Tektronix®

Generic Precompensation Plug-in Application

Programmer Manual

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Getting Started

Introduction

This programmer manual provides information on how to use commands for remotely controlling the Generic Precompensation plug-in application.

The Generic Precompensation plug-in can be installed in the SourceXpress software application,AWG70000A series instruments, and AWG5200 series instruments.

Communication with the plug-in is through the programmatic interface of these products. Using a single VISA or raw socket session, it is possible to communicate with SourceXpress, AWG70000A series instruments, and AWG5200 series instruments.

For information on the Remote Control, GPIB Parameters, LAN Parameters, Connecting to the Instrument using GPIB, and Setting up GPIB Communication, refer to the *AWG70000A series Arbitrary Waveform Generators Programmer Manual* or the *AWG5200 series Arbitrary Waveform Generators Programmer Manual*.

Documentation

In addition to this Generic Precompensation Programmer Guide, the following documentation is included with this application:

- Generic Precompensation Help. The help provides in-depth operation and user interface help.
- Generic Precompensation User Manual (PDF). This is adapted from the Generic Precompensation help system.

Syntax and Commands

Command Syntax

For information on the Syntax Overview, Command and Query Structure, Clearing the Instrument, Command Entry, Parameter Types, SCPI Commands and Queries, refer to the *AWG70000A series Arbitrary Waveform Generators Programmer Manual* or the *AWG5200 series Arbitrary Waveform Generators Programmer Manual*.

Command Groups

Global commands

These commands perform functions that are common to the Generic Precompensation plug-in regardless of the type of waveform.

Table 2-1: Global commands and their descriptions

Command	Description
GPRecompensation:CONNect	Attempts to connect to an available instrument. The query returns the currently connected instrument.
GPRecompensation:CREAte	Starts the action of creating correction coefficients.
GPRecompensation:PATH	Sets or returns the correction file output path and correction file output name for the Generic Precompensation file.
GPRecompensation:RESet	Resets all Generic Precompensation parameters.
GPRecompensation:TYPE	Sets or returns the Generic Precompensation Type.

Parameters

These commands are used to set the parameters for the various coefficient types. Some settings are common to one or more coefficient type selection.

Table 2-2: Parameter commands and their descriptions

Command	Description
GPRecompensation:BANDwidth	This command sets or returns the Bandwidth. This is a common setting for Direct IQ, IQ with Internal Modulator, and IQ with External Modulator types.
GPRecompensation:BOFFset	This command sets or returns the Baseband Offset. This is a common setting for Direct IQ, IQ with Internal Modulator, and IQ with External Modulator types.
GPRecompensation:CARRier	This command sets or returns the Carrier Frequency. This is a common setting for IQ with Internal Modulator and IQ with External Modulator types.

Table 2-2: Parameter commands and their descriptions (cont.)

Command	Description
GPRecompensation:FRESolution	This command sets or returns the Frequency Resolution for the Generic Precompensation. This is a common setting for all Generic Precompensation Types.
GPRecompensation:IFEFrequency	This command sets or returns the IF End Frequency for the Generic Precompensation Type IF.
GPRecompensation:IFSFrequency	This command sets or returns the IF Start Frequency for the Generic Precompensation Type IF.
GPRecompensation:ITERations	This command sets or returns the Number of Averages (iterations) for Generic Precompensation. The Number of Averages is a common setting for all Generic Precompensation types.
GPRecompensation:LOFRequency	This command sets or returns the LO (Local Oscillator) Frequency expected to be mixed with the Generic Precompensation Type IF signal.
GPRecompensation:NZONe	This command sets or returns the Nyquist Zone setting. This is a common setting for RF and IQ with Internal Modulator types.
GPRecompensation:RFEFrequency	This command sets or returns the RF End Frequency for the Generic Precompensation Type RF.
GPRecompensation:RFSFrequency	This command sets or returns the RF Start Frequency for the Generic Precompensation Type RF.
GPRecompensation:SBANd	This command sets or returns the Side Band for the Generic Precompensation Type IF.

Channel commands

These commands are used to set the channel selections of the AWG outputs and the oscilloscope inputs.

Table 2-3: Channel commands and their descriptions

Command	Description
GPRecompensation:AWGChannel:ICHannel	This command sets or returns which AWG output channel to use for the I signal. This is a common setting for Direct IQ and IQ with External Modulator.
GPRecompensation:AWGChannel:IFCHannel	This command sets or returns which AWG output channel to use for the IF signal.
GPRecompensation:AWGChannel:QCHannel	This command sets or returns which AWG output channel to use for the Q signal. This is a common setting for Direct IQ and IQ with External Modulator.
GPRecompensation:AWGChannel:RFCHannel	This command sets or returns which AWG output channel to use for the RF signal. This is a common setting for RF and IQ with Internal Modulator types.
GPRecompensation:SCHannel:ICHannel	This command sets or returns which oscilloscope channel to use as the input for the I signal from the AWG.
GPRecompensation:SCHannel:QCHannel	This command sets or returns which oscilloscope channel to use as the input for the Q signal from the AWG.
GPRecompensation:SCHannel:RFCHannel	This command sets or returns which oscilloscope channel to use as the input for the RF signal. This is a common setting for RF, IF, IQ with Internal Modulator, and IQ with External Modulator types.

Oscilloscope trigger commands

Use these commands to set the trigger source for the connected oscilloscope.

Table 2-4: Oscilloscope trigger commands and their descriptions

Command	Description
GPRecompensation:STRigger:TCHannel	Sets or returns the connected oscilloscope's trigger input source.
GPRecompensation:STRigger:TYPE	Sets or returns the oscilloscope's trigger option.

Command Descriptions

GPRecompensation:AWGChannel:ICHannel

This command sets or returns which AWG output channel to use for the I signal.

This is a common setting for Direct IQ and IQ with External Modulator.

Conditions The Generic Precompensation Type must be set to Direct IQ or IQ with External Modulator to set the I signal AWG Output Channel.

Group Channel

Syntax `GPRecompensation:AWGChannel:ICHannel <channel>`

Arguments <channel>::= <NR1> value.

Returns A single <NR1> value.

Examples `GPRECOMPENSATION:AWGCHANNEL:ICHANNEL 2` sets the I channel output on the AWG to channel 2 (if there is a channel 2).

`GPRECOMPENSATION:AWGCHANNEL:ICHANNEL?` might return `1`, indicating that the I channel output of the AWG is set to channel 1.

GPRecompensation:AWGChannel:IFCHannel

This command sets or returns which AWG output channel to use for the IF signal.

Conditions The Generic Precompensation Type must be set to IF to set the IF AWG Output Channel.

Group Channel

Syntax `GPRecompensation:AWGChannel:IFCHannel <channel>`

Arguments <channel>::= <NR1> value.

Returns A single <NR1> value.

Examples `GPRECOMPENSATION:AWGCHANNEL:IFCHANNEL 2` sets the IF channel output on the AWG to channel 2 (if there is a channel 2).

`GPRECOMPENSATION:AWGCHANNEL:IFCHANNEL?` might return `1`, indicating that the IF channel output of the AWG is set to channel 1.

GPRecompensation:AWGChannel:QCHannel

This command sets or returns which AWG output channel to use for the Q signal.

This is a common setting for Direct IQ and IQ with External Modulator.

Conditions The Generic Precompensation Type must be set to Direct IQ or IQ with External Modulator to set the Q signal AWG Output Channel.

Group Channel

Syntax `GPRecompensation:AWGChannel:QCHannel <channel>`

Arguments <channel>::= <NR1> value.

Returns A single <NR1> value.

Examples `GPRECOMPENSATION:AWGCHANNEL:QCHANNEL 2` sets the Q channel output on the AWG to channel 2 (if there is a channel 2).

`GPRECOMPENSATION:AWGCHANNEL:QCHANNEL?` might return `1`, indicating that the Q channel output of the AWG is set to channel 1.

GPRecompensation:AWGChannel:RFCHannel

This command sets or returns which AWG output channel to use for the RF signal.

This is a common setting for RF and IQ with Internal Modulator types.

Conditions The Generic Precompensation Type must be set to RF or IQ with Internal Modulator to set the RF AWG Output Channel.

Group Channel

Syntax

```
GPRecompensation:AWGChannel:RFCHannel <channel>
GPRecompensation:AWGChannel:RFCHannel?
```

Arguments <channel>::= <NR1> value.

Returns A single <NR1> value indicating the channel number.

Examples `GPRECOMPENSATION:AWGCHANNEL:RFCHANNEL 2` sets the RF channel output on the AWG to channel 2 (if there is a channel 2).

`GPRECOMPENSATION:AWGCHANNEL:RFCHANNEL?` might return `1`, indicating that the RF channel output of the AWG is set to channel 1.

GPRecompensation:BANDwidth

This command sets or returns the Bandwidth.

This is a common setting for Direct IQ, IQ with Internal Modulator, and IQ with External Modulator types.

Conditions The Generic Precompensation Type must be set to Direct IQ, IQ with Internal Modulator, or IQ with External Modulator to set the Baseband Offset.

Group Parameters

Syntax

```
GPRecompensation:BANDwidth <bandwidth>
```

Related Commands GPRecompensation:FRESolution

Arguments <bandwidth>::= <NR3>.

Minimum value: 20 MHz.
Maximum value: based on Sample Rate and Frequency Resolution.

Returns A single <NR3> value.

Examples `GPRECOMPENSATION:BANDWIDTH 8E9` sets the Bandwidth to 8 GHz.

`GPRECOMPENSATION:BANDWIDTH?` might return `10.0000000000E+9`, indicating the Bandwidth is set to 10 GHz.

GPRecompensation:BOFFset

This command sets or returns the Baseband Offset.

This is a common setting for Direct IQ, IQ with Internal Modulator, and IQ with External Modulator types.

Conditions The Generic Precompensation Type must be set to Direct IQ, IQ with Internal Modulator, or IQ with External Modulator to set the Baseband Offset.

Group Parameters

Syntax `GPRecompensation:BOFFset <baseband_offset>`

Arguments <baseband_offset>::= <NR3>

Minimum value: negative ½ Sample Rate
Maximum value: positive ½ Sample Rate

Returns A single <NR3> value.

Examples `GPRECOMPENSATION:BOFFSET 8E9` sets the Baseband Offset to 8 GHz.

`GPRECOMPENSATION:BOFFSET?` might return `10.0000000000E+9`, indicating the Baseband Offset is set to 10 GHz.

GPRecompensation:CARRier

This command sets or returns the Carrier Frequency.

This is a common setting for IQ with Internal Modulator and IQ with External Modulator types.

Conditions The Generic Precompensation Type must be set to IQ with Internal Modulator or IQ with External Modulator to set the Carrier Frequency.

Group Parameters

Syntax `GPRecompensation:CARRier <carrier_frequency>`

Arguments <carrier_frequency>::= <NR3>.

Range: 1 GHz to 100 GHz.

Returns A single <NR3> value.

Examples `GPRECOMPENSATION:CARRIER 1E9` sets the Carrier Frequency for Generic Precompensation IQ with Modulator Type to 1 GHz.

`GPRECOMPENSATION:CARRIER?` `10.0000000000E+9`, indicating the Carrier Frequency for Generic Precompensation IQ with Modulator Type is set to 10 GHz.

GPRecompensation:CONNect

This command attempts to connect to the instrument at the specified IP address. The query returns the currently connected instrument.

Conditions This is an overlapping command.

Connection to the following instruments is supported:

- Oscilloscopes
  - DPO70000DX series
  - DPO70000(A,B,C,D) series
  - DPO70000SX series
- Analyzers
  - RSA5000 series
  - RSA6000 series

Group Global

Syntax

```
GPRecompensation:CONNect <IP_address>
GPRecompensation:CONNect?
```

Arguments <IP_address>::= <string>.

Returns A single <string>.

Examples `GPRECOMPENSATION:CONNECT "192.168.1.101"` connects to the currently available instrument with the specified IP address.

`GPRECOMPENSATION:CONNECT?` might return "DPO73304DX B260167" as the currently connected instrument and its serial number.

GPRecompensation:CREAte (No Query Form)

This command starts the action of creating correction coefficients.

Group Global

Syntax

```
GPRecompensation:CREAte
```

Examples `GPRECOMPENSATION:CREATE` starts communicating with the connected instrument to determine the correction coefficients for the instrument's current setup.

GPRecompensation:FRESolution

This command sets or returns the Frequency Resolution for the Generic Precompensation.

This is a common setting for all Generic Precompensation Types.

Group Parameters

Syntax

```
GPRecompensation:FRESolution <frequency_res>
GPRecompensation:FRESolution?
```

Arguments <frequency_res>::= <NR3> value.

Range: 1 MHz to 100 MHz.

Returns A single <NR3> value.

Examples `GPRECOMPENSATION:FRESOLUTION 10E3` sets the Generic Precompensation Frequency Resolution to 10 MHz.

`GPRECOMPENSATION:FRESOLUTION?` might return `10.0000000000E+6`, indicating that the Generic Precompensation Frequency Resolution is set to 10 MHz.

GPRecompensation:IFEFrequency

This command sets or returns the IF End Frequency for the Generic Precompensation Type IF.

Conditions The Generic Precompensation Type must be set to IF to set the IF End Frequency.

Group Parameters

Syntax

```
GPRecompensation:IFEFrequency <end_frequency>
GPRecompensation:IFEFrequency?
```

Related Commands GPRecompensation:TYPE, GPRecompensation:IFSFrequency, GPRecompensation:FRESolution

Arguments <end_frequency>::= <NR3> value.

Range affected by Sample Rate, Start Frequency and Frequency Resolution.

Returns A single <NR3> value.

Examples `GPRECOMPENSATION:IFEFREQUENCY 8E9` sets the Generic Precompensation IF End Frequency to 8 GHz.

`GPRECOMPENSATION:IFEFREQUENCY?` might return `1.0000000000E+9`, indicating that the IF End Frequency is set to 1 GHz.

GPRecompensation:IFSFrequency

This command sets or returns the IF Start Frequency for the Generic Precompensation Type IF.

Conditions The Generic Precompensation Type must be set to IF to set the IF Start Frequency.

Group Parameters

Syntax

```
GPRecompensation:IFSFrequency <start_frequency>
GPRecompensation:IFSFrequency?
```

Related Commands GPRecompensation:TYPE, GPRecompensation:IFEFrequency, GPRecompensation:FRESolution

Arguments <start_frequency>::= <NR3> value.

Range affected by Sample Rate, End Frequency and Frequency Resolution.

Returns A single <NR3> value.

Examples `GPRECOMPENSATION:IFSFREQUENCY 8E9` sets the Generic Precompensation IF Start Frequency to 8 GHz.

`GPRECOMPENSATION:IFSFREQUENCY?` might return `1.0000000000E+9`, indicating that the IF Start Frequency is set to 1 GHz.

GPRecompensation:ITERations

This command sets or returns the Number of Averages (iterations) for Generic Precompensation.

The Number of Averages is a common setting for all Generic Precompensation types.

Group Parameters

Syntax `GPRecompensation:ITERations <averages>`

Arguments <averages>::= <NR1> value.

Range: 1 to 100

Returns A single <NR1> value.

Examples `GPRECOMPENSATION:ITERATIONS 10` sets the Generic Precompensation Number of Averages to 10.

`GPRECOMPENSATION:ITERATIONS?` might return `100`, indicating the sets the Generic Precompensation Number of Averages is set to 100 iterations.

GPRecompensation:LOFRequency

This command sets or returns the LO (Local Oscillator) Frequency expected to be mixed with the Generic Precompensation Type IF signal.

Conditions The Generic Precompensation Type must be set to IF to set the IF LO Frequency.

Group Parameters

Syntax

```
GPRecompensation:LOFRequency <lo_frequency>
GPRecompensation:LOFRequency?
```

Arguments <lo_frequency>::= <NR3> value.

Range: 1 GHz to 100 GHz.

Returns A single <NR3> value.

Examples `GPRECOMPENSATION:LOFREQUENCY 1E9` sets the expected local oscillator frequency setting to 1 GHz.

`GPRECOMPENSATION:LOFREQUENCY?` might return `1.0000000000E+9`, indicating the sets the expected local oscillator frequency is set to 1 GHz.

GPRecompensation:NZONe

This command sets or returns the Nyquist Zone setting.

This is a common setting for RF and IQ with Internal Modulator types.

Conditions The Generic Precompensation Type must be set to RF or IQ with Internal Modulator to set the Nyquist Zone.

Group Parameters

Syntax

```
GPRecompensation:NZONe {1|2|3}
```

Arguments 1: Sets the Generic Precompensation RF Nyquist Zone to Zone 1.

2: Sets the Generic Precompensation RF Nyquist Zone to Zone 2.

3: Sets the Generic Precompensation RF Nyquist Zone to Zone 3.

Returns A single <NR1> value.

Examples `GPRECOMPENSATION:NZONE 1` sets Nyquist Zone to Zone 1.

`GPRECOMPENSATION:NZONE?` might return `2`, indicating Nyquist Zone is set to Zone 2.

GPRecompensation:PATH

This command sets or returns the correction file output path and correction file output name for the Generic Precompensation file.

Conditions A correction file is only created upon a successful creation of coefficients.

Group Global

Syntax

```
GPRecompensation:PATH <filepath>
GPRecompensation:PATH?
```

Arguments <filepath>:=<string>

Returns A single <filepath> string.

Examples `GPRECOMPENSATION:PATH "C:\Temp\MyCorrectionFile.corr"` sets the Generic Precompensation module to write a correction file to the indicated directory with the indicated correction file name upon a successful creation of coefficients.

`GPRECOMPENSATION:PATH?` might return `"C:\Temp\MyCorrectionFile.corr"`, indicating where the correction file will be saved and its name.

GPRecompensation:RESet (No Query Form)

This command resets all Generic Precompensation parameters.

Group Global

Syntax `GPRecompensation:RESet`

Examples `GPRECOMPENSATION:RESET` resets all Generic Precompensation parameters to their default settings.

GPRecompensation:RFEFrequency

This command sets or returns the RF End Frequency for the Generic Precompensation Type RF.

Conditions The Generic Precompensation Type must be set to RF to set the RF End Frequency.

Group Parameters

Syntax
```
GPRecompensation:RFEFrequency <RF_end_frequency>
GPRecompensation:RFEFrequency?
```

Related Commands GPRecompensation:TYPE, GPRecompensation:NZONe, GPRecompensation:FRESolution

Arguments <RF_end_frequency>::= <NR3> value.

Range is affected by Sample Rate, Nyquist Zone, and Frequency Resolution.

Returns A single <NR3> value.

Examples `GPRECOMPENSATION:RFEFREQUENCY 8E9` sets the Generic Precompensation RF End Frequency to 8 GHz.

`GPRECOMPENSATION:RFEFREQUENCY?` might return `1.0000000000E+9`, indicating that the RF End Frequency is set to 1 GHz.

GPRecompensation:RFSFrequency

This command sets or returns the RF Start Frequency for the Generic Precompensation Type RF.

Conditions The Generic Precompensation Type must be set to RF to set the RF Start Frequency.

Group Parameters

Syntax

```
GPRecompensation:RFSFrequency <RF_start_frequency>
GPRecompensation:RFSFrequency?
```

Related Commands GPRecompensation:TYPE, GPRecompensation:NZONe, GPRecompensation:FRESolution

Arguments <RF_start_frequency>::= <NR3> value.

Range is affected by Sample Rate, Nyquist Zone, and Frequency Resolution.

Returns A single <NR3> value.

Examples `GPRECOMPENSATION:RFSFREQUENCY 8E9` sets the Generic Precompensation RF Start Frequency to 8 GHz.

`GPRECOMPENSATION:RFSFREQUENCY?` might return `1.0000000000E+9`, indicating that the RF Start Frequency is set to 1 GHz.

GPRecompensation:SBANd

This command sets or returns the Side Band for the Generic Precompensation Type IF.

Conditions The Generic Precompensation Type must be set to IF to set the IF Side Band.

Group Parameters

Syntax

```
GPRecompensation:SBANd {USB|LSB}
GPRecompensation:SBANd?
```

Arguments USB: Upper Side Band

LSB: Lower Side Band

Returns USB
LSB

Examples `GPRECOMPENSATION:SBAND USB` sets the IF Generic Precompensation Side Band to Upper.

`GPRECOMPENSATION:SBAND?` might return `LSB`, indicating that the IF Generic Precompensation Side Band is set to Lower.

GPRecompensation:SCHannel:ICHannel

This command sets or returns which oscilloscope channel to use as the input for the I signal from the AWG.

Conditions The Generic Precompensation Type must be set to Direct IQ to set the oscilloscope channel for the I input.

Group Channel

Syntax `GPRecompensation:SCHannel:ICHannel <channel>`

Arguments <channel>::= <NR1> value.

Returns A single <NR1> value.

Examples `GPRECOMPENSATION:SCHANNEL:ICHANNEL 2` sets the I Input channel on the oscilloscope to channel 2 for the Direct IQ Type.

`GPRECOMPENSATION:SCHANNEL:ICHANNEL?` might return `1`, indicating that the I Input channel on the oscilloscope is set to channel 1 for the Direct IQ Type.

GPRecompensation:SCHannel:QCHannel

This command sets or returns which oscilloscope channel to use as the input for the Q signal from the AWG.

Conditions The Generic Precompensation Type must be set to Direct IQ to set the oscilloscope channel for the Q input.

Group Channel

Syntax `GPRecompensation:SCHannel:QCHannel <channel>`

Arguments <channel>::= <NR1> value.

Returns A single <NR1> value.

Examples `GPRECOMPENSATION:SCHANNEL:QCHANNEL 2` sets the Q Input channel on the oscilloscope to channel 2 for the Direct IQ Type.

`GPRECOMPENSATION:SCHANNEL:QCHANNEL?` might return `1`, indicating that the Q Input channel on the oscilloscope is set to channel 1 for the Direct IQ Type.

GPRecompensation:SCHannel:RFCHannel

This command sets or returns which oscilloscope channel to use as the input for the RF signal.

This is a common setting for RF, IF, IQ with Internal Modulator, and IQ with External Modulator types.

Conditions The Generic Precompensation Type must be set to RF, IF, IQ with Internal Modulator, or IQ with External Modulator to set the oscilloscope channel for the RF input.

Group Channel

Syntax

```
GPRecompensation:SCHannel:RFCHannel <channel>
```

Arguments <channel>::= <NR1> value.

Returns A single <NR1> value.

Examples

`GPRECOMPENSATION:SCHANNEL:RFCHANNEL 2` sets the RF Input channel on the oscilloscope to channel 2 (if there is a channel 2).

`GPRECOMPENSATION:SCHANNEL:RFCHANNEL?` might return `1`, indicating that the RF Input channel on the oscilloscope is set to channel 1.

GPRecompensation:STRigger:TCHannel

This command sets or returns the connected oscilloscope's trigger input source.

Conditions The connected instrument must be an oscilloscope.

Group Oscilloscope trigger

Syntax

```
GPRecompensation:STRigger:TCHannel {AUX|<channel>}
GPRecompensation:STRigger:TCHannel
```

Related Commands GPRecompensation:STRigger:TYPE

Arguments AUX: Sets the connected oscilloscope to use the Auxiliary input connector as the trigger source.

<channel>::= <NR1> (where <NR1> is a valid channel number 1, 2, ... etc)

Returns AUX
A single <NR1> value.

Examples `GPRECOMPENSATION:STRIGGER:TCHANNEL 1` sets the oscilloscope to use channel 1 as the trigger source.

`GPRECOMPENSATION:STRIGGER:TCHANNEL?` might return AUX, indicating that the oscilloscope is set to use the auxiliary input connector as the trigger source.

GPRecompensation:STRigger:TYPE

This command sets or returns the oscilloscope's trigger option.

Conditions The connected instrument must be an oscilloscope.

Group Oscilloscope trigger

Syntax
```
GPRecompensation:STRigger:TYPE {NONE|AWGMarker|EXTernal}
GPRecompensation:STRigger:TYPE?
```

Related Commands GPRecompensation:STRigger:TCHannel

Arguments NONE: The oscilloscope uses the stimulus signal from the AWG as the trigger signal.

AWGMarker: The oscilloscope uses the Marker signal from the AWG as the trigger signal.

EXTernal: The oscilloscope uses an external signal as the trigger signal.

Returns NONE
AWGM
EXT

Examples `GPRECOMPENSATION:STRIGGER:TYPE AWGMARKER` sets the connected oscilloscope to use the marker output from the AWG as the trigger signal.

GPRECOMPENSATION:STRIGGER:TYPE? might return EXT, indicating that the connected oscilloscope is set to use an external trigger source.

GPRecompensation:TYPE

This command sets or returns the type of coefficients created.

Group Global

Syntax

```
GPRecompensation:TYPE {RF|IF|IQ|IQIM|IQEM}
GPRecompensation:TYPE?
```

Arguments

RF: RF coefficients (AWG outputs RF)

IF: IF coefficients (AWG outputs IF to external Mixer)

IQ: Direct IQ coefficients (AWG outputs individual I and Q signals)

IQIM: IQ with internal modulator coefficients (AWG5200 series up-converts individual I and Q signals with internal modulator and outputs RF). This argument requires an AWG5200 series generator with a DIGUP license.

IQEM: IQ with external modulator coefficients (AWG outputs individual I and Q signals to external modulator)

Returns

RF
IF
IQM
IQ

Examples

GPRECOMPENSATION:TYPE RF sets the current Generic Precompensation type to RF.

GPRECOMPENSATION:TYPE? might return IQ, indicating that the type is set to Direct IQ.

Status and Events

Status and Events

There is no status and event information.

Error messages and codes

The following table lists error codes and messages that are unique to the Multitone plug-in.

Error code	Error message
7812	Instrument Connection Error. Failed to connect to the selected instrument.
7813	Instrument Connection Error. Please connect to an instrument to continue.
7814	Precompensation Error. Error during calculation of coefficients.
7815	Precompensation Error. Error while setting Oscilloscope Record Length. Check instrument connections and retry.
7816	Precompensation Error. Access to correction file denied.
7817	Precompensation Error. Invalid Output Filepath for correction file.
7818	Precompensation Error. Correction file not found.
7819	Precompensation Error. Cannot calculate coefficients using a virtual generator.
7820	Precompensation Setup Error. Cannot use an RSA with a Direct IQ setup.
7821	Precompensation Error. No good signal correlation between the captured and reference signals.
7822	Precompensation Error. Unable to trigger, signal amplitude too low.
7823	Precompensation Error. Unable to capture signal, signal is clipping.
7824	Precompensation Error. Unable to capture signal. Amplitude is too large.
7825	Sample Rate Error. Insufficient sample rate. Please increase to <recommended value> or higher. Recommended value is dependent on current setup.
7826	Precompensation Error. Captured waveform length is insufficient for calculation of coefficients.
7830	Precompensation Error. Resolution too large. Need a better resolution.
7831	Precompensation Error. Too few trace points.
7832	Precompensation Error. Unable to create stimulus. Requires more than two tones. Need a larger span or smaller resolution.
7833	Precompensation Error. Desired start frequency is lower than the set resolution.
7834	Precompensation Error. 80% of the data captured is below noise floor.
7835	Precompensation Error. Bandwidth cannot be less than or equal to 0.
7836	Precompensation Error. Creation of coefficients already in progress.
7837	Precompensation Setup Error. Cannot use an ATI Channel and Non-ATI channel with a Direct IQ setup.
7838	Precompensation Setup Error. Cannot use the same AWG Channel for I and Q with an IQ setup.
7839	Precompensation Setup Error. Cannot use the same Scope Channel for I and Q with an IQ setup.

Error code	Error message
7840	Precompensation Setup Error. Input parameters are greater than instrument parameters. Please reduce Bandwidth/Start/End Frequencies.
7841	Precompensation Setup Error. Input parameters is setting analysis frequency to less than or equal to zero.
7842	Precompensation Setup Error. Sample Rate cannot be less than or equal to 0 or NaN.
7843	Precompensation Error. AWG play timed out. Please check settings and try again.
7844	Precompensation Error. Cannot create correction coefficients with Sync Hub enabled.
7850	Asset not found. Unable to access selected asset.
7851	Correction file not supported. Only dB-Angle correction files are supported.
7852	Correction file not supported. Only Scattering correction files are supported.
7853	Error Calculating Correction Parameter. Unable to calculate <parameter> from correction file.
7854	Frequency Count Mismatch. When reading the correction file, the number of frequencies <current value> did not match the expected number <expected value>. The current value is based on the correction file.
7856	Precompensation Apply Error. Error while applying correction coefficients.
7857	Error using Waveform Sample Rate. Sampling Rate must be set for <waveform name> waveform to apply correction coefficients.
7858	Precompensation Apply Error. Cannot apply IQ Correction Coefficients to a Real Signal.
7859	Precompensation Apply Error. Cannot apply <signal format> Correction Coefficient to a <signal format value> Signal Format waveform.
7860	Precompensation Apply Error. Corrections are currently being applied.
7861	Precompensation Apply Error. No sample rate detected in file.
7862	Precompensation Apply Error. Too few frequency points detected in file.

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