

# Recorder Objects

## Introduction

The **Recorder** object provides a mechanism to collect and buffer data from the controller. Only one Recorder object per controller is supported. After the Recorder is configured and started, the controller copies the data from the specified fields to a local buffer every "N" samples. The host can collect the data from the Recorder object using polling or interrupt-based techniques.

| [Buffer Size](#) |

## Methods

### Create, Delete, Validate Methods

<a href="#">mpiRecorderCreate</a>	Create Recorder object
<a href="#">mpiRecorderDelete</a>	Delete Recorder object
<a href="#">mpiRecorderValidate</a>	Validate Recorder object

### Configuration and Information Methods

<a href="#">mpiRecorderConfigGet</a>	Get Recorder's configuration
<a href="#">mpiRecorderConfigSet</a>	Set Recorder's configuration
<a href="#">mpiRecorderFlashConfigGet</a>	Get Recorder's flash configuration
<a href="#">mpiRecorderFlashConfigSet</a>	Set Recorder's flash configuration
<a href="#">mpiRecorderRecordConfig</a>	Configure type of data record that Recorder will capture
<a href="#">mpiRecorderStatus</a>	Get status of Recorder

### Event Methods

<a href="#">mpiRecorderEventNotifyGet</a>	Get event mask of events for which host notification has been requested
<a href="#">mpiRecorderEventNotifySet</a>	Set event mask of events for which host notification will be requested
<a href="#">mpiRecorderEventReset</a>	Reset the events specified in event mask that are generated by Recorder

### Action Methods

<a href="#">mpiRecorderRecordGet</a>	Get data records from Recorder
<a href="#">mpiRecorderStart</a>	Start recording data records using Recorder
<a href="#">mpiRecorderStop</a>	Stop recording data records using Recorder

### Memory Methods

<a href="#">mpiRecorderMemory</a>	Get address to Recorder's memory
<a href="#">mpiRecorderMemoryGet</a>	Copy data from Recorder memory to application memory
<a href="#">mpiRecorderMemorySet</a>	Copy data from application memory to Recorder memory

### Relational Methods

<a href="#">mpiRecorderControl</a>	Return handle of Control object associated with Recorder
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## Data Types

[MPIRecorderConfig / MEIRecorderConfig](#)  
[MPIRecorderMessage](#)  
[MPIRecorderRecord / MEIRecorderRecord](#)  
[MEIRecorderRecordAxis](#)  
[MEIRecorderRecordFilter](#)  
[MPIRecorderRecordPoint](#)  
[MPIRecorderRecordType / MEIRecorderRecordType](#)  
[MPIRecorderStatus](#)  
[MEIRecorderTrace](#)

## Constants

[MPIRecorderADDRESS\\_COUNT\\_MAX](#)

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## mpiRecorderCreate

**Declaration**      const [MPIRecorder](#) **mpiRecorderCreate**([MPIControl](#) **control**)

**Required Header**    stdmpi.h

**Description**            **RecorderCreate** creates a Recorder object associated with a Control object (**control**). *RecorderCreate* is the equivalent of a C++ constructor.

### Return Values

**handle**                to a Recorder object

**MPIHandleVOID**        if the Recorder object could not be created

**See Also**             [mpiRecorderDelete](#) | [mpiRecorderValidate](#)

## mpiRecorderDelete

**Declaration** long `mpiRecorderDelete(MPIRecorder recorder)`

**Required Header** stdmpi.h

**Description** **RecorderDelete** deletes a Recorder object and invalidates its handle (*recorder*). *RecorderDelete* is the equivalent of a C++ destructor.

### Return Values

**MPIMessageOK** if *RecorderDelete* successfully deletes a Recorder object and invalidates its handle

**See Also** [mpiRecorderCreate](#) | [mpiRecorderValidate](#)

## mpiRecorderValidate

**Declaration** long `mpiRecorderValidate(MPIRecorder recorder)`

**Required Header** stdmpi.h

**Description** **RecorderValidate** validates the Recorder object and its handle (*recorder*).

### Return Values

**MPIMessageOK** if Recorder is a handle to a valid object.

**See Also** [mpiRecorderCreate](#) | [mpiRecorderDelete](#)

## mpiRecorderConfigGet

### Declaration

```
long mpiRecorderConfigGet(MPIRecorder recorder,
MPIRecorderConfig* config,
void *external)
```

### Required Header

stdmpi.h

### Description

**RecorderConfigGet** gets a Recorder's (*recorder*) configuration and writes it into the structure pointed to by *config*, and also writes it into the implementation-specific structure pointed to by *external* (if *external* is not NULL).

The Recorder's configuration information in *external* is in addition to the Recorder's configuration information in *config*, i.e. the configuration information in *config* and in *external* is not the same information. Note that *config* or *external* can be NULL (but not both NULL).

**XMP Only** *external* either points to a structure of type **MEIRecorderConfig{}** or is NULL.

### Return Values

<b>MPIMessageOK</b>	if <i>RecorderConfigGet</i> successfully writes the Recorder's configuration to the structure(s)
---------------------	--

### See Also

[MEIRecorderConfig](#) | [mpiRecorderConfigSet](#)

# mpiRecorderConfigSet

## Declaration

```
long mpiRecorderConfigSet(MPIRecorder recorder,
MPIRecorderConfig *config,
void *external)
```

**Required Header** stdmpi.h

## Description

**RecorderConfigSet** sets a Recorder's (*recorder*) configuration using data from the structure pointed to by *config*, and also using data from the implementation-specific structure pointed to by *external* (if *external* is not NULL).

The Recorder's configuration information in *external* is in addition to the Recorder's configuration information in *config*, i.e. the configuration information in *config* and in *external* is not the same information. Note that *config* or *external* can be NULL (but not both NULL).

**XMP Only** *external* either points to a structure of type **MEIRecorderConfig{}** or is NULL.

## Return Values

**MPIMessageOK** if *RecorderConfigSet* successfully sets the Recorder's configuration using data from the structure(s)

**See Also** [MEIRecorderConfig](#) | [mpiRecorderConfigGet](#)

## mpiRecorderFlashConfigGet

### Declaration

```
long mpiRecorderFlashConfigGet(MPIRecorder  
void *flash,  
MPIRecorderConfig *config,  
void *external)
```

### Required Header

stdmpi.h

### Description

**RecorderFlashConfigGet** gets the flash configuration (*flash*) for a Recorder (*recorder*) and writes it into the structure pointed to by *config*, and also writes it in the implementation-specific structure pointed to by *external* (if *external* is not NULL).

The Recorder's flash configuration information in *external* is *in addition* to the Recorder's flash configuration information in *config*, i.e, the flash configuration information in *config* and in *external* is not the same information. Note that *config* or *external* can be NULL (but not both NULL).

#### XMP Only

*external* either points to a structure of type **MEIRecorderConfig{}** or is NULL.

### Return Values

#### MPIMessageOK

if *RecorderFlashConfigGet* successfully writes the Recorder's flash configuration to the structure(s)  
*flash* is either an MEIFlash handle or MPIHandleVOID. If *flash* is MPIHandleVOID, an MEIFlash object will be created and deleted internally.

### See Also

[MEIRecorderConfig](#) | [MEIFlash](#) | [mpiRecorderFlashConfigSet](#)

## mpiRecorderFlashConfigSet

### Declaration

```
long mpiRecorderFlashConfigSet(MPIRecorder recorder,
                             void *flash,
                             MPIRecorderConfig *config,
                             void *external)
```

### Required Header

stdmpi.h

### Description

**RecorderFlashConfigSet** sets the flash configuration (*flash*) for a Recorder (*recorder*) using data from the structure pointed to by *config*, and also using data from the implementation-specific structure pointed to by *external* (if *external* is not NULL).

The Recorder's flash configuration information in *external* is in addition to the Recorder's flash configuration information in *config*, i.e., the flash configuration information in *config* and in *external* is not the same information. Note that *config* or *external* can be NULL (but not both NULL).

#### XMP Only

*external* either points to a structure of type **MEIRecorderConfig{}** or is NULL.

### Return Values

#### MPIMessageOK

if *RecorderFlashConfigSet* successfully sets the Recorder's flash configuration using data from the structure(s)  
*flash* is either an MEIFlash handle or MPIHandleVOID. If *flash* is MPIHandleVOID, an MEIFlash object will be created and deleted internally.

### See Also

[MEIRecorderConfig](#) | [MEIFlash](#) | [mpiRecorderFlashConfigGet](#)

# mpiRecorderRecordConfig

**Declaration**

```
long mpiRecorderRecordConfig(MPIRecorder recorder,
                             MPIRecorderRecordType type,
                             long count,
                             void *handle)
```

**Required Header** stdmpi.h

**Description** **RecorderRecordConfig** configures the type (*type*) of record that a Recorder (*recorder*) will capture.

If " <i>type</i> " is	Then
MPIRecorderRecordTypePOINT	<i>count</i> data points will be recorded, and <i>handle</i> points to an array of <i>count</i> controller addresses
MEIRecorderRecordTypeAXIS	<i>count</i> records of type MPIRecorderRecordAxis{ } will be recorded, and <i>handle</i> points to an array of <i>count</i> Axis handles
MEIRecorderRecordTypeFILTER	<i>count</i> records of type MPIRecorderRecordFilter{ } will be recorded, and <i>handle</i> points to an array of <i>count</i> Filter handles

## Return Values

<b>MPIMessageOK</b>	if <i>RecorderRecordConfig</i> successfully configures the type of record that the Recorder will capture
---------------------	--

**See Also** [MPIRecorderRecordAxis](#) | [MPIRecorderRecordFilter](#)

## *mpiRecorderStatus*

### Declaration

```
long mpiRecorderStatus(MPIRecorder recorder,
MPIRecorderStatus *status,
void *external)
```

### Required Header

stdmпи.h

### Description

**RecorderStatus** gets the status of the Recorder (*recorder*) and writes it into the structure pointed to by *status*, and also writes it into the implementation-specific structure pointed to by *external* (if *external* is not NULL).

The Recorder's status information in *external* is in addition to the Recorder's status information in *status*, i.e., the status information in *status* and in *external* is not the same information. Note that *status* or *external* can be NULL (but not both NULL).

### XMP Only

*external* either points to a structure of type MPIRecorderStatus{ } or is NULL.

### Return Values

#### MPIMessageOK

if *RecorderStatus* successfully gets the Recorder's status and writes it into the structure(s)

### See Also

[MPIRecorderStatus](#)

## mpiRecorderEventNotifyGet

### Declaration

```
long mpiRecorderEventNotifyGet(MPIRecorder recorder,
                               MPIEventMask *eventMask,
                               void *external)
```

### Required Header

stdmpi.h

### Description

**RecorderEventNotifyGet** writes the event mask into the structure pointed to by **eventMask**, and also writes it into the implementation-specific structure pointed to by **external** (if **external** is not NULL). (The event mask specifies the event type(s) generated by a Recorder (**recorder**), for which host notification has been requested.)

The event mask information in **external** is in addition to the event mask information in **eventMask**, i.e, the mask information in **eventMask** and in **external** is not the same mask information. Note that **eventMask** or **external** can be NULL (but not both NULL).

### XMP Only

**external** either points to a structure of type MEIEventNotifyData{} or is NULL. An MEIEventNotifyData{} structure is an array of firmware addresses. The contents of these firmware addresses are placed into the MEIEventStatusInfo{} structure (which contains all events generated by this Recorder object).

### Return Values

<b>MPIMessageOK</b>	if <i>RecorderEventNotifyGet</i> successfully writes the event mask to the structure(s)
---------------------	---

### See Also

[MEIEventNotifyData](#) | [MEIEventStatusInfo](#) | [mpiRecorderEventNotifySet](#)

# mpiRecorderEventNotifySet

## Declaration

```
long mpiRecorderEventNotifySet(MPIRecorder recorder,
MPIEventMask eventMask,
void *external)
```

## Required Header

stdmpi.h

## Description

**RecorderEventNotifySet** requests host notification of the event(s) specified by *eventMask* and generated by a Recorder (*recorder*), and also generated by the implementation-specific structure pointed to by *external* (if *external* is not NULL).

The events in *external* are in addition to the events in *recorder*, i.e., the events in *recorder* and in *external* are not necessarily the same events. Note that *recorder* or *external* can be NULL (but not both NULL).

Event notification is enabled for the event types specified in *eventMask*. *eventMask* is a bit mask generated by the logical OR of the MPIEventMask bits that are associated with the desired MPIEventType values. Event notification is disabled for event types not specified in *eventMask*.

The mask of event types (generated by a Recorder object) consists of MEIEventMaskRECODER\_FULL and MEIEventMaskRECODER\_DONE.

To	Use "eventMask"
Enable host notification of all Recorder events	MPIEventMaskALL
Disable host notification of all Recorder events	MPIEventTypeNONE

## XMP Only

*external* either points to a structure of type MEIEventNotifyData{} or is NULL. An MEIEventNotifyData{} structure is an array of firmware addresses. The contents of these firmware addresses are placed into the MEIEventStatusInfo{} structure (which contains all events generated by this Recorder object).

## Return Values

<b>MPIMessageOK</b>	if <i>RecorderEventNotifySet</i> successfully requests host notification of the event(s) as specified by the structure(s)
---------------------	---

## See Also

[MEIEventMaskRECODER](#) | [MEIEventNotifyData](#) | [MEIEventStatusInfo](#)  
[mpiRecorderEventNotifyGet](#)

## mpiRecorderEventReset

### Declaration

```
long mpiRecorderEventReset(MPIRecorder recorder,  
MPIEventMask eventMask)
```

### Required Header

stdmpi.h

### Description

**RecorderEventReset** resets the event(s) specified in *eventMask* and generated by a Recorder (*recorder*). Your application should call *RecorderEventReset* only after one or more latchable events have occurred.

### Return Values

#### MPIMessageOK

if *RecorderEventReset* successfully resets the event(s) that are specified in *eventMask* and generated by a Recorder

### See Also

## mpiRecorderRecordGet

### Declaration

```
long mpiRecorderRecordGet(MPIRecorder recorder,
                        long MPIRecorderRecord *record,
                        long *count)
```

### Required Header

stdmpi.h

### Description

**RecorderRecordGet** obtains a Recorder's (*recorder*) data records. The record type must have been configured previously, by a prior call to `mpiRecorderRecordConfig(...)`.

`RecorderRecordGet` gets a maximum of *countMax* records and writes them into the location pointed to by *record* (the location must be large enough to hold them). `RecorderRecordGet` also writes the actual number of records that were obtained to the location pointed to by *count*.

If the recorder data buffer is full and recording is enabled, recording will be temporarily disabled while either all or *countMax* records are obtained, whichever is less. Any records not obtained will be lost.

### Return Values

<b>MPIMessageOK</b>	if <i>RecorderRecordGet</i> successfully gets the data records
---------------------	--

### See Also

[mpiRecorderRecordConfig](#)

## mpiRecorderStart

### Declaration

```
long mpiRecorderStart(MPIRecorder recorder,
                      long count,
                      long period,
                      long fullCount)
```

**Required Header** stdmpi.h

### Description

**RecorderStart** instructs a Recorder (*recorder*) to begin recording data records. The record type must have been configured previously, by a prior call to mpiRecorderRecordConfig(...).

An event of type MPIEventRECORDER\_DONE will be generated when the Recorder has finished collecting data records.

<i>count</i> ( for <i>count</i> > 0 )	specifies the total number of data records to record
if <i>count</i> = -1	then recording is continuous, and uncollected records may be overwritten
period if <i>period</i> = 0	frequency of recording in milliseconds then data will be recorded as quickly as possible (on every sample)
if <i>fullCount</i> > 0	then an event of type MPIEventRECORDER_COUNT will be generated when the Recorder's data buffer contains <i>fullCount</i> data records

### Return Values

<b>MPIMessageOK</b>	if <i>RecorderStart</i> successfully instructs a Recorder to begin recording data records
---------------------	---

### See Also

[mpiRecorderRecordConfig](#) | [mpiRecorderStop](#)

## mpiRecorderStop

**Declaration** long `mpiRecorderStop`(`MPIRecorder` recorder)

**Required Header** stdmpi.h

**Description** `RecorderStop` instructs a Recorder (*recorder*) to stop recording data records.

### Return Values

`MPIMessageOK` if *RecorderStop* successfully stops recording data records

**See Also** [mpiRecorderStart](#)

## mpiRecorderMemory

### Declaration

```
long mpiRecorderMemory(MPIRecorder recorder,  
                      void      **memory)
```

### Required Header

stdmpi.h

### Description

**RecorderMemory** writes an address to the contents of *memory*. An address can be used to access a Recorder's (*recorder*) memory. An address calculated from it can be passed as the *src* argument to mpiRecorderMemoryGet(...) and as the *dst* argument to mpiRecorderMemorySet(...).

### Return Values

<b>MPIMessageOK</b>	if <i>RecorderMemory</i> successfully writes the Recorder's memory address to the contents of <i>memory</i>
---------------------	---

### See Also

[mpiRecorderMemoryGet](#) | [mpiRecorderMemorySet](#)

## mpiRecorderMemoryGet

### Declaration

```
long mpiRecorderMemoryGet( MPIRecorder recorder,  
                           void* dst,  
                           void* src,  
                           long count)
```

**Required Header** stdmpi.h

**Description** **RecorderMemoryGet** copies *count* bytes of a Recorder's (*recorder*) memory (starting at address *src*) to application memory (starting at address *dst*).

### Return Values

<b>MPIMessageOK</b>	if <i>RecorderMemoryGet</i> successfully copies data from Recorder memory to application memory
---------------------	---

**See Also** [mpiRecorderMemory](#) | [mpiRecorderMemorySet](#)

## mpiRecorderMemorySet

### Declaration

```
long mpiRecorderMemorySet(MPIRecorder recorder,  
                          void *dst,  
                          void *src,  
                          long count)
```

### Required Header

stdmpi.h

### Description

[RecorderMemorySet](#) copies *count* bytes of application memory (starting at address *src*) to a Recorder's (*recorder*) memory (starting at address *dst*).

### Return Values

<a href="#">MPIMessageOK</a>	if <i>RecorderMemorySet</i> successfully copies data from application memory to Recorder memory
------------------------------	---

### See Also

[mpiRecorderMemory](#) | [mpiRecorderMemoryGet](#)

## mpiRecorderControl

**Declaration**      const [MPIControl](#) **mpiRecorderControl**([MPIRecorder](#) *recorder*)

**Required Header**    stdmpi.h

**Description**            **RecorderControl** returns a handle to the motion controller (Control object) that a Recorder (*recorder*) is associated with.

### Return Values

<b>handle</b>	to a Control object that a Recorder is associated with
---------------	--

<b>MPIHandleVOID</b>	if the Recorder object is invalid
----------------------	-----------------------------------

### See Also

## MPIRecorderConfig / MEIRecorderConfig

### MPIRecorderConfig

```
typedef struct MPIRecorderConfig {
    long      period;          /* collect 1 record every `period` milliseconds */
    long      fullCount;       /* >0 => record count to trigger full buffer */

    long      addressCount;    /* number of data point addresses in address[] */
    void     *address[MPIRecorderADDRESS_COUNT_MAX];
} MPIRecorderConfig;
```

### Description

<b>period</b>	The number of milliseconds between successive recordings. A value of zero means the recorder will record data every sample.
<b>fullCount</b>	If fullCount>0, then the recorder will generate a "recorder full" event when this fullCount number or records are in the recorder buffer.
<b>addressCount</b>	The number of XMP memory addresses in address[].
<b>*address[]</b>	An array of XMP memory addresses the recorder will record.

### MEIRecorderConfig

```
typedef MPIEmpty           MEIRecorderConfig;
```

### Description

**RecorderConfig** is currently not supported and is reserved for future use.

### See Also

[mpiRecorderConfigGet](#) | [mpiRecorderConfigSet](#)

# **MPIRecorderMessage**

## **MPIRecorderMessage**

```
typedef enum {

    MPIRecorderMessageRECODER_INVALID,
    MPIRecorderMessageSTARTED,
    MPIRecorderMessageSTOPPED,
    MPIRecorderMessageNOT_CONFIGURED,
} MPIRecorderMessage;
```

## Description

### **MPIRecorderMessageRECODER\_INVALID**

<b>Meaning</b>	The MPIRecorder handle passed to an MPIRecorder method is invalid.
<b>Possible Causes</b>	Either the handle was never initialized or the MPIRecorderCreate method failed.
<b>Recommendations</b>	Use MPIRecorderValidate after MPIRecorderCreate to see if the returned handle is valid.

### **MPIRecorderMessageSTARTED**

<b>Meaning</b>	
<b>Possible Causes</b>	An MPIRecorder method that assumes that recorder has not been started has been called while the recorder was recording data.
<b>Recommendations</b>	

### **MPIRecorderMessageSTOPPED**

<b>Meaning</b>	
<b>Possible Causes</b>	An MPIRecorder method that assumes that recorder has been started has been called while the recorder was not recording data.
<b>Recommendations</b>	

### **MPIRecorderMessageNOT\_CONFIGURED**

<b>Meaning</b>	
<b>Possible Causes</b>	An MPIRecorder method has been called that assumes that the recorder has been configured. mpiRecorderStart is the most common method to return this error code.
<b>Recommendations</b>	

## Sample Code

```
MPIControl control;
MPIRecorder recorder;
long returnValue;
...
recorder =
    mpRecorderCreate(control);
returnValue =
    mpiRecorderValidate(recorder);
```

## See Also

[mpiRecorderCreate](#) | [mpiRecorderValidate](#)

# ***MPIRecorderRecord / MEIRecorderRecord***

## **MPIRecorderRecord**

```
typedef union {
    MPIRecorderRecordPoint      point[MPIRecorderADDRESS\_COUNT\_MAX] ;
} MPIRecorderRecord;
```

### Description

<b>point</b>	An array of recorded values corresponding to the XMP addresses stored in MPIRecorderConfig.address[].
--------------	---

## **MEIRecorderRecord**

```
typedef union {
    MEIRecorderRecordAxis      axis[MEIXmpMAX\_Axes] ;
    MEIRecorderRecordFilter   filter[MEIXmpMAX\_Filters] ;
    MPIRecorderRecord           dummy; /* ensure proper sizing */
} MEIRecorderRecord;
```

### Description

<b>axis</b>	An array of MEIRecorderRecordAxis records.
<b>filter</b>	An array of MEIRecorderRecordFilter records.
<b>dummy</b>	A dummy structure that ensures that MEIRecorderRecord has the proper size.

### See Also

# **MEIRecorderRecordAxis**

```
typedef struct MEIRecorderRecordAxis {  
    long    sample;          /* sample number */  
    long    command;         /* command position */  
    long    actual;          /* actual position */  
    float   dac;            /* voltage */  
} MEIRecorderRecordAxis;
```

## Description

<b>sample</b>	The XMP sample number in which the following values were recorded.
<b>command</b>	The command position of the axis.
<b>actual</b>	The actual position of the axis.
<b>dac</b>	The output of the primary DAC of the motor associated with the axis.

## See Also

# MEIRecorderRecordFilter

## MEIRecorderRecordFilter

```
typedef struct MEIRecorderRecordFilter {  
    long      sample;          /* sample number */  
    long      command;         /* command position */  
    long      actual;          /* actual position */  
    float     dac;             /* voltage */  
} MEIRecorderRecordFilter;
```

### Description

<b>sample</b>	The XMP sample number in which the following values were recorded
<b>command</b>	The command position the filter uses to calculate the filter output.
<b>actual</b>	The actual position (of an axis) the filter uses to calculate the filter output.
<b>dac</b>	The output of the filter that gets sent to a motor's primary DAC.

### See Also

## ***MPIRecorderRecordPoint***

### **MPIRecorderRecordPoint**

```
typedef long MPIRecorderRecordPoint;
```

#### Description

**MPIRecorderRecordPoint**

represents one recorder record. This will correspond to the value of one XMP address.

#### See Also

## ***MPIRecorderRecordType / MEIRecorderRecordType***

### **MPIRecorderRecordType**

```
typedef enum {
    MPIRecorderRecordTypeINVALID,
    MPIRecorderRecordTypePOINT,
} MPIRecorderRecordType;
```

#### **Description**

<b>MPIRecorderRecordTypeINVALID</b>	specifies to the data recorder that MPIRecorderRecordPoint records (copies of controller memory locations) are being recorded.
<b>MPIRecorderRecordTypePOINT</b>	an invalid record type.

### **MEIRecorderRecordType**

```
typedef enum {
    MEIRecorderRecordTypeAXIS,
    MEIRecorderRecordTypeFILTER,
} MEIRecorderRecordType;
```

#### **Description**

<b>MEIRecorderRecordTypeAXIS</b>	specifies to the data recorder that MEIRecorderRecordAxis records are being recorded.
<b>MEIRecorderRecordTypeFILTER</b>	specifies to the data recorder that MEIRecorderRecordFilter records are being recorded.

#### **Remarks**

Predefined types for setting up the type of data an MPIRecorder object will record. This is used by the mpiRecorderRecordConfig() method.

#### **See Also**

[MPIRecorder](#) | [MEIRecorderRecordAxis](#) | [MEIRecorderRecordFilter](#) | [mpiRecorderRecordConfig](#)

## MPIRecorderStatus

### MPIRecorderStatus

```
typedef struct MPIRecorderStatus {
    long    enabled;
    long    full;
    long    recordCount;
    long    recordCountMax;
} MPIRecorderStatus;
```

### Description

<b>enabled</b>	If the recorder is enabled (recording) then enabled will equal TRUE, otherwise enabled will equal FALSE.
<b>full</b>	If the recorder is full (the number of stored records $\geq$ MPIRecorderConfig.fullCount) then full will equal TRUE, otherwise full will equal FALSE.
<b>recordCount</b>	The number of stored records in the recorder.
<b>recordCountMax</b>	The maximum number of records the recorder can store.

### See Also

[mpiRecorderStatus](#)

# **MEIRecorderRecordTrace**

## **MEIRecorderRecordTrace**

```
typedef enum {  
  
    MEIRecorderTraceRECORD_GET,  
    MEIRecorderTraceSTATUS,  
    MEIRecorderTraceOVERFLOW,  
} MEIRecorderTrace;
```

### **Description**

<b>MEIRecorderTraceRECORD_GET</b>	will display trace information when the data recorder retrieves records.
<b>MEIRecorderTraceSTATUS</b>	will display trace information when the MPI retrieves the data recorder status.
<b>MEIRecorderTraceOVERFLOW</b>	will display trace information when the data recorder overflows.

### **See Also**

## ***MPIRecorderADDRESS\_COUNT\_MAX***

### **MPIRecorderADDRESS\_COUNT\_MAX**

```
#define MPIRecorderADDRESS_COUNT_MAX      (128)
```

#### **Description**

**RecorderADDRESS\_COUNT\_MAX** defines the maximum number of addresses the Recorder object supports.

#### **See Also**

[MPIRecorderConfig](#)

# Recorder Buffer Size

The Data Recorder buffer size can be dynamically allocated. The [MPIControlConfig{...}](#) structure has a new element, called recordCount. This element allows the application to change the size of the recorder object's data buffer using the [mpiControlConfigGet/Set\(...\)](#) methods. The Record buffer size (the default is 3064 records) is defined within the MEIXmpDefaultEnabled\_Records structure (*xmp.h*). Each record is the size of one memory word. Using a larger data buffer size can improve the performance of MotionScope running on a slow host or running in Client/Server mode over a congested network.

A new method, [meiControlExtMemAvail\(...\)](#), has been added which will return the size of external memory available for allocation. This value can be added to the current recordCount to expand the record buffer to the maximum possible size.

For more information, see the [Special Note](#) on *Dynamic Allocation of External Memory Buffers*.

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