

## Waveform generator (option R&amp;S MXO5-B6)

**Example:**

```
PBUS:STAT ON
PBUS:DISP:SHBU ON
PBUS:DISP:BTYP COMB
PBUS:DATA:FORMat HEX
PBUS:DATA:VAL?
```

**Usage:** Query only  
Asynchronous command

**Manual operation:** See "Data format" on page 640

## 17.18 Waveform generator (option R&S MXO5-B6)

This section describes the remote commands of the waveform generator.

The instrument preset does not affect the generator settings. Each generator has its own preset: `WGENerator<wg>:PRESet`.

Some of the commands in the following section are asynchronous. An overlapping or asynchronous command does not automatically finish executing before the next command starts executing. If overlapping commands must be executed in a defined order, e.g. to avoid wrong measurement results, they must be serviced sequentially.

To prevent an overlapping execution of commands, one of the commands `*OPC`, `*OPC?` or `*WAI` can be used after the command or a command set.

For more information, see:

- [www.rohde-schwarz.com/rc-via-sdpi](http://www.rohde-schwarz.com/rc-via-sdpi), section "Command sequence and synchronization"

### 17.18.1 Waveform generator setup

#### 17.18.1.1 General settings

<code>WGENerator&lt;wg&gt;:FREQuency</code> .....	1349
<code>WGENerator&lt;wg&gt;:FUNCTion:PULSe[:WIDTh]</code> .....	1349
<code>WGENerator&lt;wg&gt;:FUNCTion:RAMP[:SYMMetry]</code> .....	1349
<code>WGENerator&lt;wg&gt;:FUNCTion[:SElect]</code> .....	1350
<code>WGENerator&lt;wg&gt;:FUNCTion[:SQUare]:DCYCLE</code> .....	1350
<code>WGENerator&lt;wg&gt;:OUTPut[:LOAD]</code> .....	1350
<code>WGENerator&lt;wg&gt;:PERiod</code> .....	1351
<code>WGENerator&lt;wg&gt;:PRESet</code> .....	1351
<code>WGENerator&lt;wg&gt;:VOLTage:DCLevel</code> .....	1351
<code>WGENerator&lt;wg&gt;:VOLTage:HIGH</code> .....	1352
<code>WGENerator&lt;wg&gt;:VOLTage:INVersion</code> .....	1352
<code>WGENerator&lt;wg&gt;:VOLTage:LOW</code> .....	1352

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WGENerator<wg>:VOLTage:OFFSet.....	1352
WGENerator<wg>:VOLTage[:VPP].....	1353
WGENerator<wg>[:ENABLE].....	1353

**WGENerator<wg>:FREQuency <Frequency>**

Sets the frequency of the waveform.

**Suffix:**

<wg> 1 | 2, index of the waveform generator

**Parameters:**

<Frequency> Range: 0.001 to 100E+6  
Increment: 0.001  
\*RST: 10E+6  
Default unit: Hz

**Usage:** Asynchronous command

**Manual operation:** See ["Frequency"](#) on page 651

**WGENerator<wg>:FUNctioN:PULSe[:WIDTh] <PulseWidth>**

Sets the pulse width, the pulse duration of the generated pulse waveform.

**Suffix:**

<wg> 1 | 2, index of the waveform generator

**Parameters:**

<PulseWidth> Range: 1.65E-08 to 90000  
Increment: 1  
\*RST: 5E-07  
Default unit: s

**Usage:** Asynchronous command

**Manual operation:** See ["Pulse width"](#) on page 653

**WGENerator<wg>:FUNctioN:RAMP[:SYMMetry] <RampSymmetry>**

Sets the symmetry of a ramp waveform, the percentage of time the waveform is rising. By changing the symmetry of the ramp, you can create, for example, triangular waveforms.

**Suffix:**

<wg> 1 | 2, index of the waveform generator

**Parameters:**

<RampSymmetry> Range: 0 to 100  
Increment: 1  
\*RST: 50  
Default unit: %

**Usage:** Asynchronous command

**Manual operation:** See ["Symmetry"](#) on page 653

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### WGENerator<wg>:FUNctio[n]:SElect] <FunctionType>

Selects the type of waveform to be generated.

**Suffix:**

<wg> 1 | 2, index of the waveform generator

**Parameters:**

<FunctionType> SINusoid | SQUare | RAMP | DC | PULSe | SINC | CARDiac | GAUSs | LORNtz | HAVer | EXPRise | EXPFall | ARBitrary  
 SINC: cardinal sine  
 HAVer: haversine (great-circle distance between two points on a sphere)  
 \*RST: SINusoid

**Usage:** Asynchronous command

**Manual operation:** See ["Function type"](#) on page 646

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### WGENerator<wg>:FUNctio[n]:SQUare]:DCYCLE <SquareDutyCycle>

Sets the duty cycle for the pulse function.

**Suffix:**

<wg> 1 | 2, index of the waveform generator

**Parameters:**

<SquareDutyCycle> Range: 0.01 to 99.99  
 Increment: 1  
 \*RST: 50  
 Default unit: %

**Usage:** Asynchronous command

**Manual operation:** See ["Duty cycle"](#) on page 653

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### WGENerator<wg>:OUTPut[:LOAD] <Load>

Select the user load, the load of the DUT at its connection.

**Suffix:**

<wg> 1 | 2, index of the waveform generator

**Parameters:**

<Load> FIFTy | HIZ  
 FIFTy: 50Ω  
 HIZ: High-Z (high input impedance)  
 \*RST: HIZ

**Usage:** Asynchronous command

**Manual operation:** See ["User load"](#) on page 652

### WGENerator<wg>:PERiod <Period>

Sets the period of the pulse waveform, if `WGENerator<wg>:FUNCTION[:SElect]` is set to `PULSe`.

**Suffix:**

<wg> 1 | 2, index of the waveform generator

**Parameters:**

<Period> Range: 1E-08 to 1000  
Increment: 1  
\*RST: 1E-06  
Default unit: s

**Usage:** Asynchronous command

**Manual operation:** See ["Period"](#) on page 653

### WGENerator<wg>:PRESet

Presets the generator to a default setup. The default includes the following settings:

- "Function type" = "Sine"
- "Frequency" = "1 MHz"
- "Amplitude" = "1 Vpp"

**Suffix:**

<wg> 1 | 2, index of the waveform generator

**Usage:**

Setting only  
Asynchronous command

**Manual operation:** See ["Default setup"](#) on page 653

### WGENerator<wg>:VOLTage:DCLevel <DCLevel>

Sets the level for the DC signal, if `WGENerator<wg>:FUNCTION[:SElect]` is set to `DC`.

**Suffix:**

<wg> 1 | 2, index of the waveform generator

**Parameters:**

<DCLevel> Range: -5 to 5  
Increment: 0.01  
\*RST: 0  
Default unit: V

**Usage:** Asynchronous command

**Manual operation:** See ["DC level"](#) on page 653

**WGENerator<wg>:VOLTage:HIGH <High>**

Sets the high signal level of the output waveform.

**Suffix:**

<wg> 1 | 2, index of the waveform generator

**Parameters:**

<High> Range: -5.99 to 6  
Increment: 0.1  
\*RST: 0.5  
Default unit: V

**Usage:** Asynchronous command

**WGENerator<wg>:VOLTage:INVersion <Inversion>**

Inverts the waveform at the offset level.

**Suffix:**

<wg> 1 | 2, index of the waveform generator

**Parameters:**

<Inversion> OFF | ON  
\*RST: OFF

**Usage:** Asynchronous command

**Manual operation:** See "[Inversion](#)" on page 646

**WGENerator<wg>:VOLTage:LOW <Low>**

Sets the low signal level of the output waveform.

**Suffix:**

<wg> 1 | 2, index of the waveform generator

**Parameters:**

<Low> Range: -6 to 5.99  
Increment: 0.1  
\*RST: -0.5  
Default unit: V

**Usage:** Asynchronous command

**WGENerator<wg>:VOLTage:OFFSet <Offset>**

Sets the vertical offset of the generated waveform.

**Suffix:**

<wg> 1 | 2, index of the waveform generator

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**Parameters:**

<Offset>                      Range:        -5.995 to 5.995  
                                  Increment: 0.01  
                                  \*RST:        0  
                                  Default unit: V

**Usage:**                      Asynchronous command

**Manual operation:**    See ["Offset"](#) on page 652

**WGENerator<wg>:VOLTage[:VPP] <Amplitude>**

Sets the amplitude of the waveform.

**Suffix:**

<wg>                            1 | 2, index of the waveform generator

**Parameters:**

<Amplitude>                  Range:        0.01 to 12  
                                  Increment: 0.01  
                                  \*RST:        0.4  
                                  Default unit: Vpp

**Usage:**                      Asynchronous command

**Manual operation:**    See ["Amplitude"](#) on page 652

**WGENerator<wg>[:ENABLE] <State>**

Enables the function generator.

**Suffix:**

<wg>                            1 | 2, index of the waveform generator

**Parameters:**

<State>                        OFF | ON  
                                  \*RST:        No effect

**Usage:**                      Asynchronous command

**Manual operation:**    See ["State"](#) on page 646

**17.18.1.2 Modulation settings**

WGENerator<wg>:MODulation[:STATe].....	1354
WGENerator<wg>:MODulation:AM:DCYCLE.....	1354
WGENerator<wg>:MODulation:AM:DEPTHe.....	1355
WGENerator<wg>:MODulation:AM:FREQUency.....	1355
WGENerator<wg>:MODulation:AM:SYMMetry.....	1355
WGENerator<wg>:MODulation:AM[:FUNCTioN].....	1356
WGENerator<wg>:MODulation:CARRier:FREQUency.....	1356
WGENerator<wg>:MODulation:CARRier:PERiod.....	1356
WGENerator<wg>:MODulation:FM:DCYCLE.....	1356