms430584mAlmLine1DdmAlmPor ms430584mtrapPortNumber ms430584mtrapBoardNumber tn	Consult Alarms. Correlate alarms originating from the line. Carry out necessary maintenance procedures.
ms430584mLine1TrapUrgentGoesOff Urgent Line 1 fault disappeared	ms430584mAlmLine1DdmAlmPor ms430584mtrapPortNumber ms430584mtrapBoardNumber	No Action.
ms430584mLine1TrapCritGoesOn Critical Line 1 fault is activated	ms430584mAlmLine1FailPortn ms430584mAlmLine1HwFailPortn ms430584mtrapPortNumber ms430584mtrapBoardNumber	Consult Alarms. Correlate alarms originating from the Module. Carry out necessary maintenance procedures.
ms430584mLine1TrapCritGoesOff Critical Line 1 fault disappeared	ms430584mAlmLine1FailPortn ms430584mAlmLine1HwFailPortn ms430584mtrapPortNumber ms430584mtrapBoardNumber	No Action.
ms430584mLine2TrapNotUrgentGoesOn Not urgent Line 2 fault is activated	ms430584mAlmLine2DdmWarningPortn ms430584mtrapPortNumber ms430584mtrapBoardNumber	Consult Alarms. Correlate warnings originating from the port. Carry out necessary maintenance procedures.
ms430584mLine2TrapNotUrgentGoesOff Not urgent Line 2 fault disappeared	ms430584mAlmLine2DdmWarningPortn ms430584mtrapPortNumber ms430584mtrapBoardNumber	No Action.

MS430584M Traps		
Name	**Bindings**	**Action**
Description		
ms430584mLine2TrapUrgentGoesOn	ms430584mAlmLine2DdmAlmPor ms430584mtrapPortNumber ms430584mtrapBoardNumber tn	Consult Alarms. Correlate alarms originating from the port. Carry out necessary maintenance procedures.
Urgent Line 2 fault is activated		
ms430584mLine2TrapUrgentGoesOff	ms430584mAlmLine2DdmAlmPor ms430584mtrapPortNumber ms430584mtrapBoardNumber	No Action.
Urgent Line 2 fault disappeared		
ms430584mLine2TrapCritGoesOn	ms430584mAlmLine2FailPortn ms430584mAlmLine2HwFailPortn ms430584mtrapPortNumber ms430584mtrapBoardNumber	Consult Alarms. Correlate alarms originating from the Module. Carry out necessary maintenance procedures.
Critical Line 2 fault is activated		
ms430584mLine2TrapCritGoesOff	ms430584mAlmLine2FailPortn ms430584mAlmLine2HwFailPortn ms430584mtrapPortNumber ms430584mtrapBoardNumber	No Action.
Critical Line 2 fault disappeared		
ms430584mPowerTrapUrgentGoesOn	ms430584mAlmDefFuseB ms430584mAlmDefFuseA ms430584mtrapBoardNumber	Consult Alarms. Correlate alarms originating from the module. Carry out necessary maintenance procedures.
Urgent power fault is activated		
ms430584mPowerTrapUrgentGoesOff	ms430584mAlmDefFuseB ms430584mAlmDefFuseA ms430584mtrapBoardNumber	No Action.
Urgent power fault disappeared		

Software Management

<u>Hardware Reset</u>
A Hardware reset may be performed on the MS430584M. This operation is performed by extracting and re-inserting the MS430584M in the Chassis. The following procedure describes the steps to follow to perform a hardware reset of the MS430584M module.

Procedure

- Using a flat head screwdriver, loosen the two holding screws on the frontplate, located at the top right-hand and bottom left-hand corners.

- Slide out the module for few centimetres

- Wait for 15 seconds

  Warning
  The wait ti me of 15 seconds is mandatory to insure to correct detection of the module extraction and re-insertion. Re-inserting the MS430584M module to early may casue communication problem between the MS430584M module and the management board.

- Slide in the module in the Chassis.

- Check the module has been correctly detected by the MGNT board using the object:

  mgnt2GigmBoardTable

Location:
…\microsens\mgnt2\mgnt2SNMPAgentData\mgnt2ModulesManagement\

Use the chassis User Manual SNMP for details about this OID.

- Using a flat head screwdriver; tighten the holding screw on the frontplate of module.

End

Software Cold Reset MS430584M
A software cold reset loads the software from the selected bank and the configuration into the operational memory. The configuration from conf2 is the first choice, if conf2 is empty then conf1; if conf1 is empty the default hardwired configuration is loaded.

This reset is traffic affecting and takes 20 seconds to complete.

The following outlines the steps to perform a Software cold reset on a MS430584M module:

Procedure

- Ensure that the correct module is selected for management. Consult the object:

  mgnt2GigmSelectedBoard
  Location:
  …\microsens\mgnt2\mgnt2SNMPAgentData\mgnt2ModulesManagement\

- Change if necessary.
- Start the reset:

  Set to "on "the object:
  ms430584mCtrlColdReset

  Location:…\ microsens\modulems430584m\ms430584mcontrolsWrite\
  ms430584mCtrlOther\ms430584mCtrlswMgnt

  Once this change is recognised the module starts to reset.

  Visual indication:
  The colour sequence of the SW led on the front panel of the module during a reset is:

  Green on > Red on > Green/Orange blinking > Green on

  Under normal conditions all LEDs return to green when the reset is complete. The status of the Line and Client Port LEDs depend on the local configuration. The duration of a Software Cold Reset on a MS430584M is approximately 25 seconds.

End

Warm Reset MS430584M
A warm reset only loads the selected software into the operational memory. This reset has no effect on the traffic takes approximately 20 seconds to complete.

Procedure

- Ensure that the correct module is selected for management. Consult the object:

  mgnt2GigmSelectedBoard

  Location:
  …\microsens\mgnt2\mgnt2SNMPAgentData\mgnt2ModulesManagement\

- Change if necessary.

- Start the reset:

  Set to "on "the object:
  ms430584mCtrlWarmReset,

  Location:... \microsens\modulems430584mm\ms430584mcontrolsWrite\
  ms430584mCtrlOther\ms430584mCtrlswMgnt

  Once this change is recognised the module starts to reset.

  Visual indications:
  The colour sequence of the SW led on the front panel of the module during a Warm Reset is:

  Green on > Red on > Green on

  Under normal conditions all LEDs return to green when the reset is complete. The status of the Line and Client Port LEDs depend on the local configuration.

End

Monitoring

In order to manage the various measurements available a polling mechanism is required, thereby allowing the uploading of several physical parameters such as SFP temperature, optical input power, etc. provided by the DDM. The DDM or Digital Diagnostic Monitoring in each SFP provides real-time monitoring of voltage and temperature readings of each optical component, together with thresholds and alarms.

The following describes the method of interpretation of the different types of measurements:

Temperature
The object:

> ms430584mMesrline1TemperatureTable
> Location:..\microsens\modulems430584m\ms430584mmeasures\
> ms430584mMesrClient\

, and

The object:

> ms430584mMesrline2TemperatureTable,
> Location:..\microsens\modulems430584m\ms430584mmeasures\
> ms430584mMesrLine\

, give the temperature value of the SFP plugged into Line 1 and Line 2, read from the DDM (Digital Diagnostic Monitoring) (Unit = °C) . The following formula must be applied to the returned value in order to obtain the actual temperature:

$$T (°C) = MSB + LSB/256$$

Parameter	Meaning	Format
MSB	Most Significant Byte	Signed Byte
LSB	Least Significant Byte	Unsigned Byte

For example:

A listing of ms430584mMesrportaTemperature outputs the following:

> ***** SNMP QUERY STARTED *****
> 1: ms430584mMesrportaTemperature (integer) 11066
> ***** SNMP QUERY FINISHED *****

The value returned from the SFP in Line 1 is: 11066. This is a decimal value, the Hexadecimal equivalent is: 2B3A

2B (hex) = 43 (dec) and 3A (hex) = 58 (dec)
So applying the formula: T = 43 + 58/256
Gives an actual temperature of: + 43.23°C

Voltage
The object:

> ms430584mMesrline1VoltTable
> Location:..\microsens\modulems430584m\ms430584mmeasures\
ms430584mMesrClient\
, and

The object:

> ms430584mMesrline2VoltTable,
> Location:..\microsens\modulems430584m\ms430584mmeasures\
ms430584mMesrLine\

, give the 3V3 voltage value of the SFP plugged into Line 1 and Line 2, read from the DDM (Digital Diagnostic Monitoring) (Unit = V). The following formula must be applied to the returned value in order to obtain the actual voltage:

$$3V3 (Volts) = AV/10000$$

Parameter	Meaning	Format
AV	Article Value	Unsigned word (16 bits)

For example:
A listing of the ms430584mMesrportaVolt outputs the following:

    ***** SNMP QUERY STARTED *****
    1: ms430584mMesrportaVolt (integer) 33094
    ***** SNMP QUERY FINISHED *****

The value returned from the SFP in Line 1 is: 33094.
So applying the formula: 3V3 (Volts) = 33094/10000
Gives an actual value of: 3.3094V

Bias
The object:

    ms430584mMesrline1TxBiasTable
    Location:..\microsens\modulems430584m\ms430584mmeasures\
    ms430584mMesrClient\
, and

The object:

    ms430584mMesrline2TxBiasTable,
    Location:..\microsens\modulems430584m\ms430584mmeasures\
ms430584mMesrLine\

, give the bias value of the SFP plugged into Line 1 and Line 2, read from the DDM (Digital Diagnostic Monitoring) (Unit = mA). The following formula must be applied to the returned value in order to obtain the bias:

$$Bias(mA) = AV/500$$

Parameter	Meaning	Format
AV	Article Value	Unsigned word (16 bits)

For example:
A listing of the ms430584mMesrportaTxBias outputs the following:

    ***** SNMP QUERY STARTED *****
    1: ms430584mMesrportaTxBias (integer) 11046
    ***** SNMP QUERY FINISHED *****

The value returned from the SFP in Line 1 is: 11046.
So applying the formula: Bias(mA) = 11046/500
Gives an actual value of: 22.092mA

Transmit Power
The object:

    ms430584mMesrline1TxPowerTable
    Location:..\microsens\modulems430584m\ms430584mmeasures\
ms430584mMesrClient\
, and

The object:

> ms430584mMesrline2TxPowerTable,
> Location:..\microsens\modulems430584m\ms430584mmeasures\
> ms430584mMesrLine\

This article gives the transmit power value of the SFP plugged into Line 1 and Line 2, read from the DDM (Digital Diagnostic Monitoring) (Unit = dBm).

The actual Transmit Power in dBm or mW can be obtained by applying the following formula to the returned value:

$$Tx\_Pwr(mW) = AV/10000$$
$$Tx\_Pwr(dBm) = 10xlog(AV/10000)$$

Parameter	Meaning	Format
AV	Article Value	Unsigned word (16 bits)

For example:
A listing of the ms430584mMesrportaTxPower outputs the following:

> ***** SNMP QUERY STARTED *****
> 1: ms430584mMesrportaTxPower (integer) 30
> ***** SNMP QUERY FINISHED *****

The value returned from the SFP in Line 1 is: 30.
So applying the formula: Tx_Pwr(mW) = 30/10000
Gives an actual value of: 0.003mW
And applying the formula: Tx_Pwr(dBm) = 10xlog(30/10000)
Gives an actual value of: -25.23dBm

Receive Power
The object:

> ms430584mMesrline1RxPowerTable
> Location:..\microsens\modulems430584m\ms430584mmeasures\
> ms430584mMesrClient\

, and

The object:

> ms430584mMesrline2RxPowerTable,
> Location:..\microsens\modulems430584m\ms430584mmeasures\
> ms430584mMesrLine\

This article gives the receive power value of the SFP plugged into Line 1 and Line 2, read from the DDM (Digital Diagnostic Monitoring) (Unit = dBm). The actual Receive Power in dBm or mW can be obtained by applying the following formula to the returned value:

$$Rx\_Pwr(mW) = AV/10000$$
$$Rx\_Pwr(dBm) = 10xlog(AV/10000)$$

Parameter	Meaning	Format
AV	Article Value	Unsigned word (16 bits)

For example:
A listing of the ms430584mMesrportaRxPower outputs the following:

     ***** SNMP QUERY STARTED *****
     1: ms430584mMesrportaRxPower (integer) 10
     ***** SNMP QUERY FINISHED *****

The value returned from the SFP in Line 1 is: 10.
So applying the formula: Rx_Pwr(mW) = 10/10000
Gives an actual value of: 0.001mW
And applying the formula: Rx_Pwr(dBm) = 10xlog(10/10000)
Gives an actual value of: -30dBm

Appendixes

Laser Class

Laser Class	Risks	General Requirements
1	Considered safe to eye and Skin under all reasonably foreseeable conditions of operation.	Protective housing: may be required.

MS430584M Leds description

LED	Status	Condition
SW	Green On	Normal
	Red On	Init./Reboot
HW	Green On	Normal
	Red On	Init./Reboot
S1 to S8	Green	Normal
	Red	Line Fault

OID	Name	Access	Description
1.3.6.1.4.1.20044.25.2	**ms430584malarms**		
1.3.6.1.4.1.20044.25.2.1	**ms430584mAlmOther**		
1.3.6.1.4.1.20044.25.2.1.1	**ms430584mAlmOtherNurg**		
1.3.6.1.4.1.20044.25.2.1.1.2	**ms430584mAlmsynthAlm2**		
1.3.6.1.4.1.20044.25.2.1.1.2.1	ms430584mAlmConfTableSave	r	Module configuration Save: This OID is at 1 during the saving of a new configuration table in the module Flash memory.
1.3.6.1.4.1.20044.25.2.1.1.2.2	ms430584mAlmInvUpload	r	Inventory Upload: This OID is at 1 during the uploading of module inventory information.
1.3.6.1.4.1.20044.25.2.1.1.2.3	ms430584mAlmConfTableLoad	r	Module configuration Load: This OID is at 1 during the loading of configuration tables in the modules RAM.
1.3.6.1.4.1.20044.25.2.1.1.2.4	ms430584mAlmCorrelatOff	r	Not used: This OID, when set, indicates that alarm correlation is not being performed.
1.3.6.1.4.1.20044.25.2.1.2	**ms430584mAlmOtherUrg**		
1.3.6.1.4.1.20044.25.2.1.3	**ms430584mAlmOtherCrit**		
1.3.6.1.4.1.20044.25.2.1.3.0	**ms430584mAlmsynthAlm0**		
1.3.6.1.4.1.20044.25.2.1.3.0.9	ms430584mAlmModuleGlobFailure	r	Module Failure: This OID is set on detection of a failure originating from the module
1.3.6.1.4.1.20044.25.2.1.3.0.15	ms430584mAlmDefFuseA	r	Fuse A fail: This OID indicates that the fuse of the power input A is in fail condition
1.3.6.1.4.1.20044.25.2.1.3.0.16	ms430584mAlmDefFuseB	r	Fuse B Fail: This OID indicates that the fuse of the power input B is in fail condition
1.3.6.1.4.1.20044.25.2.2	**ms430584mAlmClient**		
1.3.6.1.4.1.20044.25.2.2.1	**ms430584mAlmClientNurg**		
1.3.6.1.4.1.20044.25.2.2.1.32	ms430584mAlmline1SfpWarnDdmTable	n/a	List of ms430584mAlmline1SfpWarnDdm Article
1.3.6.1.4.1.20044.25.2.2.1.32.1	ms430584mAlmline1SfpWarnDdmEntry	n/a	Row definition for the ms430584mAlmline1SfpWarnDdm table
1.3.6.1.4.1.20044.25.2.2.1.32.1.1	ms430584mAlmline1SfpWarnDdmIndex	r	Index definition for the ms430584mAlmline1SfpWarnDdm table
1.3.6.1.4.1.20044.25.2.2.1.32.1.2	ms430584mAlmLine1TxPwLowWngPortn	r	Line 1 SFP Tx Power Low warning: Warning indicating that the SFP output power of port is lower than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.2.1.32.1.3	ms430584mAlmLine1TxPwrHighWngPortn	r	Line 1 SFP Tx Power High warning: Warning indicating that the SFP output power of port is higher than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.2.1.32.1.4	ms430584mAlmLine1TxBiasLowWngPortn	r	Line 1 SFP Bias Low warning: Warning indicating that the SFP laser bias current of port is lower than the threshold value written in the SFP EEPROM

OID	Name	Access	Description
1.3.6.1.4.1.20044.25.2.2.1.32.1.5	ms430584mAlmLine1TxBiasHighWngPortn	r	Line 1 SFP Bias High warning: Warning indicating that the SFP laser bias current of port is higher than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.2.1.32.1.6	ms430584mAlmLine1VccLowWngPortn	r	Line 1 SFP Power Supply Low warning: Warning indicating that the SFP power supply of port is lower than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.2.1.32.1.7	ms430584mAlmLine1VccHighWngPortn	r	Line 1 SFP Power Supply High warning: Warning indicating that the SFP power supply of port is higher than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.2.1.32.1.8	ms430584mAlmLine1TempLowWngPortn	r	Line 1 SFP Temp Low warning: Warning indicating that the SFP temperature of port is lower than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.2.1.32.1.9	ms430584mAlmLine1TempHighWngPortn	r	Line 1 SFP Temp High warning: Warning indicating that the SFP temperature of port is higher than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.2.1.32.1.16	ms430584mAlmLine1RxPwrLowWngPortn	r	Line 1 SFP Rx Power Low warning: Warning indicating that the SFP input power of port is lower than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.2.1.32.1.17	ms430584mAlmLine1RxPwrHighWngPortn	r	Line 1 SFP Rx Power High warning: Warning indicating that the SFP input power of port is higher than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.2.2	**ms430584mAlmClientUrg**		
1.3.6.1.4.1.20044.25.2.2.2.24	ms430584mAlmline1SfpAlmDdmTable	n/a	List of ms430584mAlmline1SfpAlmDdm Article
1.3.6.1.4.1.20044.25.2.2.2.24.1	ms430584mAlmline1SfpAlmDdmEntry	n/a	Row definition for the ms430584mAlmline1SfpAlmDdm table
1.3.6.1.4.1.20044.25.2.2.2.24.1.1	ms430584mAlmline1SfpAlmDdmIndex	r	Index definition for the ms430584mAlmline1SfpAlmDdm table
1.3.6.1.4.1.20044.25.2.2.2.24.1.2	ms430584mAlmLine1TxPwrLowAlaPortn	r	Line 1 SFP Tx Power Low: Alarm indicating that the SFP output power of port is lower than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.2.2.24.1.3	ms430584mAlmLine1Line1TxPwrHighAlaPortn	r	Line 1 SFP Tx Power High: Alarm indicating that the SFP output power of port is higher than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.2.2.24.1.4	ms430584mAlmLine1TxBiasLowAlaPortn	r	Line 1 SFP Bias Low: Alarm indicating that the SFP laser bias current of port is lower than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.2.2.24.1.5	ms430584mAlmLine1TxBiasHighAlaPortn	r	Line 1 SFP Bias High: Alarm indicating that the SFP laser bias current of port is higher than the threshold value written in the SFP EEPROM

OID	Name	Access	Description
1.3.6.1.4.1.20044.25.2.2.2.24.1.6	ms430584mAlmLine1VccLowAlaPortn	r	Line 1 SFP Power Supply Low: Alarm indicating that the SFP power supply of port is lower than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.2.2.24.1.7	ms430584mAlmLine1VccHighAlaPortn	r	Line 1 SFP Power Supply High: Alarm indicating that the SFP power supply of port is higher than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.2.2.24.1.8	ms430584mAlmLine1TempLowAlaPortn	r	Line 1 SFP Temp Low: Alarm indicating that the SFP temperature of port is lower than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.2.2.24.1.9	ms430584mAlmLine1TempHighAlaPortn	r	Line 1 SFP Temp High: Alarm indicating that the SFP temperature of port is higher than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.2.2.24.1.16	ms430584mAlmLine1RxPwrLowAlaPortn	r	Line 1 SFP Rx Power Low: Alarm indicating that the SFP input power of port is lower than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.2.2.24.1.17	ms430584mAlmLine1RxPwrHighAlaPortn	r	Line 1 SFP Rx Power High: Alarm indicating that the SFP input power of port is higher than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.2.3	**ms430584mAlmClientCrit**		
1.3.6.1.4.1.20044.25.2.2.3.8	ms430584mAlmsynthAlmLine1Table	n/a	List of ms430584mAlmsynthAlmLine1 Article
1.3.6.1.4.1.20044.25.2.2.3.8.1	ms430584mAlmsynthAlmLine1Entry	n/a	Row definition for the ms430584mAlmsynthAlmLine1 table
1.3.6.1.4.1.20044.25.2.2.3.8.1.1	ms430584mAlmsynthAlmLine1Index	r	Index definition for the ms430584mAlmsynthAlmLine1 table
1.3.6.1.4.1.20044.25.2.2.3.8.1.2	ms430584mAlmLine1SfpAbsentPortn	r	Line 1 SFP not plugged: This OID indicates that the SFP module is not present in the Line 1 port.
1.3.6.1.4.1.20044.25.2.2.3.8.1.3	ms430584mAlmLine1DdmAbsentPortn	r	DDM supported on Line 1 SFP: This OID indicates that the Line 1 SFP module does not support the Digital Diagnostic Monitoring function
1.3.6.1.4.1.20044.25.2.2.3.8.1.5	ms430584mAlmLine1HwFailAccPortn	r	Line 1 HW Fail: This OID indicates a failure on Line 1 port, most probably caused by a HW issue.
1.3.6.1.4.1.20044.25.2.2.3.8.1.6	ms430584mAlmLine1LsdPortn	r	Line 1 SFP optical TX ON: This OID indicates the Line 1 SFP transmitter output has shut down.
1.3.6.1.4.1.20044.25.2.2.3.8.1.7	ms430584mAlmLine1LocalOosPortn	r	Local Line 1 port In Service: This OID indicates that the local Line 1 port is In Service (1) or Out of Service (2)
1.3.6.1.4.1.20044.25.2.2.3.8.1.9	ms430584mAlmLine1DwCaisPortn	r	Line 1 AIS inserted: This OID indicates a CAIS has been inserted on the output Line 1 port.
1.3.6.1.4.1.20044.25.2.2.3.8.1.10	ms430584mAlmLine1SfpDdmWarningPortn	r	Warning on Line 1 SFP DDM: This OID indicates a warning is being received from the Line 1 SFP DDM
1.3.6.1.4.1.20044.25.2.2.3.8.1.11	ms430584mAlmLine1SfpDdmAlmPortn	r	Alarm on Line 1 SFP DDM: This OID indicates an alarm is being received from the Line 1 SFP DDM

OID	Name	Access	Description
1.3.6.1.4.1.20044.25.2.2.3.8.1.13	ms430584mAlmLine1FailAccPortn	r	Line 1 Access Fail: This OID indicates a failure on the Line 1 port
1.3.6.1.4.1.20044.25.2.2.3.16	ms430584mAlmline1AccessioAlmTable	n/a	List of ms430584mAlmline1AccessioAlm Article
1.3.6.1.4.1.20044.25.2.2.3.16.1	ms430584mAlmline1AccessioAlmEntry	n/a	Row definition for the ms430584mAlmline1AccessioAlm table
1.3.6.1.4.1.20044.25.2.2.3.16.1.1	ms430584mAlmline1AccessioAlmIndex	r	Index definition for the ms430584mAlmline1AccessioAlm table
1.3.6.1.4.1.20044.25.2.2.3.16.1.2	ms430584mAlmLine1LasFailPortn	r	Line 1 SFP Tx Failed: This OID indicates that the transmitter fails for the SFP plugged into the Line 1 port (this alarm reports the transmitter failure alarm generated by the SFPs)
1.3.6.1.4.1.20044.25.2.2.3.16.1.5	ms430584mAlmLine1LosPortn	r	Loss of Optical signal on Line 1: This OID indicates that no signal is present on the SFP of the Line 1 port
1.3.6.1.4.1.20044.25.2.2.3.16.1.7	ms430584mAlmLine1LosCdrPortn	r	Loss Of Signal on CDR On Line 1: ?????????
1.3.6.1.4.1.20044.25.2.2.3.16.1.8	ms430584mAlmLine1ErrSigCdrPortn	r	Error Signal on CDR On Line 1: ??????????
1.3.6.1.4.1.20044.25.2.2.3.16.1.17	ms430584mAlmLine1CaisIndicPortn	r	CAIS inserted by GW on Line 1: This OID indicates a Line 1 AIS has been inserted in the downstream Line 1 port
1.3.6.1.4.1.20044.25.2.3	**ms430584mAlmLine**		
1.3.6.1.4.1.20044.25.2.3.1	**ms430584mAlmLineNurg**		
1.3.6.1.4.1.20044.25.2.3.1.36	ms430584mAlmline2SfpWarnDdmTable	n/a	List of ms430584mAlmline2SfpWarnDdm Article
1.3.6.1.4.1.20044.25.2.3.1.36.1	ms430584mAlmline2SfpWarnDdmEntry	n/a	Row definition for the ms430584mAlmline2SfpWarnDdm table
1.3.6.1.4.1.20044.25.2.3.1.36.1.1	ms430584mAlmline2SfpWarnDdmIndex	r	Index definition for the ms430584mAlmline2SfpWarnDdm table
1.3.6.1.4.1.20044.25.2.3.1.36.1.2	ms430584mAlmLine2TxPwLowWngPortn	r	Line 2 SFP Tx Power Low warning: Warning indicating that the SFP output power of port is lower than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.3.1.36.1.3	ms430584mAlmLine2TxPwrHighWngPortn	r	Line 2 SFP Tx Power High warning: Warning indicating that the SFP output power of port is higher than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.3.1.36.1.4	ms430584mAlmLine2TxBiasLowWngPortn	r	Line 2 SFP Bias Low warning: Warning indicating that the SFP laser bias current of port is lower than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.3.1.36.1.5	ms430584mAlmLine2TxBiasHighWngPortn		Line 2 SFP Bias High warning: Warning indicating that the SFP laser bias current of port is higher than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.3.1.36.1.6	ms430584mAlmLine2VccLowWngPortn		Line 2 SFP Power Supply Low warning: Warning indicating that the SFP power supply of port is lower than the threshold value written in the SFP EEPROM

OID	Name	Access	Description
1.3.6.1.4.1.20044.25.2.3.1.36.1.7	ms430584mAlmLine2VccHighWngPortn	r	Line 2 SFP Power Supply High warning: Warning indicating that the SFP power supply of port is higher than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.3.1.36.1.8	ms430584mAlmLine2TempLowWngPortn	r	Line 2 SFP Temp Low warning: Warning indicating that the SFP temperature of port is lower than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.3.1.36.1.9	ms430584mAlmLine2TempHighWngPortn	r	Line 2 SFP Temp High warning: Warning indicating that the SFP temperature of port is higher than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.3.1.36.1.16	ms430584mAlmLine2RxPwrLowWngPortn	r	Line 2 SFP Rx Power Low warning: Warning indicating that the SFP input power of port is lower than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.3.1.36.1.17	ms430584mAlmLine2RxPwrHighWngPortn	r	Line 2 SFP Rx Power High warning: Warning indicating that the SFP input power of port is higher than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.3.2	**ms430584mAlmLineUrg**		
1.3.6.1.4.1.20044.25.2.3.2.28	ms430584mAlmline2SfpAlmDdmTable	n/a	List of ms430584mAlmline2SfpAlmDdm Article
1.3.6.1.4.1.20044.25.2.3.2.28.1	ms430584mAlmline2SfpAlmDdmEntry	n/a	Row definition for the ms430584mAlmline2SfpAlmDdm table
1.3.6.1.4.1.20044.25.2.3.2.28.1.1	ms430584mAlmline2SfpAlmDdmIndex	r	Index definition for the ms430584mAlmline2SfpAlmDdm table
1.3.6.1.4.1.20044.25.2.3.2.28.1.2	ms430584mAlmLine2TxPwrLowAlaPortn	r	Line 2 SFP Tx Power Low: Alarm indicating that the SFP output power of port is lower than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.3.2.28.1.3	ms430584mAlmLine2Line2TxPwrHighAlaPortn	r	Line 2 SFP Tx Power High: Alarm indicating that the SFP output power of port is higher than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.3.2.28.1.4	ms430584mAlmLine2TxBiasLowAlaPortn	r	Line 2 SFP Bias Low: Alarm indicating that the SFP laser bias current of port is lower than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.3.2.28.1.5	ms430584mAlmLine2TxBiasHighAlaPortn	r	Line 2 SFP Bias High: Alarm indicating that the SFP laser bias current of port is higher than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.3.2.28.1.6	ms430584mAlmLine2VccLowAlaPortn	r	Line 2 SFP Power Supply Low: Alarm indicating that the SFP power supply of port is lower than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.3.2.28.1.7	ms430584mAlmLine2VccHighAlaPortn	r	Line 2 SFP Power Supply High: Alarm indicating that the SFP power supply of port is higher than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.3.2.28.1.8	ms430584mAlmLine2TempLowAlaPortn	r	Line 2 SFP Temp Low: Alarm indicating that the SFP temperature of port is lower than the threshold value written in the SFP EEPROM

OID	Name	Access	Description
1.3.6.1.4.1.20044.25.2.3.2.28.1.9	ms430584mAlmLine2TempHighAlaPortn	r	Line 2 SFP Temp High: Alarm indicating that the SFP temperature of port is higher than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.3.2.28.1.16	ms430584mAlmLine2RxPwrLowAlaPortn	r	Line 2 SFP Rx Power Low: Alarm indicating that the SFP input power of port is lower than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.3.2.28.1.17	ms430584mAlmLine2RxPwrHighAlaPortn	r	Line 2 SFP Rx Power High: Alarm indicating that the SFP input power of port is higher than the threshold value written in the SFP EEPROM
1.3.6.1.4.1.20044.25.2.3.3	**ms430584mAlmLineCrit**		
1.3.6.1.4.1.20044.25.2.3.3.12	ms430584mAlmsynthAlmLine2Table	n/a	List of ms430584mAlmsynthAlmLine2 Article
1.3.6.1.4.1.20044.25.2.3.3.12.1	ms430584mAlmsynthAlmLine2Entry	n/a	Row definition for the ms430584mAlmsynthAlmLine2 table
1.3.6.1.4.1.20044.25.2.3.3.12.1.1	ms430584mAlmsynthAlmLine2Index	r	Index definition for the ms430584mAlmsynthAlmLine2 table
1.3.6.1.4.1.20044.25.2.3.3.12.1.2	ms430584mAlmLine2SfpAbsentPortn	r	Line 2 SFP not plugged: This OID indicates that the SFP module is not present in the Line 2 port.
1.3.6.1.4.1.20044.25.2.3.3.12.1.3	ms430584mAlmLine2DdmAbsentPortn	r	DDM supported on Line 2 SFP: This OID indicates that the Line 2 SFP module does not support the Digital Diagnostic Monitoring function
1.3.6.1.4.1.20044.25.2.3.3.12.1.5	ms430584mAlmLine2HwFailPortn	r	Line 2 HW Fail: This OID indicates a failure on Line 2 port, most probably caused by a HW issue.
1.3.6.1.4.1.20044.25.2.3.3.12.1.6	ms430584mAlmLine2LsdPortn	r	Line 2 SFP optical TX ON: This OID indicates the Line 2 SFP transmitter output has shut down.
1.3.6.1.4.1.20044.25.2.3.3.12.1.7	ms430584mAlmLine2LocalOosPortn	r	Local Line 2 port In Service: This OID indicates that the local Line 2 port is In Service (1) or Out of Service (2)
1.3.6.1.4.1.20044.25.2.3.3.12.1.10	ms430584mAlmLine2DdmWarningPortn	r	Warning on Line 2 SFP DDM: This OID indicates a warning is being received from the Line 2 SFP DDM
1.3.6.1.4.1.20044.25.2.3.3.12.1.11	ms430584mAlmLine2DdmAlmPortn	r	Alarm on Line 2 SFP DDM: This OID indicates an alarm is being received from the Line 2 SFP DDM
1.3.6.1.4.1.20044.25.2.3.3.12.1.13	ms430584mAlmLine2FailPortn	r	Line 2 Access Fail: This OID indicates a failure on the Line 2 port
1.3.6.1.4.1.20044.25.2.3.3.20	ms430584mAlmline2AccessioAlmTable	n/a	List of ms430584mAlmline2AccessioAlm Article
1.3.6.1.4.1.20044.25.2.3.3.20.1	ms430584mAlmline2AccessioAlmEntry	n/a	Row definition for the ms430584mAlmline2AccessioAlm table
1.3.6.1.4.1.20044.25.2.3.3.20.1.1	ms430584mAlmline2AccessioAlmIndex	r	Index definition for the ms430584mAlmline2AccessioAlm table
1.3.6.1.4.1.20044.25.2.3.3.20.1.2	ms430584mAlmLine2LasFailPortn	r	Line 2 SFP Tx Failed: This OID indicates that the transmitter fails for the SFP plugged into the Line 2 port (this alarm reports the transmitter failure alarm generated by the SFPs)
1.3.6.1.4.1.20044.25.2.3.3.20.1.5	ms430584mAlmLine2LosPortn	r	Loss of Optical signal on Line 2: This OID indicates that no signal is present on the SFP of the Line 2 port

OID	Name	Access	Description
1.3.6.1.4.1.20044.25.2.3.3.20.1.7	ms430584mAlmLine2LosCdrPortn		Loss Of Signal on CDR On Line 2: ?????????
1.3.6.1.4.1.20044.25.2.3.3.20.1.8	ms430584mAlmLine2ErrSigCdrPortn		Error Signal on CDR On Line 2: ??????????
1.3.6.1.4.1.20044.25.2.3.3.20.1.17	ms430584mAlmLine2CaisIndicPortn		CAIS inserted by GW on Line 2: This OID indicates a Line 2 AIS has been inserted in the downstream Line 2 port
1.3.6.1.4.1.20044.25.3	**ms430584mmeasures**		
1.3.6.1.4.1.20044.25.3.1	**ms430584mMesrOther**		
1.3.6.1.4.1.20044.25.3.2	**ms430584mMesrClient**		
1.3.6.1.4.1.20044.25.3.2.16	ms430584mMesrline1TemperatureTable	n/a	List of ms430584mMesrline1Temperature Article
1.3.6.1.4.1.20044.25.3.2.16.1	ms430584mMesrline1TemperatureEntry	n/a	Row definition for the ms430584mMesrline1Temperature table
1.3.6.1.4.1.20044.25.3.2.16.1.1	ms430584mMesrline1TemperatureIndex	r	Index definition for the ms430584mMesrline1Temperature table
1.3.6.1.4.1.20044.25.3.2.16.1.2	ms430584mMesrline1TemperaturePortn	r	Line 1 SFP Temperature: This OID gives the temperature value of the SFP, read from the DDM (Digital Diagnostic Monitoring) (Unit = °C)
1.3.6.1.4.1.20044.25.3.2.24	ms430584mMesrline1VoltTable	n/a	List of ms430584mMesrline1Volt Article
1.3.6.1.4.1.20044.25.3.2.24.1	ms430584mMesrline1VoltEntry	n/a	Row definition for the ms430584mMesrline1Volt table
1.3.6.1.4.1.20044.25.3.2.24.1.1	ms430584mMesrline1VoltIndex	r	Index definition for the ms430584mMesrline1Volt table
1.3.6.1.4.1.20044.25.3.2.24.1.2	ms430584mMesrline1VoltPortn		Line 1 SFP Power Supply: This OID gives the 3V3 voltage value of the SFP plugged into port, read from the DDM (Digital Diagnostic Monitoring) (Unit = V)
1.3.6.1.4.1.20044.25.3.2.32	ms430584mMesrline1TxBiasTable	n/a	List of ms430584mMesrline1TxBias Article
1.3.6.1.4.1.20044.25.3.2.32.1	ms430584mMesrline1TxBiasEntry	n/a	Row definition for the ms430584mMesrline1TxBias table
1.3.6.1.4.1.20044.25.3.2.32.1.1	ms430584mMesrline1TxBiasIndex	r	Index definition for the ms430584mMesrline1TxBias table
1.3.6.1.4.1.20044.25.3.2.32.1.2	ms430584mMesrline1TxBiasPortn	r	Line 1 SFP Laser Bias: This OID gives the bias value of the SFP, read from the DDM (Digital Diagnostic Monitoring) (Unit = mA)
1.3.6.1.4.1.20044.25.3.2.40	ms430584mMesrline1TxPowerTable	n/a	List of ms430584mMesrline1TxPower Article
1.3.6.1.4.1.20044.25.3.2.40.1	ms430584mMesrline1TxPowerEntry	n/a	Row definition for the ms430584mMesrline1TxPower table
1.3.6.1.4.1.20044.25.3.2.40.1.1	ms430584mMesrline1TxPowerIndex	r	Index definition for the ms430584mMesrline1TxPower table
1.3.6.1.4.1.20044.25.3.2.40.1.2	ms430584mMesrline1TxPowerPortn	r	Line 1 SFP Transmitted Power: This OID gives the transmit power value of the SFP, read from the DDM (Digital Diagnostic Monitoring) (Unit = dBm)
1.3.6.1.4.1.20044.25.3.2.48	ms430584mMesrline1RxPowerTable	n/a	List of ms430584mMesrline1RxPower Article
1.3.6.1.4.1.20044.25.3.2.48.1	ms430584mMesrline1RxPowerEntry	n/a	Row definition for the ms430584mMesrline1RxPower table
1.3.6.1.4.1.20044.25.3.2.48.1.1	ms430584mMesrline1RxPowerIndex	r	Index definition for the ms430584mMesrline1RxPower table

OID	Name	Access	Description
1.3.6.1.4.1.20044.25.3.2.48.1.2	ms430584mMesrline1RxPowerPortn	r	Line 1 SFP Received Power: This OID gives the receive power value of the SFP, read in the DDM (Digital Diagnostic Monitoring) (Unit = dBm)
1.3.6.1.4.1.20044.25.3.3	**ms430584mMesrLine**		
1.3.6.1.4.1.20044.25.3.3.20	ms430584mMesrline2TemperatureTable	n/a	List of ms430584mMesrline2Temperature Article
1.3.6.1.4.1.20044.25.3.3.20.1	ms430584mMesrline2TemperatureEntry	n/a	Row definition for the ms430584mMesrline2Temperature table
1.3.6.1.4.1.20044.25.3.3.20.1.1	ms430584mMesrline2TemperatureIndex	r	Index definition for the ms430584mMesrline2Temperature table
1.3.6.1.4.1.20044.25.3.3.20.1.2	ms430584mMesrline2TemperaturePortn	r	Line 2 SFP Temperature: This OID gives the temperature value of the SFP, read from the DDM (Digital Diagnostic Monitoring) (Unit = °C)
1.3.6.1.4.1.20044.25.3.3.28	ms430584mMesrline2VoltTable	n/a	List of ms430584mMesrline2Volt Article
1.3.6.1.4.1.20044.25.3.3.28.1	ms430584mMesrline2VoltEntry	n/a	Row definition for the ms430584mMesrline2Volt table
1.3.6.1.4.1.20044.25.3.3.28.1.1	ms430584mMesrline2VoltIndex	r	Index definition for the ms430584mMesrline2Volt table
1.3.6.1.4.1.20044.25.3.3.28.1.2	ms430584mMesrline2VoltPortn	r	Line 2 SFP Power Supply: This OID gives the 3V3 voltage value of the SFP, read from the DDM (Digital Diagnostic Monitoring) (Unit = V)
1.3.6.1.4.1.20044.25.3.3.36	ms430584mMesrline2TxBiasTable	n/a	List of ms430584mMesrline2TxBias Article
1.3.6.1.4.1.20044.25.3.3.36.1	ms430584mMesrline2TxBiasEntry	n/a	Row definition for the ms430584mMesrline2TxBias table
1.3.6.1.4.1.20044.25.3.3.36.1.1	ms430584mMesrline2TxBiasIndex	r	Index definition for the ms430584mMesrline2TxBias table
1.3.6.1.4.1.20044.25.3.3.36.1.2	ms430584mMesrline2TxBiasPortn	r	Line 2 SFP Laser Bias: This OID gives the bias value of the SFP, read from the DDM (Digital Diagnostic Monitoring) (Unit = mA)
1.3.6.1.4.1.20044.25.3.3.44	ms430584mMesrline2TxPowerTable	n/a	List of ms430584mMesrline2TxPower Article
1.3.6.1.4.1.20044.25.3.3.44.1	ms430584mMesrline2TxPowerEntry	n/a	Row definition for the ms430584mMesrline2TxPower table
1.3.6.1.4.1.20044.25.3.3.44.1.1	ms430584mMesrline2TxPowerIndex	r	Index definition for the ms430584mMesrline2TxPower table
1.3.6.1.4.1.20044.25.3.3.44.1.2	ms430584mMesrline2TxPowerPortn	r	Line 2 SFP Transmitted Power: This OID gives the transmit power value of the SFP, read from the DDM (Digital Diagnostic Monitoring) (Unit = dBm)
1.3.6.1.4.1.20044.25.3.3.52	ms430584mMesrline2RxPowerTable	n/a	List of ms430584mMesrline2RxPower Article
1.3.6.1.4.1.20044.25.3.3.52.1	ms430584mMesrline2RxPowerEntry	n/a	Row definition for the ms430584mMesrline2RxPower table
1.3.6.1.4.1.20044.25.3.3.52.1.1	ms430584mMesrline2RxPowerIndex	r	Index definition for the ms430584mMesrline2RxPower table
1.3.6.1.4.1.20044.25.3.3.52.1.2	ms430584mMesrline2RxPowerPortn	r	Line 2 SFP Received Power: This OID gives the receive power value of the SFP, read in the DDM (Digital Diagnostic Monitoring) (Unit = dBm)

OID	Name	Access	Description
1.3.6.1.4.1.20044.25.4	**ms430584mcounters**		
1.3.6.1.4.1.20044.25.4.1	**ms430584mCntOther**		
1.3.6.1.4.1.20044.25.4.2	**ms430584mCntClient**		
1.3.6.1.4.1.20044.25.4.3	**ms430584mCntLine**		
1.3.6.1.4.1.20044.25.6	**ms430584mcontrolsWrite**		
1.3.6.1.4.1.20044.25.6.1	**ms430584mCtrlOther**		
1.3.6.1.4.1.20044.25.6.1.0	**ms430584mCtrlsynth0**		
1.3.6.1.4.1.20044.25.6.1.0.1	ms430584mCtrlConfLoad	r/w	Load Configuration Tables: When set this enables loading from flash configuration1 into the module.
1.3.6.1.4.1.20044.25.6.1.0.9	ms430584mCtrlConfFlash	r/w	Write Configuration Tables: This bit saves the current configuration of the module as configuration in the flash.
1.3.6.1.4.1.20044.25.6.1.0.13	ms430584mCtrlConfClear	r/w	Clear Configuration Tables: This bit clears the configuration tables from configuration in the flash.
1.3.6.1.4.1.20044.25.6.1.4	**ms430584mCtrlsynth4**		
1.3.6.1.4.1.20044.25.6.1.4.1	ms430584mCtrlCorrelatOn	r/w	Enable Alarm Correlation: This OID enables the alarm correlation in the module.
1.3.6.1.4.1.20044.25.6.1.4.2	ms430584mCtrlCorrelatOff	r/w	Disable Alarm Correlation: This OID disables the alarm correlation in the module.
1.3.6.1.4.1.20044.25.6.1.5	**ms430584mCtrlswMgnt**		
1.3.6.1.4.1.20044.25.6.1.5.2	ms430584mCtrlColdReset	r/w	Module Cold Reset: This OID, when set, causes a cold reset of the Software. This reset is traffic affecting, and the configuration of Software is reloaded on start-up.
1.3.6.1.4.1.20044.25.6.1.5.3	ms430584mCtrlWarmReset	r/w	Module Warm Reset: This OID, when set, causes a warm reset of the Software. This reset is not traffic affecting, and the configuration of the Sofwtare remains unchanged.
1.3.6.1.4.1.20044.25.6.1.72	**ms430584mCtrlledTest**		
1.3.6.1.4.1.20044.25.6.1.72.1	ms430584mCtrlGreenLed	r/w	Green Leds Test: This OID switches on all the green Leds as a test feature.
1.3.6.1.4.1.20044.25.6.1.72.2	ms430584mCtrlRedLed	r/w	Red Leds Test: This OID switches on all the red Leds as a test feature.
1.3.6.1.4.1.20044.25.6.1.72.3	ms430584mCtrlLedOff		Leds Off: This OID switches off all the Leds as a test feature.
1.3.6.1.4.1.20044.25.6.1.73	**ms430584mCtrlmoduleOosMode**		
1.3.6.1.4.1.20044.25.6.1.73.1	ms430584mCtrlModuleOosMode	r/w	Module Out Of Service: This OID sets the module Out Of Service
1.3.6.1.4.1.20044.25.6.2	**ms430584mCtrlClient**		
1.3.6.1.4.1.20044.25.6.2.16	ms430584mCtrlline1SfpOnoffTable	n/a	List of ms430584mCtrlline1SfpOnoff Article
1.3.6.1.4.1.20044.25.6.2.16.1	ms430584mCtrlline1SfpOnoffEntry	n/a	Row definition for the ms430584mCtrlline1SfpOnoff table
1.3.6.1.4.1.20044.25.6.2.16.1.1	ms430584mCtrlline1SfpOnoffIndex	r	Index definition for the ms430584mCtrlline1SfpOnoff table
1.3.6.1.4.1.20044.25.6.2.16.1.2	ms430584mCtrlline1SfpOnoffPortn	r/w	Line 1 SFP Optical Output Shut Down: This OID switches off the SFP
1.3.6.1.4.1.20044.25.6.2.20	ms430584mCtrlline1OosModeTable	n/a	List of ms430584mCtrlline1OosMode Article

OID	Name	Access	Description
1.3.6.1.4.1.20044.25.6.2.20.1	ms430584mCtrlline1OosModeEntry	n/a	Row definition for the ms430584mCtrlline1OosMode table
1.3.6.1.4.1.20044.25.6.2.20.1.1	ms430584mCtrlline1OosModeIndex	r	Index definition for the ms430584mCtrlline1OosMode table
1.3.6.1.4.1.20044.25.6.2.20.1.2	ms430584mCtrlline1OosModePortn	r/w	Line 1 port Out of Service: This OID sets the port Out Of Service
1.3.6.1.4.1.20044.25.6.2.48	ms430584mCtrlprotocolTable	n/a	List of ms430584mCtrlprotocol Article
1.3.6.1.4.1.20044.25.6.2.48.1	ms430584mCtrlprotocolEntry	n/a	Row definition for the ms430584mCtrlprotocol table
1.3.6.1.4.1.20044.25.6.2.48.1.1	ms430584mCtrlprotocolIndex	r	Index definition for the ms430584mCtrlprotocol table
1.3.6.1.4.1.20044.25.6.2.48.1.2	ms430584mCtrlprotocolPortn	r/w	Protocol used for line port: This OID sets the protocol of the lines port.
1.3.6.1.4.1.20044.25.6.3	**ms430584mCtrlLine**		
1.3.6.1.4.1.20044.25.6.3.64	ms430584mCtrlline2SfpOnoffTable	n/a	List of ms430584mCtrlline2SfpOnoff Article
1.3.6.1.4.1.20044.25.6.3.64.1	ms430584mCtrlline2SfpOnoffEntry	n/a	Row definition for the ms430584mCtrlline2SfpOnoff table
1.3.6.1.4.1.20044.25.6.3.64.1.1	ms430584mCtrlline2SfpOnoffIndex	r	Index definition for the ms430584mCtrlline2SfpOnoff table
1.3.6.1.4.1.20044.25.6.3.64.1.2	ms430584mCtrlline2SfpOnoffPortn	r/w	Line SFP Optical Output Shut Down: This OID switches off the SFP
1.3.6.1.4.1.20044.25.6.3.65	ms430584mCtrlline2OosModeTable	n/a	List of ms430584mCtrlline2OosMode Article
1.3.6.1.4.1.20044.25.6.3.65.1	ms430584mCtrlline2OosModeEntry	n/a	Row definition for the ms430584mCtrlline2OosMode table
1.3.6.1.4.1.20044.25.6.3.65.1.1	ms430584mCtrlline2OosModeIndex	r	Index definition for the ms430584mCtrlline2OosMode table
1.3.6.1.4.1.20044.25.6.3.65.1.2	ms430584mCtrlline2OosModePortn	r/w	Line port Out of Service: This OID sets the port Out Of Service
1.3.6.1.4.1.20044.25.7	**ms430584mri**		
1.3.6.1.4.1.20044.25.7.1	**ms430584mriTable**		
1.3.6.1.4.1.20044.25.7.1.1	ms430584mRinvLine1Table	n/a	List of the SFPs on the selected module
1.3.6.1.4.1.20044.25.7.1.1.1	ms430584mRinvLine1Entry	n/a	Row definition for the Line1 SFP table
1.3.6.1.4.1.20044.25.7.1.1.1.1	ms430584mRinvLine1Index	r	Index for Line1 SFP table
1.3.6.1.4.1.20044.25.7.1.1.1.2	ms430584mRinvSfpLine1	r	Inventory for the SFP: This OID contains the inventory for the Line1 SFP
1.3.6.1.4.1.20044.25.7.1.2	ms430584mRinvLine2Table	n/a	List of the SFPs on the selected module
1.3.6.1.4.1.20044.25.7.1.2.1	ms430584mRinvLine2Entry	n/a	Row definition for the Line SFP table
1.3.6.1.4.1.20044.25.7.1.2.1.1	ms430584mRinvLine2Index	r	Index for SFP table
1.3.6.1.4.1.20044.25.7.1.2.1.2	ms430584mRinvsfpLine2	r	Inventory for the SFP: This OID contains the inventory for the Line2 SFP
1.3.6.1.4.1.20044.25.7.2	ms430584mRinvReloadInventory	r/w	Reload the inventory: This OID triggers an inventory reload.
1.3.6.1.4.1.20044.25.7.3	ms430584mRinvHwPlatform	r	HW platform description: This OID contains the description of the Hardware platform.
1.3.6.1.4.1.20044.25.7.4	ms430584mRinvModulePlatform	r	Module platform description: This OID contains the description of the Module.

OID	Name	Access	Description
1.3.6.1.4.1.20044.25.7.5	ms430584mRinvSwPlatform	r	SW platform description: This OID contains the description of the Software platform.
1.3.6.1.4.1.20044.25.7.6	ms430584mRinvGwPlatform	r	GW platform desciption: This OID contains the description of the Gateware platform.
1.3.6.1.4.1.20044.25.9	**ms430584mConfig**		
1.3.6.1.4.1.20044.25.9.1	**ms430584mCfgLsd**		
1.3.6.1.4.1.20044.25.9.1.1	ms430584mCfgLine1LsdTable	n/a	List of Article
1.3.6.1.4.1.20044.25.9.1.1.1	ms430584mCfgLine1LsdEntry	n/a	Row definition for the lsd table
1.3.6.1.4.1.20044.25.9.1.1.1.1	ms430584mCfgLine1LsdIndex	r	Index definition for the line1Lsd table
1.3.6.1.4.1.20044.25.9.1.1.1.3	ms430584mCfgLine1LsdModePortn	r/w	CAIS mode on Lines Port: This register selects the way to activate the laser upon CAIS/CSF criteria detection on Port
1.3.6.1.4.1.20044.25.9.1.1.1.4	ms430584mCfgLine1AccessioCtrbInsPortn	r/w	CAIS contributors on Line 1 Port: This register selects the contributors to upstream CAIS/CSF on Port
1.3.6.1.4.1.20044.25.9.1.1.1.7	ms430584mCfgLine2AccessioCtrbInsPortn		CAIS contributors on Lne 2 Port: This register selects the contributors to downstream CAIS/CSF on Port
1.3.6.1.4.1.20044.25.9.2	**ms430584mCfgStartUp**		
1.3.6.1.4.1.20044.25.9.2.1	**ms430584mtableline1Startup**		
1.3.6.1.4.1.20044.25.9.2.1.2	ms430584mCfgline1TrscvCtrlA	r/w	Default Settings on Line 1-A TRSCV: This register configures the default initialisation settings on client transceiver.
1.3.6.1.4.1.20044.25.9.2.1.3	ms430584mCfgline1ProtocolA	r/w	Default Protocol on Line A: This register configures the default initialisation protocol on the port.
1.3.6.1.4.1.20044.25.9.2.1.4	ms430584mCfgline1OosModeA	r/w	Default Settings on Line 1-A TRSCV: This register configures the default initialisation settings on client transceiver.
1.3.6.1.4.1.20044.25.9.2.1.6	ms430584mCfgline1TrscvCtrlB	r/w	Default Settings on Line 1-B TRSCV: This register configures the default initialisation settings on client transceiver.
1.3.6.1.4.1.20044.25.9.2.1.7	ms430584mCfgline1ProtocolB		Default Protocol on Line B: This register configures the default initialisation protocol on the port.
1.3.6.1.4.1.20044.25.9.2.1.8	ms430584mCfgline1OosModeB	r/w	Default Settings on Line 1-B TRSCV: This register configures the default initialisation settings on client transceiver.
1.3.6.1.4.1.20044.25.9.2.1.10	ms430584mCfgline1TrscvCtrlC	r/w	Default Settings on Line 1-C TRSCV: This register configures the default initialisation settings on client transceiver.
1.3.6.1.4.1.20044.25.9.2.1.11	ms430584mCfgline1ProtocolC	r/w	Default Protocol on Line C: This register configures the default initialisation protocol on the port.
1.3.6.1.4.1.20044.25.9.2.1.12	ms430584mCfgline1OosModeC	r/w	Default Settings on Line 1-C TRSCV: This register configures the default initialisation settings on client transceiver.

OID	Name	Access	Description
1.3.6.1.4.1.20044.25.9.2.1.14	ms430584mCfgline1TrscvCtrlD	r/w	Default Settings on Line 1-D TRSCV: This register configures the default initialisation settings on client transceiver.
1.3.6.1.4.1.20044.25.9.2.1.15	ms430584mCfgline1ProtocolD	r/w	Default Protocol on Line D: This register configures the default initialisation protocol on the port.
1.3.6.1.4.1.20044.25.9.2.1.16	ms430584mCfgline1OosModeD	r/w	Default Settings on Line 1-D TRSCV: This register configures the default initialisation settings on client transceiver.
1.3.6.1.4.1.20044.25.9.2.2	**ms430584mtableline2Startup**		
1.3.6.1.4.1.20044.25.9.2.2.2	ms430584mCfgline2TrscvCtrlA	r/w	Default Settings on Line 2-A TRSCV: This register configures the default initialisation settings on line transceiver.
1.3.6.1.4.1.20044.25.9.2.2.3	ms430584mCfgline2OosModeA	r/w	Default Settings on Line 2-A TRSCV: This register configures the default initialisation settings on line transceiver.
1.3.6.1.4.1.20044.25.9.2.2.6	ms430584mCfgline2TrscvCtrlB	r/w	Default Settings on Line 2-B TRSCV: This register configures the default initialisation settings on line transceiver.
1.3.6.1.4.1.20044.25.9.2.2.7	ms430584mCfgline2OosModeB	r/w	Default Settings on Line 2-B TRSCV: This register configures the default initialisation settings on line transceiver.
1.3.6.1.4.1.20044.25.9.2.2.10	ms430584mCfgline2TrscvCtrlC	r/w	Default Settings on Line 2-C TRSCV: This register configures the default initialisation settings on line transceiver.
1.3.6.1.4.1.20044.25.9.2.2.11	ms430584mCfgline2OosModeC	r/w	Default Settings on Line 2-C TRSCV: This register configures the default initialisation settings on line transceiver.
1.3.6.1.4.1.20044.25.9.2.2.14	ms430584mCfgline2TrscvCtrlD	r/w	Default Settings on Line 2-D TRSCV: This register configures the default initialisation settings on line transceiver.
1.3.6.1.4.1.20044.25.9.2.2.15	ms430584mCfgline2OosModeD	r/w	Default Settings on Line 2-D TRSCV :This register configures the default initialisation settings on line transceiver.
1.3.6.1.4.1.20044.25.9.257	ms430584mCfgWriteConfiguration	r/w	Write configuration to module: This OID writes the complete configuration to the module
1.3.6.1.4.1.20044.25.10	**ms430584mtraps**		
1.3.6.1.4.1.20044.25.10.2	ms430584mtrapPortNumber	r	Last port which generates a trap
1.3.6.1.4.1.20044.25.10.3	ms430584mtrapLineNumber	r	Last Line which generates a trap
1.3.6.1.4.1.20044.25.10.4	ms430584mtrapBoardNumber	r	Last module which generates a trap
1.3.6.1.4.1.20044.25.10.30	ms430584mLine2TrapNotUrgentGoesOn	n/a	Not urgent Line default is activated
1.3.6.1.4.1.20044.25.10.31	ms430584mLine2TrapNotUrgentGoesOff	n/a	Not urgent Line default disappeared
1.3.6.1.4.1.20044.25.10.32	ms430584mLine2TrapUrgentGoesOn	n/a	Urgent Line default is activated
1.3.6.1.4.1.20044.25.10.33	ms430584mLine2TrapUrgentGoesOff	n/a	Urgent Line default disappeared
1.3.6.1.4.1.20044.25.10.34	ms430584mLine2TrapCritGoesOn	n/a	Critical Line default is activated
1.3.6.1.4.1.20044.25.10.35	ms430584mLine2TrapCritGoesOff	n/a	Critical Line default disappeared
1.3.6.1.4.1.20044.25.10.40	ms430584mLine1TrapNotUrgentGoesOn	n/a	Not urgent client default is activated
1.3.6.1.4.1.20044.25.10.41	ms430584mLine1TrapNotUrgentGoesOff	n/a	Not urgent client default disappeared
1.3.6.1.4.1.20044.25.10.42	ms430584mLine1TrapUrgentGoesOn	n/a	Urgent client default is activated

OID	Name	Access	Description
1.3.6.1.4.1.20044.25.10.43	ms430584mLine1TrapUrgentGoesOff	n/a	Urgent client default disappeared
1.3.6.1.4.1.20044.25.10.44	ms430584mLine1TrapCritGoesOn	n/a	Critical client default is activated
1.3.6.1.4.1.20044.25.10.45	ms430584mLine1TrapCritGoesOff	n/a	Critical client default disappeared
1.3.6.1.4.1.20044.25.10.50	ms430584mPowerTrapUrgentGoesOn	n/a	Urgent power supply default is activated
1.3.6.1.4.1.20044.25.10.51	ms430584mPowerTrapUrgentGoesOff	n/a	Urgent power supply default disappeared

Front Panel Layout

The MS430584M occupies one slot in the MICROSENS chassis. Line and Client interfaces are SFP cages capable of hosting standard SFP modules
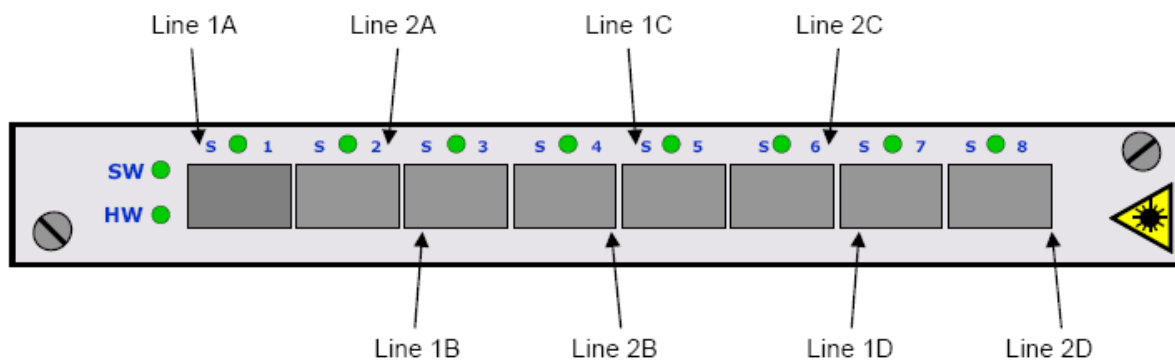

Figure 2: MS430584M Front panel layout.

Technical Specifications

Type Quadruple Transponder Module

Connectors SFP ports

Data rate from 155 Mbps up to 4.25 Gbps

LED displays
	SW	Software loading
	HW	Hardware ready

Power consumption 13 W typical

15 W max

Operating temperature 0°C to 50°C

Storage temperature -20°C to 85°C

Order Information

Art. No.	Description	Connectors
Modules		
MS430584M	Quadruple Transponder Unit (FE, 1GbE, 1GFC, 2GFC, 4GFC, 155Mb/s, 622Mb/s, 2,5Gbps) with SFP Line Port A&B interfaces (not included), Local Port 1..4: SFP Slots (not included)	8x SFP
Optical Interfaces		
	Active Pluggable Interface (SFP) B&W	
MS100200D	SFP Pluggable Transceiver GBE/1x Fibre Channel, Multimode 850nm LC	
MS100210D	SFP Pluggable Transceiver GBE/1x Fibre Channel, Single Mode 1310nm LC 10km	
MS100213D	SFP Pluggable Transceiver GBE/1x Fibre Channel, Single Mode 1550nm LC 50km	
MS100060D	SFP Pluggable Transceiver SR-1 2km, 1310nm, LC connector, Multirate 100..2488 MBit/s, OC-3/12/48 STM-1/4/16, GBE, 1x/2x FC	
MS100061D	SFP Pluggable Transceiver IR-1 15km, 1310nm, LC connector, Multirate 100..2488 MBit/s, OC-3/12/48 STM-1/4/16, GBE, 1x/2x FC	
MS100062D	SFP Pluggable Transceiver IR-2 40km, 1550nm, LC connector, Multirate 100..2488 MBit/s, OC-3/12/48 STM-1/4/16, GBE, 1x/2x FC	
MS100063D	SFP Pluggable Transceiver LR-1 40km, 1310nm, LC connector, Multirate 100..2488 MBit/s, OC-3/12/48 STM-1/4/16, GBE, 1x/2x FC	
MS100064D	SFP Pluggable Transceiver LR-2 80km, 1550nm, LC connector, Multirate 100..2488 MBit/s, OC-3/12/48 STM-1/4/16, GBE, 1x/2x FC	
MS100360D	SFP Pluggable Transceiver 1x/2x/4x Fibre Channel, Multimode 850nm 500m (50/125μm), LC	
MS100364D	SFP Pluggable Transceiver 1x/2x/4x Fibre Channel, Single Mode 1310nm 4km, LC	
MS100366D	SFP Pluggable Transceiver 1x/2x/4x Fibre Channel, Single Mode 1310nm 10km, LC	
MS100368D	SFP Pluggable Transceiver 1x/2x/4x Fibre Channel, Single Mode 1310nm 30km, LC	
	Active Pluggable Interface (SFP) CWDM	
MS100270D-ww	SFP Pluggable Multirate CWDM Transceiver max. 2,67 GBit/s, Monomode LC 1ww0nm DFB Laser, OC-3/STM-1, OC-12/STM-4, OC-48/STM-16, Gigabit Ethernet, 1x/2x FC, min. 20dB Budget	
MS100272D-ww	SFP Pluggable Multirate CWDM Transceiver max. 2,67 GBit/s, Monomode LC 1ww0nm DFB Laser, OC-3/STM-1, OC-12/STM-4, OC-48/STM-16, Gigabit Ethernet, 1x/2x FC, min. 28dB Budget	
MS100273D-ww	SFP Pluggable Multirate CWDM Transceiver max. 2,67 GBit/s, Monomode LC 1ww0nm DFB Laser, OC-3/STM-1, OC-12/STM-4, OC-48/STM-16, Gigabit Ethernet, 1x/2x FC, min. 30dB Budget, low dispersion penalty	
MS100280D-ww	SFP Pluggable Transceiver 1x/2x/4x Fibre Channel, CWDM Single Mode 1ww0nm, min. 17dB Budget, 40km, LC	
	Active Pluggable Interface (SFP) DWDM	
MS100320D-nn	DWDM Multirate Line Interface 100 Mbps..2.7 Gbps for Fast Ethernet, STM-1/OC-3, STM-4/OC-12, STM-16/OC-48, ESCON, Gigabit Ethernet, 1x/2x Fibre Channel, Single Mode DWDM Laser, nn: ITU C-Band Channel 17-60, LC connector, min. 28dB Budget	

MS100321D-nn	DWDM Multirate Line Interface 100 Mbps..2.7 Gbps for Fast Ethernet, STM-1/OC-3, STM-4/OC-12, STM-16/OC-48, ESCON, Gigabit Ethernet, 1x/2x Fibre Channel, Single Mode DWDM Laser, nn: ITU C-Band Channel 17-60, LC connector, min. 120km
MS100390D-nn	SFP Pluggable Transceiver 1x/2x/4x Fibre Channel, DWDM Single Mode, min. 24dB Budget, LC

Chassis

MS430500M	19" Chassis 2 HU, 5 module slots, 2x 48 VDC power supplies, incl. Backplane
MS430502M	19" Chassis 6 HU, 5 module slots, 2x 48 VDC power supplies, incl. Backplane
MS430520M	Management Module, 1x RJ-45 Ethernet, 1x SUBD9