

## MCADxpXmap Tango Cpp Class

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### MCADxpXmap Class Identification :

Contact : at synchrotron-soleil.fr - langlois  
 Class Family : Acquisition  
 Platform : Windows  
 Bus : Compact PCI  
 Manufacturer : XIA  
 Manufacturer ref. : Dxp-Xmap

### MCADxpXmap Class Inheritance :

- [Tango::DeviceImpl](#)
  - MCADxpXmap

### MCADxpXmap Class Description :

This Device Server controls the MCA DXP-XMAP from XIA (cPCI).

It uses the XIA handel library.

The ini file is loaded into the xMAP.

1 spectrum attribute is created dynamically for each channel (detector).

N roi scalar attribute are dynamically created for each channel (detector).

### MCADxpXmap Properties :

### There is no class properties

Device Properties			
Name	Description	Type	Default Value
ConfigFile	.ini configuration file	String	no_file_set
XIADeviceType	Which kind of XIA device shall be controlled? Allowed values are XMAP, SATURN, MERCURY	String	XMAP
MappingStorageType	How should the mapping data be stored? Allowed values are (NO_DATA_STORE, TEST_FILE_STORE, TANGO_STORE, RAW_STORE, NEXUS_STORE)	String	NO_DATA_STORE
MappingStorageFilePrefix	Prefix of the mapping storage file	String	mca_xmap_1
Timebase	Timebase for device that is used in calculation of statistics (XMAP: 320e-9, MERCURY: 20MHz/16 -> 800 ns).	String	1.0
SpoolID	Flyscan spool ID	String	0

MCADxpXmap Class Commands				
Name	Input type	Output type	Level	Description
<a href="#">State</a>	DEV_VOID	DEV_STATE	OPERATOR	This command gets the device state (stored in its <i>device_state</i> data member) and returns it to the caller.
<a href="#">Status</a>	DEV_VOID	CONST_DEV_STRING	OPERATOR	This command gets the device status (stored in its <i>device_status</i> data member) and returns it to the caller.
<a href="#">Start</a>	DEV_VOID	DEV_VOID	OPERATOR	Start an acquisition for the Value specified in the attribute <i>presetValue</i> . acquisition will be stopped either automatically after the elapsed value, or by an Abort .
<a href="#">Stop</a>	DEV_VOID	DEV_VOID	OPERATOR	Stop the acquisition
<a href="#">SetROIs</a>	DEVVAR_LONGARRAY	DEV_VOID	OPERATOR	Set the ROIs. the parameter is an array with values going by pair: tab[0]=126, tab[1]=238 -> first ROI starts from 126, ends to 238 tab[2]=1569, tab[3]=2368 -> second ROI starts from 1569, ends to 2368.

<a href="#">ChooseMode</a>	DEV_SHORT	DEV_VOID	OPERATOR	Choose the acquisition mode: 0->MCA 1->MAP 2->SCA
<a href="#">SaveParametersToCurrentINIFile</a>	DEV_VOID	DEV_VOID	EXPERT	Save the current Parameters to an INI file
<a href="#">SaveParametersToNewINIFile</a>	DEV_STRING	DEV_VOID	EXPERT	Save current Xmap parameters to a new INI file
<a href="#">LoadConfigFile</a>	DEV_STRING	DEV_VOID	EXPERT	Load a new config file (.ini)
<a href="#">Reinit</a>	DEV_VOID	DEV_VOID	EXPERT	Used to simulate an Init (delete_device + init_device) when a new INI file is loaded
<a href="#">NexusResetBufferIndex</a>	DEV_VOID	DEV_VOID	EXPERT	Reset the Nexus buffer index to 1
<a href="#">Abort</a>	DEV_VOID	DEV_VOID	EXPERT	Call the Stop command. used for backward compatibility
<a href="#">GetDataStreams</a>	DEV_VOID	DEV_STRING	EXPERT	Returns the flyscan data streams associated with this device.

### **Command State :**

This command gets the device state (stored in its *device\_state* data member) and returns it to the caller.

State Definition		
Input Argument	Tango::DEV_VOID	none.
Output Argument	Tango::DEV_STATE	State Code
DisplayLevel	OPERATOR	..
Inherited	true	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

### **Command Status :**

This command gets the device status (stored in its *device\_status* data member) and returns it to the caller.

Status Definition		
Input Argument	Tango::DEV_VOID	none.
Output Argument	Tango::CONST_DEV_STRING	Status description
DisplayLevel	OPERATOR	..
Inherited	true	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

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### **Command Start :**

Start an acquisition for the Value specified in the attribute presetValue.  
acquisition will be stopped either automatically after the elapsed value, or by an Abort .

Start Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
		..
Command NOT allowed for	<ul style="list-style-type: none"><li>• RUNNING</li><li>• FAULT</li><li>• INIT</li></ul>	..

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### **Command Stop :**

Stop the acquisition

Stop Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
		..
Command NOT allowed for	<ul style="list-style-type: none"><li>• FAULT</li><li>• INIT</li></ul>	..

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### **Command SetROIs :**

Set the ROIs.  
the parameter is an array with values going by pair:  
tab[0]=126, tab[1]=238 -> first ROI starts from 126, ends to 238  
tab[2]=1569,tab[3]=2368 -> second ROI starts from 1569, ends to 2368.

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SetROIs Definition		
Input Argument	Tango::DEVVAR_LONGARRAY	starts and ends of the ROI. eg: tab[0]=126, tab[1]=238, tab[2]=1569,tab[3]=2368
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> <li>• RUNNING</li> <li>• FAULT</li> <li>• INIT</li> </ul>	..

**Command ChooseMode :**

Choose the acquisition mode:

0->MCA

1->MAP

2->SCA

ChooseMode Definition		
Input Argument	Tango::DEV_SHORT	Mode: 0->MCA 1->MAP 2>SCA
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> <li>• RUNNING</li> <li>• FAULT</li> <li>• INIT</li> </ul>	..

**Command SaveParametersToCurrentINIFile :**

Save the current Parameters to an INI file

SaveParametersToCurrentINIFile Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> <li>• RUNNING</li> </ul>	

Command NOT allowed for	<ul style="list-style-type: none"> <li>• FAULT</li> <li>• INIT</li> </ul>	..
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**Command SaveParametersToNewINIFile :**

Save current Xmap parameters to a new INI file

SaveParametersToNewINIFile Definition		
Input Argument	Tango::DEV_STRING	file where to save parameters
Output Argument	Tango::DEV_VOID	
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> <li>• RUNNING</li> <li>• FAULT</li> <li>• INIT</li> </ul>	..

**Command LoadConfigFile :**

Load a new config file (.ini)

LoadConfigFile Definition		
Input Argument	Tango::DEV_STRING	Config file (.ini) to be loaded
Output Argument	Tango::DEV_VOID	
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> <li>• RUNNING</li> <li>• FAULT</li> <li>• INIT</li> </ul>	..

**Command Reinit :**

Used to simulate an linit (delete\_device + init\_device) when a new INI file is loaded

Reinit Definition

Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> <li>• RUNNING</li> <li>• INIT</li> </ul>	..

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### **Command NexusResetBufferIndex :**

Reset the Nexus buffer index to 1

<b>NexusResetBufferIndex Definition</b>		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> <li>• RUNNING</li> <li>• FAULT</li> <li>• INIT</li> </ul>	..

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### **Command Abort :**

Call the Stop command.  
used for backward compatibility

<b>Abort Definition</b>		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> <li>• FAULT</li> <li>• INIT</li> </ul>	..

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## Command GetDataStreams :

Returns the flyscan data streams associated with this device.

GetDataStreams Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_STRING	
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> <li>• FAULT</li> <li>• INIT</li> </ul>	..

MCADxpXmap Class Attributes							
Name	Inherited	Abstract	Attr. type	R/W type	Data type	Level	Description
<a href="#">nbBins</a>	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	Number of Bins for each inputs.\naka: mca_length
<a href="#">nbChannels</a>	false	false	Scalar	READ	Tango::DEV_LONG	OPERATOR	Number of Channels
<a href="#">peakingTime</a>	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	Peaking time of the energy filter, specified in ms
<a href="#">dynamicRange</a>	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	Energy range corresponding to 40% of the total ADC range, specified in eV
<a href="#">presetType</a>	false	false	Scalar	READ_WRITE	Tango::DEV_SHORT	OPERATOR	Sets the preset run type:\n0->NONE\n1->FIXED_REAL\n2->FIXED_LIVE\n3->FIXED_EVENTS\n4->FIXED_TRIGGERS
<a href="#">presetValue</a>	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	When a preset run type other then 0 is set, this value is either the number of\ncounts or the time (specified in seconds)
<a href="#">accumulate</a>	false	false	Scalar	WRITE	Tango::DEV_SHORT	OPERATOR	Flag saying if the Xmap will accumulate data between 2 Start
<a href="#">currentMode</a>	false	false	Scalar	READ	Tango::DEV_STRING	OPERATOR	Current Mode:\n0->MCA\n1->MAP\n2->SCA
<a href="#">mode</a>	false	false	Scalar	WRITE	Tango::DEV_USHORT	EXPERT	Choose the mode of acquisition:\n0->MCA\n1-> MAP\n2-> SCA



<a href="#">currentConfigFile</a>	false	false	Scalar	READ	Tango::DEV_STRING	OPERATOR	Current XIA configuration file : .ini file
<a href="#">mapPixelsNumber</a>	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	Number of pixels (step) for the Mapping acquisition.
<a href="#">mapPixelsPerBufferNumber</a>	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	EXPERT	Number of Pixels per buffer for Mapping acquisition.\n-1 : let the driver calculate the good value.
<a href="#">selectedChannelForSetRois</a>	false	false	Scalar	WRITE	Tango::DEV_SHORT	EXPERT	Selected Channel for SetRois:\n-1 -> ALL Channels\n0 -> channel00\n1 -> channel01\n...
<a href="#">pixelAdvanceMode</a>	false	false	Scalar	READ_WRITE	Tango::DEV_SHORT	OPERATOR	The xMAP supports three modes of pixel advance: GATE, SYNC and HOST control.\n0: GATE, 1: SYNC, 2: HOST\nGATE: Trigger input to LEMO connector\nSYNC: Like GATE, but with option to divide in put by N. Can be used to divide stepper motor pulses,for ,example, to have each pixel be 25 motor steps\nHOST: Auto advance via the device itself
<a href="#">ticksPerPixel</a>	false	false	Scalar	READ_WRITE	Tango::DEV_ULONG	OPERATOR	One primary method of advancing the pixel is to use the SYNC input as a pixel clock. \nUsing this method, the pixel will advance for every N positive pulses, where N is set using the sync_count acquisition value. \nN can range from 1 to 65535. Finally, the pulses must be at least 40 ns wide to be recognized by the xMAP
<a href="#">currentPixel</a>	false	false	Scalar	READ	Tango::DEV_ULONG	OPERATOR	current pixel of the mapping
<a href="#">mappingStorageFilePath</a>	false	false	Scalar	WRITE	Tango::DEV_STRING	OPERATOR	Path of the mapping storage
<a href="#">nbAcqPerFile</a>	false	false	Scalar	WRITE	Tango::DEV_USHORT	OPERATOR	Number of acquisition per file
<a href="#">roisStartsEnds</a>	false	false	Spectrum	READ	Tango::DEV_DOUBLE	EXPERT	Rois Starts/Ends of the selected Channel

**There is no dynamic attribute defined.**

**Attribute nbBins :**

Number of Bins for each inputs.\naka: mca\_length

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	<ul style="list-style-type: none"> <li>• RUNNING</li> <li>• FAULT</li> <li>• INIT</li> </ul>
Write allowed for	All states

Attribute Properties	
label	Nb Bins
unit	
standard unit	
display unit	
format	%6d
max_value	16384
min_value	256
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

**Attribute nbChannels :**

Number of Channels

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	<ul style="list-style-type: none"> <li>• RUNNING</li> <li>• FAULT</li> <li>• INIT</li> </ul>

Attribute Properties	
label	Nb Channels
unit	
standard unit	
display unit	
format	%6d
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

### Attribute peakingTime :

Peaking time of the energy filter, specified in ms

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	<ul style="list-style-type: none"><li>• RUNNING</li><li>• FAULT</li><li>• INIT</li></ul>
Write allowed for	All states

Attribute Properties	
label	Peaking Time
unit	ms
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

### Attribute dynamicRange :

Energy range corresponding to 40% of the total ADC range, specified in eV

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set

Attribute Properties	
label	Dynamic Range
unit	eV
standard unit	
display unit	
format	%7.2f
max_value	
min_value	
max_alarm	
min_alarm	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set

Read NOT allowed for	<ul style="list-style-type: none"> <li>• RUNNING</li> <li>• FAULT</li> <li>• INIT</li> </ul>
Write allowed for	All states

max_warning	
min_warning	
delta_time	
delta_val	

Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

**Attribute presetType :**

Sets the preset run type:\n0->NONE\n1->FIXED\_REAL\n2->FIXED\_LIVE\n3->FIXED\_EVENTS\n4->FIXED\_TRIGGERS

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_SHORT
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	<ul style="list-style-type: none"> <li>• RUNNING</li> <li>• FAULT</li> <li>• INIT</li> </ul>
Write allowed for	All states

Attribute Properties	
label	Preset Type
unit	
standard unit	
display unit	
format	%1d
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

**Attribute presetValue :**

When a preset run type other than 0 is set, this value is either the number ofncounts or the time (specified in seconds)

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE

Attribute Properties	
label	Preset Value
unit	sec or counts

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
	Not set

Display Level Inherited	OPERATOR false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	<ul style="list-style-type: none"> <li>• RUNNING</li> <li>• FAULT</li> <li>• INIT</li> </ul>
Write allowed for	All states

standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Absolute Change	set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

**Attribute accumulate :**

Flag saying if the Xmap will accumulate data between 2 Start

Attribute Definition	
Attribute Type	Scalar
R/W Type	WRITE
Data Type	Tango::DEV_SHORT
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Write allowed for	All states

Attribute Properties	
label	Accumulate
unit	
standard unit	
display unit	
format	%1d
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

**Attribute currentMode :**

Current Mode:\n0->MCA\n1->MAP\n2->SCA

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_STRING
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	<ul style="list-style-type: none"> <li>• FAULT</li> <li>• INIT</li> </ul>

Attribute Properties	
label	Current Mode
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

#### **Attribute mode :**

Choose the mode of acquisition:\n0-> MCA\n1-> MAP\n2-> SCA

Attribute Definition	
Attribute Type	Scalar
R/W Type	WRITE
Data Type	Tango::DEV_USHORT
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Write allowed for	All states

Attribute Properties	
label	Mode
unit	
standard unit	
display unit	
format	%1d
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

#### **Attribute currentConfigFile :**

Current XIA configuration file : .ini file

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_STRING
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	<ul style="list-style-type: none"> <li>• FAULT</li> <li>• INIT</li> </ul>

Attribute Properties	
label	Current Config File (.ini)
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

**Attribute mapPixelsNumber :**

Number of pixels (step) for the Mapping acquisition.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	<ul style="list-style-type: none"> <li>• RUNNING</li> <li>• FAULT</li> <li>• INIT</li> </ul>
Write allowed for	All states

Attribute Properties	
label	Map Pixels Number
unit	
standard unit	
display unit	
format	%5d
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

**Attribute mapPixelsPerBufferNumber :**

Number of Pixels per buffer for Mapping acquisition.\n-1 : let the driver calculate the good value.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_LONG
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	<ul style="list-style-type: none"> <li>• RUNNING</li> <li>• FAULT</li> <li>• INIT</li> </ul>
Write allowed for	All states

Attribute Properties	
label	Map Pixels per buffer Number
unit	
standard unit	
display unit	
format	%5d
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

**Attribute selectedChannelForSetRois :**

Selected Channel for SetRois:\n-1 -> ALL Channels\n0 -> channel00\n1 -> channel01\n...

Attribute Definition	
Attribute Type	Scalar
R/W Type	WRITE
Data Type	Tango::DEV_SHORT
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled

Attribute Properties	
label	Selected Channel (for Set Rois)
unit	
standard unit	
display unit	
format	%2d
max_value	
min_value	-1

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set



Memorized	Not set
Write allowed for	All states

max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

### **Attribute pixelAdvanceMode :**

The xMAP supports three modes of pixel advance: GATE, SYNC and HOST control.  
 0: GATE, 1: SYNC, 2: HOST  
 GATE: Trigger input to LEMO connector  
 SYNC: Like GATE, but with option to divide input by N. Can be used to divide stepper motor pulses, for example, to have each pixel be 25 motor steps  
 HOST: Auto advance via the device itself

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_SHORT
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	<ul style="list-style-type: none"> <li>RUNNING</li> <li>FAULT</li> <li>INIT</li> </ul>
Write allowed for	All states

Attribute Properties	
label	Pixel Advance Mode
unit	
standard unit	
display unit	
format	%d
max_value	2
min_value	0
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

### **Attribute ticksPerPixel :**

One primary method of advancing the pixel is to use the SYNC input as a pixel clock. Using this method, the pixel will advance for every N positive pulses, where N is set using the sync\_count acquisition value. N can range from 1 to 65535. Finally, the pulses must be at least 40 ns wide to be recognized by the xMAP

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_ULONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	<ul style="list-style-type: none"> <li>• RUNNING</li> <li>• FAULT</li> <li>• INIT</li> </ul>
Write allowed for	All states

Attribute Properties	
label	Synch Count
unit	ticks/pixel
standard unit	
display unit	
format	
max_value	65535
min_value	1
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

**Attribute currentPixel :**

current pixel of the mapping

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_ULONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	<ul style="list-style-type: none"> <li>• FAULT</li> <li>• INIT</li> </ul>

Attribute Properties	
label	
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

**Attribute mappingStorageFilePath :**

Path of the mapping storage

Attribute Definition	
Attribute Type	Scalar
R/W Type	WRITE
Data Type	Tango::DEV_STRING
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Write allowed for	All states

Attribute Properties	
label	
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

**Attribute nbAcqPerFile :**

Number of acquisition per file

Attribute Definition	
Attribute Type	Scalar
R/W Type	WRITE
Data Type	Tango::DEV_USHORT
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Write allowed for	All states

Attribute Properties	
label	nbAcqPerFile
unit	
standard unit	
display unit	
format	%d
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

**Attribute roisStartsEnds :**

Rois Starts/Ends of the selected Channel

Attribute Definition	
Attribute Type	Spectrum ( 64 )
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	<ul style="list-style-type: none"> <li>• FAULT</li> <li>• INIT</li> </ul>

Attribute Properties	
label	Rois Starts/Ends
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

MCADxpXmap Class States	
Name	Description
RUNNING	Acquisition is running
STANDBY	Acquisition is finished
FAULT	Device is on error: init failed
INIT	XIA System is initializing