

Keysight Technologies X-Series Signal Generators

N5181B/82B MXG
N5171B/72B EXG

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SCPI Reference	<ul style="list-style-type: none"> - SCPI Basics - Basic Function Commands - System Commands - Analog Modulation Commands - Arb Commands - Real-Time Commands
Programming Compatibility Guide	<ul style="list-style-type: none"> - Provides a listing of SCPI commands and programming codes for signal generator models that are supported by the Keysight N5171B/72B EXG and N5181B/82B MXG X-Series signal generators.
Service Guide	<ul style="list-style-type: none"> - Troubleshooting - Replaceable Parts - Assembly Replacement - Post-Repair Procedures - Safety and Regulatory Information - Instrument History
Key Help^a	<ul style="list-style-type: none"> - Key function description - Related SCPI commands

a. Press the **Help** hardkey, and then the key for which you wish help.

1 Overview

Inside This Guide

This guide provides a comprehensive listing of SCPI commands and programming codes for signal generator models supported by the Keysight N5171B/72B EXG and N5181B/82B MXG X-Series signal generators. The following list shows the supported models along with the language type for each one:

Keysight N5181A/82A MXG	SCPI commands
Keysight E4428C/38C ESG	SCPI commands
Keysight/HP E44xxB	SCPI commands
Keysight/HP 8648A/B/C/D	SCPI commands
Keysight E8257D/67D/E8663B PSG	SCPI commands
Keysight E8247C/57C/67C PSG	SCPI commands
Keysight E8241A/44A/51A/54A PSG	SCPI commands
Rhode and Schwarz SM series	SCPI commands
Keysight/HP 8656B, 8657A/B	programming codes
Keysight/HP 8662A/63A	programming codes
Aeroflex 3410 series	SCPI commands

In some cases, SCPI commands are only partially supported. This usually occurs due to a variance in parameters between the N5171B/72B/81B/82B and the other signal generator models. When this condition occurs, the SCPI command shows only the supported SCPI command syntax. The Remarks column shows the part of the command that is unsupported.

When the backward compatible command differs from the X-Series signal generator due to range values or parameter differences (as noted in the remarks column), typically the command syntax is identical. Even though you may be in a the remote language mode, the Keysight X-Series signal generator supports the command using the range and parameter choices of the X-Series signal generator. Range values vary based on the X-Series signal generator model and configuration.

NOTE When the range is the difference, use the range values listed in the X-Series signal generator **Data Sheet**, or as shown in the *Keysight X-Series Signal Generators SCPI Command Reference*.

In addition to providing the compatible command/code listings, this guide also provides you with N5171B/72B/81B/82B SCPI commands that lets you perform various tasks:

- select a compatible programming language (see “**Selecting the Programming Language**” on page 2)
- change the signal generator identification output (see “**:SYSTem:IDN**” on page 4)
- query the signal generator for errors (see “**:SYSTem:ERRor[:NEXT]**” on page 9)
- track all executed SCPI commands using the logging command “**:SYSTem:LOG:SCPI**” on page 9.

Selecting the Programming Language

When using the compatible SCPI commands or programming codes in this guide, you must set the remote programming language to the correct language format. There are two methods of setting the programming language:

Preset

Language Use this method to hold the remote programming language through instrument presets, power cycles, and *RST, and to set the signal generator with the default settings of the remote language choice.

Remote

Language Use this method to set only the language mode. It does not reset the signal generator defaults to match that of the remote language instrument, and upon a preset, power cycle, and *RST, the signal generator changes back to the same setting as the Preset Language.

Preset Language

Use this process to set the remote programming language and the signal generator default settings to match that of the remote language.

Front Panel Operation

1. Press Utility > Power On/Preset > Preset Language > <remote programming language>.
2. Press Preset.

The Preset action changes the signal generator default settings and the remote language mode to the Step 1 selection.

SCPI Operation

1. Execute the SCPI command **“:PRESet:LANGuage”** on page 5.
2. Execute *RST.

*RST sets the signal generator’s default settings and programming language to match that of the Preset Language selection.

Remote Language

Use this method to change the programming language to a different remote language selection without changing any system settings.

Front Panel Operation

- Press Utility > I/O Config > Remote Language > <remote programming language>.

SCPI Operation

- Execute the SCPI command **“:SYSTem:LANGuage”** on page 7.

Changing the Signal Generator Identification String

:SYSTem:IDN

Supported All Models

:SYSTem:IDN "<string>"

This Keysight X-Series signal generator command modifies the identification string that the *IDN? query returns. Sending an empty string returns the *IDN? query output to its factory shipped setting. The maximum string length is 72 characters.

Modification of the *IDN? query output enables the Keysight X-Series signal generator to identify itself as another signal generator when it is used as a backward compatible replacement. This modification of the identification string does not affect the display diagnostic information, which is shown by pressing the **Diagnostic Info** softkey.

Changing the Signal Generator Option String

:SYSTem:OPT

Supported All Models

:SYSTem:OPT "<string>"

This Keysight X-Series signal generator command modifies the option string that the *OPT? query returns. Sending an empty string returns the *OPT? query output to its factory shipped setting. The maximum string length is 72 characters.

Modification of the *OPT? query output enables the Keysight X-Series signal generator with options, to identify itself as another signal generator when it is used as a backward compatible replacement. This modification of the option string does not affect the display diagnostic information, which is shown by pressing the **Diagnostic Info** softkey.

Functional N5171B/72B EXG and N5181B/82B MXG SCPI Commands While in a Compatible Language Mode

The commands in this section are used for configuring the signal generator compatible programming language and for isolating problems.

:PRESet:LANGUage

Supported All Models

```
:SYSTem:PRESet:LANGUage  
"SCPI" | "COMP" | "8648" | "E4428C" | "E4438C" | "E8257D" | "E8267D" | "E8  
663B" | "E8247C" | "E8257C" | "E8267C" | "N5181A" | "N5182A" | "E442XB" |  
"E443XB" | "E8241A" | "E8244A" | "E8251A" | "E8254A" | "SMU200A" | "SMAT  
E200A" | "SMJ100A" | "SMIQ" | "SML" | "SMV" | "3410" | "8662" | "8663"  
:SYSTem:PRESet:LANGUage?
```

This command sets the remote language that is available when the signal generator is preset, *RST, or power cycled. Upon the preset, *RST, or power cycle, the signal generator default settings match that of the language selection.

SCPI	This choice selects the X-Series signal generator as the programming language for use with its SCPI commands using GPIB, LAN, or USB.
COMP	This choice provides compatibility for the 8656B, 8657A/B signal generator, which is supported through only a GPIB interface.
8648	This choice provides compatibility for the 8648A/B/C/D signal generator, which is supported through only a GPIB interface.
E4428C or E4438C	This choice provides compatibility for the E4428C or E4438C signal generators, which are supported through a GPIB, LAN, or USB interface.
E8257D or E8267D or E8663B	This choice provides compatibility for the E8257D, E8267D, or E8663B signal generators, which are supported through a GPIB, LAN, or USB interface.
E8247C or E8257C or E8267C	This choice provides compatibility for the E8247C, E8257C or E8267C signal generators, which are supported through a GPIB, LAN, or USB interface.

Overview

Functional N5171B/72B EXG and N5181B/82B MXG SCPI Commands While in a Compatible Language Mode

N5181A or N5182A	This choice provides compatibility for the N5181A or N5182A signal generators which are supported through a GPIB, LAN, or USB interface.
E442XB or E443XB	This choice provides compatibility for the E442XB or E443XB signal generators, which are supported through a GPIB, LAN, or USB interface.
E8241A or E8244A or E8251A or E8254A	This choice provides compatibility for the E8241A, E8244A, E8251A, or E8254A signal generators, which are supported through a GPIB, LAN, or USB interface.
SMU200A or SMATE200A or SMJ100A or SMIQ or SML or SMV	This choice provides compatibility for the Rhode and Schwarz SMU200A, SMATE200A, SMJ100A, SMIQ, SML, or SMV signal generators which are supported through a GPIB, LAN or USB interface.
3410	This choice provides compatibility for the Aeroflex 3410 series signal generator, which is supported through a GPIB, LAN, or USB interface.
8340	This choice provides compatibility for the 8340A/B/C/D signal generator, which is supported through only a GPIB interface.
8662, or 8663	This choice provides compatibility for the 8662A or 8663A signal generator, which is supported through only a GPIB interface.
*RST	The current Preset Language selection.

Table 1-1

Key Entry	SCPI	3410 Series	8662A	E8257D, E8267D, E8663B
	SML	N5181A,N5182 A	8663A	E8241A, E8244A, E8251A, E8254A
	SMV	E4428C,E4438C	8648A/B/C/D	
	SMIQ	E442xB, E443xB	8656B, 8657A/B	
	SMJ100A	SMU200A, SMATE200A	E8247C, E8257C, E8267C	

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST. After a power cycle, preset, or *RST, the “:SYSTem:LANGuage” query will return the same language selection as made with the :PRESet :LANGuage command.

:SYSTem:LANGuage

Supported All Models

```
:SYSTem:LANGuage
"SCPI" | "COMP" | "8648" | "E4428C" | "E4438C" | "E8257D" | "E8267D" | "E8
663B" | "E8247C" | "E8257C" | "E8267C" | "N5181A" | "N5182A" | "E442XB" | "
E443XB" | "E8241A" | "E8244A" | "E8251A" | "E8254A" | "SMU200A" | "SMATE
200A" | "SMJ100A" | "SMIQ" | "SML" | "SMV" | "3410" | "8662" | "8663"
:SYSTem:LANGuage?
```

This command sets the remote language for the signal generator.

SCPI	This choice selects the X-Series signal generator as the programming language for use with its SCPI commands using GPIB, LAN, or USB.
COMP	This choice provides compatibility for the 8656B, 8657A/B signal generator, which is supported through only a GPIB interface.
8648	This choice provides compatibility for the 8648A/B/C/D signal generator, which is supported through only a GPIB interface.
E4428C or E4438C	This choice provides compatibility for the E4428C or E4438C signal generators, which are supported through a GPIB, LAN, or USB interface.

Overview

Functional N5171B/72B EXG and N5181B/82B MXG SCPI Commands While in a Compatible Language Mode

E8257D or E8267D or E8663B	This choice provides compatibility for the E8257D, E8267D, or E8663B signal generators, which are supported through a GPIB, LAN, or USB interface.
E8247C or E8257C or E8267C	This choice provides compatibility for the E8247C, E8257C or E8267C signal generators, which are supported through a GPIB, LAN, or USB interface.
N5181A or N5182A	This choice provides compatibility for the N5181A or N5182A signal generators which are supported through a GPIB, LAN, or USB interface.
E442XB or E443XB	This choice provides compatibility for the E442XB or E443XB signal generators, which are supported through a GPIB, LAN, or USB interface.
E8241A or E8244A or E8251A or E8254A	This choice provides compatibility for the E8241A, E8244A, E8251A, or E8254A signal generators, which are supported through a GPIB, LAN, or USB interface.
SMU200A or SMATE200A or SMJ100A or SMIQ or SML or SMV	This choice provides compatibility for the Rhode and Schwarz SMU200A, SMATE200A, SMJ100A, SMIQ, SML, or SMV signal generators which are supported through a GPIB, LAN or USB interface.
3410	This choice provides compatibility for the Aeroflex 3410 series signal generator, which is supported through a GPIB, LAN, or USB interface.
8340	This choice provides compatibility for the 8340A/B/C/D signal generator, which is supported through only a GPIB interface.
8662, or 8663	This choice provides compatibility for the 8662A or 8663A signal generator, which is supported through only a GPIB interface.

***RST** "SCPI"

Table 1-2

Key Entry	SCPI	3410 Series	8662A	E8257D, E8267D, E8663B
	SML	N5181A,N5182 A	8663A	E8241A, E8244A, E8251A, E8254A
	SMV	E4428C,E4438C	8648A/B/C/D	
	SMIQ	E442xB, E443xB	8656B, 8657A/B	
	SMJ100A	SMU200A, SMATE200A	E8247C, E8257C, E8267C	

Remarks While the X-Series signal generator default *RST is SCPI, in operation, the actual *RST setting matches the Preset Language selection made using **“:PRESet:LANGuage”** on **page 5**.

To set the signal generator default settings to match the remote language selection, use the **“:PRESet:LANGuage”** on **page 5** to change the remote language selection.

:SYSTem:ERRor[:NEXT]

Supported All Models

:SYSTem:ERRor[:NEXT]?

This query returns the most recent error message from the signal generator error queue. If there are no error messages, the query returns the following output:

+0, "No error"

When there is more than one error message, the query will need to be sent for each message. Each error message is erased after being queried.

Key Entry View Next Error Message

:SYSTem:LOG:SCPI

Supported All Models

:SYSTem:LOG:SCPI ON|OFF|1|0

:SYSTem:LOG:SCPI?

Use this command to turn SCPI logging on or off.

Overview

Functional N5171B/72B EXG and N5181B/82B MXG SCPI Commands While in a Compatible Language Mode

ON|1 When initially set to ON, this command causes the X-Series signal generator to create the SCPI_LOG.TXT file that lists all of the executed SCPI commands. If the logging is turned off, and then back on, executed commands are added to the existing list. To clear and start a new SCPI list, use the signal generator front panel **Clear SCPI Log** softkey.

The SCPI list will capture some errors caused by a command execution. But to view all errors, see **“:SYSTem:ERRor[:NEXT]” on page 9.**

To view the SCPI_LOG.TXT file, ftp the X-Series signal generator file using the file path:
/USER/BIN/SCPI_LOG.TXT.

OFF|0 When set to OFF, commands are not logged.

***RST** 0

Key Entry SCPI Logging Off On

2 Keysight N5181A/82A MXG Compatible Commands

Command List Overview

NOTE When using the SCPI commands in this section, you must set the remote programming language to the correct language format. See [“Selecting the Programming Language” on page 2](#) for more information.

The following table lists the commands that are supported by the Agilent N5171B/72B EXG and N5181B/82B MXG X-Series signal generators and that have some difference from the X-Series commands. These differences vary due to command syntax, argument choices, ranges, or a combination. When the difference is caused by the arguments, typically the supported command syntax is the same as the Keysight X-Series signal generator command and the Keysight X-Series command has more argument choices. In this situation, using the additional choices, offered by the X-Series command, are also supported, but they are not shown in the table. For the additional choices, refer to the *Keysight X-Series Signal Generators SCPI Command Reference*.

When the range is the difference, use the range values listed in the X-Series signal generator **Data Sheet**, or as shown in the *Keysight X-Series Signal Generators SCPI Command Reference*. Range values vary based on the X-Series signal generator model and configuration.

Commands that are supported and identical to the X-Series commands are not listed in the following table. Instead these commands are listed as a command in the *Keysight X-Series Signal Generators SCPI Command Reference*.

Command List

Table 2-1 Supported N5181A/82A SCPI Sequences

Supported Commands	Remarks
Calibration Subsystem	
:CALibration:BBG:CHANnel	<i>This command is accepted without it performing any function.</i>
:CALibration:IQ:START <value><units> :CALibration:IQ:START?	<i>The range is dependent upon the X-Series signal generator model.</i>
:CALibration:IQ:STOP <value><units> :CALibration:IQ:STOP?	<i>The range is dependent upon the X-Series signal generator model.</i>

Route Subsystem	
:ROUTE[:CONNECTors]:TOUT SWEep SETTled PVIDeo PSYNc LXI SRUN :ROUTE[:CONNECTors]:TOUT?	Supported but the following parameters are not supported: M1 M2 M3 M4
Digital Modulation Subsystem	
[:SOURce]:DM:IQADjustment:DELay <val><unit> [:SOURce]:DM:IQADjustment:DELay?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce]:DM:IQADjustment:EXTernal:COFFset <val><unit> [:SOURce]:DM:IQADjustment:EXTernal:COFFset?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce]:DM:IQADjustment:SKEW <val><unit> [:SOURce]:DM:IQADjustment:SKEW?	<i>The range is dependent upon the X-Series signal generator model.</i>

3 Keysight E4428C/38C ESG Compatible Commands

Command List Overview

NOTE

When using the SCPI commands in this section, you must set the remote programming language to the correct language format. See [“Selecting the Programming Language” on page 2](#) for more information.

The following table lists the commands that are supported by the Agilent N5171B/72B EXG and N5181B/82B MXG X-Series signal generators and that have some difference from the X-Series commands. These differences vary due to command syntax, argument choices, ranges, or a combination. Typically when syntax is the difference, there are no remarks. This means that the X-Series signal generator, while it supports the command in the E4428C/38C mode, may in rare circumstances provide a different behavior.

When the difference is caused by the arguments (parameters), typically the supported command syntax is the same as the Keysight X-Series signal generator command, with the Keysight X-Series command having more argument choices. In this situation, using the additional choices are also supported, but they are not shown in the table. For the additional choices, refer to the *Keysight X-Series Signal Generators SCPI Command Reference*.

When the range is the difference, use the range values listed in the X-Series signal generator **Data Sheet**, or as shown in the *Keysight X-Series Signal Generators SCPI Command Reference*.

Commands that are supported and identical to the X-Series commands are not listed in the following table. Instead these commands are listed as a command in the *X-Series Signal Generators SCPI Command Reference*.

Command List

Table 3-1 Supported E4428C/38C SCPI Sequences

Supported Commands	Remarks
Communication Subsystem	
:SYSTem:COMMunicate:PMETer:TIMEout <num>[<time suffix>] :SYSTem:COMMunicate:PMETer:TIMEout?	
Memory Subsystem	
:MEMory:DATA:FIR <"filename">,osr,coefficient{,coefficient} :MEMory:DATA:FIR? <"filename">	<i>Parameters differ, refer to the Keysight X-Series Signal Generator SCPI Command Reference for a complete listing.</i>
:MEMory:DATA:FSK <"filename">,num_states,f0,f0,...[,diff_state,num_diff_states,diff0,diff1,..].] :MEMory:DATA:FSK? <"filename">	<i>Parameters differ, refer to the Keysight X-Series Signal Generator SCPI Command Reference for a complete listing.</i>
System Subsystem	
:SYSTem:FILEsystem:SAFEmode ON OFF 1 0 :SYSTem:FILEsystem:SAFEmode?	This command is accepted but performs no action.
:SYSTem:LANGUage "SCPI" "COMP" "8648" :SYSTem:LANGUage?	Supported but the following parameters are not supported: "NADC" "PDC" "PHS" NOTE: Changing the language while in a language mode other than SCPI may produce undesired results when executing commands.
:SYSTem:PON:TYPE PRESet LAST :SYSTem:PON:TYPE?	<i>Parameters differ, refer to the Keysight X-Series Signal Generator SCPI Command Reference for a complete listing.</i>
:SYSTem:PRESet:LANGUage "SCPI" "COMP" "8648" :SYSTem:PRESet:LANGUage?	Supported but the following parameters are not supported: "NADC" "PDC" "PHS" NOTE: Changing the language while in a language mode other than SCPI may produce undesired results when executing commands.
:SYSTem:PRESet[:USER]:SAVE	While [:USER] is optional in E4428C/38C mode, it is required in the X-Series SCPI mode.

Table 3-1 Supported E4428C/38C SCPI Sequences (Continued)

Supported Commands	Remarks
Trigger Subsystem	
:TRIGger[:SEQuence]:SOURce BUS IMMEdiate EXTernal KEY :TRIGger[:SEQuence]:SOURce?	<i>Parameters differ, refer to the Keysight X-Series Signal Generator SCPI Command Reference for a complete listing.</i>
Amplitude Modulation Subsystem	
[:SOURce] :AM [1] 2 :EXTernal [1] 2 :IMPeda nce <50 600> [:SOURce] :AM [1] 2 :EXTernal [1] 2 :IMPeda nce <50 600>	<i>Parameters differ, refer to the Keysight X-Series Signal Generator SCPI Command Reference for a complete listing.</i>
[:SOURce] :AM :INTernal :FREQuency :STEP [: INCRement] <num> [:SOURce] :AM :INTernal :FREQuency :STEP [: INCRement] ?	
[:SOURce] :AM [1] 2 :INTernal [1] :SWEep :TR IGger IMMEdiate KEY EXTernal BUS [:SOURce] :AM [1] 2 :INTernal [1] :SWEep :TR IGger?	<i>Parameters differ, refer to the Keysight X-Series Signal Generator SCPI Command Reference for a complete listing.</i>
[:SOURce] :AM [1] 2 :INTernal [1] 2 :FREQue ncy <value><unit> UP DOWN [:SOURce] :AM [1] 2 :INTernal [1] 2 :FREQue ncy?	<i>The range is dependent upon the X-Series signal generator model.</i>
Frequency Subsystem	
[:SOURce] :FREQuency :FIXed <value><unit> UP DOWN [:SOURce] :FREQuency :FIXed?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce] :FREQuency [:CW] <value><unit> UP DOWN [:SOURce] :FREQuency [:CW] ?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce] :ROSCillator :BANDwidth :EXTern al <value> [:SOURce] :ROSCillator :BANDwidth :EXTern al?	<i>The range is dependent upon the X-Series signal generator model.</i>
Frequency Modulation Subsystem	

Table 3-1 Supported E4428C/38C SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce]:FM[1] 2:EXTeRnal[1] 2:IMPeDa nce 50 600 [:SOURce]:FM[1] 2:EXTeRnal[1] 2:IMPeDa nce?	Parameters differ, refer to the Keysight X-Series Signal Generator SCPI Command Reference for a complete listing.
[:SOURce]:FM[1] 2:INTeRnal[1]:SWEep:TR IGger IMMEdiate KEY EXTeRnal BUS [:SOURce]:FM[1] 2:INTeRnal[1]:SWEep:TR IGger?	Parameters differ, refer to the Keysight X-Series Signal Generator SCPI Command Reference for a complete listing.

List/Sweep Subsystem	
[:SOURce]:LIST:TRIGger:SOURce BUS IMMEdiate EXTeRnal KEY [:SOURce]:LIST:TRIGger:SOURce?	Parameters differ, refer to the Keysight X-Series Signal Generator SCPI Command Reference for a complete listing.
[:SOURce]:SWEep:MODE AUTO MANual [:SOURce]:SWEep:MODE?	
Low Frequency Output Subsystem	
[:SOURce]:LFOutput:FUNCTion[1] 2:SHAPE SINE DUALsine SWEPTsine TRIangle SQUar e RAMP NOISE DC [:SOURce]:LFOutput:FUNCTion[1] 2:SHAPE ?	Parameters differ, refer to the Keysight X-Series Signal Generator SCPI Command Reference for a complete listing.
[:SOURce]:LFOutput:FUNCTion[1]:SWEep:T RIGger BUS IMMEdiate EXTeRnal KEY [:SOURce]:LFOutput:FUNCTion[1]:SWEep:T RIGger?	Parameters differ, refer to the Keysight X-Series Signal Generator SCPI Command Reference for a complete listing.
[:SOURce]:LFOutput:SOURce INT[1] FUNCTion [:SOURce]:LFOutput:SOURce?	Parameters differ, refer to the Keysight X-Series Signal Generator SCPI Command Reference for a complete listing.
Phase Modulation Subsystem	
[:SOURce]:PM[1] 2:EXTeRnal[1] 2:IMPeDa nce <50 600> [:SOURce]:PM[1] 2:EXTeRnal[1] 2:IMPeDa nce?	Parameters differ, refer to the Keysight X-Series Signal Generator SCPI Command Reference for a complete listing.
[:SOURce]:PM[1] 2:INTeRnal[1]:FUNCTion :SHAPE SINE TRIangle SQUare RAMP NOISE [:SOURce]:PM[1] 2:INTeRnal[1]:FUNCTion :SHAPE?	Supported but the following parameters are not supported: DUALsine SWEPTsine

Table 3-1 Supported E4428C/38C SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce]:PM[1] 2:INTernal[1]:SWEep:TRIGger IMMEDIATE KEY EXTernal BUS [:SOURce]:PM[1] 2:INTernal[1]:SWEep:TRIGger?	Parameters differ, refer to the Keysight X-Series Signal Generator SCPI Command Reference for a complete listing.
Power Subsystem	
[:SOURce]:POWer:ALC:SEARch ON OFF 1 0 ONCE [:SOURce]:POWer:ALC:SEARch?	Parameters differ, refer to the Keysight X-Series Signal Generator SCPI Command Reference for a complete listing.
[:SOURce]:POWer:ALC:SOURce INTernal DIODE [:SOURce]:POWer:ALC:SOURce?	Supported but the following parameter is not supported: MMHead.
[:SOURce]:POWer:ALternate:AMPLitude <value>dB [:SOURce]:POWer:ALternate:AMPLitude?	The range is dependent upon the X-Series signal generator model. The Alternate Amplitude behavior differs in the X-Series Signal Generators. The entered value is a desired value. The signal generator tries to accommodate as much of the desired value (delta) as possible for each frequency/power setting without capping the value when impossible at a certain point.
[:SOURce]:POWer:ALternate:TRIGger[:SOURce] INTernal EXTernal MANual [:SOURce]:POWer:ALternate:TRIGger[:SOURce]?	Supported with the following choice being accepted but performs no action: MANual
[:SOURce]:POWer[:LEVEL][:IMMEDIATE][:AMPLitude] <value><unit> UP DOWN [:SOURce]:POWer[:LEVEL][:IMMEDIATE][:AMPLitude]?	The range is dependent upon the X-Series signal generator model.
Pulse Modulation Subsystem	
[:SOURce]:PULM:INTernal[1]:DELay <delay> UP DOWN [:SOURce]:PULM:INTernal[1]:DELay[UP DOWN]	Parameters differ, refer to the Keysight X-Series Signal Generator SCPI Command Reference for a complete listing.
[:SOURce]:PULM:SOURce INT EXT[1] EXT2 [:SOURce]:PULM:SOURce?	Parameters differ from the N51xxB command. When sending EXT2, it is accepted and the query returns EXT2, but EXT[1] is actually selected.
[:SOURce]:PULM:SOURce:INTernal SQUARE FRUN TRIGgered DOUBlet GATED [:SOURce]:PULM:SOURce:INTernal?	Parameters differ, refer to the Keysight X-Series Signal Generator SCPI Command Reference for a complete listing.

Table 3-1 Supported E4428C/38C SCPI Sequences (Continued)

Supported Commands	Remarks
Custom Subsystem	
[:SOURCE]:RADio[1] 2 3 4:CUSTom:BBCLoc k INT[1] [:SOURCE]:RADio[1] 2 3 4:CUSTom:BBCLoc k?	Supported but the following choice is not supported: EXT[1].
[:SOURCE]:RADio:CUSTom:FILTer RNYQuist NYQuist GAUSSian RECTangle IS 95 IS95_EQ IS95_MOD IS95_MOD_EQ EWIDe WCDMa AC4Fm EDGE EHSR "user FIR" [:SOURCE]:RADio:CUSTom:FILTer?	<i>Parameters differ, refer to the Keysight X-Series Signal Generator SCPI Command Reference for a complete listing.</i>
[:SOURCE]:RADio:CUSTom:MODulation[:TYP E] ASK BPSK QPSK UQPSk IS95QPSK GRAYQPSK OQPSK IS95OQPSK P4DQPSK PSK8 PSK16 D8P SK MSK FSK2 FSK4 FSK8 FSK16 C4FM QAM4 QAM16 QAM32 QAM64 QAM128 QAM256 QAM102 4 UIQ UFSK [:SOURCE]:RADio:CUSTom:MODulation[:TYP E]?	<i>Parameters differ, refer to the Keysight X-Series Signal Generator SCPI Command Reference for a complete listing.</i>
[:SOURCE]:RADio:CUSTom:SRATE <val> [:SOURCE]:RADio:CUSTom:SRATE?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURCE]:RADio:CUSTom:VCO:CLOCK[:SOUR ce] INTERNAL EXTERNAL [:SOURCE]:RADio:CUSTom:VCO:CLOCK[:SOUR ce]?	This command is accepted but performs no action. The following parameter is not accepted: EXTERNAL
Dmodulation Subsystem	
[:SOURCE]:RADio:DMODulation:ARB:MODula tion[:TYPE] ASK BPSK QPSK UQPSk IS95QPSK GRAYQPSK OQPSK IS95OQPSK P4DQPSK PSK8 PSK16 D8P SK EDGE MSK FSK2 FSK4 FSK8 FSK16 C4FM QAM4 QAM16 QAM32 QAM64 QAM128 QAM256 U IQ UFSK [:SOURCE]:RADio:DMODulation:ARB:MODula tion[:TYPE]?	<i>Parameters differ, refer to the Keysight X-Series Signal Generator SCPI Command Reference for a complete listing.</i>
[:SOURCE]:RADio:DMODulation:ARB:SCLock :RATE <val> [:SOURCE]:RADio:DMODulation:ARB:SCLock :RATE?	<i>The range is dependent upon the X-Series signal generator model.</i>

Table 3-1 Supported E4428C/38C SCPI Sequences (Continued)

Supported Commands	Remarks
<pre>[:SOURce] :RADio:DMODulation:ARB:SETup GSM NADC PDC PHS DECT AC4Fm ACQPsk CDP D PWT EDGE TETra MCArrier "file name" [:SOURce] :RADio:DMODulation:ARB:SETup?</pre>	<p>Parameters differ, refer to the Keysight X-Series Signal Generator SCPI Command Reference for a complete listing.</p>
Digital Modulation Subsystem	
<pre>[:SOURce] :BURSt:SOURce INTernal [1] EXTernal[1]</pre>	<p>Accepted but performs not action. The following query is not supported:</p> <pre>[:SOURce] :BURSt:SOURce?</pre>
<pre>[:SOURce] :DM:EXTernal:FILTer 40e6 THROugh [:SOURce] :DM:EXTernal:FILTer?</pre>	<p>Commands are accepted without error by the signal generator, but no action occurs.</p>
<pre>[:SOURce] :DM:EXTernal:FILTer:AUTO ON OFF 1 0</pre>	<p>Accepted but performs no action. The following query is not supported:</p> <pre>[:SOURce] :DM:EXTernal:FILTer:AUTO?</pre> <p>If the query is used, the following error is generated: -113, Undefined header</p>
<pre>[:SOURce] :DM:EXTernal:HCRest [:STATe] ON OFF 1 0</pre>	<p>Accepted but performs no action. The following query is not supported:</p> <pre>[:SOURce] :DM:EXTernal:HCRest [:STATe] ?</pre> <p>If the query is used, the following error is generated: -113, Undefined header</p>
<pre>[:SOURce] :DM:EXTernal:POLarity [:ALL] NORMal INVert INVerted [:SOURce] :DM:EXTernal:POLarity [:ALL] ?</pre>	
<pre>[:SOURce] :DM:SOURce [1] EXTernal INTernal OFF [:SOURce] :DM:SOURce?</pre>	<p>Supported but the following command syntax is not supported: <code>:SOURce:DM:SOURce2</code></p> <p>The following parameters also are not supported: BBG1 BBG2 BBG3 BBG4 EXT600</p>
Dual ARB Subsystem	
<pre>[:SOURce] :RADio:ARB:BASEband:FREQuency :OFFSet <value> [:SOURce] :RADio:ARB:BASEband:FREQuency :OFFSet?</pre>	<p>The range is dependent upon the X-Series signal generator model.</p>

Table 3-1 Supported E4428C/38C SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce] :RADio:ARB:GENerate:SINE ["filename"], [<osr>], [<scale>], [I Q {I Q}]	Parameters differ, refer to the Keysight X-Series Signal Generator SCPI Command Reference for a complete listing.
[:SOURce] :RADio:ARB:NOISe:CBWidth <val> [:SOURce] :RADio:ARB:NOISe:CBWidth?	The range is dependent upon the X-Series signal generator model.
[:SOURce] :RADio:ARB:SCLock:RATE <val> [:SOURce] :RADio:ARB:SCLock:RATE?	The range is dependent upon the X-Series signal generator model.
[:SOURce] :RADio[:ARB:TRIGger[:SOURce]: EXTernal:DElay:STATe OFF [:SOURce] :RADio:ARB:TRIGger[:SOURce]:E XTernal:DElay:STATe?	Supported but the following parameters are not supported: TIME SAMPlEs.
[:SOURce] :RADio:ARB:TRIGger[:SOURce]:E XTernal:DElay[:TIME] <value> [:SOURce] :RADio:ARB:TRIGger[:SOURce]:E XTernal:DElay[:TIME] ?	Refer to the "Keysight X-Series Signal Generators SCPI Reference" for the range values.
[:SOURce] :RADio:ARB:VCO:CLOck[:SOURce] INTernal [:SOURce] :RADio:ARB:VCO:CLOck[:SOURce] ?	This command is accepted but performs no action. The following parameter is not accepted: EXTernal
Multi-Tone Subsystem	
[:SOURce] :RADio:MTONE:ARB:SCLock:RATE <value> [:SOURce] :RADio:MTONE:ARB:SCLock:RATE?	The range is dependent upon the X-Series signal generator model.
Two Tone Subsystem	
[:SOURce] :RADio:TTONE:ARB:SCLock:RATE <value> [:SOURce] :RADio:TTONE:ARB:SCLock:RATE?	The range is dependent upon the X-Series signal generator model.

4 Keysight/HP E44xxB Compatible Commands

Command List Overview

NOTE

When using the SCPI commands in this section, you must set the remote programming language to the correct language format. See [“Selecting the Programming Language” on page 2](#) for more information.

The following table shows the SCPI commands supported by the Keysight N5171B/72B EXG and N5181B/82B MXG X-Series signal generators.

Some commands may have identical syntax to the X-Series signal generator commands but the parameters (arguments) may show a difference. When this occurs, typically the X-Series command has more parameters that are also supported while using the compatible command. To compare the compatible commands with the X-Series commands, refer to the Keysight X-Series Signal Generators SCPI Command Reference.

When the command requires a range value, use the range values listed in the X-Series signal generator **Data Sheet**, or as shown in the *Keysight X-Series Signal Generators SCPI Command Reference*.

Command List

Table 4-1 Supported E44xxB SCPI Sequences

Supported Commands	Remarks
IEEE Common Commands	
*CLS	
*ESE <data> *ESE?	
*ESR?	
*IDN?	
*OPC *OPC?	
*RCL <reg_num>	
*RST	
*SAV <reg_num>	
*SRE <data> *SRE?	
*STB?	
*TRG	
*TST?	
*WAI	
Calibration Subsystem	
:CALibration:DCFM	
:CALibration:IQ	
:CALibration:IQ:DEFault	
:CALibration:IQ:FULL	
:CALibration:IQ:START <value> :CALibration:IQ:START?	<i>The range is dependent upon the X-Series signal generator model.</i>
:CALibration:IQ:STOP <value> :CALibration:IQ:STOP?	<i>The range is dependent upon the X-Series signal generator model.</i>
Communication Subsystem	
:SYSTem:COMMunicate:GPIB:ADDRESS <number> :SYSTem:COMMunicate:GPIB:ADDRESS?	
Diagnostic Subsystem	

Table 4-1 Supported E44xxB SCPI Sequences (Continued)

Supported Commands	Remarks
:DIAGnostic[:CPU]:INfOrMation:CCOunt:AT Tenuator?	
:DIAGnostic[:CPU]:INfOrMation:CCOunt:PO N?	
:DIAGnostic[:CPU]:INfOrMation:CCOunt:PR OTection?	
:DIAGnostic[:CPU]:INfOrMation:DISPlay:O TIME?	
:DIAGnostic[:CPU]:INfOrMation:LIDN?	
:DIAGnostic[:CPU]:INfOrMation:OPTions?	
:DIAGnostic[:CPU]:INfOrMation:OPTions:D ETail?	
:DIAGnostic[:CPU]:INfOrMation:OTIME?	
:DIAGnostic[:CPU]:INfOrMation:SDATe?	
Display Subsystem	
:DISPlay:BRIGhtness <value> :DISPlay:BRIGhtness?	
:DISPlay:CONTRast <value> :DISPlay:CONTRast?	
:DISPlay:INVerse ON OFF 1 0 :DISPlay:INVerse?	
:DISPlay:REMote ON OFF 1 0 :DISPlay:REMote?	
Memory Subsystem	
:MEMory:CATalog:BINary?	
:MEMory:CATalog:DMOD?	
:MEMory:CATalog:FIR?	
:MEMory:CATalog:FSK?	
:MEMory:CATalog:LIST?	
:MEMory:CATalog:MTONE?	
:MEMory:CATalog:SEQ?	
:MEMory:CATalog:STATe?	
:MEMory:CATalog[:ALL]?	

Table 4-1 Supported E44xxB SCPI Sequences (Continued)

Supported Commands	Remarks
:MEMory:COpy[:NAME] "<file name>","<file name>"	
:MEMory:DATA "<file name>",<datablock>	
:MEMory:DATA? "<file name>"	
:MEMory:DATA:FIR "<file name>",<osr>,<coefficient{,<coefficient}>	
:MEMory:DATA:FIR? "<file name>"	
:MEMory:DATA:FSK "<file name>",<num_states>,<f0>,<f1>,...<f(n)> [,<diff_state>,<num_diff_states>,<diff0>,<diff1>,...<diff(n)>]	
:MEMory:DATA:FSK? "<file name>"	
:MEMory:DATA:IQ "<file name>",<offsetQ>,<num_states>,<i0>,<q0>,<i1>,<q1>,...<i(n)>,<q(n)> [,<diff_state>,<num_diff_states>,<diff0>,<diff1>,...<diff(n)>]	
:MEMory:DATA:IQ? "<file name>"	
:MEMory:DELEte:ALL	
:MEMory:DELEte:BINary	
:MEMory:DELEte:MDMod	
:MEMory:DELEte:SEQ	
:MEMory:DELEte:STATE	
:MEMory:DELEte[:NAME] "<file name>"	
:MEMory:FREE[:ALL]?	
:MEMory:LOAD:LIST "<file name>"	
:MEMory:MOVE <src_file>,<dest_file>	
:MEMory:STATE:COMMeNt <reg_num>,<seq_num>,"<comment>"	
:MEMory:STATE:COMMeNt? <reg_num>,<seq_num>	
:MMEMemory:CATalog? "<msus>"	
:MMEMemory:COpy "<file name>","<file name>"	

Table 4-1 Supported E44xxB SCPI Sequences (Continued)

Supported Commands	Remarks
:MMEMory:DATA "<file name>",<datablock>	
:MMEMory:DATA? "<file name>"	
:MMEMory:DELeTe[:NAME] "<file name>",<msus>"	
:MMEMory:LOAD:ARB:ALL	
:MMEMory:LOAD:LIST "<file name>"	
:MMEMory:MOVE <src_file>,<dest_file>	
:MMEMory:STORe:ARB:ALL	
:MMEMory:STORe:LIST "<file name>"	
:MEMory:STORe:LIST "<file name>"	
Output Subsystem	
:OUTPut:BLANking:AUTO ON OFF 1 0 :OUTPut:BLANking:AUTO?	
:OUTPut:BLANking[:STATe] ON OFF 1 0 :OUTPut:BLANking[:STATe]?	
:OUTPut:MODulation[:STATe] ON OFF 1 0 :OUTPut:MODulation[:STATe]?	Requires Option UNT (AM/FM/Phase Modulation)
:OUTPut:PROTection:CLEar	
:OUTPut:PROTection[:STATe] ON OFF 1 0 :OUTPut:PROTection[:STATe]?	
:OUTPut:PROTection:TRIPped?	
:OUTPut[:STATe] ON OFF 1 0 :OUTPut[:STATe]?	
Status Subsystem	
:STATus:OPERation:CONDition?	
:STATus:OPERation:ENABle <value> :STATus:OPERation:ENABle?	
:STATus:OPERation:NTRansition <value> :STATus:OPERation:NTRansition?	
:STATus:OPERation:PTRansition <value> :STATus:OPERation:PTRansition?	
:STATus:OPERation[:EVENT]?	

Table 4-1 Supported E44xxB SCPI Sequences (Continued)

Supported Commands	Remarks
:STATus:PRESet	
:STATus:QUESTionable:CALibration:CONDition?	
:STATus:QUESTionable:CALibration:ENABle <value> :STATus:QUESTionable:CALibration:ENABle?	
:STATus:QUESTionable:CALibration:NTRansition <value> :STATus:QUESTionable:CALibration:NTRansition?	
:STATus:QUESTionable:CALibration:PTRansition <value> :STATus:QUESTionable:CALibration:PTRansition?	
:STATus:QUESTionable:CALibration[:EVENT]?	
:STATus:QUESTionable:CONDition?	
:STATus:QUESTionable:ENABle <value> :STATus:QUESTionable:ENABle?	
:STATus:QUESTionable:FREQuency:CONDition?	
:STATus:QUESTionable:FREQuency:ENABle <value> :STATus:QUESTionable:FREQuency:ENABle?	
:STATus:QUESTionable:FREQuency:NTRansition <value> :STATus:QUESTionable:FREQuency:NTRansition?	
:STATus:QUESTionable:FREQuency:PTRansition <value> :STATus:QUESTionable:FREQuency:PTRansition?	
:STATus:QUESTionable:FREQuency[:EVENT]?	
:STATus:QUESTionable:NTRansition <value> :STATus:QUESTionable:NTRansition?	
:STATus:QUESTionable:POWer:CONDition?	

Table 4-1 Supported E44xxB SCPI Sequences (Continued)

Supported Commands	Remarks
:STATus:QUESTionable:POWer:ENABle <value> :STATus:QUESTionable:POWer:ENABle?	
:STATus:QUESTionable:POWer:NTRansition <value> :STATus:QUESTionable:POWer:NTRansition?	
:STATus:QUESTionable:POWer:PTRansition <value> :STATus:QUESTionable:POWer:PTRansition?	
:STATus:QUESTionable:POWer[:EVENT]?	
:STATus:QUESTionable:PTRansition <value> :STATus:QUESTionable:PTRansition?	
:STATus:QUESTionable[:EVENT]?	
System Subsystem	
:SYSTem:CAPability?	
:SYSTem:ERRor[:NEXT]?	
:SYSTem:HELP:MODE SINGLE CONTinuous :SYSTem:HELP:MODE?	CONTinuous is accepted without error, but performs no action. The query returns only SING.
:SYSTem:LANGUage "SCPI" "COMP" "8648" :SYSTem:LANGUage?	Supported but the following parameters are not supported: "NADC" "PDC" "PHS" NOTE: Changing the language while in a language mode other than SCPI may produce undesired results when executing commands.
:SYSTem:PON:TYPE PRESet LAST :SYSTem:PON:TYPE?	
:SYSTem:PRESet	
:SYSTem:PRESet:ALL	
:SYSTem:PRESet:LANGUage "SCPI" "COMP" "8648" :SYSTem:PRESet:LANGUage?	Supported but the following parameters are not supported: "NADC" "PDC" "PHS" NOTE: Changing the language while in a language mode other than SCPI may produce undesired results when executing commands.
:SYSTem:PRESet:PERSistent	
:SYSTem:PRESet:TYPE NORMal USER :SYSTem:PRESet:TYPE?	

Table 4-1 Supported E44xxB SCPI Sequences (Continued)

Supported Commands	Remarks
:SYSTem:PRESet:PN9 NORMAL QUICK :SYSTem:PRESet:PN9?	
:SYSTem:PRESet[:USER]:SAVE	
:SYSTem:SSAVer:DELay <value> :SYSTem:SSAVer:DELay?	
:SYSTem:SSAVer:MODE LIGHT TEXT :SYSTem:SSAVer:MODE?	
:SYSTem:SSAVer:STATE ON OFF :SYSTem:SSAVer:STATE?	
:SYSTem:VERSion?	
Trigger Subsystem	
:ABORT	
:INITiate:CONTinuous[:ALL] ON OFF 1 0 :INITiate:CONTinuous[:ALL]?	
:INITiate[:IMMediate][:ALL]	
:TRIGger:OUTPut:POLarity POSitive NEGative :TRIGger:OUTPut:POLarity?	
:TRIGger[:SEQuence]:SLOPe POSitive NEGative :TRIGger[:SEQuence]:SLOPe?	
:TRIGger[:SEQuence]:SOURce BUS IMMediate EXTernal KEY :TRIGger[:SEQuence]:SOURce?	
:TRIGger[:SEQuence][:IMMediate]	
[:SOURce]:TSweep	
Unit Subsystem	
:UNIT:POWer DBM DBUV DBUVEMF V VEMF :UNIT:POWer?	
Amplitude Modulation Subsystem	
[:SOURce]:AM[1] 2:EXTernal[1] 2:COUplin g AC DC [:SOURce]:AM[1] 2:EXTernal[1] 2:COUplin g?	

Table 4-1 Supported E44xxB SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce]:AM[1] 2:INTernal[1]:FREQuency <value><unit> [:SOURce]:AM[1] 2:INTernal[1]:FREQuency ?	
[:SOURce]:AM[1] 2:INTernal[1]:FUNctIon: SHAPE <enum> [:SOURce]:AM[1] 2:INTernal[1]:FUNctIon: SHAPE?	
[:SOURce]:AM[1] 2:INTernal[1]:SWEep:TIM E <value><unit> [:SOURce]:AM[1] 2:INTernal[1]:SWEep:TIM E?	
[:SOURce]:AM[1] 2:INTernal[1]:SWEep:TRI Gger <enum> [:SOURce]:AM[1] 2:INTernal[1]:SWEep:TRI Gger?	
[:SOURce]:AM[1] 2:SOURce INT[1] EXT1 EXT2 [:SOURce]:AM[1] 2:SOURce?	
[:SOURce]:AM[1] 2:STATe ON OFF 1 0 [:SOURce]:AM[1] 2:STATe?	
[:SOURce]:AM[1] 2[:DEPTH] <value><unit> [:SOURce]:AM[1] 2[:DEPTH]?	
[:SOURce]:AM[1] 2[:DEPTH][:LINear]:TRAC k ON OFF 1 0 [:SOURce]:AM[1] 2[:DEPTH]:TRACk?	
Digital Modulation Subsystem	
[:SOURce]:BURSt:SOURce INTernal[1]	Supported but the following parameter is not supported: EXTernal[1] Supported but the following query is not supported: [:SOURce]:BURSt:SOURce?
[:SOURce]:DM:BBFilter <value> THROUGH [:SOURce]:DM:BBFilter?	Command accepted without error but does nothing.
[:SOURce]:DM:EXTernal:POLarity NORMAL INVERTed [:SOURce]:DM:EXTernal:POLarity?	
[:SOURce]:BURSt:STATe ON OFF 1 0 [:SOURce]:BURSt:STATe?	

Table 4-1 Supported E44xxB SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce]:DM:EXTErnal:ALC:BA NDwidth BWI Dth NORMAl NARRow [:SOURce]:DM:EXTErnal:ALC:BA NDwidth BWI Dth?	
[:SOURce]:DM:EXTErnal:HICRest[:STATe] ON OFF 1 0	Supported but the following query is not supported: [:SOURce]:DM:EXTErnal:HICRest[:STATe]?
[:SOURce]:DM:IQADjustment:Gain <value><unit> [:SOURce]:DM:IQADjustment:Gain?	
[:SOURce]:DM:IQADjustment:IOFFset <value><unit> [:SOURce]:DM:IQADjustment:IOFFset?	
[:SOURce]:DM:IQADjustment:QOFFset <value><unit> [:SOURce]:DM:IQADjustment:QOFFset?	
[:SOURce]:DM:IQADjustment:QSKew <value><unit> [:SOURce]:DM:IQADjustment:QSKew?	
[:SOURce]:DM:IQADjustment[:STATe] ON OFF 1 0 [:SOURce]:DM:IQADjustment[:STATe]?	
[:SOURce]:DM:SOURce EXTErnal INTErnal[1] [:SOURce]:DM:SOURce?	
[:SOURce]:DM:STATe ON OFF 1 0 [:SOURce]:DM:STATe?	
Dual ARB Subsystem	
[:SOURce]:RADio:ARB:CLIPping "<file name>", IJQ IORQ, <10-100%>	
[:SOURce]:RADio:ARB:CLOCK:SRATE <value> [:SOURce]:RADio:ARB:CLOCK:SRATE?	
[:SOURce]:RADio:ARB:MARKer:CLEar "<file name>", <mkr(1 2)>, <first_point>, <last_point>	
[:SOURce]:RADio:ARB:MARKer:CLEar:ALL "<file name>", <mkr(1 2)>	

Table 4-1 Supported E44xxB SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce]:RADio:ARB:MARKer:POLarity NEGative POSitive [:SOURce]:RADio:ARB:MARKer:POLarity?	
[:SOURce]:RADio:ARB:MARKer:RFBLank ON OFF 1 0 [:SOURce]:RADio:ARB:MARKer:RFBLank?	
[:SOURce]:RADio:ARB:MARKer[:SET] "<file name>",<mkr(1 2)>,<first_point>, <last_point>,<skip_count>	
[:SOURce]:RADio:ARB:RETRigger 1 0	This command is not recommended; the following command is the preferred syntax for the ESG E44xxB.
[:SOURce]:RADio:ARB:RETRigger ON OFF [:SOURce]:RADio:ARB:RETRigger?	This query for the Keysight X-Series Vector Signal Generators (N5172B/82B) only returns the string ON or OFF. This is different from the ESG E44xxB query which returns a 1 or 0.
[:SOURce]:RADio:ARB:RFILter <value> THrough	Command accepted without error but does nothing. The query form of the command is not compatible.
[:SOURce]:RADio:ARB:SCALing "<file name>",<1%-100%>	
[:SOURce]:RADio:ARB:SEquence "<file name>",<waveform>",<reps>,<mkr1(1 0)>, <mkr2(1 0)>{,"<waveform>",<rep>,<mkr1(1 0)>,<mkr2(1 0)>} [:SOURce]:RADio:ARB:SEquence? "<file name>"	
[:SOURce]:RADio:ARB:TRIGger:TYPE CONTinuous SINGLE GATE SADVance [:SOURce]:RADio:ARB:TRIGger:TYPE?	
[:SOURce]:RADio:ARB:TRIGger:TYPE:GATE:A CTive LOW HIGH [:SOURce]:RADio:ARB:TRIGger:TYPE:GATE:A CTive?	
[:SOURce]:RADio:ARB:TRIGger[:SOURce] KEY EXT BUS [:SOURce]:RADio:ARB:TRIGger[:SOURce]?	

Table 4-1 Supported E44xxB SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce] :RADio:ARB:TRIGger [:SOURce] :EX Ternal:DELAy <value> [:SOURce] :RADio:ARB:TRIGger [:SOURce] :EX Ternal:DELAy?	
[:SOURce] :RADio:ARB:TRIGger [:SOURce] :EX Ternal:DELAy:STATe ON OFF 1 0 [:SOURce] :RADio:ARB:TRIGger [:SOURce] :EX Ternal:DELAy:STATe?	
[:SOURce] :RADio:ARB:TRIGger [:SOURce] :EX Ternal:SLOPe POSitive NEGative [:SOURce] :RADio:ARB:TRIGger [:SOURce] :EX Ternal:SLOPe?	
[:SOURce] :RADio:ARB:WAVEform "<file name>" [:SOURce] :RADio:ARB:WAVEform?	
[:SOURce] :RADio:ARB [:STATe] ON OFF 1 0 [:SOURce] :RADio:ARB [:STATe] ?	
Multi-Tone Subsystem	
[:SOURce] :RADio:MTONE:ARB:SETup "<file name>" [:SOURce] :RADio:MTONE:ARB:SETup?	
[:SOURce] :RADio:MTONE:ARB:SETup:STORE "<file name>"	
[:SOURce] :RADio:MTONE:ARB:SETup:TABLE <freq_spacing>, <num_tones> { , <phase> , <state> } [:SOURce] :RADio:MTONE:ARB:SETup:TABLE?	
[:SOURce] :RADio:MTONE:ARB:SETup:TABLE:F SPacing <freq_spacing> [:SOURce] :RADio:MTONE:ARB:SETup:TABLE:F SPacing?	
[:SOURce] :RADio:MTONE:ARB:SETup:TABLE:N TONes <num_tones> [:SOURce] :RADio:MTONE:ARB:SETup:TABLE:N TONes?	
[:SOURce] :RADio:MTONE:ARB:SETup:TABLE:P HASE:INITialize FIXed RANdOm [:SOURce] :RADio:MTONE:ARB:SETup:TABLE:P HASE:INITialize?	

Table 4-1 Supported E44xxB SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce]:RADio:MTONE:ARB:SETup:TABLE:P HAsE:INITialize:SEED FIXed RANdOm [:SOURce]:RADio:MTONE:ARB:SETup:TABLE:P HAsE:INITialize:SEED?	
[:SOURce]:RADio:MTONE:ARB:SETup:TABLE:R OW <row_number>, <power>, <phase>, <state> [:SOURce]:RADio:MTONE:ARB:SETup:TABLE:R OW? <row_number>	
[:SOURce]:RADio:MTONE:ARB[:STATe] ON OFF 1 0 [:SOURce]:RADio:MTONE:ARB[:STATe]?	

Keysight/HP E44xxB Compatible Commands
Command List

5 Keysight/HP 8648A/B/C/D Compatible Commands

Command List Overview

NOTE Compatibility is provided for GPIB only; USB and LAN are **not** supported.

NOTE When using the SCPI commands in this section, you must set the remote programming language to the correct language format. See [“Selecting the Programming Language” on page 2](#) for more information.

The following table shows the 8648A/B/C/D SCPI commands supported by the Keysight N5171B/72B EXG and N5181B/82B MXG X-Series signal generators.

When there is a parameter (argument) difference between the supported command and the X-Series signal generator command, typically the X-Series command has more parameters (the difference), which are also supported while using the compatible command. For the additional parameters, refer to the *Keysight X-Series Signal Generators SCPI Command Reference*. The remarks column of the command table states when there is a parameter difference.

When the range is the difference, use the range values listed in the X-Series signal generator **Data Sheet**, or as shown in the *Keysight X-Series Signal Generators SCPI Command Reference*.

Command List

Table 5-1 Supported 8648A/B/C/D SCPI Sequences

Supported Commands	Remarks
IEEE Common Commands	
*CLS?	
*ESE <dec. num. data> *ESE?	
*IDN?	
*OPC *OPC?	
*RCL <reg_num> [, <seq_num>]	
*RST?	
*SAV <reg_num> [, <seq_num>]	
*SRE <dec. num. data> *SRE?	
*STB?	
*TST?	
*WAI?	
Status Subsystem	
:STATUS:QUESTIONable:MODulation:CONDition?	Supported but without the [:SOURCE] mnemonic, including :SOUR.
:STATUS:QUESTIONable:MODulation:ENABle <NR1>	Supported but without the [:SOURCE] mnemonic, including :SOUR.
:STATUS:QUESTIONable:MODulation:ENABLE?	Supported but without the [:SOURCE] mnemonic, including :SOUR.
:STATUS:QUESTIONable:MODulation:EVENT?	Supported but without the [:SOURCE] mnemonic, including :SOUR.
[:SOURCE]:STATUS:QUESTIONable:POWER:CONDition?	
[:SOURCE]:STATUS:QUESTIONable:POWER:ENABle <NR1> [:SOURCE]:STATUS:QUESTIONable:POWER:ENABLE?	
[:SOURCE]:STATUS:QUESTIONable:POWER:EVENT?	
[:SOURCE]:STATUS:QUESTIONable:CALibratIon:FEXTension[:EVENT]?	

Table 5-1 Supported 8648A/B/C/D SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce] :STATus:QUESTionable:CALibr ation:FEXTension:CONDition?	
[:SOURce] :STATus:QUESTionable:CALibr ation:ENABle <NR1> [:SOURce] :STATus:QUESTionable:CALibr ation:ENABle?	
System Subsystem	
[:SOURce] :SYSTem:LANGUage "COMP" "SCPI" [:SOURce] :SYSTem:LANGUage?	
[:SOURce] :SYSTem:ERRor?	
[:SOURce] :SYSTem:VERSion?	
Amplitude Subsystem	
[:SOURce] :OUTPut:STATe ON OFF [:SOURce] :OUTPut:STATe?	
[:SOURce] :POWer:AMPLitude <value><units> [:SOURce] :POWer:AMPLitude?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce] :POWer:ATTenuation:AUTO ON OFF [:SOURce] :POWer:ATTenuation:AUTO?	
[:SOURce] :POWer:REFerence <value><units> [:SOURce] :POWer:REFerence?	
[:SOURce] :POWer:REFerence:STATe ON OFF [:SOURce] :POWer:REFerence:STATe?	
Frequency Subsystem	
[:SOURce] :FREQuency:CW <value><units> [:SOURce] :FREQuency:CW?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce] :FREQuency:REFerence <value><units> [:SOURce] :FREQuency:REFerence?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce] :FREQuency:REFerence:STATe ON OFF [:SOURce] :FREQuency:REFerence:STATe?	
Amplitude Modulation Subsystem	

Table 5-1 Supported 8648A/B/C/D SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce] :AM:DEPTh <value>PCT [:SOURce] :AM:DEPTh?	Refer to the X-Series signal generator Data Sheet for the range values.
[:SOURce] :AM:STATe ON OFF [:SOURce] :AM:STATe?	
[:SOURce] :AM:SOURce INTernal [1] INTernal2 EXTernal [:SOURce] :AM:SOURce?	While the 8648A/B/C/D supports multiple source selections (e.g. INTernal1, EXTernal) within a single command execution, the X-Series signal generators support only a single source selection.
[:SOURce] :AM:INTernal [1] 2:FREQUency <val><unit> [:SOURce] :AM:INTernal [1] 2:FREQUency ?	Refer to the X-Series signal generator Data Sheet for the range values.
[:SOURce] :AM:INTernal2:FUNCTion:SHAPE SINE TRIangle SQUare [:SOURce] :AM:INTernal2:FUNCTion:SHAP e?	<i>Supported but the following parameter is not supported: SAW</i>
[:SOURce] :AM:EXTernal:COUPling AC DC [:SOURce] :AM:EXTernal:COUPling?	
Frequency Modulation Subsystem	
[:SOURce] :CALibration:DCFm	
[:SOURce] :FM:DEVIation <value>kHz [:SOURce] :FM:DEVIation?	Refer to the X-Series signal generator Data Sheet for the range values.
[:SOURce] :FM:STATe ON OFF [:SOURce] :FM:STATe?	
[:SOURce] :FM:SOURce INTernal [1] INTernal2 EXTernal [:SOURce] :FM:SOURce?	While the 8648A/B/C/D supports multiple source selections (e.g. INTernal1, EXTernal) within a single command execution, the X-Series signal generators support only a single source selection.
[:SOURce] :FM:INTernal [1] 2:FREQUency <val><unit> [:SOURce] :FM:INTernal [1] 2:FREQUency ?	Refer to the X-Series signal generator Data Sheet for the range values.
[:SOURce] :FM:INTernal2:FUNCTion:SHAPE SINE TRIangle SQUare [:SOURce] :FM:INTernal2:FUNCTion:SHAP e?	<i>Supported but the following parameters are not supported: SAW</i>

Table 5-1 Supported 8648A/B/C/D SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce] : FM : EXTeRnal : COUPling AC DC [:SOURce] : FM : EXTeRnal : COUPling ?	
Phase Modulation Subsystem	
[:SOURce] : PM : DEVIation <value>RAD [:SOURce] : PM : DEVIation ?	Refer to the X-Series signal generator Data Sheet for the range values.
[:SOURce] : PM : STATE ON OFF [:SOURce] : PM : STATE ?	
[:SOURce] : PM : SOURce INTeRnal [1] INTeRnal2 EXTeRnal [:SOURce] : PM : SOURce ?	While the 8648A/B/C/D supports multiple source selections (e.g. INTeRnal1, EXTeRnal) within a single command execution, the X-Series signal generators support only a single source selection.
[:SOURce] : PM : INTeRnal [1] 2 : FREQUency <vak><unit> [:SOURce] : PM : INTeRnal [1] 2 : FREQUency ?	Refer to the X-Series signal generator Data Sheet for the range values.
[:SOURce] : PM : INTeRnal2 : FUNCTion : SHAPE SINE TRIangle SQUARE [:SOURce] : PM : INTeRnal2 : FUNCTion : SHAP e ?	<i>Supported but the following parameters are not supported: SAW</i>
[:SOURce] : PM : EXTeRnal : COUPling AC DC [:SOURce] : PM : EXTeRnal : COUPling ?	
Pulse Modulation Subsystem	
[:SOURce] : PULM : STATE ON OFF [:SOURce] : PULM : STATE ?	
: INITiate : IMMEDIATE	Supported but without the [:SOURce] mnemonic, including : SOUR.
: ABORT	Supported but without the [:SOURce] mnemonic, including : SOUR.

Keysight/HP 8648A/B/C/D Compatible Commands
Command List

6 Keysight E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B Compatible Commands

Command List Overview

NOTE When using the SCPI commands in this section, you must set the remote programming language to the correct language format. See [“Selecting the Programming Language” on page 2](#) for more information.

The following table shows the SCPI commands supported by the Keysight N5171B/72B EXG and N5181B/82B MXG X-Series signal generators.

NOTE Some commands or subsystems may be supported only by the Keysight N5172B/82B Vector Signal Generator. These exceptions are indicated either in the Remarks for individual commands or in the subsystem headings when it applies to the whole subsystem.

Some commands may have identical syntax to the X-Series signal generator commands but the parameters (arguments) may show a difference. When this occurs, typically the X-Series command has more parameters that are also supported while using the compatible command. To compare the compatible commands with the X-Series commands, refer to the Keysight X-Series Signal Generators SCPI Command Reference.

When the command requires a range value, use the range values listed in the X-Series signal generator **Data Sheet**, or as shown in the *Keysight X-Series Signal Generators SCPI Command Reference*.

Command List

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences

Supported Commands	Remarks
IEEE Common Commands	
*CLS	
*ESE <data> *ESE?	
*ESR?	
*IDN?	
*OPC *OPC?	
*RCL <reg_num>	
*RST	
*SAV <reg_num>	
*SRE <data> *SRE?	
*STB?	
*TRG	
*TST?	
*WAI	
Calibration Subsystem	
:CALibration:DCFM	
Communication Subsystem	
:SYSTem:COMMunicate:GPIB:ADDRESS <number>	
:SYSTem:COMMunicate:GPIB:ADDRESS?	
:SYSTem:COMMunicate:GTLocal	
:SYSTem:COMMunicate:LAN:CONFig DHCP MANual	
:SYSTem:COMMunicate:LAN:CONFig?	
:SYSTem:COMMunicate:LAN:GATeway <ipstring>	
:SYSTem:COMMunicate:LAN:GATeway?	

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
:SYSTem:COMMunicate:LAN:HOSTname <string>	
:SYSTem:COMMunicate:LAN:HOSTname?	
:SYSTem:COMMunicate:LAN:IP <ipstring>	
:SYSTem:COMMunicate:LAN:IP?	
:SYSTem:COMMunicate:LAN:SUBNet <ipstring>	
:SYSTem:COMMunicate:LAN:SUBNet?	
:SYSTem:COMMunicate:PMETer:CHANnel A B	Command accepted without error but does nothing.
:SYSTem:COMMunicate:PMETer:CHANnel?	Command accepted without error but does nothing.
:SYSTem:COMMunicate:PMETer:IDN E4418B E4419B E4416A E4417A	Command accepted without error but does nothing.
:SYSTem:COMMunicate:PMETer:IDN?	Command accepted without error but does nothing.
:SYSTem:COMMunicate:PMETer:TIMEout <num>[<time suffix>]	Command accepted without error but does nothing.
:SYSTem:COMMunicate:PMETer:TIMEout?	Command accepted without error but does nothing.
Diagnostic Subsystem	
:DIAGnostic[:CPU]:INFORMation:CCOUNT :ATTenuator?	
:DIAGnostic[:CPU]:INFORMation:CCOUNT :PON?	
:DIAGnostic[:CPU]:INFORMation:DISPLAy: OTIME?	
:DIAGnostic[:CPU]:INFORMation:LICens e:AUXiliary?	
:DIAGnostic[:CPU]:INFORMation:LICens e:WAVEform?	
:DIAGnostic[:CPU]:INFORMation:OPTion s?	
:DIAGnostic[:CPU]:INFORMation:OPTion s:DETail?	
:DIAGnostic[:CPU]:INFORMation:OTIME?	

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
:DIAGnostic[:CPU]:INfOrMation:REVisi on?	
:DIAGnostic[:CPU]:INfOrMation:SDATE?	
:DIAGnostic[:CPU]:INfOrMation:WLIC ense[:VALue]? <waveformType>	
Memory Subsystem	
:MEMory:CATalog:BINary?	
:MEMory:CATalog:STATE?	
:MEMory:CATalog:UFLT?	
:MEMory:CATalog[:ALL]?	
:MEMory:COpy[:NAME] <"filename">,<"filename">	
:MEMory:DATA <"filename">,<datablock>	
:MEMory:DATA? <"filename">	
:MEMory:DATA:APPend <"filename">,<datablock>	
:MEMory:DELeTe:ALL	
:MEMory:DELeTe:BINary	
:MEMory:DELeTe:STATE	
:MEMory:DELeTe:UFLT	
:MEMory:DELeTe[:NAME] <"filename">	
:MEMory:FRee[:ALL]?	
:MEMory:LOAD:LIST <"filename">	
:MEMory:MOVE <src_file>,<dest_file>	
:MEMory:SIZE? <"filename">	
:MEMory:STATE:COMMeNt <reg_num>,<seq_num>,<"comment">	
:MEMory:STATE:COMMeNt? <reg_num>,<seq_num>	
:MEMory:STORE:LIST <"filename">	
:MMEMory:CATalog? <"msus">	

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
:MMEMory:COpy <"filename">,<"filename">	
:MMEMory:DATA <"filename">,<datablock>	
:MMEMory:DATA? <"filename">	
:MMEMory:DELEte:NVWFm	
:MMEMory:DELEte[:NAME] <"filename">,[<"msus">]	
:MMEMory:HEADer:CLEar <filename>	
:MMEMory:HEADer:DESCRIption <"filename">,<"description">	
:MMEMory:HEADer:DESCRIption? <"filename">	
:MMEMory:LOAD:LIST <"filename">	
:MMEMory:MOVE <src_file>,<dest_file>	
:MMEMory:STORe:LIST <"filename">	
Output Subsystem	
:OUTPut:BLANking:AUTO ON OFF 1 0 :OUTPut:BLANking:AUTO?	
:OUTPut:BLANking[:STATe] ON OFF 1 0 :OUTPut:BLANking[:STATe]?	
:OUTPut:MODulation[:STATe] ON OFF 1 0 :OUTPut:MODulation[:STATe]?	
:OUTPut[:STATe] ON OFF 1 0 :OUTPut[:STATe]?	
Status Subsystem	
:STATus:OPERation:BASEband:CONDition ?	
:STATus:OPERation:BASEband:ENABle <value> :STATus:OPERation:BASEband:ENABle?	

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
:STATus:OPERation:BASEband:NTRansition <value> :STATus:OPERation:BASEband:NTRansition?	
:STATus:OPERation:BASEband:PTRansition <value> :STATus:OPERation:BASEband:PTRansition?	
:STATus:OPERation:BASEband[:EVENT]?	
:STATus:OPERation:CONDition?	
:STATus:OPERation:ENABle <value> :STATus:OPERation:ENABle?	
:STATus:OPERation:NTRansition <value> :STATus:OPERation:NTRansition?	
:STATus:OPERation:PTRansition <value> :STATus:OPERation:PTRansition?	
:STATus:OPERation[:EVENT]?	
:STATus:PRESet	
:STATus:QUESTionable:CALibration:ENABle <value> :STATus:QUESTionable:CALibration:ENABle?	
:STATus:QUESTionable:CALibration:NTRansition <value> :STATus:QUESTionable:CALibration:NTRansition?	
:STATus:QUESTionable:CALibration:PTRansition <value> :STATus:QUESTionable:CALibration:PTRansition?	
:STATus:QUESTionable:CALibration[:EVENT]?	
:STATus:QUESTionable:CONDition?	
:STATus:QUESTionable:ENABle <value> :STATus:QUESTionable:ENABle?	

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
:STATus:QUESTionable:FREQuency:CONDi tion?	
:STATus:QUESTionable:FREQuency:ENABl e <value> :STATus:QUESTionable:FREQuency:ENABl e?	
:STATus:QUESTionable:FREQuency:NTRan sition <value> :STATus:QUESTionable:FREQuency:NTRan sition?	
:STATus:QUESTionable:FREQuency:PTRan sition <value> :STATus:QUESTionable:FREQuency:PTRan sition?	
:STATus:QUESTionable:FREQuency[:EVEN t]?	
:STATus:QUESTionable:NTRansition <value> :STATus:QUESTionable:NTRansition?	
:STATus:QUESTionable:POWer:CONDition ?	
:STATus:QUESTionable:POWer:ENABLE <value> :STATus:QUESTionable:POWer:ENABLE?	
:STATus:QUESTionable:POWer:NTRansiti on <value> :STATus:QUESTionable:POWer:NTRansiti on?	
:STATus:QUESTionable:POWer:PTRansiti on <value> :STATus:QUESTionable:POWer:PTRansiti on?	
:STATus:QUESTionable:POWer[:EVENT]?	
:STATus:QUESTionable:PTRansition <value> :STATus:QUESTionable:PTRansition?	

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
:STATus:QUESTionable[:EVENT]?	
System Subsystem	
:SYSTem:ALTErnate <reg num> :SYSTem:ALTErnate? [MAXimum MINimum]	<i>The range is dependent upon the X-Series signal generator model.</i>
:SYSTem:ALTErnate:STATE ON OFF 1 0 :SYSTem:ALTErnate:STATE?	
:SYSTem:CAPability?	
:SYSTem:DATE <year>, <month>, <day> :SYSTem:DATE?	
:SYSTem:ERRor:SCPI[:SYNTAX] ON OFF 1 0 :SYSTem:ERRor:SCPI[:SYNTAX]?	
:SYSTem:ERRor[:NEXT]?	
:SYSTem:HELP:MODE SINGLE	Supported but the following parameter is not supported: CONTinuous Supported but the following query is not supported: :SYSTem:HELP:MODE?
:SYSTem:IDN "string"	
:SYSTem:LANGuage "SCPI" "COMP" "8648" "8662" "8663" :SYSTem:LANGuage?	Supported but the following parameters are not supported: "8340" "8360" "83712" "83732" "83752" "8757"
:SYSTem:OPT "string"	
:SYSTem:PON:TYPE PRESet LAST :SYSTem:PON:TYPE?	
:SYSTem:PRESet	Always performs the same action as the Preset hardkey. For related Preset hardkey information, refer to “:SYSTem:PRESet:TYPE NORMAL USER :SYSTem:PRESet:TYPE?” on page 29
:SYSTem:PRESet:ALL	

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
:SYSTem:PRESet:LANGuage "SCPI" "COMP" "8662" "8663" :SYSTem:PRESet:LANGuage?	Supported but the following parameters are not supported: "8340" "8360" "83712" "83732" "83752" "8757"
:SYSTem:PRESet:PERSistent	
:SYSTem:PRESet:TYPE NORMAl USER :SYSTem:PRESet:TYPE?	This command toggles the Preset hardkey state between factory- and user-defined conditions. The setting enabled by this command is not affected by signal generator power-on, preset, or *RST. NOTE If the Preset hardkey is not responding correctly, using the SCPI command :SYSTem:PRESet:TYPE NORMAl will return the Preset hardkey to its default factory behavior.
:SYSTem:PRESet[:USER]:SAVE	
:SYSTem:SECurity:DISPlay ON OFF {1} 0:SYSTem:SECurity:DISPlay?	
:SYSTem:SECurity:DISPlay:RESTRicted ON OFF {1} 0 :SYSTem:SECurity:DISPlay:RESTRicted?	
:SYSTem:SECurity:ERASeall	
:SYSTem:SECurity:LEVel {NONE} ERASe OVERwrite SANitize :SYSTem:SECurity:LEVel?	
:SYSTem:SECurity:LEVel:STATe ON OFF 1 0 :SYSTem:SECurity:LEVel:STATe?	
:SYSTem:SECurity:OVERwrite	
:SYSTem:SECurity:SANitize	
:SYSTem:SSAVer:DELay <value> :SYSTem:SSAVer:DELay?	
:SYSTem:SSAVer:MODE LIGHT TEXT :SYSTem:SSAVer:MODE?	
:SYSTem:SSAVer:STATe ON OFF :SYSTem:SSAVer:STATe?	

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
:SYSTem:TIME <hour>, <minute>, <second> :SYSTem:TIME?	
:SYSTem:VERSion?	
Trigger Subsystem	
:ABORT	
:INITiate:CONTinuous[:ALL] ON OFF 1 0 :INITiate:CONTinuous[:ALL]?	
:INITiate[:IMMediate][:ALL]	
:TRIGger:OUTPut:POLarity POSitive NEGative :TRIGger:OUTPut:POLarity?	
:TRIGger[:SEQuence]:SLOPe POSitive NEGative :TRIGger[:SEQuence]:SLOPe?	
:TRIGger[:SEQuence]:SOURce BUS IMMediate EXTernal KEY :TRIGger[:SEQuence]:SOURce?	
:TRIGger[:SEQuence][:IMMediate]	
[:SOURce]:TSweep	
Unit Subsystem	
:UNIT:POWer DBM DBUV DBUVEMF V VEMF DB :UNIT:POWer?	
Amplitude Modulation Subsystem	
[:SOURce]:AM:INTernal:FREQuency:STEP [:INCRement] <num> [:SOURce]:AM:INTernal:FREQuency:STEP [:INCRement]?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce]:AM:MODE DEEP	
[:SOURce]:AM:MODE NORMal [:SOURce]:AM:MODE?	

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce]:AM[1] 2:EXTeRnal[1] 2:COUPling AC DC [:SOURce]:AM[1] 2:EXTeRnal[1] 2:COUPling?	
[:SOURce]:AM[1] 2:EXTeRnal[1] 2:IMPeDance <50 600> [:SOURce]:AM[1] 2:EXTeRnal[1] 2:IMPeDance?	<i>Parameters differ from the N51xxB command.</i>
[:SOURce]:AM[1] 2:INTeRnal[1] 2:FUNcTion:SHApe SINE TRIangle SQUare [:SOURce]:AM[1] 2:INTeRnal[1] 2:FUNcTion:SHApe?	Supported but the following parameters are not supported: RAMP NOISe DUALsine SWEPTsine
[:SOURce]:AM[1] 2:INTeRnal[1] 2:FREQUency <value><unit> UP DOWN [:SOURce]:AM[1] 2:INTeRnal[1] 2:FREQUency?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce]:AM[1] 2:POLarity NORMal INVeRted [:SOURce]:AM[1] 2:POLarity?	
[:SOURce]:AM[1] 2:SOURce INT[1] INT2 EXT[1] EXT2 [:SOURce]:AM[1] 2:SOURce?	
[:SOURce]:AM[1] 2:STATe ON OFF 1 0 [:SOURce]:AM[1] 2:STATe?	
[:SOURce]:AM[1] 2:TYPE LINear EXPOntial [:SOURce]:AM[1] 2:TYPE?	
[:SOURce]:AM[1] 2[:DEPTh][:LINear] <value><unit> UP DOWN [:SOURce]:AM[1] 2[:DEPTh][:LINear]?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce]:AM[:DEPTh]:STEP[:INCRement] <value><unit> [:SOURce]:AM[:DEPTh]:STEP[:INCRement]?	<i>The range is dependent upon the X-Series signal generator model.</i>

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
Frequency Subsystem	
[:SOURce]:FREQuency:CENTer <num> [<freq suffix>] MAXimum MINimum UP DOWN [:SOURce]:FREQuency:CENTer? [MAXimum MINimum]	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce]:FREQuency:FIXed <value><unit> UP DOWN [:SOURce]:FREQuency:FIXed?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce]:FREQuency:MODE FIXed CW SWEp LIST [:SOURce]:FREQuency:MODE?	
[:SOURce]:FREQuency:MULTiplier <value> [:SOURce]:FREQuency:MULTiplier?	
[:SOURce]:FREQuency:OFFSet <value><unit> [:SOURce]:FREQuency:OFFSet?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce]:FREQuency:OFFSet:STATe ON OFF [:SOURce]:FREQuency:OFFSet:STATe?	
[:SOURce]:FREQuency:REFerence <value><unit> [:SOURce]:FREQuency:REFerence?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce]:FREQuency:REFerence:SET	
[:SOURce]:FREQuency:REFerence:STATe ON OFF 1 0 [:SOURce]:FREQuency:REFerence:STATe?	
[:SOURce]:FREQuency:SPAN <num> [<freq suffix>] MAXimum MINimum UP DOWN [:SOURce]:FREQuency:SPAN? [MAXimum MINimum]	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce]:FREQuency:START <value><unit> [:SOURce]:FREQuency:START?	<i>The range is dependent upon the X-Series signal generator model.</i>

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce]:FREQuency:STOP <value><unit> [:SOURce]:FREQuency:STOP?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce]:FREQuency[:CW] <value><unit> UP DOWN [:SOURce]:FREQuency[:CW]?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce]:FREQuency[:CW]:STEP[:INCRement] <value><unit> [:SOURce]:FREQuency[:CW]:STEP[:INCRement]?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce]:FREQuency[:FIXed]:STEP[:INCRement] <value><unit> [:SOURce]:FREQuency[:FIXed]:STEP[:INCRement]?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce]:PHASe:REFerence	
[:SOURce]:PHASe[:ADJust] <value><unit> [:SOURce]:PHASe[:ADJust]?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce]:ROSCillator:BANDwidth:EXTeRnal <value> [:SOURce]:ROSCillator:BANDwidth:EXTeRnal?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce]:ROSCillator:SOURce?	
[:SOURce]:ROSCillator:SOURce:AUTO ON OFF 1 0 [:SOURce]:ROSCillator:SOURce:AUTO?	
Frequency Modulation Subsystem	
[:SOURce]:FM[1] 2:EXTeRnal[1] 2:COUPling AC DC [:SOURce]:FM[1] 2:EXTeRnal[1] 2:COUPling?	
[:SOURce]:FM[1] 2:EXTeRnal[1] 2:IMPeDance <50 600> [:SOURce]:FM[1] 2:EXTeRnal[1] 2:IMPeDance?	Command accepted without error but does nothing.

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce] : FM : INTernal : FREQuency : STEP [: INCRement] < num > [:SOURce] : FM : INTernal : FREQuency : STEP [: INCRement] ?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce] : FM [1] 2 : INTernal [1] : FUNcti on : SHAPE SINE TRIangle SQUare [:SOURce] : FM [1] 2 : INTernal [1] : FUNcti on : SHAPE ?	Supported but the following parameters are not supported: RAMP NOISe DUALsine SWEPTsine
[:SOURce] : FM [1] 2 : INTernal [1] 2 : FREQ uency < value > < unit > [:SOURce] : FM [1] 2 : INTernal [1] 2 : FREQ uency ?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce] : FM [1] 2 : SOURce INT [1] INT2 EXT [1] EXT2 [:SOURce] : FM [1] 2 : SOURce ?	
[:SOURce] : FM [1] 2 : STATE ON OFF 1 0 [:SOURce] : FM [1] 2 : STATE ?	
[:SOURce] : FM [1] 2 [: DEVIation] < value > < unit > [:SOURce] : FM [1] 2 [: DEVIation] ?	<i>The range is dependent upon the X-Series signal generator model.</i>
List/Sweep Subsystem	
[:SOURce] : LIST : CPOint ?	
[:SOURce] : LIST : DIRection UP DOWN [:SOURce] : LIST : DIRection ?	
[:SOURce] : LIST : DWELl < value > { , < value > } [:SOURce] : LIST : DWELl ?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce] : LIST : DWELl : POINts ?	
[:SOURce] : LIST : DWELl : TYPE LIST STEP [:SOURce] : LIST : DWELl : TYPE ?	
[:SOURce] : LIST : FREQuency < value > { , < value > } [:SOURce] : LIST : FREQuency ?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce] : LIST : FREQuency : POINts ?	

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce] :LIST:MANual <value> UP DOWN [:SOURce] :LIST:MANual ?	
[:SOURce] :LIST:MODE AUTO MANual [:SOURce] :LIST:MODE ?	
[:SOURce] :LIST:POWER <value> { , <value> } [:SOURce] :LIST:POWER ?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce] :LIST:POWER:POINTs ?	
[:SOURce] :LIST:RETRace ON OFF 0 1 [:SOURce] :LIST:RETRace ?	
[:SOURce] :LIST:TRIGger:SOURce BUS IMMEDIATE EXTERNAL KEY [:SOURce] :LIST:TRIGger:SOURce ?	
[:SOURce] :LIST:TYPE LIST STEP [:SOURce] :LIST:TYPE ?	
[:SOURce] :LIST:TYPE:LIST:INITialize: FSTep	
[:SOURce] :LIST:TYPE:LIST:INITialize: PRESet	
[:SOURce] :SWEep:CPOint ?	
[:SOURce] :SWEep:DWELl <value> [:SOURce] :SWEep:DWELl ?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce] :SWEep:GENeration ANALog STEPPed [:SOURce] :SWEep:GENeration ?	Command accepted without error but does nothing.
[:SOURce] :SWEep:MODE AUTO MANual [:SOURce] :SWEep:MODE ?	
[:SOURce] :SWEep:POINTs <value> [:SOURce] :SWEep:POINTs ?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce] :SWEep:SPACing LINear LOGarithmic [:SOURce] :SWEep:SPACing ?	

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce] :SWEep:TIME 10mS - 99S [:SOURce] :SWEep:TIME?	
[:SOURce] :SWEep:TIME:AUTO ON OFF 0 1 [:SOURce] :SWEep:TIME:AUTO?	
Phase Modulation Subsystem	
[:SOURce] :PM:INTernal:FREQuency:STEP [:INCRement] [:SOURce] :PM:INTernal:FREQuency:STEP [:INCRement] ?	
[:SOURce] :PM[1] 2: BANDwidth BWIDth NORMal HIGH [:SOURce] :PM[1] 2: BANDwidth BWIDth?	
[:SOURce] :PM[1] 2: EXTernal [1] : COUPling AC DC [:SOURce] :PM[1] 2: EXTernal [1] : COUPling?	
[:SOURce] :PM[1] 2: EXTernal [1] 2: IMPe dance <50 600> [:SOURce] :PM[1] 2: EXTernal [1] 2: IMPe dance?	<i>Parameters differ from the N51xxB command.</i>
[:SOURce] :PM[1] 2: INTernal [1] 2: FREQ uency <value><unit> [:SOURce] :PM[1] 2: INTernal [1] 2: FREQ uency?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce] :PM[1] 2: INTernal [1] : FUNCTi on:SHAPE SINE TRIangle SQUare [:SOURce] :PM[1] 2: INTernal [1] : FUNCTi on:SHAPE?	Supported but the following parameters are not supported: RAMP NOISE DUALsine SWEPTSine
[:SOURce] :PM[1] 2: SOURce INT[1] INT2 EXT[1] EXT2 [:SOURce] :PM[1] 2: SOURce?	
[:SOURce] :PM[1] 2: STATE ON OFF 1 0 [:SOURce] :PM[1] 2: STATE?	
[:SOURce] :PM[1] 2[:DEVIation] <value><unit> [:SOURce] :PM[1] 2[:DEVIation]?	<i>The range is dependent upon the X-Series signal generator model.</i>

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce]:PM[:DEVIation]:STEP[:INCRement] <value><unit> [:SOURce]:PM[:DEVIation]:STEP[:INCRement]?	Refer to the “Keysight X-Series Signal Generators SCPI Command Reference” for the range values.
Power Subsystem	
[:SOURce]:POWER:ALC:BANDwidth BWIDth <num>[freq suffix] [:SOURce]:POWER:ALC:BANDwidth BWIDth?	The range is dependent upon the X-Series signal generator model.
[:SOURce]:POWER:ALC:BANDwidth BWIDth:AUTO ON OFF 1 0 [:SOURce]:POWER:ALC:BANDwidth BWIDth:AUTO?	
[:SOURce]:POWER:ALC:LEVEl <value>dB [:SOURce]:POWER:ALC:LEVEl?	The range is dependent upon the X-Series signal generator model.
[:SOURce]:POWER:ALC:SEARch:REFerence FIXed MODulated MANual MODulated [:SOURce]:POWER:ALC:SEARch:REFerence?	Supported on the N5172B/82B only.
[:SOURce]:POWER:ALC:SEARch:REFerence:LEVEl <value> [:SOURce]:POWER:ALC:SEARch:REFerence:LEVEl?	Supported on the N5172B/82B Only. The range is dependent upon the X-Series signal generator model.
[:SOURce]:POWER:ALC:SEARch:SPAN:POINts <value> [:SOURce]:POWER:ALC:SEARch:SPAN:POINts?	The range is dependent upon the X-Series signal generator model.
[:SOURce]:POWER:ALC:SEARch:SPAN:STARt <value><units> [:SOURce]:POWER:ALC:SEARch:SPAN:STARt?	The range is dependent upon the X-Series signal generator model.
[:SOURce]:POWER:ALC:SEARch:SPAN:STOP <value><units> [:SOURce]:POWER:ALC:SEARch:SPAN:STOP?	The range is dependent upon the X-Series signal generator model.

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce] : POWer : ALC : SEARCh : SPAN : TYPE FULL USER [:SOURce] : POWer : ALC : SEARCh : SPAN : TYPE ?	
[:SOURce] : POWer : ALC : SEARCh : SPAN [: STA Te] ON OFF 1 0 [:SOURce] : POWer : ALC : SEARCh : SPAN [: STA Te] ?	
[:SOURce] : POWer : ALC : SOURce INTernal DIODE [:SOURce] : POWer : ALC : SOURce?	Supported on the N5182B only. But the following parameter is not supported: MMHead.
[:SOURce] : POWer : ALC [: STATE] ON OFF 1 0 [:SOURce] : POWer : ALC [: STATE] ?	
[:SOURce] : POWer : ATTenuation <value><unit> [:SOURce] : POWer : ATTenuation?	
[:SOURce] : POWer : ATTenuation : AUTO ON OFF 1 0 [:SOURce] : POWer : ATTenuation : AUTO?	
[:SOURce] : POWer : MODE FIXed LIST SWEEp [:SOURce] : POWer : MODE?	
[:SOURce] : POWer : PROTection [: STATE] ON OFF 1 0 [:SOURce] : POWer : PROTection [: STATE] ?	
[:SOURce] : POWer : REFerence <value><unit> [:SOURce] : POWer : REFerence?	
[:SOURce] : POWer : REFerence : STATE ON OFF 1 0 [:SOURce] : POWer : REFerence : STATE?	
[:SOURce] : POWer : START <value><unit> [:SOURce] : POWer : START?	
[:SOURce] : POWer : STOP <value><unit> [:SOURce] : POWer : STOP?	

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce]:POWER[:LEVEL][:IMMEDIATE]: OFFSet <value><unit> [:SOURce]:POWER[:LEVEL][:IMMEDIATE]: OFFSet?	
[:SOURce]:POWER[:LEVEL][:IMMEDIATE][:AMPLitude] <value><unit> UP DOWN [:SOURce]:POWER[:LEVEL][:IMMEDIATE][:AMPLitude]?	
[:SOURce]:POWER[:LEVEL][:IMMEDIATE][:AMPLitude]:STEP[:INCRement] <value> [:SOURce]:POWER[:LEVEL][:IMMEDIATE][:AMPLitude]:STEP[:INCRement]?	
Pulse Modulation Subsystem	
[:SOURce]:PULM:EXTernal:POLarity NORMAL INVERTed [:SOURce]:PULM:EXTernal:POLarity?	
[:SOURce]:PULM:INTernal[1]:DELay <delay> UP DOWN [:SOURce]:PULM:INTernal[1]:DELay? [UP DOWN]	
[:SOURce]:PULM:INTernal[1]:DELay:STE P <step> [:SOURce]:PULM:INTernal[1]:DELay:STE P?	
[:SOURce]:PULM:INTernal[1]:FREQuency <frequency> MAXimum MINimum UP DOWN [:SOURce]:PULM:INTernal[1]:FREQuency ?	
[:SOURce]:PULM:INTernal[1]:FREQuency :STEP[:INCRement] <freq> MAXimum MINimum DEFault [:SOURce]:PULM:INTernal[1]:FREQuency :STEP[:INCRement]? [MIN MAX DEF]	
[:SOURce]:PULM:INTernal[1]:PERiod <period> MAXimum MINimum UP DOWN [:SOURce]:PULM:INTernal[1]:PERiod?	

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce]:PULM:INTernal [1]:PERiod:STEP [INCREMENT] <step> UP DOWN [:SOURce]:PULM:INTernal [1]:PERiod:STEP [INCREMENT]?	
[:SOURce]:PULM:INTernal [1]:PWIDth <width> [:SOURce]:PULM:INTernal [1]:PWIDth?	
[:SOURce]:PULM:INTernal [1]:PWIDth:STEP <step> DEFault MAXimum MINimum [:SOURce]:PULM:INTernal [1]:PWIDth:STEP?	
[:SOURce]:PULM:SOURce INT EXT [:SOURce]:PULM:SOURce?	Supported but the following parameter is not supported: SCALar
[:SOURce]:PULM:SOURce:INTernal SQUARE FRUN TRIGgered DOUBlet GATED [:SOURce]:PULM:SOURce:INTernal?	
[:SOURce]:PULM:STATE ON OFF 1 0 [:SOURce]:PULM:STATE?	
All Subsystem	
[:SOURce]:RADio:ALL:OFF	
AWGN Real Time Subsystem (This subsystem is supported on the N5172B/82B only.)	
[:SOURce]:RADio:AWGN:RT:BWIDth <val> [:SOURce]:RADio:AWGN:RT:BWIDth?	
[:SOURce]:RADio:AWGN:RT[:STATE] ON OFF 1 0 [:SOURce]:RADio:AWGN:RT[:STATE]?	
Dmodulation Subsystem (This subsystem supported on the N5172B/82B only.)	
[:SOURce]:RADio:DMODulation:ARB:FILTer RNYQuist NYQuist GAUSSian RECTangl e IS95 IS95_EQ IS95_MOD IS95_MOD_EQ WCDMa AC4Fm IS2000SR3DS UGGaussi an "user FIR" [:SOURce]:RADio:DMODulation:ARB:FILTer?	

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce]:RADio:DMODulation:ARB:FILT er:ALPHa <value> [:SOURce]:RADio:DMODulation:ARB:FILT er:ALPHa?	
[:SOURce]:RADio:DMODulation:ARB:FILT er:BBT <value> [:SOURce]:RADio:DMODulation:ARB:FILT er:BBT?	
[:SOURce]:RADio:DMODulation:ARB:FILT er:CHANnel EVM ACP [:SOURce]:RADio:DMODulation:ARB:FILT er:CHANnel?	
[:SOURce]:RADio:DMODulation:ARB:HEAD er:CLEar	
[:SOURce]:RADio:DMODulation:ARB:HEAD er:SAVE	
[:SOURce]:RADio:DMODulation:ARB:IQ:E XTernal:FILTer 40e6 THROUGH [:SOURce]:RADio:DMODulation:ARB:IQ:E XTernal:FILTer?	Command accepted on the N5172B/82B without error but does nothing.
[:SOURce]:RADio:DMODulation:ARB:IQ:E XTernal:FILTer:AUTO ON OFF 1 0 [:SOURce]:RADio:DMODulation:ARB:IQ:E XTernal:FILTer:AUTO?	
[:SOURce]:RADio:DMODulation:ARB:IQ:M ODulation:ATTen <val><unit> [:SOURce]:RADio:DMODulation:ARB:IQ:M ODulation:ATTen?	
[:SOURce]:RADio:DMODulation:ARB:IQ:M ODulation:ATTen:AUTO ON OFF 1 0 [:SOURce]:RADio:DMODulation:ARB:IQ:M ODulation:ATTen:AUTO?	
[:SOURce]:RADio:DMODulation:ARB:IQ:M ODulation:FILTer 2.1e6 40e6 THROUGH [:SOURce]:RADio:DMODulation:ARB:IQ:M ODulation:FILTer?	Command accepted on the N5172B/82B without error but does nothing.

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce]:RADio:DMODulation:ARB:IQ:MODulation:FILTer:AUTO ON OFF 1 0 [:SOURce]:RADio:DMODulation:ARB:IQ:MODulation:FILTer:AUTO?	
[:SOURce]:RADio:DMODulation:ARB:MDESTination:ALCHold {NONE} M1 M2 M3 M4 [:SOURce]:RADio:DMODulation:ARB:MDESTination:ALCHold?	
[:SOURce]:RADio:DMODulation:ARB:MDESTination:PULSe {NONE} M1 M2 M3 M4 [:SOURce]:RADio:DMODulation:ARB:MDESTination:PULSe?	
[:SOURce]:RADio:DMODulation:ARB:MODulation:ASK[:DEPTh] <0% - {100%}> [:SOURce]:RADio:DMODulation:ARB:MODulation:ASK[:DEPTh]?	
[:SOURce]:RADio:DMODulation:ARB:MODulation:FSK[:DEVIation] <val><unit> [:SOURce]:RADio:DMODulation:ARB:MODulation:FSK[:DEVIation]?	
[:SOURce]:RADio:DMODulation:ARB:MODulation[:TYPE] ASK BPSK QPSK IS95QPSK GRAYQPSK OQPSK IS95OQPSK P4DQPSK PSK8 PSK16 D8PSK EDGE MSK FSK2 FSK4 FSK8 FSK16 C4FM QAM4 QAM16 QAM32 QAM64 QAM128 QAM256 [:SOURce]:RADio:DMODulation:ARB:MODulation[:TYPE]?	
[:SOURce]:RADio:DMODulation:ARB:MPOLarity:MARKer1 2 3 4 NEGative {POSitive} [:SOURce]:RADio:DMODulation:ARB:MPOLarity:MARKer1 2 3 4?	
[:SOURce]:RADio:DMODulation:ARB:REFeference:EXTErnal:FREQuency <value> [:SOURce]:RADio:DMODulation:ARB:REFeference:EXTErnal:FREQuency?	

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce]:RADio:DMODulation:ARB:REFe rence[:SOURce] INTernal EXTernal [:SOURce]:RADio:DMODulation:ARB:REFe rence[:SOURce]?	
[:SOURce]:RADio:DMODulation:ARB:RETR igger ON OFF IMMediate [:SOURce]:RADio:DMODulation:ARB:RETR igger?	
[:SOURce]:RADio:DMODulation:ARB:SCLO ck:RATE <1Hz - 1.0e8 kHz {1.0e8 kHz}> [:SOURce]:RADio:DMODulation:ARB:SCLO ck:RATE?	
[:SOURce]:RADio:DMODulation:ARB:SETu p GSM NADC PDC PHS DECT AC4Fm ACQPsk C DPD PWT EDGE TETRa MCArrier "file name" [:SOURce]:RADio:DMODulation:ARB:SETu p?	
[:SOURce]:RADio:DMODulation:ARB:SETu p:MCArrier (GSM NADC PDC PHS DECT AC4Fm ACQPsk CDPD PWT EDGE TETRa,<num carriers>,<freq spacing>) "file name" [:SOURce]:RADio:DMODulation:ARB:SETu p:MCArrier?	
[:SOURce]:RADio:DMODulation:ARB:SETu p:MCArrier:PHASe {FIXed} RANDom [:SOURce]:RADio:DMODulation:ARB:SETu p:MCArrier:PHASe?	
[:SOURce]:RADio:DMODulation:ARB:SETu p:MCArrier:STORe "file name"	

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce]:RADio:DMODulation:ARB:SETup:MCARrier:TABLE INIT APPend <carrier_num>,GSM NADC PDC PHS DECT AC4Fm ACQPsk CDPD PWT EDGE TETRa "file name",<freq_offset>,<power> [:SOURce]:RADio:DMODulation:ARB:SETup:MCARrier:TABLE? <carrier_num>	
[:SOURce]:RADio:DMODulation:ARB:SETup:MCARrier:TABLE:NCARriers?	
[:SOURce]:RADio:DMODulation:ARB:TRIGger:TYPE :CONTInuous[:TYPE] FREE TRIGger RESet [:SOURce]:RADio:DMODulation:ARB:TRIGger:TYPE :CONTInuous[:TYPE]?	
[:SOURce]:RADio:DMODulation:ARB:TRIGger:TYPE CONTInuous SINGle GATE [:SOURce]:RADio:DMODulation:ARB:TRIGger:TYPE?	
[:SOURce]:RADio:DMODulation:ARB:TRIGger:TYPE:GATE LOW HIGH [:SOURce]:RADio:DMODulation:ARB:TRIGger:TYPE:GATE?	
[:SOURce]:RADio:DMODulation:ARB:TRIGger[:SOURce] KEY BUS EXT [:SOURce]:RADio:DMODulation:ARB:TRIGger[:SOURce]?	
[:SOURce]:RADio:DMODulation:ARB:TRIGger[:SOURce]:EXTernal:DELay <value> [:SOURce]:RADio:DMODulation:ARB:TRIGger[:SOURce]:EXTernal:DELay?	
[:SOURce]:RADio:DMODulation:ARB:TRIGger[:SOURce]:EXTernal:DELay:STATE ON OFF 1 0 [:SOURce]:RADio:DMODulation:ARB:TRIGger[:SOURce]:EXTernal:DELay:STATE?	

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce]:RADio:DMODulation:ARB:TRIGger[:SOURce]:EXTernal:SLOPe POSitive NEGative [:SOURce]:RADio:DMODulation:ARB:TRIGger[:SOURce]:EXTernal:SLOPe?	
[:SOURce]:RADio:DMODulation:ARB:TRIGger[:SOURce]:EXTernal[:SOURce] EPT1 EPT2 EPTRIGGER1 EPTRIGGER2 [:SOURce]:RADio:DMODulation:ARB:TRIGger[:SOURce]:EXTernal[:SOURce]?	
[:SOURce]:RADio:DMODulation:ARB[:STAte] ON OFF 1 0 [:SOURce]:RADio:DMODulation:ARB[:STAte]?	
Digital Modulation Subsystem (This subsystem supported on the N5172B/82B only.)	
[:SOURce]:DM:EXTernal:FILTer 40e6 THROUGH	Commands are accepted without error by the signal generator, but no action occurs. But the following query is not supported: [:SOURce]:DM:EXTernal:FILTer?
[:SOURce]:DM:EXTernal:FILTer:AUTO ON OFF 1 0	Supported but the following query is not supported: [:SOURce]:DM:EXTernal:FILTer:AUTO?
[:SOURce]:DM:EXTernal:POLarity NORMal INVert INVerted [:SOURce]:DM:EXTernal:POLarity?	
[:SOURce]:DM:EXTernal:SOURce EXTernal INTernal BBG1 OFF SUM [:SOURce]:DM:EXTernal:SOURce?	Supported but the following parameters are not supported: BBG2 BBG3 BBG4 EXT600
[:SOURce]:DM:IQADjustment:BBG[1] 2:D ELay <value><unit> [:SOURce]:DM:IQADjustment:BBG[1] 2:D ELay?	
[:SOURce]:DM:IQADjustment:BBG[1] 2:D ELay:EVENTs ON OFF 1 0 [:SOURce]:DM:IQADjustment:BBG[1] 2:D ELay:EVENTs?	
[:SOURce]:DM:IQADjustment:BBG[1] 2:S KEW:PATH {RF} BB [:SOURce]:DM:IQADjustment:BBG[1] 2:S KEW:PATH?	

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce]:DM:IQADjustment:BBG[1] 2:S KEW[:DELay] <value><unit> [:SOURce]:DM:IQADjustment:BBG[1] 2:S KEW[:DELay]?	
[:SOURce]:DM:IQADjustment:EXTernal:C OFFset <value><unit> [:SOURce]:DM:IQADjustment:EXTernal:C OFFset?	
[:SOURce]:DM:IQADjustment:EXTernal:D IOFFset <value><unit> [:SOURce]:DM:IQADjustment:EXTernal:D IOFFset?	
[:SOURce]:DM:IQADjustment:EXTernal:D QOFFset <value><unit> [:SOURce]:DM:IQADjustment:EXTernal:D QOFFset?	
[:SOURce]:DM:IQADjustment:EXTernal:I OFFset <value><unit> [:SOURce]:DM:IQADjustment:EXTernal:I OFFset?	
[:SOURce]:DM:IQADjustment:EXTernal:Q OFFset <value><unit> [:SOURce]:DM:IQADjustment:EXTernal:Q OFFset?	
[:SOURce]:DM:IQADjustment:GAIN? [:SOURce]:DM:IQADjustment:GAIN[1 2] <value><unit>	
[:SOURce]:DM:IQADjustment:IOFFset <value><unit> [:SOURce]:DM:IQADjustment:IOFFset?	
[:SOURce]:DM:IQADjustment:QOFFset <value><unit> [:SOURce]:DM:IQADjustment:QOFFset?	
[:SOURce]:DM:IQADjustment:QSKew <value><unit> [:SOURce]:DM:IQADjustment:QSKew?	

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce] :DM:IQADjustment [:STATe] ON OFF 1 0 [:SOURce] :DM:IQADjustment [:STATe] ?	
[:SOURce] :DM:MODulation:ATTen <value><unit> [:SOURce] :DM:MODulation:ATTen?	
[:SOURce] :DM:MODulation:ATTen:AUTO ON OFF 1 0 [:SOURce] :DM:MODulation:ATTen:AUTO?	
[:SOURce] :DM:MODulation:ATTen:EXTErnal DEFault MANual MEASure [:SOURce] :DM:MODulation:ATTen:EXTErnal?	
[:SOURce] :DM:MODulation:ATTen:EXTErnal:LEVel <value> <volt_units> [:SOURce] :DM:MODulation:ATTen:EXTErnal:LEVel?	
[:SOURce] :DM:MODulation:ATTen:EXTErnal:LEVel:MEASurement	
[:SOURce] :DM:MODulation:ATTen:OPTimize: BANDwidth <value> <bw_rate_units> [:SOURce] :DM:MODulation:ATTen:OPTimize: BANDwidth?	
[:SOURce] :DM:MODulation:FILTer THROUGH	Supported but the following query generates an error: -113, Undefined header: [:SOURce] :DM:MODulation:FILTer?
[:SOURce] :DM:MODulation:FILTer:AUTO ON OFF 1 0 2.1e6 40e6 [:SOURce] :DM:MODulation:FILTer:AUTO?	Commands are accepted by the signal generator, but no action is taken. (An error -113, Undefined header will be displayed on the signal generator.)
[:SOURce] :DM:POLarity [:ALL] NORMAl INVert INVerted [:SOURce] :DM:POLarity?	
[:SOURce] :DM:SKEW [:STATe] ON OFF 1 0 [:SOURce] :DM:SKEW [:STATe] ?	
[:SOURce] :DM:SOURce [1] 2 EXTErnal INTErnal BBG1 OFF [:SOURce] :DM:SOURce?	Supported but the following parameters are not supported: BBG2 BBG3 BBG4 EXT600

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce]:DM:SRATio <value><unit> [:SOURce]:DM:SRATio?	
[:SOURce]:DM:STATe ON OFF 1 0 [:SOURce]:DM:STATe?	
Display Subsystem	
:DISPlay:ANNotation:AMPLitude:UNIT DBM DBUV DBUVEMF V VEMF DB :DISPlay:ANNotation:AMPLitude:UNIT?	
:DISPlay:ANNotation:CLOCK:DATE:FORMa t MDY DMY :DISPlay:ANNotation:CLOCK:DATE:FORMa t?	
:DISPlay:ANNotation:CLOCK[:STATe] ON OFF 1 0 :DISPlay:ANNotation:CLOCK[:STATe]?	
:DISPlay:BRIGhtness <value> :DISPlay:BRIGhtness?	
:DISPlay:CAPTure	
:DISPlay:CONTrast <value> :DISPlay:CONTrast?	
:DISPlay:INVerse ON OFF 1 0 :DISPlay:INVerse?	Supported but the following query is not supported: :DISPlay:INVerse?
:DISPlay:REMote ON OFF 1 0 :DISPlay:REMote?	
:DISPlay[:WINDow] [:STATe] ON OFF 1 0 :DISPlay[:WINDow] [:STATe]?	
Dual ARB Subsystem (This subsystem supported on the N5172B/82B only.)	
[:SOURce]:RADio:ARB:BASEband:FREQuen cy:OFFSet <value> [:SOURce]:RADio:ARB:BASEband:FREQuen cy:OFFSet?	
[:SOURce]:RADio[1]:ARB:CLIPping "filename", IJQ IORQ, <10-100%>[, <10-1 00%>]	

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
<code>[:SOURce] :RADio [1] :ARB:DACS:ALIGn</code>	
<code>[:SOURce] :RADio [1] :ARB:GENerate:SINE ["filename"], [<osr>], [<scale>], [I Q {IQ}]</code>	
<code>[:SOURce] :RADio [1] :ARB:HEADer:CLEar</code>	
<code>[:SOURce] :RADio [1] :ARB:HEADer:RMS <"filename">, <rms:0 - 1.414213562373095> UNSPecified [:SOURce] :RADio [1] :ARB:HEADer:RMS? <"filename"></code>	
<code>[:SOURce] :RADio [1] :ARB:HEADer:SAVE</code>	
<code>[:SOURce] :RADio [1] :ARB:IQ:EXTernal:F ILTer 40e6 THROUGH</code>	Commands are accepted by the signal generator, but no action is taken. But the following query is not supported and generates an Error: -113, Undefined header: <code>[:SOURce] :RADio [1] :ARB:IQ:EXTernal:FILTer?</code>
<code>[:SOURce] :RADio [1] :ARB:IQ:EXTernal:F ILTer:AUTO ON OFF 1 0</code>	Commands are accepted by the signal generator, but no action is taken. But the following query is not supported and generates an Error: -113, Undefined header: <code>[:SOURce] :RADio [1] :ARB:IQ:EXTernal:FILTer: AUTO?</code>
<code>[:SOURce] :RADio [1] :ARB:IQ:MODulation :ATTen <value><unit> [:SOURce] :RADio [1] :ARB:IQ:MODulation :ATTen?</code>	
<code>[:SOURce] :RADio [1] :ARB:IQ:MODulation :ATTen:AUTO ON OFF 1 0 [:SOURce] :RADio [1] :ARB:IQ:MODulation :ATTen:AUTO?</code>	
<code>[:SOURce] :RADio [1] :ARB:IQ:MODulation :FILTer 2.1e6 40e6 THROUGH</code>	Commands are accepted by the signal generator, but no action is taken. But the following query is not supported and generates an Error: -113, Undefined header: <code>[:SOURce] :RADio [1] :ARB:IQ:MODulation:FILTe r?</code>

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce]:RADio[1]:ARB:IQ:MODulation: :FILTEr:AUTO ON OFF 1 0	Commands are accepted by the signal generator, but no action is taken. But the following query is not supported and generates an Error: -113, Undefined header: [:SOURce]:RADio[1]:ARB:IQ:MODulation:FILTEr:AUTO?
[:SOURce]:RADio[1]:ARB:MARKer:CLEar "filename", <mkr(1 2 3 4)>, <first_Poi nt>, <last_point>	
[:SOURce]:RADio[1]:ARB:MARKer:CLEar: ALL "filename", <mkr(1 2 3 4)>	
[:SOURce]:RADio[1]:ARB:MARKer:ROtate "filename", <rotate_count>	
[:SOURce]:RADio[1]:ARB:MARKer:[SET] "filename", <mkr(1 2 3 4)>, <first_Poi nt>, <last_point>, <skip_count>	
[:SOURce]:RADio[1]:ARB:MDEStination: ALCHold {NONE} M1 M2 M3 M4 [:SOURce]:RADio[1]:ARB:MDEStination: ALCHold?	
[:SOURce]:RADio[1]:ARB:MDEStination: PULSe {NONE} M1 M2 M3 M4 [:SOURce]:RADio[1]:ARB:MDEStination: PULSe?	
[:SOURce]:RADio[1]:ARB:MPOLarity:MAR Ker1 NEGative {POSitive} [:SOURce]:RADio[1]:ARB:MPOLarity:MAR Ker1?	
[:SOURce]:RADio[1]:ARB:MPOLarity:MAR Ker2 NEGative {POSitive} [:SOURce]:RADio[1]:ARB:MPOLarity:MAR Ker2?	
[:SOURce]:RADio[1]:ARB:MPOLarity:MAR Ker3 NEGative {POSitive} [:SOURce]:RADio[1]:ARB:MPOLarity:MAR Ker3?	

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce]:RADio[1]:ARB:MPOLarity:MAR Ker4 NEGative {POSitive} [:SOURce]:RADio[1]:ARB:MPOLarity:MAR Ker4?	
[:SOURce]:RADio[1]:ARB:NOISe:BFACTOR <1 - 2 {1}> [:SOURce]:RADio[1]:ARB:NOISe:BFACTOR ?	
[:SOURce]:RADio[1]:ARB:NOISe:CBWidth <1Hz-80Mhz {1Hz}> [:SOURce]:RADio[1]:ARB:NOISe:CBWidth ?	
[:SOURce]:RADio[1]:ARB:NOISe:CN <-100dB - 100dB {0dB}> [:SOURce]:RADio[1]:ARB:NOISe:CN?	
[:SOURce]:RADio[1]:ARB:NOISe[:STATE] ON {OFF} 1 0 [:SOURce]:RADio[1]:ARB:NOISe[:STATE] ?	
[:SOURce]:RADio[1]:ARB:REFeRence[:SO URce] INTernal EXTernal [:SOURce]:RADio[1]:ARB:REFeRence[:SO URce]?	
[:SOURce]:RADio[1]:ARB:RETRigger ON OFF IMMediate [:SOURce]:RADio[1]:ARB:RETRigger?	
[:SOURce]:RADio[1]:ARB:RSCaling <val> [:SOURce]:RADio[1]:ARB:RSCaling?	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce]:RADio[1]:ARB:SCALing "filename", <1%-100%>	
[:SOURce]:RADio[1]:ARB:SCLock:RATE <val> [:SOURce]:RADio[1]:ARB:SCLock:RATE?	<i>The range is dependent upon the X-Series signal generator model.</i>

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
<pre>[:SOURce] :RADio [1] :ARB:SEQuence [:MWA Veform] <filename>, <waveform>, <reps>, NONE M1 M2 M3 M4 M1M2 M1M3 M1M4 M2M3 M2M4 M 3M4 M1M2M3 M1M2M4 M1M3M4 M2M3M4 M1M2 M3M4 ALL, { , <waveform>, <reps>, NONE M1 M2 M3 M4 M1M2 M1M3 M1M4 M2M3 M2M4 M 3M4 M1M2M3 M1M2M4 M1M3M4 M2M3M4 M1M2 M3M4 ALL, }</pre> <pre>[:SOURce] :RADio [1] :ARB:SEQuence [:MWA Veform] ? <filename></pre>	
<pre>[:SOURce] :RADio [1] :ARB:TRIGger:TYPE CONTInuous SINGle GATE SADVance [:SOURce] :RADio [1] :ARB:TRIGger:TYPE?</pre>	
<pre>[:SOURce] :RADio [1] :ARB:TRIGger:TYPE: CONTInuous [:TYPE] FREE TRIGger RESet [:SOURce] :RADio [1] :ARB:TRIGger:TYPE: CONTInuous [:TYPE] ?</pre>	
<pre>[:SOURce] :RADio [1] :ARB:TRIGger:TYPE: GATE LOW HIGH [:SOURce] :RADio [1] :ARB:TRIGger:TYPE: GATE?</pre>	
<pre>[:SOURce] :RADio [1] :ARB:TRIGger:TYPE: SADVance [:TYPE] SINGle CONTInuous [:SOURce] :RADio [1] :ARB:TRIGger:TYPE: SADVance [:TYPE] ?</pre>	
<pre>[:SOURce] :RADio [1] :ARB:TRIGger [:SOUR ce] KEY BUS EXT [:SOURce] :RADio [1] :ARB:TRIGger [:SOUR ce] ?</pre>	
<pre>[:SOURce] :RADio [1] :ARB:TRIGger [:SOUR ce] :EXTernal:DELay:STATE ON OFF 1 0 [:SOURce] :RADio [1] :ARB:TRIGger [:SOUR ce] :EXTernal:DELay:STATE?</pre>	
<pre>[:SOURce] :RADio [1] :ARB:TRIGger [:SOUR ce] :EXTernal:SLOPe POSitive NEGative [:SOURce] :RADio [1] :ARB:TRIGger [:SOUR ce] :EXTernal:SLOPe?</pre>	

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce]:RADio[1]:ARB:TRIGger[:SOURce]:EXTernal[:SOURce] EPT1 EPT2 EPTRIGGER1 EPTRIGGER2 [:SOURce]:RADio[1]:ARB:TRIGger[:SOURce]:EXTernal[:SOURce]?	
[:SOURce]:RADio[1]:ARB:VCO:CLOCK[:SOURce] INTERNAL EXTERNAL [:SOURce]:RADio[1]:ARB:VCO:CLOCK[:SOURce]?	
[:SOURce]:RADio[1]:ARB:WAVeform:NHEAders "WFM1:filename" "SEQ:filename" [:SOURce]:RADio[1]:ARB:WAVeform:NHEAders?	
[:SOURce]:RADio[1]:ARB[:STATe] ON OFF 1 0 [:SOURce]:RADio[1]:ARB[:STATe]?	
Multi-Tone Subsystem (This subsystem supported on the N5172B/82B only.)	
[:SOURce]:RADio:MTONE:ARB:HEADer:CLEAr	
[:SOURce]:RADio:MTONE:ARB:HEADer:SAVE	
[:SOURce]:RADio:MTONE:ARB:IQ:EXTErnAl:FILTEr 40e6 THROugh [:SOURce]:RADio:MTONE:ARB:IQ:EXTErnAl:FILTEr?	Command accepted without error but does nothing.
[:SOURce]:RADio:MTONE:ARB:IQ:MODulAtion:ATTen <val><unit> [:SOURce]:RADio:MTONE:ARB:IQ:MODulAtion:ATTen?	
:SOURce]:RADio:MTONE:ARB:IQ:MODulAtion:ATTen:AUTO ON OFF 1 0 [:SOURce]:RADio:MTONE:ARB:IQ:MODulAtion:ATTen:AUTO?	
:SOURce]:RADio:MTONE:ARB:IQ:MODulAtion:FILTEr 2.1e6 40e6 THROugh [:SOURce]:RADio:MTONE:ARB:IQ:MODulAtion:FILTEr?	Command accepted without error but does nothing.

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce]:RADio:MTONE:ARB:IQ:MODulat ion:FILTer:AUTO ON OFF 1 0 [:SOURce]:RADio:MTONE:ARB:IQ:MODulat ion:FILTer:AUTO?	Command accepted without error but does nothing.
[:SOURce]:RADio:MTONE:ARB:MDESTinati on:ALCHold {NONE} M1 M2 M3 M4 [:SOURce]:RADio:MTONE:ARB:MDESTinati on:ALCHold?	
[:SOURce]:RADio:MTONE:ARB:MDESTinati on:PULSe {NONE} M1 M2 M3 M4 [:SOURce]:RADio:MTONE:ARB:MDESTinati on:PULSe?	
[:SOURce]:RADio:MTONE:ARB:MPOLarity: MARKer1 2 3 4 NEGative {POSitive} [:SOURce]:RADio:MTONE:ARB:MPOLarity: MARKer1 2 3 4?	
[:SOURce]:RADio:MTONE:ARB:REFerence: EXTernal:FREQuency <value> [:SOURce]:RADio:MTONE:ARB:REFerence: EXTernal:FREQuency?	
[:SOURce]:RADio:MTONE:ARB:REFerence [:SOURce] INTernal EXTernal [:SOURce]:RADio:MTONE:ARB:REFerence [:SOURce]?	
[:SOURce]:RADio:MTONE:ARB:SCLock:RAT E <1Hz - 100MHz {100MHz}> [:SOURce]:RADio:MTONE:ARB:SCLock:RAT E?	
[:SOURce]:RADio:MTONE:ARB:SETup <filename> [:SOURce]:RADio:MTONE:ARB:SETup?	

Table 6-1 Supported E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B SCPI Sequences (Continued)

Supported Commands	Remarks
[:SOURce]:RADio:MTONE:ARB:SETup:STOR e "file name" [:SOURce]:RADio:MTONE:ARB:SETup:TABL e <freq_spacing>, <num_tones>{, <phase>, <state>} [:SOURce]:RADio:MTONE:ARB:SETup:TABL e?	
[:SOURce]:RADio:MTONE:ARB:SETup:TABL e:FSPacing <freq_spacing> [:SOURce]:RADio:MTONE:ARB:SETup:TABL e:FSPacing?	
[:SOURce]:RADio:MTONE:ARB:SETup:TABL e:NTONes <num_tones> [:SOURce]:RADio:MTONE:ARB:SETup:TABL e:NTONes?	
[:SOURce]:RADio:MTONE:ARB:SETup:TABL e:PHASe:INITialize FIXed RANdOm [:SOURce]:RADio:MTONE:ARB:SETup:TABL e:PHASe:INITialize?	
[:SOURce]:RADio:MTONE:ARB:SETup:TABL e:PHASe:INITialize:SEED FIXed RANdOm [:SOURce]:RADio:MTONE:ARB:SETup:TABL e:PHASe:INITialize:SEED?	
[:SOURce]:RADio:MTONE:ARB:SETup:TABL e:ROW <row_number>, <power>, <phase>, <state> [:SOURce]:RADio:MTONE:ARB:SETup:TABL e:ROW? <row_number>	
[:SOURce]:RADio:MTONE:ARB[:STATe] ON OFF 1 0 [:SOURce]:RADio:MTONE:ARB[:STATe]?	

Keysight E8257D/67D, E8247C/57C/67C, E8241A/44A, E8251A/54A, and E8663B
Compatible Commands
Command List

7 Rhode & Schwarz SMATE200A/SMIQ/SML/SMJ100A/SMU200A/ SMV/SMB100A/SMBV100A Compatible Commands

Command List Overview

NOTE When using the SCPI commands in this section, you must set the remote programming language to the correct language format. See [“Selecting the Programming Language” on page 2](#) for more information.

The following table shows the SCPI commands supported by the Keysight N5171B/72B EXG and N5181B/82B MXG X-Series signal generators.

For range values, use the range values listed in the X-Series signal generator **Data Sheet**, or as shown in the *Keysight X-Series Signal Generators SCPI Command Reference*.

The R&S SMIQ, SMATE, SMU, and SMU200A have dual RF outputs.

Command List

Table 7-1 Supported R&S SMATE/SMIQ/SML/SMJ/SMU/SMB/SMBV SCPI Sequences

Supported Commands ✓ = Supported by indicated X-Series Signal Generator - = Not supported by indicated X-Series Signal Generator	N5171B/81B	N5172B/82B	Remarks
:ABORt	✓	✓	
:ABORt:LIST	✓	✓	
:ABORt[:SWEp]	✓	✓	
:ARB:CLOCK	-	✓	
:ARB:SEQUence AUTO RETRigger AAUTO ARETrigger	-	✓	
:ARB:STATe ON OFF	-	✓	
:ARB:TRIGger[:EXtErnal<[1] 2>]:DELay	-	✓	
:ARB:TRIGger:SOURce INTernal EXtErnal	-	✓	
:ARB:WAVEform:CATalog?	-	✓	
:ARB:WAVEform:DATA "name", <binary block data>	-	✓	
:ARB:WAVEform:DELeTe "<name>"	-	✓	
:ARB:WAVEform:SELeCt "<name>"	-	✓	
:CALibration[:ALL]?	✓	✓	
:CALibration:ALL[:MEASure]?	✓	✓	
:CALibration[1]:FMOffset[:MEASure]?	✓	✓	Returns a 0 value when calibration is completed.
:CALibration[1]:FREQuency[:MEASure]?	✓	✓	Command is accepted, returns a 0, but no other action is taken.
:CALibration[1] 2:IQModulator:FULL?	-	✓	
:CALibration:LFGenerator[:MEASure]?	✓	✓	Command is accepted but no action is taken.
:CALibration[1]:LFOutput[:MEASure]?	✓	✓	Command is accepted, returns a 0, but no other action is taken.
:CALibration:VMODulation[:MEASure]?	✓	✓	
:DIAGnostic:INFO:CCOunt:ATTenuator1 2 3 4?	✓	✓	Supported but the numeric suffixes, 1 2 3 4 and 1 2 3 4 5 6, are ignored.
:DIAGnostic:INFO:CCOunt:ATTenuator1 2 3 4 5 6?	✓	✓	Regardless of the numeric suffix used, the command always returns the total attenuator count.
:DIAGnostic:INFO:OTIME?	✓	✓	

Table 7-1 Supported R&S SMATE/SMIQ/SML/SMJ/SMU/SMB/SMBV SCPI Sequences

Supported Commands ✓ = Supported by indicated X-Series Signal Generator - = Not supported by indicated X-Series Signal Generator	N5171B/81B	N5172B/82B	Remarks
DIAGnostic:INFO:POCounter?	✓	✓	
:OUTPut [1] [:STATe] ON OFF	✓	✓	Output 3 is not supported.
:OUTPut:AMode AUTO FIXed :OUTPut:AMode?	✓	✓	Supported but the following parameter is not supported: ELECTronic
:OUTPut1:AMode AUTO FIXed	✓	✓	Output 3 is not supported.
:OUTPut [1] :IMPedance?	✓	✓	Always returns 50 ohms. Output 3 is not supported.
*RCL	✓	✓	
:READ[:POWer]?	✓	✓	
SENSe:UNIT[:POWer] DBM W SENSe:UNIT[:POWer]?	✓	✓	
SENSe[:POWer]:FILTer:LENGth[:USER] <avgCount> SENSe[:POWer]:FILTer:LENGth[:USER]?	✓	✓	
SENSe[:POWer]:FILTer:TYPE AUTO USER SENSe[:POWer]:FILTer:TYPE?	✓	✓	
SENSe[:POWer]:FREQuency <freq><unit> SENSe[:POWer]:FREQuency?	✓	✓	The range is dependent upon the X-Series signal generator model.
SENSe[:POWer]:OFFSet <offset><unit> SENSe[:POWer]:OFFSet?	✓	✓	The range is dependent upon the X-Series signal generator model.
[:SOURce]:AM:EXTErnal:COUPling AC DC	✓	✓	
[:SOURce]:AM[:DEPTh]	✓	✓	
[:SOURce]:AM:EXTErnal:COUPling AC DC	✓	✓	
[:SOURce]:AM:EXTErnal1 2:COUPling AC DC [:SOURce]:AM:EXTErnal1 2:COUPling?	✓	✓	
[:SOURce]:AM:EXTErnal1 2:IMPedance 600 Ohm	✓	✓	100 kOhm is not supported
[:SOURce]:AM:INTernAl:FREQuency	✓	✓	Preset value is 1KHz.
[:SOURce]:AM:SOURce EXTErnAl INTernAl	✓	✓	Supported but the following parameter is not supported: TTONE EXT, INT
[:SOURce]:AM:SOURce INTernAl EXT2	✓	✓	

Table 7-1 Supported R&S SMATE/SMIQ/SML/SMJ/SMU/SMB/SMBV SCPI Sequences

Supported Commands ✓ = Supported by indicated X-Series Signal Generator - = Not supported by indicated X-Series Signal Generator	N5171B/81B	N5172B/82B	Remarks
[:SOURce]:AM:STATe ON OFF	✓	✓	In the N5172B/82B, AM On does not turn off digital modulation formats. You may need to turn on the LF Source in conjunction with this command.
*SAV	✓	✓	SMATE200A & SMIQ: The Keysight X-Series supports the parameters [1-1000]. SMJ100A: The Keysight X-Series supports the parameters [0-10], where 0 is the instrument preset state. SMV: The Keysight X-Series supports the parameters [1-100]. SML: The Keysight X-Series supports the parameters [0-50].
[:SOURce][1]:BB:ARB:CLOCK <value> [:SOURce][1]:BB:ARB:CLOCK?	-	✓	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce][1]:BB:ARB:SEquence AUTO RETRigger AAUTO ARETrigger SINGLE [:SOURce][1]:BB:ARB:SEquence?	-	✓	AUTO: CONTInuous + Free Run RETRigger: CONTInuous + Reset & Run + implicit trigger AAUTO: CONTInuous + Trigger & Run ARETrigger: CONTInuous + Reset & Run SINGLE: SINGle + Restart on Trig
[:SOURce][1]:BB:ARB:STATe ON OFF [:SOURce][1]:BB:ARB:STATe?	-	✓	
[:SOURce][1]:BB:ARB:TRIGger:OUTPut [1] 2 3 4:MODE UNCHanged REStArt PULSe PATtern RATio	-	✓	
[:SOURce][1]:BB:ARB:TRIGger[:EXtErnal][1] 2]:DELay [:SOURce][1]:BB:ARB:TRIGger[:EXtErnal][1] 2]:DELay?	-	✓	Supported but applied at the current sample rate when the command is sent.
[:SOURce][1] 2]:BB:ARB:TRIGger:SOURce INTernal EXtErnal BEXtErnal [:SOURce][1] 2]:BB:ARB:TRIGger:SOURce?	-	✓	Supported but the following parameters are not supported: OBASeband If parameters are used, they will generate a parameter error.
[:SOURce][1]:BB:ARB:WAVeform:CATalog? [<path>]	-	✓	
[:SOURce][1]:BB:ARB:WAVeform:DATA <"filename.wv">	-	✓	

Table 7-1 Supported R&S SMATE/SMIQ/SML/SMJ/SMU/SMB/SMBV SCPI Sequences

Supported Commands ✓ = Supported by indicated X-Series Signal Generator - = Not supported by indicated X-Series Signal Generator	N5171B/81B	N5172B/82B	Remarks
[:SOURce] [1] :BB:ARB:WAVeform:DELeTe <"filename.wv">	-	✓	
[:SOURce] [1] :BB:ARB:WAVeform:SELEct <"filename.wv"> [:SOURce] [1] :BB:ARB:WAVeform:SELEct?	-	✓	
[:SOURce [1]] :BB:IQOutput:SOURce A [:SOURce [1]] :BB:IQOutput:SOURce?	-	✓	Supported but the following parameters are not supported: B Supported, but query always returns A.
[:SOURce] :BB:FOFFset <val>	-	✓	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce [1]] :BB:PATH:COUNT?	-	✓	Supported, but query always returns 1.
[:SOURce [1]] :BB:PGAin <value> [:SOURce [1]] :BB:PGAin?	-	✓	Command is accepted but no action is taken. The query always returns 0.
[:SOURce] :BB:POFFset <-360 - 360 degrees, 0> [:SOURce] :BB:POFFset?	-	✓	
[:SOURce [1]] :BB:ROUTE A [:SOURce [1]] :BB:ROUTE?	-	✓	Supported but the following parameters are not supported: B AB Supported, but query always returns A.
[:SOURce] [:BB] :ARB:CLOCK <val>	-	✓	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce [1]] [:BB] :ARB:CLOCK:DELAy 0.0 - 0.8 (sample) [:SOURce [1]] [:BB] :ARB:CLOCK:DELAy?	-	✓	Supported but applied at the current sample rate when the command is sent.
[:SOURce [1]] [:BB] :ARB:CLOCK:SOURce INTernal [:SOURce [1]] [:BB] :ARB:CLOCK:SOURce?	-	✓	Supported but the following parameter is not supported: EXTernal.
[:SOURce [1]] [:BB] :ARB:IQ:SKEW <valueInSeconds> [:SOURce [1]] [:BB] :ARB:IQ:SKEW?	-	✓	
[:SOURce [1]] [:BB] :ARB:PRESet	-	✓	

Table 7-1 Supported R&S SMATE/SMIQ/SML/SMJ/SMU/SMB/SMBV SCPI Sequences

Supported Commands ✓ = Supported by indicated X-Series Signal Generator - = Not supported by indicated X-Series Signal Generator	N5171B/81B	N5172B/82B	Remarks
[:SOURce [1]] [:BB] :ARB:SEQuence AUTO RETRigger AAUTo ARETrigger SINGLE [:SOURce] [:BB] :ARB:SEQuence?	-	✓	AUTO: CONTInuous + Free Run RETRigger: CONTInuous + Reset & Run + implicit trigger AAUTo: CONTInuous + Trigger & Run ARETrigger: CONTInuous + Reset & Run SINGLE: SINGLE + Restart on Trig
[:SOURce [1]] [:BB] :ARB:TRIGger:ARM:EXECute	-	✓	
[:SOURce [1]] [:BB] :ARB:TRIGger:EXECute	-	✓	
[:SOURce] [:BB] :ARB:TRIGger[:EXTernal [1] 2]:SYNChronize:OUTPut ON OFF 1 0 [:SOURce] [:BB] :ARB:TRIGger[:EXTernal [1] 2]:SYNChronize:OUTPut?	-	✓	
[:SOURce [1]] [:BB] :ARB:TRIGger:OUTPut [1] 2 3 4: DELay 0 - 2 ²⁰ -1 Samples [:SOURce [1]] [:BB] :ARB:TRIGger:OUTPut [1] 2 3 4: DELay?	-	✓	
[:SOURce [1]] [:BB] :ARB:TRIGger:OUTPut [1] 2 : MODE USER `mode_string` [:SOURce [1]] [:BB] :ARB:TRIGger:OUTPut [1] 2 :MODE?	-	✓	
[:SOURce [1]] [:BB] :ARB:TRIGger:OUTPut [1] 2 :MODE: CATALog?	-	✓	
[:SOURce [1]] [:BB] :ARB:TRIGger:OUTPut [1] 2 3 4: OFFTime 0-waveform_len-1 samples [:SOURce [1]] [:BB] :ARB:TRIGger:OUTPut [1] 2 3 4: OFFTime?	-	✓	
[:SOURce [1]] [:BB] :ARB:TRIGger:OUTPut [1] 2 3 4: ONTime 0-waveform_len-1 samples [:SOURce [1]] [:BB] :ARB:TRIGger:OUTPut [1] 2 3 4: ONTime?	-	✓	

Table 7-1 Supported R&S SMATE/SMIQ/SML/SMJ/SMU/SMB/SMBV SCPI Sequences

Supported Commands ✓ = Supported by indicated X-Series Signal Generator - = Not supported by indicated X-Series Signal Generator	N5171B/81B	N5172B/82B	Remarks
[:SOURce [1]] [:BB] :ARB:TRIGger:OUTPut [1] 2 3 4: PATtern #B0,1 ... #B111...1,32 [:SOURce [1]] [:BB] :ARB:TRIGger:OUTPut [1] 2 3 4: PATtern?	-	✓	
[:SOURce [1]] [:BB] :ARB:TRIGger:OUTPut [1] 2 3 4:PULSe:DIVider 2 - 2 ¹⁰ [:SOURce [1]] [:BB] :ARB:TRIGger:OUTPut [1] 2 3 4:PULSe:DIVider?	-	✓	
[:SOURce [1]] [:BB] :ARB:TRIGger:OUTPut [1] 2 3 4: POLarity POSitive NEGative [:SOURce [1]] [:BB] :ARB:TRIGger:OUTPut [1] 2 3 4: POLarity?	-	✓	
[:SOURce [1]] [:BB] :ARB:TRIGger:OUTPut [1] 2 3 4:PULSe:FREQUency?	-	✓	
[:SOURce [1]] [:BB] :ARB:TRIGger:RMOde?	-	✓	
[:SOURce] [:BB] :ARB[:TRIGger]:SEQUence AUTO RETRigger AAUTO ARETrigger SINGLE [:SOURce] [:BB] :ARB[:TRIGger]:SEQUence?	-	✓	
[:SOURce [1]] [:BB] :ARB:TRIGger:SLUNit SEQUence [:SOURce [1]] [:BB] :ARB:TRIGger:SLUNit?	-	✓	Supported but the following parameter is not supported: SAMPlE.
[:SOURce [1]] [:BB] :ARB:WAVEform:CATalog:LE NGth? [<"path">]	-	✓	
[:SOURce [1]] [:BB] :ARB:WAVEform:FREE?	-	✓	
[:SOURce [1]] [:BB] :ARB:WAVEform:POINts? [<"filename.wv">]	-	✓	
[:SOURce [1]] [:BB] :ARB:WAVEform:FREE?	-	✓	
[:SOURce [1]] :BB:FOFFset <val> [:SOURce [1]] :BB:FOFFset?	-	✓	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce]:CORRection[:STATe] ON OFF 1 0	✓	✓	
[:SOURce]:CORRection:CSET[:SELEct] <'table_name'>	✓	✓	
[:SOURce]:CORRection:CSET:CATalog?	✓	✓	

Table 7-1 Supported R&S SMATE/SMIQ/SML/SMJ/SMU/SMB/SMBV SCPI Sequences

Supported Commands ✓ = Supported by indicated X-Series Signal Generator - = Not supported by indicated X-Series Signal Generator	N5171B/81B	N5172B/82B	Remarks
[:SOURce] :CORRection:CSET:DATA:FREQuency 300 Khz to RFmax { ,300 kHz to RFmax }	✓	✓	
[:SOURce] :CORRection:CSET:DATA:POWer -40dB to 6dB { , -40dB to 6dB }	✓	✓	
[:SOURce] :CORRection:CSET:DATA:POWer:POINts?	✓	✓	
[:SOURce] :CORRection:CSET:DELeTe <'table_name'>	✓	✓	
[:SOURce] :CORRection:CSET:FREE?	✓	✓	
[:SOURce] :DM:IQ:CREStfactor	-	✓	
[:SOURce] :DM:IQ:IMPairment [:STATe] ON OFF [:SOURce] :DM:IQ:IMPairment [:STATe] ?	-	✓	
[:SOURce] :DM:IQ:LEAKage [:MAGNitude] [:SOURce] :DM:IQ:LEAKage [:MAGNitude] ?	-	✓	
[:SOURce] :DM:IQ:QUADrature:ANGLE [:SOURce] :DM:IQ:QUADrature:ANGLE?	-	✓	
[:SOURce] :DM:IQRatio [:MAGNitude] [:SOURce] :DM:IQRatio [:MAGNitude] ?	-	✓	
[:SOURce] :DM:IQ:STATe ON OFF [:SOURce] :DM:IQ:STATe?	-	✓	
[:SOURce] :DM:IQSWap [:STATe] ON OFF	-	✓	
[:SOURce] :DM:LEAKage [:MAGNitude]	-	✓	
[:SOURce] :DM:STATe ON OFF	-	✓	
[:SOURce] :DM:THREShold [:ALL]	-	✓	
[:SOURce] :DM:TRIGger:DELay	-	✓	
[:SOURce] :DM:TRIGger:INHibit	-	✓	
[:SOURce] :DM:TRIGger:SLOPe POSitive NEGative	-	✓	
[:SOURce] :DM:TRIGger:SOURce EXTeRnal INTeRnal	-	✓	
[:SOURce] :FM:EXTeRnal1 2:COUPling AC DC	✓	✓	
[:SOURce] :FM:INTeRnal:FREQuency	✓	✓	

Table 7-1 Supported R&S SMATE/SMIQ/SML/SMJ/SMU/SMB/SMBV SCPI Sequences

Supported Commands ✓ = Supported by indicated X-Series Signal Generator - = Not supported by indicated X-Series Signal Generator	N5171B/81B	N5172B/82B	Remarks
[:SOURce] : FM : SOURce INTernal EXTernal1	✓	✓	
[:SOURce] : FM : STATE ON OFF	✓	✓	
[:SOURce] : FM1 [: DEVIation]	✓	✓	On SMATE200A and SMIQ the preset value is 10 kHz.
[:SOURce] : FM1 : EXTernal1 : COUPling AC DC	✓	✓	
[:SOURce] : FM1 : INTernal : FREQuency	✓	✓	
[:SOURce] : FM1 : PREemphasis 0 50us 75us	-	-	
[:SOURce] : FM1 : SOURce INTernal EXTernal1 EXTernal2	✓	✓	
[:SOURce] : FM1 : STATE ON OFF	✓	✓	
[:SOURce] : FREQuency : CENTER <num> [<freq suffix>]	✓	✓	The range is dependent upon the X-Series signal generator model.
[:SOURce] : FREQuency [: CW : FIXed] <val>	✓	✓	The range is dependent upon the X-Series signal generator model.
[:SOURce] : FREQuency : RCL INCLude EXCLude	✓	✓	
[:SOURce] : FREQuency [: CW : FIXed] : RCL INCLude EXCLude	✓	✓	
[:SOURce] : FREQuency : MODE CW FIXed SWEEp LIST	✓	✓	Supported but the following parameter is not supported: SWEEp.
[:SOURce] : FREQuency : MULTiplier	✓	✓	
[:SOURce] : FREQuency : OFFSet	✓	✓	
[:SOURce] : FREQuency : SPAN <num> [<freq suffix>]	✓	✓	
[:SOURce] : FREQuency : START <val>	✓	✓	The range is dependent upon the X-Series signal generator model.
[:SOURce] : FREQuency : STEP [: INCRement]	✓	✓	
[:SOURce] : FREQuency : STOP <val>	✓	✓	The range is dependent upon the X-Series signal generator model.
[:SOURce] : IQ : CREStfactor <val> dB	-	✓	
[:SOURce] : IQ : IMPairment : IQRatio [: MAGNitud e] <value> <unit> [:SOURce] : IQ : IMPairment : IQRatio [: MAGNitud e] ?	-	✓	

Table 7-1 Supported R&S SMATE/SMIQ/SML/SMJ/SMU/SMB/SMBV SCPI Sequences

Supported Commands ✓ = Supported by indicated X-Series Signal Generator - = Not supported by indicated X-Series Signal Generator	N5171B/81B	N5172B/82B	Remarks
[:SOURCE]:IQ:IMPAIrmEnt:LEAKage:I <value><unit> [:SOURCE]:IQ:IMPAIrmEnt:LEAKage:I?	-	✓	
[:SOURCE]:IQ:IMPAIrmEnt:LEAKage:Q <value><unit> [:SOURCE]:IQ:IMPAIrmEnt:LEAKage:Q?	-	✓	
[:SOURCE]:IQ:IMPAIrmEnt:QUADrature[:ANGLE] <value><unit> [:SOURCE]:IQ:IMPAIrmEnt:QUADrature[:ANGLE]]?	-	✓	
[:SOURCE]:IQ:IMPAIrmEnt[:STATE] ON OFF [:SOURCE]:IQ:IMPAIrmEnt[:STATE]?	-	✓	
[SOURCE]:IQ:OUTPut:OFFSet:I	-	✓	
[SOURCE]:IQ:OUTPut:OFFSet:Q	-	✓	
[:SOURCE]:IQ:SOURce ANALog BASEband	-	✓	
[:SOURCE]:IQ:STATE ON OFF	-	✓	
[:SOURCE]:IQ:SWAP[:STATE] ON OFF	-	✓	
[:SOURCE]:LFOutput ON OFF 1 0 [:SOURCE]:LFOutput?	✓	✓	
[:SOURCE]:LFOutput:FREQuency <val><unit> [:SOURCE]:LFOutput:FREQuency?	✓	✓	
[:SOURCE]:LFOutput:FREQuency:MODE CW FIXed SWEep [:SOURCE]:LFOutput:FREQuency:MODE?	✓	✓	
[:SOURCE]:LFOutput:FREQuency:START <val> [:SOURCE]:LFOutput:FREQuency:START?	✓	✓	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURCE]:LFOutput:FREQuency:STOP <val> [:SOURCE]:LFOutput:FREQuency:STOP?	✓	✓	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURCE]:LFOutput:SHAPE SINE SQUare [:SOURCE]:LFOutput:SHAPE?	✓	✓	
[:SOURCE]:LFOutput:STATE ON OFF 1 0 [:SOURCE]:LFOutput:STATE?	✓	✓	

Table 7-1 Supported R&S SMATE/SMIQ/SML/SMJ/SMU/SMB/SMBV SCPI Sequences

Supported Commands ✓ = Supported by indicated X-Series Signal Generator - = Not supported by indicated X-Series Signal Generator	N5171B/81B	N5172B/82B	Remarks
[:SOURce] :LFOutput :SWEep [:FREQuency] :SHAP e SAWTooth TRIangle [:SOURce] :LFOutput :SWEep [:FREQuency] :SHAP e?	✓	✓	
[:SOURce] :LFOutput :VOLTage <val><unit> [:SOURce] :LFOutput :VOLTage?	✓	✓	
[:SOURce] :LIST :CATalog?	✓	✓	
[:SOURce] :LIST :DELeTe <'List_name'>	✓	✓	
[:SOURce] :LIST :DELeTe :ALL	✓	✓	
[:SOURce] :LIST :DWELl <value>{ , <value> }	✓	✓	
[:SOURce] :LIST :DWELl :POINTs?	✓	✓	
[:SOURce] :LIST :FREE?	✓	✓	
[:SOURce] :LIST :FREQuency <value>{ , <value> }	✓	✓	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce] :LIST :FREQuency :POINTs?	✓	✓	
[:SOURce] :LIST :LEARn	✓	✓	
[:SOURce] :LIST :MODE AUTO STEP	✓	✓	
[:SOURce] :LIST :POWer <val>dBm block_data	✓	✓	
[:SOURce] :LIST :POWer :POINTs?	✓	✓	
[:SOURce] :LIST :SELeCt <"list_name">	✓	✓	
[:SOURce] [1] 2 :LIST :TRIGger :EXECute	✓	✓	
[:SOURce] [1] 2 :LIST :RESEt	✓	✓	
[:SOURce] :LIST :TRIGger :SOURce AUTO IMM SINGLE BUS EXTernal	✓	✓	
[:SOURce] :MODulation :STATe ON OFF 1 0 [:SOURce] :MODulation :STATe?	✓	✓	
[:SOURce] :PM1 [:DEVIation]	✓	✓	On the SMATE200A, SMJ100A, and SMIQ the preset value is 1 radian.
[:SOURce] :PM1 :EXTernal1 :COUPling AC DC	✓	✓	
[:SOURce] :PM1 :INTernal :FREQuency	✓	✓	

Table 7-1 Supported R&S SMATE/SMIQ/SML/SMJ/SMU/SMB/SMBV SCPI Sequences

Supported Commands ✓ = Supported by indicated X-Series Signal Generator - = Not supported by indicated X-Series Signal Generator	N5171B/81B	N5172B/82B	Remarks
[:SOURce]:PM1:SOURce INTernal EXTernal1 EXTernal	✓	✓	Supported but the following parameters are not supported: TTONE EXT, INT EXTernal2
[:SOURce]:PM1:STATe ON OFF	✓	✓	
[:SOURce]:POWer:ALC OFF	✓	✓	When ALC is OFF a power search will be triggered when the level changes.
[:SOURce]:POWer:ALC:OMODE SHOLd	✓	✓	
[:SOURce]:POWer:ALC:SEARCh ON OFF ONCE	✓	✓	
[:SOURce]:POWer:ALC:SONCe	✓	✓	
[:SOURce]:POWer:ALC:SOURce INTernal DIODE	✓	✓	<i>PMETer not supported.</i>
[:SOURce]:POWer:ALC[:STATe] ON OFF	✓	✓	Supported but the following parameter is not supported: AUTO.
[:SOURce]:POWer[:LEVel][:IMMediate][:AMPLitude]	✓	✓	
[:SOURce]:POWer[:LEVel][:IMMediate]:OFFSet	✓	✓	
[:SOURce]:POWer[:LEVel][:IMMediate]:RCL INCLude EXCLude [:SOURce]:POWer[:LEVel][:IMMediate]:RCL?	✓	✓	
[:SOURce]:POWer[:LEVel][:IMMediate][:AMPLitude]:OFFSet	✓	✓	
[:SOURce]:POWer:MODE FIXed SWEEp LIST	✓	✓	
[:SOURce]:POWer:START	✓	✓	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce]:POWer:STEP[:INCRement]	✓	✓	
[:SOURce]:POWer:STOP	✓	✓	<i>The range is dependent upon the X-Series signal generator model.</i>
[:SOURce]:PULM:DELay <delay> DEFault MAXimum MINimum UP DOWN [:SOURce]:PULM:DELay? [DEFault MAXimum MINimum]	✓	✓	
[:SOURce]:PULM:PERiod <period> MAXimum MINimum UP DOWN [:SOURce]:PULM:PERiod? [MAXimum MINimum]	✓	✓	

Table 7-1 Supported R&S SMATE/SMIQ/SML/SMJ/SMU/SMB/SMBV SCPI Sequences

Supported Commands ✓ = Supported by indicated X-Series Signal Generator - = Not supported by indicated X-Series Signal Generator	N5171B/81B	N5172B/82B	Remarks
[:SOURce] :PULM [:INTernal [1]] :POLarity NORMal INVerted [:SOURce] :PULM [:INTernal [1]] :POLarity?	✓	✓	Does not affect the polarity of the INTernal source selection.
[:SOURce] :PULM :SOURce EXTernal INTernal	✓	✓	
[:SOURce] [1] 2 :PULM :SOURce INT EXT	✓	✓	
[:SOURce] :PULM :WIDTh <width> MAXimum MINimum [:SOURce] :PULM :WIDTh? [MAXimum MINimum]	✓	✓	
[:SOURce] :PULM :STATe ON OFF	✓	✓	
[:SOURce] :PULSe :DELay <delay>	✓	✓	
[:SOURce] :PULSe :DOUBle :DELay 50 ns to 1.3 s	✓	✓	
[:SOURce] :PULSe :DOUBle [:STATe] ON OFF	✓	✓	
[:SOURce] :PULSe :PERiod <period>	✓	✓	SMV & SML preset value is 10 micro-seconds.
[:SOURce] :PULSe :WIDTh <width> MAXimum MINimum	✓	✓	SMV & SML preset value is 1 micro-second.
[:SOURce] :ROSCillator [:INTernal] : ADJust [:STATe] ON OFF	✓	✓	
[:SOURce] :ROSCillator [:INTernal] :ADJust [:VALue]	✓	✓	
[:SOURce] :ROSCillator :SOURce INTernal EXTernal	✓	✓	
[:SOURce] :SWEep [:FREQuency] :DWELl	✓	✓	
[:SOURce] :SWEep [:FREQuency] :EXECute	✓	✓	
[:SOURce] :SWEep [:FREQuency] :MODE AUTO MANual STEP	✓	✓	
[:SOURce] :SWEep [:FREQuency] :POINts	✓	✓	
[:SOURce] :SWEep [:FREQuency] :SPACing LINear LOGarithmic	✓	✓	
[:SOURce] :SWEep [:FREQuency] :STEP [:LINear]	✓	✓	
[:SOURce] :SWEep [:FREQuency] :EXECute	✓	✓	

Table 7-1 Supported R&S SMATE/SMIQ/SML/SMJ/SMU/SMB/SMBV SCPI Sequences

Supported Commands ✓ = Supported by indicated X-Series Signal Generator - = Not supported by indicated X-Series Signal Generator	N5171B/81B	N5172B/82B	Remarks
[:SOURce] :SWEep :POWER :EXECute	✓	✓	
[:SOURce] [1] 2 :SWEep :RESet [:ALL]	✓	✓	
:STATus:OPERation[:EVENT]?	✓	✓	<i>The SMR values of the status bytes are accepted but the bits are not mapped, so they perform no function.</i>
:STATus:OPERation:CONDition?	✓	✓	
:STATus:OPERation:ENABle <value> :STATus:OPERation:ENABle?	✓	✓	
:STATus:OPERation:NTRansition <value> :STATus:OPERation:NTRansition?	✓	✓	
:STATus:OPERation:PTRansition <value> :STATus:OPERation:PTRansition?	✓	✓	
:STATus:PRESet	✓	✓	
:STATus:QUEStionable:CONDition?	✓	✓	
:STATus:QUEStionable:ENABle <value> :STATus:QUEStionable:ENABle?	✓	✓	
:STATus:QUEStionable[:EVENT]?	✓	✓	
:STATus:QUEStionable:NTRansition <value> :STATus:QUEStionable:NTRansition?	✓	✓	
:STATus:QUEStionable:PTRansition <value> :STATus:QUEStionable:PTRansition?	✓	✓	
STATus:QUE?	✓	✓	
:STATus:QUEue[:NEXT]?	✓	✓	
:SYSTem:COMMunicate:GPIB[:SELF]:ADDRESS	✓	✓	
:SYSTem:DISPlay:UPDate ON OFF	✓	✓	
:SYSTem:DISPlay:UPDate[:STATE] ON OFF	✓	✓	
:SYSTem:ERRor?	✓	✓	Supported but error codes will not match with R&S codes.
:SYSTem:ERRor:ALL?	✓	✓	
:SYSTem:ERRor:CODE:ALL?	✓	✓	
:SYSTem:ERRor:CODE[:NEXT]?	✓	✓	Supported but error codes will not match with R&S codes.
:SYSTem:ERRor:COUNT?	✓	✓	

Table 7-1 Supported R&S SMATE/SMIQ/SML/SMJ/SMU/SMB/SMBV SCPI Sequences

Supported Commands ✓ = Supported by indicated X-Series Signal Generator - = Not supported by indicated X-Series Signal Generator	N5171B/81B	N5172B/82B	Remarks
:SYSTem:ERRor[:NEXT]?	✓	✓	
:SYSTem:KLOCK ON OFF	✓	✓	
:SYSTem:PRESet	✓	✓	X-Series RST state is different.
:SYSTem:PROTect [1] 2 3 4 5 [:STATE] ON OFF 1 0, <passwd>	✓	✓	Command is accepted but no action is taken.
:SYSTem:PROTect[:STATE] ON OFF "123456"	✓	✓	Command is accepted but no action is taken.
:SYSTem:SERRor?	✓	✓	Supported but error codes will not match with R&S codes.
:SYSTem:SREStore	✓	✓	
:SYSTem:SSAVe	✓	✓	
:TRIGger:FSWEEP[:IMMEDIATE]	✓	✓	
:TRIGger:FSWEEP:SOURce AUTO IMM SINGLE BUS EXTernal	✓	✓	
:TRIGger:FSWEEP:SOURce SINGLE BUS	✓	✓	
:TRIGger:LIST[:IMMEDIATE]	✓	✓	
:TRIGger:LIST:SOURce AUTO SINGLE EXTernal	✓	✓	
:TRIGger[:SWEep][:IMMEDIATE]	✓	✓	
:TRIGger[:SWEep]:SOURce AUTO SINGLE EXTernal	✓	✓	
:TRIGger1 2:PULSE:SOURce AUTO EXTernal EGATED	✓	✓	

Rhode & Schwarz SMATE200A/SMIQ/SML/SMJ100A/SMU200A/
SMV/SMB100A/SMBV100A Compatible Commands
Command List

8 Keysight/HP 8656B, 8657A/B Compatible Programming Codes

Programming Code List Overview

NOTE Compatibility is provided for GPIB only; USB and LAN are not supported.

NOTE When using the SCPI commands in this section, you must set the remote programming language to the correct language format. See [“Selecting the Programming Language” on page 2](#) for more information.

The following tables provide a comprehensive listing of programming codes supported ([“Compatible Codes” on page 74](#)) by the Keysight N5171B/72B EXG and N5181B/82B MXG X-Series signal generators and the unsupported ([“Non-Compatible Codes” on page 76](#)) codes. Where applicable, the table for compatible codes shows the equivalent SCPI command (also GPIB only).

When the programming code/SCPI command requires a range value, use the range values listed in the X-Series signal generator **Data Sheet**, or as shown in the *Keysight X-Series Signal Generators SCPI Command Reference*.

NOTE While the Keysight N5171B/72B EXG and N5181B/82B MXG X-Series signal generators support two channels, and two internal and external sources for analog modulation (AM, FM, and PM), the programming codes/SCPI commands in this section are mapped to only a single channel and a single internal and external source (AM[1], FM[1], and PM[1]-INTernal[1], EXTernal[1]).

Programming Code Lists

Compatible Codes

8656B, 8657A/B Codes ^a	Description	Equivalent SCPI Command Syntax
AM	Amplitude Modulation	[:SOURce] :AM [1] [:DEPT h] [:LINear] <value><unit> UP DOWN For additional commands, refer to, “S1, S2, or S3 used with AM” on page 78
AO	Amplitude Offset	[:SOURce] :POWER [:LEVel] [IMMEDIATE] : OFFSet <value><unit>
AP	Amplitude (carrier)	[:SOURce] :POWER [:LEVel] [:IMMEDIATE] [:AMPLitude] <value><unit>
DB	Unit used with the power command	DB
DF	Unit used with the power command	DB
DM	Unit used with the power command	DBM
DN	Step Down	No equivalent SCPI command
EM	Unit used with the power command	EMF
FM	Frequency Modulation	[:SOURce] :FM [1] [:DEVIation] <value><unit> For additional commands, refer to, “S1, S2, or S3 used with FM” on page 79.
FR	Frequency (carrier)	[:SOURce] :FREQuency [:CW] <value><unit>
GT	Flexible Sequence	No equivalent SCPI command
Hz	Unit used with the frequency command	Hz
IS ^b	Increment Set	No equivalent SCPI command
KZ	Unit used with the frequency command	kHz
MV	Unit used with the power command	mV
MZ	Unit used with the frequency command	MHz

Keysight/HP 8656B, 8657A/B Compatible Programming Codes
 Programming Code Lists

8656B, 8657A/B Codes ^a	Description	Equivalent SCPI Command Syntax
PC ^c	Unit used with the modulation command	PCT
PD	Phase Decrement	[:SOURce] : PHASE [: ADJust] <value><RAD>
PF	Pulse Modulation (Fast Mode)	Refer to, “PF (Pulse Modulation-Fast Mode) or PM (Pulse Modulation)” on page 77.
PI	Phase Increment	[:SOURce] : PHASE [: ADJust] <value><RAD>
PM	Pulse Modulation	[:SOURce] : PULM : SOURce EXT [1] [:SOURce] : PULM : STATE ON See also “PF (Pulse Modulation-Fast Mode) or PM (Pulse Modulation)” on page 77
QS	Reverse Sequence	*RCL <reg>
RC	Recall (0–9)	*RCL <reg>
RL	Recall (0–99)	*RCL <reg>
RP ^d	Reverse Power Protection Reset	No equivalent SCPI command
R2	RF Off	OUTPut [: STATE] OFF
R3	RF On	OUTPut [: STATE] ON
R5	RF Dead (Full Attenuator)	OUTPut [: STATE] OFF
SQ	Sequence	*RCL <reg>
ST	Save (0–9)	*SAV <reg>
SV	Save (0–99)	*RCL <reg>
S1	External Modulation Source	Refer to, “S1, S2, or S3 used with AM” on page 78 or “S1, S2, or S3 used with FM” on page 79.
S2	Internal 400 Hz Modulation Source	Refer to, “S1, S2, or S3 used with AM” on page 78 or “S1, S2, or S3 used with FM” on page 79.
S3	Internal 1 kHz Modulation Source	Refer to, “S1, S2, or S3 used with AM” on page 78 or “S1, S2, or S3 used with FM” on page 79.
S4	Modulation Source Off	Refer to, “S4 (Modulation Source Off)” on page 79.
S5	DC FM	Refer to, “S5 (DC FM)” on page 80.
UP	Step Up	No equivalent SCPI command
UV	Unit used with the power command	UV

Keysight/HP 8656B, 8657A/B Compatible Programming Codes
Programming Code Lists

8656B, 8657A/B Codes^a	Description	Equivalent SCPI Command Syntax
VL	Unit used with the power command	V
0-9	Numerals 0–9	0–9
-	Minus Sign	-
.	Decimal Point	.
% ^d	Unit used with the modulation command	PCT

- a. Program codes are either upper or lower case.
- b. Increment Set is implemented for frequency (FR) and amplitude (AP) only.
- c. Either PC or % can be used.
- d. The source of reverse power must be removed.

Non-Compatible Codes

8656B, 8657A/B Codes	Description
HI	HI ALC
LO	LO ALC
R0	Standby
R1	On

Command Mapping

When using the 8656B, 8657A/B-compatible programming codes, the X-Series signal generator internally maps these codes to an equivalent SCPI response. In addition, the modulation source selections for the 8656B, 8657A/B differ from those available in the X-Series signal generator and therefore, are mapped to a valid selection. (Refer “**Modulation Sources**” table.)

Modulation Sources	
8656B, 8657A/B	Keysight X-Series Signal Generators
AM, Internal	AM1, Internal 1
AM, External	AM1, External 1
FM, Internal	FM1, Internal 1
FM, External	FM1, External 1
AM, Internal and External	AM1, Internal 1, External 1
FM, Internal and External	FM1, Internal 1, External 1

NOTE

The 8656, 8657A/B signal generators allow multiple modulations to use the same input; the X-Series signal generator does not. If you configure multiple modulations on the same input, the X-Series signal generator automatically disables the modulations.

The mapping between the 8656B, 8657A/B-compatible programming codes and the SCPI commands changes depending on the programming codes being executed. Refer to the following sections for explanations of the codes that are affected.

PF (Pulse Modulation–Fast Mode) or PM (Pulse Modulation)

The X-Series signal generator supports only one input selection for pulse which is EXTERNAL 1 (PULSE connector). This is a DC-coupled input. Internal pulse modulation, therefore, is not supported in the 8656B, 8657A/B-compatible language modes. The PF or PM code is mapped to the following SCPI commands:

- [:SOURCE] :PULM:SOURCE EXTERNAL [1]
- [:SOURCE] :PULM:STATE ON

S1, S2, or S3 used with AM

When the AM code is executed, the following occurs:

- AM becomes the active function.

NOTE

While the N5171B/72B and N5181B/82B have two AM channels, it supports only one channel (AM1) for the 8656B and 8657A/B programming codes. If AM2 is used in a SCPI command, it will be ignored and AM1 will be selected.

If AM is on, or there is no active modulation, a sequence of SCPI commands are implemented when an AM code is executed with a modulation source code. The **Table** below shows the sequence of SCPI commands that are implemented.

	AM On	No Active Modulation
S1	[:SOURce] :AM [1] :EXTernal [1] : COUPLing AC [:SOURce] :AM [1] :SOURce EXTernal 1	[:SOURce] :AM [1] :EXTernal [1] : COUPLing AC [:SOURce] :AM [1] :SOURce EXTernal [1] [:SOURce] :AM [1] :STATe ON
S2	[:SOURce] :AM [1] :SOURce INT [1] [:SOURce] :AM [1] :INTernal [1] : FREQuency 400 Hz	[:SOURce] :AM [1] :SOURce INT [1] [:SOURce] :AM [1] :INTernal [1] : FREQuency 400 Hz [:SOURce] :AM [1] :STATe ON
S3	[:SOURce] :AM [1] :SOURce INT [1] [:SOURce] :AM [1] :INTernal [1] : FREQuency 1 kHz	[:SOURce] :AM [1] :SOURce INT [1] [:SOURce] :AM [1] :INTernal [1] : FREQuency 1 kHz [:SOURce] :AM [1] :STATe ON

- If FM or pulse modulation is on, the signal generator attempts to set up AM with the same settings and turns off the other modulation.

S1, S2, or S3 used with FM

When the FM code is executed, the following occurs:

- FM becomes the active function.

NOTE

While the N5171B/72B and N5181B/82B have two FM channels, it supports only one channel (FM1) for the 8656B and 8657A/B programming codes. If FM2 is used in a SCPI command, it will be ignored and FM1 will be selected.

If FM is on, or there is no active modulation, a sequence of SCPI commands are implemented when an FM code is executed with a modulation source code.

Table shows the sequence of SCPI commands that are implemented.

	FM On	No Active Modulation
S1	[:SOURce]:FM[1]:EXTernal[1]: COUPLing AC [:SOURce]:FM[1]:SOURce EXTernal1	[:SOURce]:FM[1]:EXTernal[1]: COUPLing AC [:SOURce]:FM[1]:SOURce EXTernal1 [:SOURce]:FM[1]:STATe ON
S2	[:SOURce]:FM[1]:SOURce INT[1] [:SOURce]:FM[1]:INTernal[1]: FREQuency 400 Hz	[:SOURce]:FM[1]:SOURce INT[1] [:SOURce]:FM[1]:INTernal[1]: FREQuency 400 Hz [:SOURce]:FM[1]:STATe ON
S3	[:SOURce]:FM[1]:SOURce INT[1] [:SOURce]:FM[1]:INTernal[1]: FREQuency 1 kHz	[:SOURce]:FM[1]:SOURce INT[1] [:SOURce]:FM[1]:INTernal[1]: FREQuency 1 kHz [:SOURce]:FM[1]:STATe ON

- If AM or pulse modulation is on, the signal generator attempts to set up FM with the same settings and turns off the other modulation.

S4 (Modulation Source Off)

- If PM is the current active function, pulse modulation is disabled by mapping to the following command:

```
[:SOURce]:PULM:STATe OFF
```

- If the last code executed is S2 or S3, internal modulation is turned off for the AM and FM:

```
[:SOURce]:AM[1]:STATe OFF
```

```
[:SOURce]:FM[1]:STATe OFF
```

- If the last code executed is S1, external modulation is turned off for the AM and FM:

```
[:SOURce]:AM[1]:STATe OFF
```

```
[ :SOURce ] :FM [ 1 ] :STATe OFF
```

- If the current active function is AM or FM, the appropriate modulation is turned off:

```
[ :SOURce ] :AM [ 1 ] :STATe OFF
```

```
[ :SOURce ] :FM [ 1 ] :STATe OFF
```

- If S4 is executed with S1, S2, or S3, it will turn off the current modulation.

S5 (DC FM)

- FM becomes the active function.
- In addition, the following commands are mapped:

```
[ :SOURce ] :FM [ 1 ] :SOURce EXTernal1
```

```
[ :SOURce ] :PULM :STATe OFF
```

```
[ :SOURce ] :AM [ 1 ] :STATe OFF
```

```
[ :SOURce ] :FM [ 1 ] :EXTernal [ 1 ] :COUPling DC
```

```
[ :SOURce ] :FM [ 1 ] :STATe ON
```

9 Keysight/HP 8662A/63A Programming Codes

Programming Code List Overview

NOTE Compatibility is provided for GPIB only; USB and LAN are **not** supported.
Device Clear does not preset the instrument.
To reproduce the sweep functionality, use the N5183A List Sweep features.

NOTE When using the SCPI commands in this section, you must set the remote programming language to the correct language format. See [“Selecting the Programming Language” on page 2](#) for more information.

This section provides two listings of commands supported by the Keysight N5171B/72B EXG and N5181B/82B MXG X-Series signal generators. In the lists, each code shows whether the command is supported for the 8662A, 8663A, or both:

- **Table 9-1** provides a comprehensive listing of supported programming codes. Where applicable, the table shows the equivalent SCPI command (GPIB only). Some commands do not have an equivalent SCPI sequence. Where this occurs, it is also indicated in the table.
- **Table 9-2** is a list of supported programming commands that set an active function and use the UP/DOWN/INCR enums. As in the previous table, equivalent SCPI commands (GPIB only) are also listed.

When the programming code/SCPI command requires a range value, use the range values listed in the X-Series signal generator **Data Sheet**, or as shown in the *Keysight X-Series Signal Generators SCPI Command Reference*.

NOTE

While the Keysight N5171B/72B EXG and N5181B/82B MXG X-Series signal generators support two channels, and two internal and external sources for analog modulation (AM, FM, and PM), the programming codes/SCPI commands in this section are mapped to only a single channel, and a single internal and external source (AM[1], FM[1], and PM[1]–INT1, EXT1).

Programming Code Lists

Supported Commands/Programming Codes

Table 9-1 8662A/63A Supported Commands and Equivalent SCPI Sequences

✓ = Supported Command for the indicated source				
CMD	Description	8662	8663	Equivalent SCPI Command Sequence
@1	Write require service mask	✓	✓	*SRE <mask> supported, however, only 4 of the 8 bits of the 8662/8663 status byte will be set. These are: Entry Error, Hardware Error, Power Fail and Request Service Message (SRQ).
@3	Immediate execution mode	✓	✓	supported by the X-Series signal generators, but there is no equivalent SCPI command sequence
+D	+dBm	✓	✓	DBM
AM	AM modulation See also: Table on page 90	✓	-	AM:DEPT _H <val> <units> AM:TRAC ON FM:STAT OFF AM:STAT ON OUTPut:MOD ON
		-	✓	AM:DEPT _H <val> <units> AM:TRAC ON AM:STAT O OUTPut:MOD ON
AO	Amplitude off	✓	✓	OUTPut:STATe OFF
AP	Amplitude	✓	✓	POW:REF:STATe OFF POWER:AMPL <val> <units> OUTPut:STATe ON See also: Table on page 90
CT	Configure trigger	✓	✓	supported by the X-Series signal generators, but there is no equivalent SCPI command sequence
- D	- dBm Negates the power value.	✓	✓	DBM
DB	dB	✓	✓	DB
DG	Degree	✓	-	DEG
DM	dBm	✓	✓	DBM
DN	Decrement Passes DOWN as parameter of active function command.	✓	✓	See Table on page 90
FA	Start frequency	✓	✓	See W2, W3, W4, and Table on page 90
FB	Stop frequency	✓	✓	See W2, W3, W4, and Table on page 90

Table 9-1 8662A/63A Supported Commands and Equivalent SCPI Sequences

✓ = Supported Command for the indicated source				
CMD	Description	8662	8663	Equivalent SCPI Command Sequence
FM	FM modulation See also: Table on page 90	✓	-	FM:DEV <val> <units> AM:STAT OFF FM:STAT ON OUTPut:MOD ON
		-	✓	FM:DEV <val> <units> FM:STAT ON OUTPut:MOD ON
FR	Center frequency	✓	✓	FREQuency:CW <val> <units> See also: W2, W3, and W4, and Table on page 90
FS	Span frequency	✓	✓	See W2, W3, W4, and Table on page 90
GZ	GHz	✓	✓	GHZ
HZ	Hz	✓	✓	HZ
IS	Set increment Adds STEP: INCR to active function command.	✓	✓	supported by the X-Series signal generators, but there is no equivalent SCPI command sequence
KZ	kHz	✓	✓	KHZ
MO MO	Modulation off	✓	✓	AM:STATe OFF FM:STATe OFF PULM:STATe OFF PM:STATe OFF OUTPut:MOD OFF
M1	Modulation source internal 400 Hz For 8663A: Executes MF with <freq> = 400 Hz	✓	-	<mod>:SOURce INT1 <mod>:INT1:FREQ 400Hz
		-	✓	AM:INT1:FREQ 400 MHz FM:INT1:FREQ 400 MHz PM:INT1:FREQ 400 MHz PULM:INT:FREQ 400 MHz
M2	Modulation source internal 1 kHz For 8663A: Executes MF with <freq> = 1 kHz	✓	-	<mod>:SOURce INT1 <mod>:INT1:FREQ 1kHz
		-	✓	AM:INT1:FREQ 1 kHz FM:INT1:FREQ 1 kHz PM:INT1:FREQ 1 kHz PULM:INT:FREQ 1 kHz
M3	Modulation source external AC For 8663A: <mod> = AM, FM, or PM, depending on which is on. NOTE: For PM, the impedance value is set using the SP71/SP70 commands	✓	-	<mod>:SOURce EXT <mod>:EXT:COUPLing AC <mod>:EXT:IMP 600
		-	✓	<mod>:SOURce EXT <mod>:EXT:COUPLing AC <mod>:EXT:IMP 600

Table 9-1 8662A/63A Supported Commands and Equivalent SCPI Sequences

✓ = Supported Command for the indicated source				
CMD	Description	8662	8663	Equivalent SCPI Command Sequence
M4	<p>For 8662A: <mod> = FM or AM, depending on which is on.</p> <p>Modulation source external DC</p>	✓	-	<mod>:SOURCE EXT <mod>:EXT:COUPLing DC <mod>:EXT:IMP 600
	<p>For 8663A: <mod> = AM, FM, or PM, depending on which is on. NOTE: For PM, the impedance value is set using the SP71/SP70 commands</p>	-	✓	<mod>:SOURCE EXT <mod>:EXT:COUPLing DC <mod>:EXT:IMP 600
MF	<p>Modulation frequency</p> <p><mod> = FM, or PM, depending on which is on.</p> <p>Also see: M1, M2, and Table on page 90</p>	-	✓	<p>AM: AM:SOUR INT1 AM:SOUR:INT1:FREQ <freq></p> <p>FM or PM: <mod>:SOUR INT1 <mod>:SOUR:INT1:FREQ <freq></p> <p>Pulse: PULM:SOUR INT PULM:INT:FREQ <freq> PULM:SOUR:INT SQUARE</p>
MS	<p>Read status key message Returns status string.</p>	✓	✓	supported by the X-Series signal generators, but there is no equivalent SCPI command sequence
MV	mV	✓	✓	MV
MZ	MHz	✓	✓	MHZ
N1	Linear 100 steps	✓	✓	See W2, W3, and W4
N2	Linear 1000 steps	✓	✓	See W2, W3, and W4
N3	Step size	✓	✓	See W2, W3, W4, and Table on page 90
N4	Log 10% steps	✓	✓	See W2, W3, and W4
N5	Log 1% steps	✓	✓	See W2, W3, and W4
PC	%	✓	✓	PCT
PL	<p>Pulse modulation Must have an instrument with pulse capability.</p>	-	✓	PULM:STAT ON OUTPut:MOD ON
PM	<p>Phase modulation Not compatible with any FM modulation.</p>	-	✓	PM:STAT ON OUTPut:MOD ON See also: Table on page 90
RC	Recall	✓	✓	*RCL
RD	<p>Knob down Only for manual sweep</p>	✓	✓	LIST:MANual DOWN

Table 9-1 8662A/63A Supported Commands and Equivalent SCPI Sequences

✓ = Supported Command for the indicated source				
CMD	Description	8662	8663	Equivalent SCPI Command Sequence
RM	Read require service mask	✓	✓	*SRE? supported, however, only 4 of the 8 bits of the 8662/8663 status byte will be set. These are: Entry Error, Hardware Error, Power Fail and Request Service Message (SRQ).
RU	Knob up Only for manual sweep	✓	✓	LIST:MANual UP
SP00	System preset Presets the instrument, including the compatibility language.	✓	✓	SYSTem:PRESet
SP10	Frequency offset off	✓	✓	FREQ:OFFS:STAT OFF
SP11	Positive frequency offset The 8662 modifies the output, but does not change the displayed frequency; the PSG modifies the displayed frequency, but does not change the output. Because of this, you must first set the offset, then reapply the frequency to change the output.	✓	✓	FREQ:OFFS -<value> FREQ:OFFS:STAT ON FREQ:CW <displayed value>
SP12	Negative frequency offset The 8662 modifies the output, but does not change the displayed frequency; the PSG modifies the displayed frequency, but does not change the output. Because of this, you must first set the offset, then reapply the frequency to change the output.	✓	✓	FREQ:OFFS <value> FREQ:OFFS:STAT ON FREQ:CW <displayed value>
SP20	ALC bandwidth normal	-	✓	POWer:ALC:BANDwidth:AUTO ON
SP21	ALC bandwidth < 1 kHz	-	✓	POWer:ALC:BANDwidth:AUTO OFFPOWer:ALC:BANDwidth 200 HZ
SP30	Amplitude reference off	✓	✓	POW:REF:STATe OFF
SP31	Amplitude reference	✓	✓	POW:REF <val> <val> = current amplitude setting POW:REF:STATe ON
SP32	Amplitude reference relative to 1 m V	-	✓	POW:REF 106.99DBM POW:REF:STATe ON POW 1UV
SP40	External AM off	✓	✓	AM:STAT OFF
SP41	Internal FM + external AM (AC)	✓	-	FM:SOUR INT1 FM:INT1:FREQ 400 HZ FM:STAT ON AM:SOUR EXT1 AM:EXT1:IMP 600 AM:DEPTH 95 PCT AM:EXT1:COUP AC AM:STAT ON

Table 9-1 8662A/63A Supported Commands and Equivalent SCPI Sequences

✓ = Supported Command for the indicated source				
CMD	Description	8662	8663	Equivalent SCPI Command Sequence
SP42	Internal FM + external AM (DC)	✓	-	FM:SOUR INT1 FM:INT1:FREQ 400 HZ FM:STAT ON AM:SOUR EXT1 AM:EXT1:IMP 600 AM:DEPTH 95 PCT AM:EXT1:COUP DC AM:STAT ON
SP70	External PM input impedance 50 W Effects the behavior of M3 and M4.	-	✓	supported by the X-Series signal generators, but there is no equivalent SCPI command sequence
SP71	External PM input impedance 600 W Effects the behavior of M3 and M4.	-	✓	supported by the X-Series signal generators, but there is no equivalent SCPI command sequence
SP80	Special functions 10-62 off	✓	✓	AM:STAT OFF FREQ:OFFS:STAT OFF
SP85	Amplitude correction off	✓	✓	POWER:ALC:STATE OFF
SP86	Amplitude correction on PSG ALC ON always works with sweep.	✓	✓	POWER:ALC:STATE ON
SP87	Amplitude correction on (includes Sweep)	-	✓	POWER:ALC:STATE ON
SP98	Turn display on	-	✓	DISP ON
SP99	Turn display off	-	✓	DISP OFF
ST	Store Saves/recalls register to sequence 0.	✓	✓	*SAV
T1	0.5 ms per step	✓	✓	SWEEP:DWELL 0.5ms Beyond PSG range limit; is set to 1ms.
T2	1 ms per step	✓	✓	SWEEP:DWELL 1ms
T3	2 ms per step	✓	✓	SWEEP:DWELL 2ms
T4	10 ms per step	✓	✓	SWEEP:DWELL 10ms
T5	100 ms per step	✓	✓	SWEEP:DWELL 100ms
TR	Trigger Performs command code setup with CT command.	✓	✓	supported by the X-Series signal generators, but there is no equivalent SCPI command sequence
UP	Increment Passes UP as a parameter of the active function command.	✓	✓	See Table on page 90
UV	mV	✓	✓	UV

Table 9-1 8662A/63A Supported Commands and Equivalent SCPI Sequences

✓ = Supported Command for the indicated source				
CMD	Description	8662	8663	Equivalent SCPI Command Sequence
W1	Sweep off	✓	✓	FREQ:MODE CW LIST:TRIG:SOUR IMM
W2	Auto sweep mode on Generates a sweep list based on stored parameters from FA, FB, FR, FS, N1, N2, N3, N4, and N5 Default values: FR = 100 MHz, FS = 10 MHz, N1, T2 FA = 1 MHz, FB = 1279 MHz	✓	✓	INIT:CONT ON SWEEP:MODE AUTO LIST:TRIG:SOUR IMM LIST:DWELL:TYPE STEP LIST:TYPE LIST FREQ:MODE LIST
W3	Manual sweep mode on Generates a sweep list based on stored parameters from FA, FB, FR, FS, N1, N2, N3, N4, and N5 Default values: FR = 100 MHz, FS = 10 MHz, N1, T2 FA = 1 MHz, FB = 1279 MHz	✓	✓	INIT:CONT ON SWEEP:MODE MANual LIST:TRIG:SOUR IMM LIST:DWELL:TYPE STEP LIST:TYPE LIST FREQ:MODE LIST
W4	Single sweep mode on Generates a sweep list based on stored parameters from FA, FB, FR, FS, N1, N2, N3, N4, and N5 Default values: FR = 100 MHz, FS = 10 MHz, N1, T2 FA = 1 MHz, FB = 1279 MHz	✓	✓	INIT:CONT OFF SWEEP:MODE AUTO LIST:TRIG:SOUR IMM LIST:DWELL:TYPE STEP LIST:TYPE LIST FREQ:MODE LIST INIT
X6	Marker off	✓	✓	supported by the X-Series signal generators, but there is no equivalent SCPI command sequence
Y0	Remote stepped sweep off	✓	✓	FREQ:MODE CW LIST:TRIG:SOUR IMM
Y1 Y2	Remote stepped sweep on	✓	✓	INIT:CONT ON SWEEP:MODE AUTO LIST:DWELL:TYPE STEP LIST:TYPE LIST FREQ:MODE LIST LIST:TRIG:SOUR BUS
Y3	Execute remote stepped sweep	✓	✓	*TRG

Supported Active Function Commands and UP/DOWN/INCR Enums

Table 9-2 8662/63B Command Compatibility for Active Functions and
 UP/DOWN/INCR Enums

✓ = Supported by Keysight N5183A - = Not supported by Keysight N5183A						
CMD	Description	Sets Active Function	Compatible with UP/DN	8662	8663	Equivalent SCPI Commands for UP/DN and Increment
AM	AM modulation	✓	✓	✓	✓	AM:DEPTH UP AM:DEPTH DOWN AM:DEPTH:STEP:INCR
AP	Amplitude	✓	✓	✓	✓	POW:AMPL UP POW:AMPL DOWN POW:AMPL:STEP:INCR
FA	Start frequency	✓	✓	✓	✓	FREQ:CW:STEP:INCR
FB	Stop frequency	✓	✓	✓	✓	FREQ:CW:STEP:INCR
FM	FM modulation	✓	✓	✓	✓	FM:DEV UP FM:DEV DOWN FM:DEV:STEP:INCR
FR	Center frequency	✓	✓	✓	✓	FREQ:CW UP FREQ:CW DOWN FREQ:CW:STEP:INCR
FS	Span frequency	✓	✓	✓	✓	FREQ:CW:STEP:INCR
MF	Modulation frequency	✓	✓	✓	✓	<mod>:INT:FREQ UP <mod>:INT:FREQ DOWN <mod>:INT:FREQ:STEP:INCR <mod> = AM FM PM PULM
N3	Step size	✓	✓	✓	✓	supported by the X-Series signal generators, but there is no equivalent SCPI command sequence
PM	Phase modulation Not compatible with any FM modulation.	✓	✓	✓	✓	PM:DEV UP PM:DEV DOWN PM:DEV:STEP:INCR

10 Aeroflex IFR3410 Compatible Commands

Command List Overview

NOTE When using the SCPI commands in this section, you must set the remote programming language to the correct language format. See [“Selecting the Programming Language” on page 2](#) for more information.

The following table shows the SCPI commands supported by the Keysight N5171B/72B EXG and N5181B/82B MXG X-Series signal generators.

For range values, use the range values listed in the X-Series signal generator **Data Sheet**, or as shown in the *Keysight X-Series Signal Generators SCPI Command Reference*.

The Aeroflex IFR3410 has dual RF outputs.

Command List

Table 10-1 Supported Aeroflex IFR3410 Compatible SCPI Commands

IFR3410 Command ✓ = Supported by indicated X-Series Signal Generator - = Not supported by indicated X-Series Signal Generator	N5171B/81B	N5172B/82B	Remarks
:CALibration:IQUser:ADJust	✓	✓	
:CALibration:IQUser:MODE SPOT SPAN :CALibration:IQUser:MODE?	✓	✓	Supported but the frequency unit suffix is not supported.
:CALibration:IQUser:SPAN SPAN20 SPAN40 SPAN80 SPAN120 :CALibration:IQUser:SPAN?	✓	✓	
:OUTPut[:POWER][:STATe] OFF ON 0 1 :OUTPut[:POWER][:STATe]?	✓	✓	
[:SOURce]:FREQuency[:CW :FIXed] <Nrf>(Hz) MAXimum MINimum UP DOWN	✓	✓	Supported but the following parameters are not supported: RETurn REFerence
[:SOURce]:FREQuency[:CW :FIXed]:STEP[:INC Rement] <Nrf>(Hz) MAXimum MINimum	✓	✓	
[:SOURce][:MODulation]:AM[1][:DEPTh] <Nrf>(PCT) MAXimum MINimum UP DOWN	✓	✓	Supported but the following parameters are not supported: RETurn REFerence
[:SOURce][:MODulation]:AM[1]:EXTernal: COUPling AC DC	✓	✓	
[:SOURce][:MODulation]:AM[1]:INTernal: FREQuency[:FIXed] <Nrf>(Hz) MAXimum MINimum UP DOWN	✓	✓	Supported but the following parameters are not supported: RETurn REFerence
[:SOURce][:MODulation]:AM[1]:INTernal2:FR EQuency[:FIXed]:STEP[:INCReMent] <value>[freq unit] MAXimum MINimum [:SOURce][:MODulation]:AM[1]:INTernal2:FR EQuency[:FIXed]:STEP[:INCReMent]?	✓	✓	
[:SOURce][:MODulation]:AM[1]:INTernal: SHAPE SINE	✓	✓	Supported but the following parameters are not supported: SQUare TRIangle RAMP
[:SOURce][:MODulation]:AM[1]:SOURce INTernal EXTernal	✓	✓	
[:SOURce][:MODulation]:AM[1]:STATe OFF ON 0 1	✓	✓	

Table 10-1 Supported Aeroflex IFR3410 Compatible SCPI Commands (Continued)

IFR3410 Command ✓ = Supported by indicated X-Series Signal Generator - = Not supported by indicated X-Series Signal Generator	N5171B/81B	N5172B/82B	Remarks
[:SOURce] [:MODulation] :FM[1] [:DEVIation] <value> (Hz) MAXimum MINimum UP DOWN	✓	✓	Supported but the following parameter is not supported: RETurn REFerence
[:SOURce] [:MODulation] :FM[1] :EXTernal: COUPling AC DC	✓	✓	
[:SOURce] [:MODulation] :FM[1] :INTernal: FREQuency[:FIXed] <value> (Hz) MAXimum MINimum UP DOWN	✓	✓	Supported but the following parameter is not supported: RETurn REFerence
[:SOURce] [:MODulation] :FM[1] :INTernal2: FREQuency[:FIXed]:STEP[:INCRement] <value>[freq unit] MAXimum MINimum [:SOURce] [:MODulation] :FM[1] :INTernal2: FREQuency[:FIXed]:STEP[:INCRement]?	✓	✓	
[:SOURce] [:MODulation] :FM[1] :INTernal: SHAPE SINE	✓	✓	Supported but the following parameters are not supported: SQUare TRIangle RAMP
[:SOURce] [:MODulation] :FM[1] :SOURce INTernal EXTernal	✓	✓	
[:SOURce] [:MODulation] :FM[1] :STATE OFF ON 0 1	✓	✓	
[:SOURce] [:MODulation] :IQ:ARB:ABORT	-	✓	
[:SOURce] [:MODulation] :IQ:ARB:INITiate	-	✓	
[:SOURce] [:MODulation] :IQ:ARB[:MEMory]:FORMat <wide_sectors> [:SOURce] [:MODulation] :IQ:ARB[:MEMory]:FORMat?	-	✓	Command accepted without error but does nothing.
[:SOURce] [:MODulation] :IQ:ARB:MODE SINGLE CONTinuous [:SOURce] [:MODulation] :IQ:ARB:MODE?	-	✓	
[:SOURce] [:MODulation] :IQ:ARB:REStart ENABle DISable		✓	
[:SOURce] [:MODulation] :IQ:ARB:RMSoffset <rms_offset> [:SOURce] [:MODulation] :IQ:ARB:RMSoffset?	-	✓	Command accepted without error but does nothing. Query always returns a 0.
[:SOURce] [:MODulation] :IQ:ARB:TOFFset <sample_rate_offset_in_parts_per_million> [:SOURce] [:MODulation] :IQ:ARB:TOFFset?	-	✓	

Table 10-1 Supported Aeroflex IFR3410 Compatible SCPI Commands (Continued)

IFR3410 Command ✓ = Supported by indicated X-Series Signal Generator - = Not supported by indicated X-Series Signal Generator	N5171B/81B	N5172B/82B	Remarks
[:SOURce][:MODulation]:IQ:ARB:TRIGger IMMEDIATE START SOURce[:MODulation]:IQ:ARB:TRIGger?	-	✓	Supported but the following parameter is not supported: SSTOP Supported but the polarity is only positive.
[:SOURce][:MODulation]:IQ:ARB:WAVEform:CA Talog?	-	✓	
[:SOURce][:MODulation]:IQ:ARB:WAVEform:CH ECKsum? <"filename.aiq">	-	✓	Command accepted without error but does nothing. Query always returns a 1.
[:SOURce][:MODulation]:IQ:ARB:WAVEform:DA TA <"filename.aiq">,#blockdata	-	✓	
[:SOURce][:MODulation]:IQ:ARB:WAVEform:DE Lete:ALL	-	✓	
[:SOURce][:MODulation]:IQ:ARB:WAVEform:DE Lete[:FILE] <"filename.aiq">	-	✓	
[:SOURce][:MODulation]:IQ:ARB:WAVEform:DL Oad <"filename.aiq">,#blockdata	-	✓	
[:SOURce][:MODulation]:IQ:ARB:WAVEform:FO RMat <wide_sectors> -- ignored [:SOURce][:MODulation]:IQ:ARB:WAVEform:FO RMat?	-	✓	Command accepted without error but does nothing.
[:SOURce][:MODulation]:IQ:ARB:WAVEform:SE Lect <"filename.aiq"> [SOURce][:MODulation]:IQ:ARB:WAVEform:SEL ect?	-	✓	Supported but the path is not returned, only the basename. Auto enables ARB On when waveform is downloaded.
[:SOURce][:MODulation]:IQ:ARB:WAVEform:SU MMary? <"filename.aiq">	-	✓	
[:SOURce][:MODulation]:IQ:DIFFerential:IC Hannel:OFFSet <value>	-	✓	
[:SOURce][:MODulation]:IQ:DIFFerential:QC Hannel:OFFSet <value>	-	✓	
[:SOURce][:MODulation]:IQ:STATE OFF ON 0 1 [:SOURce][:MODulation]:IQ:STATE?	-	✓	
[:SOURce][:MODulation]:IQ:SOURce ARB EANalog [:SOURce][:MODulation]:IQ:SOURce?	-	✓	Supported but the following parameters are not supported: DIFFerential DM EDIGital

Table 10-1 Supported Aeroflex IFR3410 Compatible SCPI Commands (Continued)

IFR3410 Command ✓ = Supported by indicated X-Series Signal Generator - = Not supported by indicated X-Series Signal Generator	N5171B/81B	N5172B/82B	Remarks
[:SOURce] [:MODulation] :PM [1] [:DEViation] <value> (rad) MAXimum MINimum UP DOWN	✓	✓	Supported but the following parameters are not supported: RETurn REFerence
[:SOURce] [:MODulation] :PM [1] :INTernal :FREQuency [:FIXed] <Nrf> (Hz) MAXimum MINimum UP DOWN	✓	✓	Supported but the following parameters are not supported: RETurn REFerence
[:SOURce] [:MODulation] :PM [1] :INTernal2 :FREQuency [:FIXed] :STEP [:INCRement] <value> [freq unit] MAXimum MINimum [:SOURce] [:MODulation] :PM [1] :INTernal2 :FREQuency [:FIXed] :STEP [:INCRement] ?	✓	✓	
[:SOURce] [:MODulation] :PM [1] :INTernal :SHAPE SINE	✓	✓	Supported but the following parameters are not supported: SQUare TRIangle RAMP
[:SOURce] [:MODulation] :PM [1] :SOURce INTernal EXTernal	✓	✓	
[:SOURce] [:MODulation] :PM [1] :STATE OFF ON 0 1	✓	✓	
[:SOURce] [:MODulation] :PULM :STATE OFF ON 0 1	✓	✓	
[:SOURce] [:MODulation] :PULM :SOURce EXTernal	✓	✓	Supported but the following parameters are not supported: INTernal
[:SOURce] :POWER :ALC :BW AUTO MODerate NARRow BROad [:SOURce] :POWER :ALC :BW?	✓	✓	Command accepted without error but does nothing.
[:SOURce] :POWER :ALC [:STATE] AUTO NORMal AM FROZen SCALed	✓	✓	Supported but if queried, the X-Series signal generator only returns a 1 or a 0.
[:SOURce] :POWER [:LEVEL] [:IMMediate] [:AMPLitude] <numeric_value>	✓	✓	
:STATus :OPERation :TRIGger	✓	✓	
:STATus :QUEStionable :MODulation :AM	✓	✓	
:STATus :QUEStionable :MODulation :ARB	✓	✓	
:STATus :QUEStionable :MODulation :DM	✓	✓	
:STATus :QUEStionable :MODulation :FM	✓	✓	
:STATus :QUEStionable :MODulation :IQ	✓	✓	

Table 10-1 Supported Aeroflex IFR3410 Compatible SCPI Commands (Continued)

IFR3410 Command ✓ = Supported by indicated X-Series Signal Generator - = Not supported by indicated X-Series Signal Generator	N5171B/81B	N5172B/82B	Remarks
:STATus:QUEStionable:MODulation:PM	✓	✓	
:STATus:QUEStionable:MODulation:PULM	✓	✓	
:STATus:QUEStionable:ROSC	✓	✓	
:SYSTem:COMMunicate:GPIB[:SELF]:ADDRESS <number>	✓	✓	
:SYSTem:ERRor:ALL?	✓	✓	Supported but the error codes will be X-Series signal generator specific (i.e. Aeroflex error codes do not apply).
:SYSTem:ERRor:CODE:ALL?	✓	✓	Supported but the error codes will be X-Series signal generator specific (i.e. Aeroflex error codes do not apply).
:SYSTem:ERRor:CODE[:NEXT]?	✓	✓	Supported but the error codes will be X-Series signal generator specific (i.e. Aeroflex error codes do not apply).
:SYSTem:ERRor[:NEXT]?	✓	✓	Supported but the error codes will be X-Series signal generator specific (i.e. Aeroflex error codes do not apply).
:SYSTem:PRESet	✓	✓	
:SYSTem:SETTings:FULL:SAVE <0...99>	✓	✓	
:SYSTem:SETTings:FULL:RECall <0...99>	✓	✓	
:UNIT:VOLTtype PD EMF :UNIT:VOLTtype?	✓	✓	