

RohdeSchwarzSMA Tango Cpp Class

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RohdeSchwarzSMA Class Identification :

Contact : at esrf.fr - accelerator-control
 Class Family : Instrumentation
 Platform : All Platforms
 Bus : Socket
 Manufacturer : RohdeSchwarz
 Manufacturer ref. : SMA 100A

RohdeSchwarzSMA Class Inheritance :

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

RohdeSchwarzSMA Class Description :

This class handles Rohdes and Schwarz SMA signal generators.
 Supported model is:
 -SMA100A

This device server implements just a limited set of features from this signal generator.
 This is done on purpose in order to limit the risk of human mistake since this device server can be used to control the master source of an accelerator.

RohdeSchwarzSma Properties :

There is no class properties

Device Properties			
Name	Description	Type	Default Value
Gpib_device_name	This is the gpib device exported by gpibDeviceServer that will be controlled. If this property is set (not empty), the Socket_device_name property should not be set or be empty.	String	none
Mult_factor	Multiplicator factor. Warning: Frequency mul_factor should never be greater than signed 32bits integer max value.	double	1.0
Socket_device_name	This is the socket Tango device used to communicate with the instrument. If this property is set (not empty), the Gpib_device_name property should not be set or be empty.	String	none

RohdeSchwarzSma Class Commands				
Name	Input type	Output type	Level	Description
State	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.
Status	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.
				Switch signal generation ON according to settings. This will: - switch the RF output ON. - set the frequency to the latest memorized set point - set the level (voltage) to the latest

On	DEV_VOID	DEV_VOID	OPERATOR	<p>memorized set point</p> <ul style="list-style-type: none"> - enable the frequency mode - switch the attenuator in Fixed mode in order to freeze the attenuators and avoid glitches - enable frequency narrow mode - activate the phase continuous mode
Off	DEV_VOID	DEV_VOID	EXPERT	Switch signal generation OFF.
Reset	DEV_VOID	DEV_VOID	EXPERT	<p>!!WARNING!! This command will change the settings (RF to 1GHz) and switch RF output OFF.</p> <p>Performs a factory preset of the instrument. The device server will memorize (only in RAM, not in Tango database) the frequency and voltage set points before sending the reset command to the instrument.</p> <p>The expected settings and set points will be applied again the next time the user will execute the on() command.</p> <p>The following list gives an overview of the presets for the most important generator settings.</p> <p>The other presets can be found in the preset tables of the individual menus and the information accompanying the remote commands.</p> <ul style="list-style-type: none"> - ``RF frequency`` = 1 GHz - ``RF level`` RF output switched off - ``Offsets`` = 0 - ``Modulations State`` = Off - Uninterrupted level settings are switched off - ``Level Attenuator Mode`` = AUTO - Internal level control ``Level ALC`` = AUTO - User correction ``Level Ucor`` = OFF - ``LF output State`` = Off - ``Sweep State`` = Off - ``List mode State`` = Off
Shutdown	DEV_VOID	DEV_VOID	EXPERT	<p>Shut the master source down.</p> <p>!!Warning!!: After having sent this command, the instrument will no longer respond on the network. The only way to re-establish the communication will be to press the Standby button physically on the instrument.</p>

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	true	..
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	true	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command On :

Switch signal generation ON according to settings.

This will:

- switch the RF output ON.
- set the frequency to the latest memorized set point
- set the level (voltage) to the latest memorized set point
- enable the frequency mode
- switch the attenuator in Fixed mode in order to freeze the attenuators and avoid glitches
- enable frequency narrow mode
- activate the phase continuous mode

On Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command Off :

Switch signal generation OFF.

Off Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command Reset :

!!WARNING!! This command will change the settings (RF to 1GHz) and switch RF output OFF.

Performs a factory preset of the instrument.

The device server will memorize (only in RAM, not in Tango database) the frequency and voltage set points

before sending the reset command to the instrument.

The expected settings and set points will be applied again the next time the user will execute the on() command.

The following list gives an overview of the presets for the most important generator settings.

The other presets can be found in the preset tables of the individual menus and the information accompanying the remote commands.

- ``RF frequency`` = 1 GHz
- ``RF level`` RF output switched off
- ``Offsets`` = 0
- ``Modulations State`` = Off
- Uninterrupted level settings are switched off
- ``Level Attenuator Mode`` = AUTO
- Internal level control ``Level ALC`` = AUTO
- User correction ``Level Ucor`` = OFF
- ``LF output State`` = Off
- ``Sweep State`` = Off
- ``List mode State`` = Off

Reset Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command Shutdown :

Shut the master source down.

!!Warning!!: After having sent this command, the instrument will no longer respond on the network.
The only way to re-establish the communication will be to press the Standby button physically on the instrument.

Shutdown Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

RohdeSchwarzSMA Class Attributes							
Name	Inherited	Abstract	Attr. type	R/W type	Data type	Level	Description
Frequency	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	Frequency
							Output Level in dBm. !! Warning !! If you change this value, the new value might not be compatible with narrow mode or attenuator fixed mode. You might need to execute the on() command again to get the
Voltage	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	EXPERT	

											behaviour you are expecting. An error will be displayed on the instrument display in case the new level value is not compatible with the current mode.
--	--	--	--	--	--	--	--	--	--	--	--

There is no dynamic attribute defined.

Attribute Frequency :

Frequency

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	Frequency
unit	hz
standard unit	hz
display unit	hz
format	%12.2f
max_value	3000000000
min_value	9000
max_alarm	
min_alarm	
max_warning	
min_warning	

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

Read allowed for	All states
Write allowed for	All states

delta_time	
delta_val	

Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute Voltage :

Output Level in dBm.

!! Warning !! If you change this value, the new value might not be compatible with narrow mode or attenuator fixed mode.

You might need to execute the on() command again to get the behaviour you are expecting.

An error will be displayed on the instrument display in case the new level value is not compatible with the current mode.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	Level
unit	dBm
standard unit	dBm
display unit	dBm
format	%4.2f
max_value	30
min_value	-145
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	false
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RohdeSchwarzSma Class States	
Name	Description
ON	The device is generating the signal.
OFF	The device is NOT generating the signal.
FAULT	The device is in Fault.