



## Statistics Collected

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The MGX 8250 maintains a statistics subsystem primarily to monitor traffic conditions within the system. The TFTP daemon that handles configuration upload requests also services the statistics upload requests. The following statistics are collected by the MGX 8250 modules.

### PXM: SONET Statistics Collected

The following SONET statistics are collected by the PXM1 module on the MGX 8250 switch platform:

- Sonet Line and Trunk Counters
  - Section Counter LoSs
  - Section Counter LoFs
  - Path Counter AISs
  - Path Counter RFIs
  - Line Counter AISs
  - Line Counter RFIs
- PLCP Counters
  - dsx3PlcpRcvOOFCCount
  - dsx3PlcpRcvRAICount
  - dsx3PlcpFECount
  - dsx3PlcpFEBECount
  - dsx3PlcpFEBESecCount
  - dsx3PlcpSEFEBESecCount
  - dsx3PlcpHECCount
  - dsx3PlcpHECSecCount
  - dsx3PlcpSEHECSecCount
- DS3 Counters
  - dsx3LCVCurrent
  - dsx3LESCurrent
  - dsx3LSESCurrent
  - dsx3PCVCurrent

- dsx3PESCurrent
- dsx3PSESCurrent
- dsx3SEFSCurrent
- dsx3AISSCurrent
- dsx3UASCurrent
- dsx3PlcpRcvOOFCCount
- dsx3PlcpRcvRAICount
- dsx3PlcpFECCount
- dsx3PlcpFEBECount
- dsx3PlcpFEBESecCount
- dsx3PlcpSEFEBESecCount
- dsx3PlcpHECCount
- dsx3PlcpHECSecCount
- dsx3PlcpSEHECSecCount
- dsx3RcvLOSCCount
- dsx3RcvOOFCCount
- dsx3RcvRAICount
- dsx3FECCount
  - dsx3PlcpBip8CVCCurrent
  - dsx3PlcpBip8ESCurrent
  - dsx3PlcpBip8SESCurrent
  - dsx3PlcpSEFSCurrent
  - dsx3PlcpUASCurrent
- ATM Counters
  - Ingress
    - Number of cells received with CLP = 0 on a connection
    - Number of cells received with CLP = 1 on a connection
  - Egress
    - Number of cells received on a connection
    - Number of cells transmitted on a connection
    - Number of cells received on a connection with EFCI bit set
    - Number of cells transmitted on a connection with EFCI bit set

On the broadband interfaces on PXM1, the following counters are available.

- Number of cells received from the port
- Number of valid OAM cells received
- Number of RM cells received
- Number of cells received from the port with CLP = 0
- Number of cells received from the port with CLP = 1

- Number of cell with CLP = 0 discarded
- Number of cell with CLP = 1 discarded
- Number of OAM cells transmitted
- Number of RM cells transmitted
- Number of cells transmitted for which CLP bit was set
- Number of cells transmitted for which CLP bit was not set

For each connection on the PXM1, the following counters are available.

- Number of cells received from the port with CLP = 0
- Number of cells received from the port with CLP = 1
- Number of cells that were non-conforming at the GCRA-1
- Number of cells that were non-conforming at the GCRA-2
- Number of cell with CLP=0 received from port and discarded
- Number of cell with CLP=1 received from port and discarded
- Number of cells transmitted (to Cell bus or towards trunk card)
- Number of cells transmitted for which EFCI was not set
- Number of cells transmitted for which EFCI was set
- Number of cells with CLP=0 toward port that were discarded
- Number of cells with CLP=1 toward port that were discarded
- Number of EOF cells received

## SRM-3T3/B

The following counters are provided for the SRM-3T3/B:

- dsx3LCVCurrent
- dsx3LESCurrent
- dsx3LSESCurrent
- dsx3PCVCurrent
- dsx3PESCurrent
- dsx3PSESCurrent
- dsx3CCVCurrent
- dsx3CESCurrent
- dsx3CESESCurrent
- dsx3SEFSCurrent
- dsx3AISSCurrent
- dsx3UASCcurrent
- dsx3RcvLOSCount
- dsx3RcvOOFCcount
- dsx3RAICount

- dsx3FECCount
- dsx3RcvFEBECounter
- dsx3RcvEXZCounter

## High-Speed FRSM

The following counters are provided for the high-speed FRSM cards:

- DS1 Alarm Stats
- statDsx1LCVCurrent
- statDsx1LESCurrent
- statDsx1LSESCurrent
- statDsx1CRCCurrent
- statDsx1SEFSCurrent
- statDsx1AISSCurrent
- statDsx1UASCurrent

### DS1 Counter Stats

- statDsx1RcvLOSCount
- statDsx1RcvOOFCount
- statDsx1RcvRAICount
- statDsx1RcvFECCount

### DS3 Alarm Stats

- statDsx3LCVCurrent
- statDsx3LESCurrent
- statDsx3LSESCurrent
- statDsx3PCVCurrent
- statDsx3PESSCurrent
- statDsx3PSESSCurrent
- statDsx3SEFSCurrent
- statDsx3AISSCurrent
- statDsx3UASCurrent

### DS3 Counter Stats

- statDsx3RcvLOSCount
- statDsx3RcvOOFCount
- statDsx3RcvRAICount
- statDsx3RcvFECCount

### Frame Relay Port Counters

- statPortRcvFrames
- statPortRcvBytes

- statPortRcvFramesDiscCRCError
- statPortRcvFramesDiscIllegalHeader
- statPortRcvFramesDiscAlignmentError
- statPortRcvFramesDiscIllegalLen
- statPortRcvFramesUnknownDLCI
- statPortRcvFramesDiscXceedDEThresh
- statPortXmtFrames
- statPortXmtBytes
- statPortXmtFramesFECN
- statPortXmtFramesBECN
- statPortXmtFramesDiscXceedQDepth
- statPortXmtBytesDiscXceedQDepth
- statPortXmtFramesDuringLMIAalarm
- statPortXmtBytesDuringLMIAalarm
- statPortRcvStatusInquiry
- statPortRcvInvalidRequest
- statPortRcvUNISeqMismatch
- statPortXmtStatus
- statPortXmtAsynchUpdate
- statPortUNISignallingTimeout
- statPortXmtStatusInquiry
- statPortRcvStatus
- statPortRcvAsynchUpdate
- statPortRcvNNISeqMismatch
- statPortNNISignallingTimeout

#### Frame Relay Channel Counters

- statChanRcvFrames
- statChanRcvBytes
- statChanRcvFramesDE
- statChanRcvBytesDE
- statChanRcvFramesDiscard
- statChanRcvBytesDiscard
- statChanRcvFramesDiscXceedQDepth
- statChanRcvBytesDiscXceedQDepth
- statChanRcvFramesDiscXceedDEThresh
- statChanXmtFrames
- statChanXmtBytes
- statChanXmtFramesFECN

- statChanXmtFramesBECN
- statChanXmtFramesDE
- statChanXmtFramesDiscard
- statChanXmtBytesDiscard
- statChanXmtFramesDiscXceedQDepth
- statChanXmtBytesDiscXceedQDepth
- statChanXmtFramesDiscCRCError
- statChanXmtFramesDiscReAssmFail
- statChanXmtFramesDuringLMIAalarm
- statChanXmtBytesDuringLMIAalarm
- statChanRcvFramesDiscUPC
- statChanXmtBytesTaggedDE
- statChanXmtFramesTaggedDE
- statChanXmtFramesInvalidCPIs
- statChanXmtFramesLengthViolations
- statChanXmtFramesOversizedSDUs
- statChanXmtFramesUnknownProtocols
- statChanRcvFramesUnknownProtocols
- statChanSecUpTime
- statChanRcvBytesTaggedDE
- statChanRcvFramesTaggedDE
- statChanRcvBytesTaggedDE
- statChanRcvFramesTaggedDE

## FRSM-T1E1

The following counters are provided for FRSM-T1E1 cards:

- Frame Relay Port Counters
- Received frames discarded due to Aborts
- Received frames discarded due to illegal header (EA bit)
- Received frames discarded due to CRC errors
- Received frames discarded due to alignment errors
- Received frames discarded due to unknown DLCI
- Received frames discarded due to illegal frame length
- Received frames discarded due to DE threshold exceeded
- Received frames with DE already set
- Received frames with FECN already set
- Received frames with BECN already set

- Received frames tagged FECN
- Received frames
- Received bytes
- Transmit frames discarded due to underrun
- Transmit frames discarded due to Abort
- Transmit frames discarded due to egress Q-depth exceeded
- Transmit bytes discarded due to egress Q-depth exceeded
- Transmit frames discarded due to egress DE threshold exceeded
- Transmit frames
- Transmit bytes
- Transmit Frames with FECN set
- Transmit Frames with BECN set
- LMI receive status inquiry request count
- LMI transmit status inquiry request count
- LMI invalid receive status count
- LMI signaling protocol (keep alive time-out count)
- LMI sequence number error count
- LMI receive status transmit count (in response to request)
- LMI transmit status transmit count (in response to request)
- Transmit frames during LMI alarm
- Transmit bytes during LMI alarm
- LMI update status transmit count (in response to configuration changes)

#### Frame Relay Channel Counters

- Number of frames received
- Number of bytes received
- Number of frames received with DE already set
- Number of bytes received with DE already set
- Number of frames received with unknown DLCI
- Number of frames received but discarded
- Number of received bytes discarded
- Number of received bytes discarded due to exceeded Q-depth
- Number of frames received and discarded due to: intershelf alarm
- exceeded DE threshold
- exceeded Q depth
- Number of frames received with FECN set
- Number of frames received with BECN set
- Number of frames received tagged FECN
- Number of frames received tagged BECN

- Number of frames transmitted
- Number of bytes transmitted
- Number of frames transmitted with DE set
- Number of frames discarded due to reassembly errors
- Number of frames transmitted during LMI logical port alarm
- Number of frames transmitted with FECN set
- Number of frames transmitted with BECN set
- Number of transmit frames discarded
- Number of transmit bytes discarded
- Number of transmit frames discarded due to: CRC error
- egress Q depth exceeded
- egress DE threshold exceeded source abort
- physical link failure (T1)

#### ATM Cell-Related Counters

- Number of cells transmitted to PXM
- Number of cells transmitted with CLP bit set
- Number of OAM AIS cells transmitted
- Number of OAM FERF cells transmitted
- Number of BCM cells transmitted
- Number of OAM end-end loopback cells transmitted
- Number of OAM segment loopback cells transmitted
- Number of cells received from PXM
- Number of cells received with CLP bit set
- Number of OAM AIS cells received
- Number of OAM FERF cells received
- Number of BCM cells received
- Number of OAM end-end loopback cells received
- Number of OAM segment loopback cells received
- Number of OAM cells discarded due to CRC-10 error

## AUSM/B

The following counters are provided for AUSM/B:

- Line Counters
- LoS occurrences
- OoF occurrences
- Remote loss of signal/frame (RAI) occurrences
- All ones received (AIS) occurrences



- Bipolar violation occurrences
- Cyclic redundancy check (CRC) error occurrences
- Line code violation (LCV)
- Line errored second (LES)
- Line severely errored second (LSES)
- Code violation (CV)
- Errored Second (ES)
- SES
- SEFS
- AISS
- UAS

#### Port Counters (IMA ports)

- Number of cells received from the port
- Number of cells received with unknown VPI/VCI
- Last unknown VPI/VCI received
- Number of cells discarded due to error in cell header
- Number of cells received with nonzero GFC field
- Number of cells transmitted to the port
- Number of cells transmitted for which EFCI was set
- Number of egress cells discarded because of service interface physical layer alarm

#### Channel Counters

- Ingress
  - Number of cells received from the port on the virtual connection (VC)
  - Number of cells received with CLP = 1
  - Number of cells received with EFCI = 1
  - Number of cells received but discarded because queue exceeded queue depth
  - Number of cells received but discarded because queue exceeded CLP threshold
  - Number of cells received for which CLP was set because of UPC violations
- Peak queue depth
  - Number of cells transmitted to the cell bus
  - Number of cells transmitted to the cell bus for which EFCI was set
  - Number of cells for transmission to the cell bus discarded because of shelf alarm
  - Number of OAM cells received and discarded
  - Number of AIS cells received
  - Number of RDI FERF cells received
  - Number of segment loopback cells received
  - Number of segment loopback cells transmitted to the cell bus

- Egress
  - Number of cells received from the cell bus for this virtual circuit
  - Number of cells received with CLP = 1
  - Number of cells discarded because queue exceeded queue depth (per egress queue)
  - Number of cells discarded because queue exceeded CLP threshold (per egress queue)
  - Number of OAM cells discarded
  - Number of AIS cells transmitted to port
  - Number of segment loopback cells transmitted
  - Number of segment loopback cells received from the cell bus

## CESM-T1E1

The following counters are provided for the CESM-T1E1:

- FEBE count
- OOF count
- LCV count
- FER count
- CRC error count

### AAL-1 SAR Counters

- Number of OAM cells received
- Number of OAM cells dropped FIFO full
- Number of SN CRCs not correctable
- Number of cells with SN different from the SN+1
- Number of cells received from UTOPIA interface
- Number of cells transmitted to UTOPIA interface

### ATM Layer Counters

- Number of cells transmitted
- Number of cells transmitted with the CLP bit set
- Number of AIS cells transmitted
- Number of FERF cells transmitted
- Number of end-to-end loopback cells transmitted
- Number of segment loopback cells transmitted
- Number of cells received
- Number of cells received with the CLP bit set
- Number of AIS cells received
- Number of FERF cells received
- Number of end-to-end loopback cells received

- Number of segment loopback cells received
- Number of OAM cells discarded because of CRC-10 error

## CESM-T3E3

The following counters are provided for the CESM-T3E3:

- DS3 Line Group
- Dsx3LCVCurrent
- Dsx3LESCurrent
- Dsx3LSESCurrent
- Dsx3UASCcurrent
- Dsx3RcvLOSCount

## Channel Counters

The following channel counter are provided.

- CesReassCells
- CesGenCells
- CesHdrErrors
- CesSeqMismatchCnt
- CesLostCells
- CesChanSecUpTime
- XmtCellsFERF
- RcvCellsFERF
- XmtCellsAIS
- RcvCellsAIS
- XmtCellsSegmentLpBk
- RcvCellsSegmentLpBk
- RcvCellsDiscOAM

