AEROFLEX

3900 Series
Digital Radio Test Set

Remote Programming Manual

1002-4400-5P0

Issue-5

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Remote Programming Manual

PUBLISHED BY
Aeroflex

Original Printing	Jul 2005
Issue-2	Jan 2006
Issue-3	May 2006
Issue-4	Jul 2006
Issue-5	Jan 2007

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Preface

About this Manual

This manual contains the following:

- Describes format of Values/Ranges/Default Listings, Quick Reference Guides and Detailed Remote Commands.
- Identifies conventions used in the manual;
- Describes common remote commands;
- Lists remote commands for Analog Duplex and 3900 Series Compatibility Commands.

Refer to the appropriate option programming manuals for Remote Commands specific to optional operating systems.

Nomenclature Statement

The 3901 and 3902 Digital Radio Test Set is the official nomenclature for the test sets currently included in the 3900 Digital Radio Test Set Series. In this manual, 3900, unit or Test Set, refers to the 3901 and 3902 Digital Radio Test Sets unless otherwise indicated.

Intended Audience

This manual is intended for personnel familiar with the use of remote command language. Review the 3900 Series Operation Manual prior to using the Test Set.

Test Set Requirements

Refer to the 3900 Series Operation Manual for information on the following:

Safety Precautions

Power Requirements

Platform Performance Data Specifications

Repacking / Shipping Test Set

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Chapter 1

General Remote Operation

Introduction

The 3900 may be operated remotely via an interface conforming to IEEE Std 488.1-1987. Several SCPI features have been implemented in the 3900 to facilitate system integration. These features include the extended status reporting structure, the error numbering scheme, the command mnemonic derivation rules (long and short form) and many of the frequently used commands. Many of the SCPI features included in the 3900 are not defined by the SCPI standard; therefore, the 3900 is not fully compliant with SCPI (Standard Commands for Programmable Instruments) requirements. Refer to SCPI 1997 for details.

Remote Commands Files

Chapter describes the Common Remote Commands, System Selection Commands and System Commands supported by the 3900 Test Set.

Common Commands

This chapter describes Common Remote Commands supported by the 3900.

System Selection Commands

This chapter describes System Selection Commands for the 3900.

System Commands

Each 3900 System has two command structures; Quick Reference Commands and Detailed Remote Commands. Defaults ranges and values are also provided for each operating system.

Values, Ranges and Defaults

Default values are arranged alphabetically by display tile on which they appear. The following is an annotated extract from the Instruments default list.

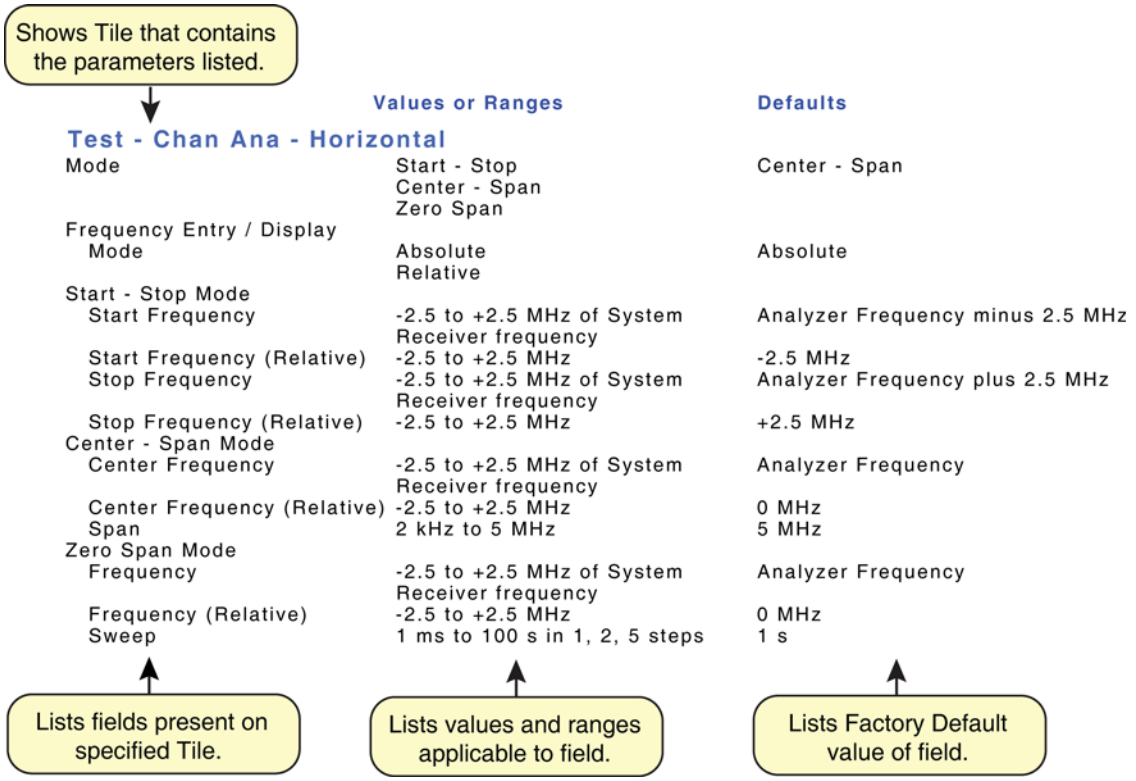

Fig. 1-1 Default Commands Illustrated Extract

Quick Reference Guide

The commands listed in the Quick Reference Guide are arranged alphabetically by command name. The listings include a reference to the Detailed Remote Command which includes parameter inputs and responses. The following annotated extract is from the Analog Duplex Quick Reference Guide listing.

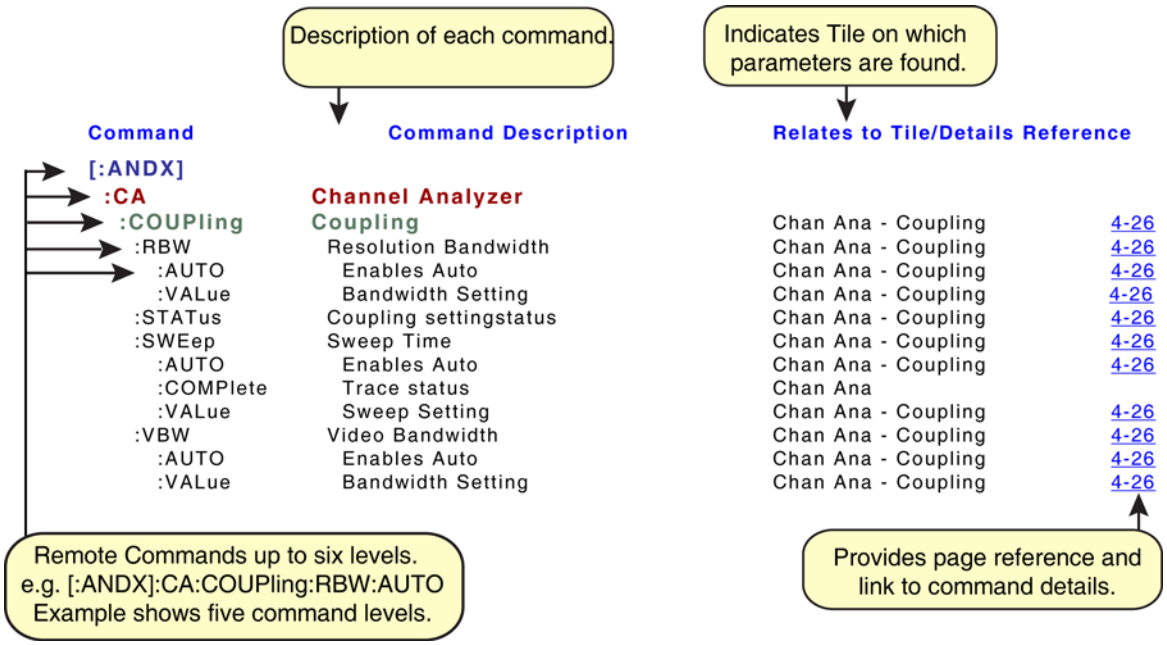

Fig. 1-2 Quick Reference Guide Illustrated Extract

Detailed Remote Commands

Detailed Remote Commands describe command functions, parameters, inputs and applicable query responses and return values. The commands are arranged alphabetically under the display tile heading on which they are located. The following annotated extract is from the Analog Duplex Detailed Remote Commands listing.

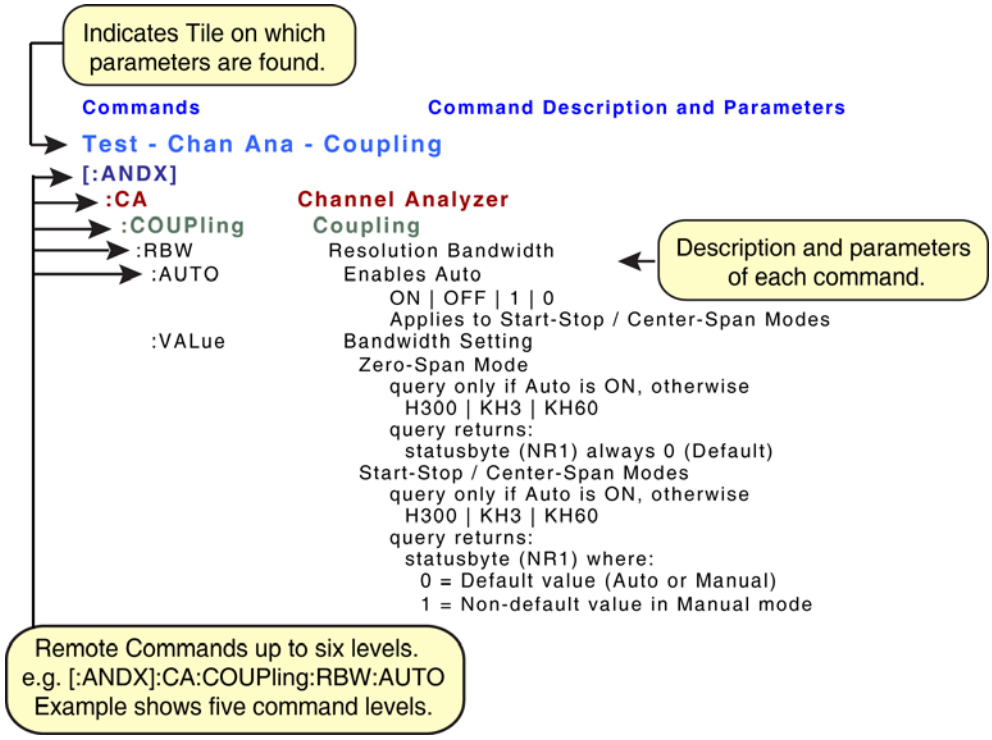

Fig. 1-3 Detailed Remote Commands Illustrated Extract

Conventions Used in Manual

Long and Short Forms

The elements of compound and query headers have a long and a short form, as defined by SCPI. Either the long or the short form may be entered as a command; other abbreviations are not permissible.

Example:

:CONFigure:OFFSet:ANALyzer:ENABle?

is interpreted the same as

:CONF:OFFS:ANAL:ENAB?

The short form is marked by upper case letters, the long form corresponds to the complete word. Uppercase and lowercase serve the above purpose only, as the Test Set does not make any distinction between upper and lowercase.

Queries always return the short form, or a numeric response in cases where the command provides a choice of numeric or character data.

Bracketed Elements

Square Brackets [ ]

Elements within the compound common program header structure enclosed within square brackets are optional and may be omitted; the instrument processes the command in the same manner whether or not the bracketed element is included.

Example:

[AAA:]BBB[:CCC][:DDD]

is interpreted the same as

BBB

This formatting also applies to parameters. The ability to recognize the full command length ensures that the instrument complies with the SCPI standard in this respect.

Braces { }

Parameters included within curly brackets may be included numerous times or not at all.

Arrow Brackets < >

Text within angle brackets represents an actual value that needs to be inserted. For example, <freq> indicates a frequency value must be inserted in the command at this point.

Case Sensitivity

3900 software is not case-sensitive. Upper and lowercase characters are completely interchangeable. There is no conflict between milli (m) and mega (M) as both cannot be applied to the same data.

Choice Indicator

The vertical bar (|) separates a choice of parameters or commands. For example, 0 | 1 means '0 or 1.'

Compound Program Headers

Compound program headers allow a complex set of commands to be compiled from a smaller set of basic elements in a tree structure. The elements of a compound program header are separated by a colon (:), each colon representing a change of level in the hierarchy. Each subsystem in this instrument is organized as a separate tree structure.

The compound program header may, optionally, be followed by one or more parameters encoded as program data functional elements.

NOTE

A leading colon is optional.

Example:

OUTput:ATTenuation:AUTO 0

xxx:yyy:aaa 1

Example:

```
XXX
:YYY
    :AAA\?
    :BBB\?
    :CCC\?
    :DDD\?
    :EEE\?
    :FFF\?
    :GGG\?
:ZZZ
    :HHH\?
    :FFF\?
    :GGG\?
```

In this example, the compound header elements "FFF" and "GGG" appear for both the YYY and ZZZ functions. The full compound header starting from the tree root can be used for each command.

For example XXX:ZZZ:FFF 2; XXX:ZZZ:GGG 10, sequences of <COMMAND MESSAGE UNITS> and <QUERY MESSAGE UNITS> can often be shortened by taking advantage of the special rules which apply to compound headers.

For example, having descended the tree to create the <PROGRAM MESSAGE UNIT> XXX:ZZZ:FFF 2, any other elements at that level may be included in the <PROGRAM MESSAGE> without repeating the entire path through the tree.

Example:

XXX:ZZZ:FFF 2;GGG 10

is equivalent to the two <PROGRAM MESSAGES>:

XXX:ZZZ:FFF 2 and XXX:ZZZ:GGG 10.

Note the use of the <PROGRAM MESSAGE UNIT SEPARATOR> character " ; " between <PROGRAM MESSAGE UNITS>.

Program Data

Program data functional elements contain the parameters related to the program header(s). The following program data functional elements are accepted by the instrument:

<CPD> (also known as <CHARACTER PROGRAM DATA>)

<NRf>(also known as <DECIMAL NUMERIC PROGRAM DATA>)

<numeric_value> (defined by SCPI)

<STRING PROGRAM DATA>

<Boolean> (defined by SCPI)

<ARBITRARY BLOCK PROGRAM DATA>

These functional elements are defined in IEEE 488.2 and the SCPI Syntax and Style handbook.

A white space must separate the command header(s) and the program data.

<white space>, as defined in IEEE Std 488.2, can be any number of ASCII characters in the range 0-9, 11-32 decimal.

<white space> is also allowed at other points in a message.

<CPD>

Character program data is used to set a parameter to one of a number of states that are best described by short alphanumeric strings.

Example:

ON

<NRf>

Flexible numeric representation covers integer and floating-point representations.

Examples:

-466	Integer value
4.91	Explicitly placed decimal point
59.5E+2	Mantissa and exponent representation

The format is known as ‘flexible’ because any of the three representations may be used for any type of numeric parameter.

Examples:

Where a parameter requires an integer value in the range 1 to 100, and the user needs to set the value to 42, the following values are accepted by the instrument:

42	Integer
42.0	Floating point
4.2E1, 4200E-2	Floating point - mantissa/exponent
41.5	Rounded up to 42
42.4	Rounded down to 42

<numeric_value>

<numeric_value> is a superset of <NRf> and <CPD>, used when parameters may consist of either a decimal value or the shorthand notations MAXimum or MINimum.

Example:

FREQ:STEP has a <numeric_value> parameter. This means that valid values for the step size may be the frequency value in Hz (for example, 250E+3), MAXimum or MINimum.

<STRING PROGRAM DATA>

String program data consists of a number of ASCII characters enclosed in quotes. Use either pairs of single (ASCII 39) or double (ASCII 34) quotes, but do not mix single and double in a string. A quote within a string must be enclosed within an extra pair of quotes.

Example:

'This string contains the word ' 'Hello' ' '

is interpreted as

This string contains the word 'Hello'

and

"This string contains the word " "Hello" " "

is interpreted as

This string contains the word "Hello"

Hex-string

Uses characters 0-9 and A-F to produce hex pairs representing values from 0 to 255.

There are no white spaces within the string.

ASCII-string

Example:

"TETRA 380-400 +12.5" which refers to the Channel Plan to be used.

Number-string

Uses characters 0-9 only.

There are no white spaces within the string.

Phone-number-string

Uses characters 0-9, #, * and +.

There are no white spaces within the string.

<Boolean>

<Boolean> is used as shorthand for the form ON | OFF | <NRf>. Boolean parameters have a value of 0 or 1 and do not contain units.

On input, an <NRf> is rounded to an integer and a nonzero result is interpreted as 1.

<CPD> elements ON and OFF are accepted as inputs, with ON corresponding to 1 and OFF corresponding to 0. Queries return 1 or 0, never ON or OFF.

Examples:

ON is interpreted as 1

0.4 is interpreted as 0

2.8 is interpreted as 1

<STRING RESPONSE DATA>

The following response data functional elements are generated by the instrument:

<CRD> (also known as <CHARACTER RESPONSE DATA>)

<arbitrary ASCII response data>

<NR1>

<NR2>

<STRING RESPONSE DATA>

<CRD>

This type of response is returned when reading the value of a parameter that can take a number of discrete states. States are represented by short alphanumeric strings.

Example:

ON

<NR1>

This type of numeric response is used when returning the value of integer parameters, such as an averaging number or the number of measurement points.

Examples:

15

+3

-57

<NR2>

This type of numeric response includes an explicitly placed decimal point, and no exponent.

Examples:

17.91

-18.27

+18.83

17.0

<STRING RESPONSE DATA>

This takes a similar form to <STRING PROGRAM DATA> except that the delimiting character is always a double quote ("ASCII 34").

Hex-string

Uses characters 0-9 and A-F to produce hex pairs representing values from 0 to 255.

There are no white spaces within the string.

ASCII-string

Example:

Channel Plan in use.

Number-string

Uses characters 0-9 only.

There are no white spaces within the string.

Phone-number-string

Uses characters 0-9, #, *, and +.

There are no white spaces within the string.

Query Only Commands

Query only commands return current settings for a specified parameter. These commands appear with a '?' located at the end of the command.

Some commands that are used to define a parameter can also be used as a query command by adding a '?' to the end of the command.

Example:

RF:GENerator:LEVel -30.00 sets the RF Generator Level to -30 dBm.

RF:GENerator:LEVel? returns the current RF Generator Level setting.

NOTE

Query response always returns short form. For example, AVERage and WCASe are returned as AVER and WCAS.

Terminators

A **<PROGRAM MESSAGE TERMINATOR>** (as defined in IEEE 488.2) can be a new line character (ASCII 10), a new line character with the ^END message asserted at the same time, or an ^END message asserted with the final character of the <PROGRAM MESSAGE>. The terminator may be preceded by any number of 'white space' characters - any single ASCII-encoded byte in the ranges 0 to 9 and 11 to 32 decimal.

A **<RESPONSE MESSAGE TERMINATOR>** (as defined in IEEE 488.2) is a new line character with the ^END message asserted at the same time.

Many GPIB controllers terminate program messages with a new line character and, by default, accept new line as the response message terminator. When transferring binary data, which may contain embedded new line characters, ensure that the controller uses only ^END messages. Usually this means that the controller's GPIB must be set up to generate and detect ^END. Refer to the documentation supplied with the controller.

Common Commands

Common Commands Recognized by 3900

*IDN?

Description:	The identification query command allows information about the Test Set to be read.
Parameters:	None
Response:	<arbitrary ASCII response data> Manufacturer, model, serial number, software issue number
Example:	*IDN? Read information on the instrument.
Example:	AEROFLEX,3901,297001018,1.0.0

*OPT?

Description:	Returns the options present. If no options are present, a single '0' is returned; otherwise the response is a comma-separated list of options.
Parameters:	None
Response:	<arbitrary ASCII response data> Options
Example: **Response:**	*OPT? OPTION 110: TETRA MS,OPTION 111: TETRA BS Indicates that the TETRA MS and BS options are available.

*RST

Description:	Resets the instrument to the factory default state. Resets all system parameters to factory default values and unloads currently loaded system. Stores, AutoTest scripts and AutoTest results files remain intact.
Parameters:	None
Example:	*RST Reset instrument to known state.

System Selection

:SYST:LOAD

Description:	Loads the specified system.
Parameters:	System name, as it appears on the bottom of the relevant screen in local control, and enclosed in quotation marks. See examples.
Examples:	:SYST:LOAD "TETRA MS" :SYST:LOAD "TETRA BS T1"
NOTE	The :SYST:LOAD command returns the currently loaded system or "Default" when no system is loaded. The AutoTest sub-system cannot be controlled via the GPIB interface.

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Chapter 2

Analog Duplex Values / Ranges / Defaults

Introduction

This chapter describes the Analog Duplex Default values, ranges and default settings. Parameters are arranged alphabetically by field name under the appropriate Tile heading.

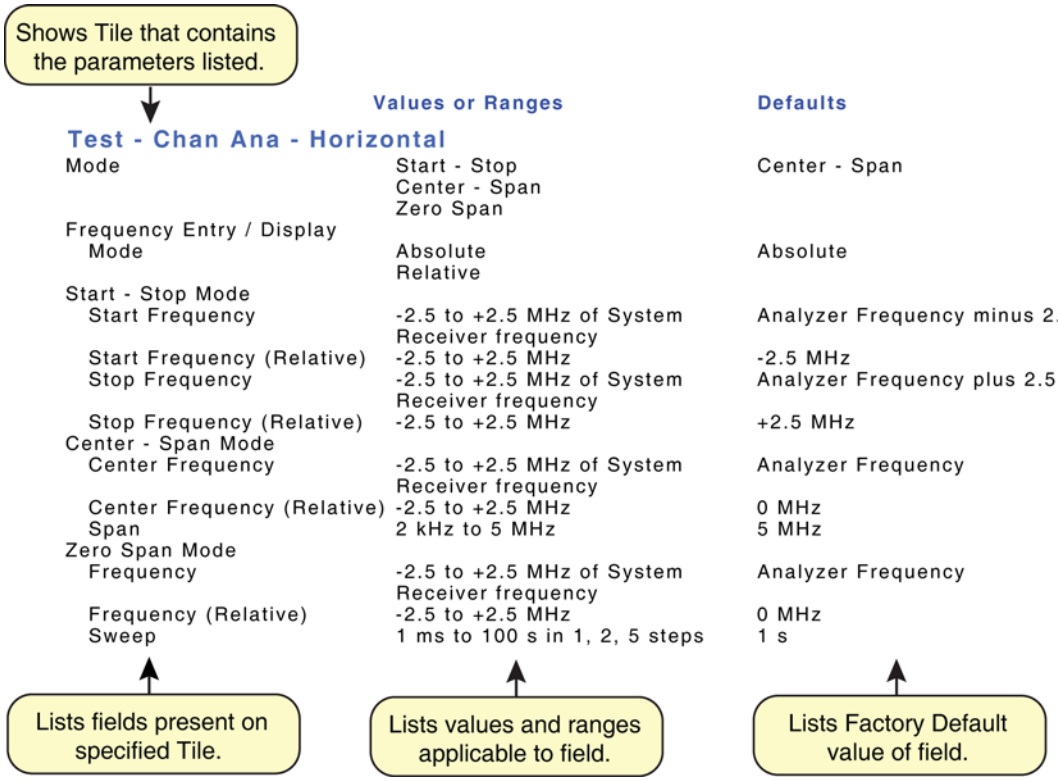

Fig. 2-1 Defaults Command Illustrated Diagram

NOTE

Upper range value of 2.7 GHz applies to the 3902 and 3920 with 2.7 GHz Frequency Range option (390XOPT058) installed. The upper range value for the 3901 and standard 3920 is 1.05 GHz.

Audio Analyzer (:AA) commands are only valid when Audio Analyzer (390XOPT055) is installed in Test Set.

Tracking Generator (:TRKGen) commands are only valid when Tracking Generator Option (390XOPT061) is installed in Test Set.

Harmonious and Spurious (:SPURHARM) commands are only valid when Harmonics and Spurious Test Option (390XOPT060) is installed in Test Set.

	Values or Ranges	Defaults
Config - AF Gen		
Output Port		
(FCTN GEN / DEMOD)	Config - Ports	Config - Ports
Config - AF Limits		
AF Level		
Upper Limit	1.0 mV to 10.0 V	10.0 V
Enable	Disabled Enabled	Disabled
Lower Limit	1.0 mV to 10.0 V	1.0 mV
Enable	Disabled Enabled	Disabled
Distortion		
Upper Limit	0.0 to 100%	5.0%
Enable	Disabled Enabled	Disabled
Hum and Noise		
Upper Limit	-100 to 100 dBr	10.0 dBr
Enable	Disabled Enabled	Disabled
Lower Limit	-100 to 100 dBr	0.0 dBr
Enable	Disabled Enabled	Disabled
SINAD		
Lower Limit	0.0 to 100 dB	26.0 dB
Enable	Disabled Enabled	Disabled
Signal to Noise Ratio		
Upper Limit	-100 to 100 dB	10.0 dB
Enable	Disabled Enabled	Disabled
Lower Limit	-100 to 100 dB	0.0 dB
Enable	Disabled Enabled	Disabled

Config - AF Measurements

	Values or Ranges	Defaults
AF - Source	Test - Analyzers	Test - Analyzers
Audio Level		
Averages	1 to 250	1
Units	V	V
	dBr	
	dBV	
Distortion Measurements		
Averages	1 to 250	10
Type	Average	Average
	Worst Case	
Frequency	1 Hz to 40 kHz	1000 Hz
	Hz	
	kHz	
	MHz	
Band(Width)	11.7 Hz	82.0 Hz
	35.2 Hz	
	58.6 Hz	
	82.0 Hz	
	105.0 Hz	
	128.9 Hz	
	52.3 Hz	
Frequency Measurements		
Averages	1 to 250	1
Hum and Noise Measurements		
Averages	1 to 250	10
Offsets	1.0 mV to 5 V	
Units	mV	V
	V	
Loudspeaker	Config - Ports	Config - Ports
Mic Phantom Power	Config - Ports	Config - Ports
Psoph Filter	Config - Mod Meas	Config - Mod Meas
Signal to Noise Ratio Measurements		
Averages	1 to 250	10
Type	Average	Average
	Worst Case	
SINAD Measurements		
Averages	1 to 250	10
Type	Average	Average
	Worst Case	

	Values or Ranges	Defaults
Config - DTMF		
AF Generator		
Mark TIme	0 to 6,000,000	100
Space TIme	0 to 6,000,000	90
End TIme	0 to 6,000,000	500
Mode	Continuous Single	Single
Mod Generator		
Mark TIme	0 to 6,000,000	100
Space TIme	0 to 6,000,000	90
End TIme	0 to 6,000,000	500
Mode	Continuous Single	Single
Config - Harm and Spur Limits		
Spurious Start Frequency	100 kHz to 2.7 GHz	10 MHz
Spurious Stop Frequency	100 kHz to 2.7 GHz	200 MHz
Spurious Threshold	-65 to 0 dBc	-50 dBc
2nd Harmonic Upper Limit	-70 to 0 dBc	-30 dBc
Enable	Disabled Enabled	Enabled
3rd Harmonic Upper Limit	-70 to 0 dBc	-40 dBc
Enable	Disabled Enabled	Enabled
Config - Mod Gen		
External Modulation Source	Audio 2 Audio 2 600 Ohm Mic	Audio 2
Mic Phantom Power	Config - Ports	Config - Ports

Config - Mod Measurements

	Values or Ranges	Defaults
AM Measurements		
Averages	1 to 250	1
FM Measurements		
Averages	1 to 250	1
Type	Peak RMS	Peak
Distortion Measurements		
Averages	1 to 250	10
Type	Average Worst Case	Average
Frequency	1 Hz to 20 kHz Hz kHz MHz	1 kHz
Band(Width)	11.7 Hz 35.2 Hz 58.6 Hz 82.0 Hz 105.0 Hz 128.9 Hz 152.3 Hz	82.0 Hz
Frequency Measurements		
Averages	1 to 250	1
Hum and Noise Measurements		
Averages	1 to 250	10
Loudspeaker	Config - Ports	Config - Ports
Offsets	Config - Offsets	Config - Offsets
Output Port		
(FCTN GEN / DEMOD)	Config - Ports	Config - Ports
Psoph Filter	CMESS CCITT	CMESS
SINAD Measurements		
Averages	1 to 250	10
Band(Width)	11.7 Hz 35.2 Hz 58.6 Hz 82.0 Hz 105.0 Hz 128.9 Hz 152.3 Hz	82.0 Hz
Type	Average Worst Case	Average

Config - Mod Meas Limits

	Values or Ranges	Defaults
AM Depth		
Upper Limit	0.0 to 100%	99.0%
Enable	Disabled Enabled	Disabled
Lower Limit	0.0 to 100%	0.0%
Enable	Disabled Enabled	Disabled
Distortion		
Upper Limit	0.0 to 100%	5.0%
Enable	Disabled Enabled	Disabled
FM Deviation		
Upper Limit	0 Hz to 100 kHz	100.0 kHz
Enable	Disabled Enabled	Disabled
Lower Limit	0 Hz to 100 kHz	0.0 Hz
Enable	Disabled Enabled	Disabled
FM RMS		
Upper Limit	-100.0 Hz to +100.0 kHz	26.0 kHz
Enable	Disabled Enabled	Disabled
Lower Limit	-100.0 Hz to +100.0 kHz	0.0 kHz
Enable	Disabled Enabled	Disabled
Hum and Noise		
Upper Limit	-100.0 to +100.0 dBr	10.0 dBr
Lower Limit	-100.0 to +100.0 dBr	0.0 dBr
Enable	Disabled Enabled	Disabled
Signal to Noise		
Upper Limit	-100.0 to +100.0 dB	10.0 dB
Lower Limit	-100.0 to +100.0 dB	0.0 dB
Enable	Disabled Enabled	Disabled
SINAD		
Lower Limit	0.0 to 100 dB	26.0 dB
Enable	Disabled Enabled	Disabled

Config - Offsets

RF Generator		
Offset Level	-100.0 to +100.0 dB	0.0 dB
Offset Enable	Off On	Off
RF Analyzer		
Offset Level	-40.0 to +40.0 dB	0.0 dB
Offset Enable	Off On	Off
Duplex Offset		
Offset Level	-999.999999 to +999.99999 MHz	0.0 MHz
Offset Lock	Locked Unlocked	Unlocked

	Values or Ranges	Defaults
Config - Ports (Input / Output)		
Output Port		
(FCTN GEN / DEMOD) Use	Function Generator	Function Generator
	Audio In	
	Audio In Filtered	
	Demod De-emphasis	
	Demod Filtered	
	Demod De-emphasis Filtered	
Loudspeaker	Off	Off
	Audio In	
	Audio In Filtered	
	Demod	
	Demod De-emphasis	
	Demod Filtered	
	Demod De-emphasis Filtered	
Audio In 1 & 2	Do Not Allow Balanced	Do Not Allow Balanced
	Allow Balanced	
PTT Controls RF Out	Config - RF Gen	Config - RF Gen
Mic Phantom Power	Off	Off
	On	
RF Level (uV / dBuV)	PD	PD
	EMF	
Config - RF Measurements		
AutoTune Threshold	-120 to +10 dBm	-100 dBm
Frequency Offset Resolution	1 Hz	1 Hz
	10 Hz	
Freq Offset Measurements		
Averages	1 to 250	10
Type	Average	Average
	Worst Case	
Frequency Increment		
(RF - Manual Mode)	1 Hz to 999 MHz	1 Hz
Power Measurements		
Averages		
T/R Broadband	1 to 250	10
T/R Inband	1 to 250	10
ANT Inband	1 to 250	10
Units		
T/R Broadband	W	W
	dBW	
	dBm	
T/R Inband	W	dBm
	dBW	
	dBm	
	V	
	dBuV	
ANT Inband	W	dBm
	dBW	
	dBm	
	V	
	dBuV	
RF Level (uV / dBuV)	Config - Ports	Config - Ports

	Values or Ranges	Defaults
Config - RF Gen		
Frequency Increment	1 Hz to 999 MHz	1 Hz
Level Increment	0.1 to 100.0 dB	0.1 dB
PTT Controls RF Out	Off On	Off
PTT Polarity Active	Low High	Low
RF Level (uV / dBuV)	Config - Ports	Config - Ports
Config - RF Limits		
Frequency Offset		
Upper Limit	0 Hz to 5 MHz	0 Hz
Enable	Disabled Enabled	Disabled
T/R Broadband Power		
Limits Units	W mW dBW dBm	W
Upper Limit (in W)	0.0 mW to 1 kW	100 uW
Enable	Disabled Enabled	Disabled
Lower Limit (in W)	0.0 mW to 1 kW	10 mW
Enable	Disabled Enabled	Disabled
T/R Inband Power		
Limits Units	uW mW W dBW dBm uV mV V dBuV	dBm
Upper Limit (in dBm)	-140.0 to +70 dBm	0.0 dBm
Enable	Disabled Enabled	Disabled
Lower Limit (in dBm)	-140.0 to +70 dBm	0.0 dBm
Enable	Disabled Enabled	Disabled
ANT Inband Power		
Limits Units	uW mW W dBW dBm uV mV V dBuV	dBm
Upper Limit (in dBm)	-140 to +70 dBm	0.0 dBm
Enable	Disabled Enabled	Disabled
Lower Limit (in dBm)	-140 to +70 dBm	0.0 dBm
Enable	Disabled Enabled	Disabled

Test - Analyzers

	Values or Ranges	Defaults
AF		
Impedance	Hi Z 600 Ohms	Hi Z
Measurement Filter	None PSOPH 300 Hz LP 5 kHz LP 20 kHz LP 0.3-3.4 kHz 0.3-5 kHz 0.3-20 kHz 15 kHz LP 0.3-15 kHz	None
Source	Audio 1 (Hi Unbal) Audio 1 600 Ohm Unbal Audio 2 (Hi Unbal) Audio 2 600 Ohm Unbal 600 Ohm Bal Mic	Audio 1 (Hi Unbal)
Units	V dBr dBV	V
Demod		
Measurement Filter	None PSOPH 300 Hz LP 5 kHz LP 20 kHz LP 0.3-3.4 kHz 0.3-5 kHz 0.3-20 kHz 15 kHz LP 0.3-15 kHz	
Loudspeaker	Config - Ports	Config - Ports
RF		
Autotune Mode	AutoTune Manual	Manual
Start frequency	100 kHz to 2.7 GHz	10 MHz
Enable	Off On	On
Stop frequency	100 kHz to 2.7 GHz	500 MHz
Enable	Off On	On
Frequency (Manual Mode)	100 kHz to 2.7 GHz	150 MHz
Frequency Increment	Config - RF Measurements	Config - RF Measurements
Frequency Measurement Resolution	Config - RF Measurements	Config - RF Measurements
Demodulation	AM FM FM 50 uS FM 75 uS FM 750 uS AM USB AM LSB	FM

	Values or Ranges	Defaults
Test - Analyzers (cont)		
RF (cont)		
IF Bandwidth		
FM	6.25 kHz 10 kHz 12.5 kHz 25 kHz 30 kHz 100 kHz 300 kHz	30 kHz
AM	6.25 kHz 8.33 kHz 10 kHz 12.5 kHz 25 kHz 30 kHz	10 kHz
Input Port	T/R ANT	T/R
Level (Input Atten / AGC)	Auto Manual	Auto
Offset	Config - Offsets	Config - Offsets
Power Measurements		
Measurement Type	Inband Broadband	Inband
Units		
T/R	Config - RF Measurements	Config - RF Measurements
ANT	Config - RF Measurements	Config - RF Measurements
Test - Audio Analyzer		
Trace		
Average	1 to 250	10
Enable	Off On	Off
Peak Hold Enable	Off On	Off
Frequency Range		
Start Frequency	0 to 22,000 Hz	0 Hz
Stop Frequency	2000 to 24,000 Hz	24000 Hz
Marker 1/2		
Enable	Off On	Off
Position	0 to 24000 Hz	0 Hz
Reference Level	-150 to 0.0 dBm	0.0 dBm
Scaling	1 to 20 dBm in 1, 2, 5 steps	20 dBm
Source	Audio Demod	Demod

Test - Channel Analyzer

	Values or Ranges	Defaults
Coupling		
Start - Stop & Center - Span		
RBW	300 Hz, 3 kHz, 60 kHz	
RBW Mode	Auto Manual	Auto
VBW	300 Hz, 1 kHz, 3 kHz, 10 kHz, 30 kHz, None	
VBW Mode	Auto Manual	Auto
Sweep Time	200 ms to 100 s in 1, 2, 5 steps	
Sweep Time Mode	Auto Manual	Auto
Zero Span Mode		
RBW	300 Hz, 3 kHz, 60 kHz	
VBW	300 Hz, 1 kHz, 3 kHz, 10 kHz, 30 kHz, None	
VBW Mode	Auto Manual	Auto
Frequency Display Mode	Absolute Relative	Absolute
Position		
Start - Stop Mode		
Start Frequency	-2.5 to +2.5 MHz of System Receiver frequency	Analyzer Frequency minus 2.5 MHz
Start Frequency (Relative)	-2.5 to +2.5 MHz	-2.5 MHz
Stop Frequency	-2.5 to +2.5 MHz of System Receiver frequency	Analyzer Frequency plus 2.5 MHz
Stop Frequency (Relative)	-2.5 to +2.5 MHz	+2.5 MHz
Center - Span Mode		
Center Frequency	-2.5 to +2.5 MHz of System Receiver frequency	Analyzer Frequency
Center Frequency		
Absolute	-2.5 to +2.5 MHz	150 MHz
Relative	-2.5 to +2.5 MHz	0 MHz
Span	2 kHz to 5 MHz	2 MHz
Zero Span Mode		
Frequency	-2.5 to +2.5 MHz of System Receiver frequency	Analyzer Frequency
Frequency (Relative)	-2.5 to +2.5 MHz	0 MHz
Sweep	1 ms to 100 s in 1, 2, 5 steps	100 ms
Markers		
Start - Stop & Center - Span Modes		
Enable	Enable‘ Enable	Disable
Mode	Unlocked Locked	Unlocked
Mkr1 Position	Between Start and Stop frequencies	Left Hand Edge / Start frequency
Mkr2 Position	Between Start and Stop frequencies	Right Hand Edge / Stop frequency
Zero Span Mode		
Enable	Enable‘ Enable	Disable
Mode	Unlocked Locked	Unlocked
Mkr1 Position	Between 0 and Sweep value	100 ms
Mkr2 Position	Between 0 and Sweep value	100 ms
Ref Level (no Pre-amp)	T/R: -60 to +60 dBm ANT: -100 to +10 dBm when no offset set	-20 dBm

	Values or Ranges	Defaults
Test - Channel Analyzer (cont)		
RF In (Source)	T/R ANT	T/R
Scaling (dB /div)	1, 2, 5, 10	10 dB /div
Span Mode	Start - Stop Center - Span Zero Span	Center - Span
Trace Settings		
Averages	1 to 250	10
Enable	Off On	Off
Peak Hold Enable	Off On	Off
Trigger Mode	Single Repeat	Repeat
Test - Generators		
RF		
Enable	On Off "Use PTT"	On
Port	T/R Gen	T/R
Offset Enable	Config - Offsets	Config - Offsets
Frequency	100 kHz to 2.7 GHz	150 MHz
Increment	Config - RF Gen	Config - RF Gen
Modulation	Off AM FM FM 50 uS FM 75 uS FM 750 uS AM USB AM LSB	FM
Level		
Units	dBm dBuV uV (/mV/V)	dBm
T/R Port - dBm	-130 to -30 dBm	-80 dBm
T/R Port - uV/mV/V PD	0.071 uV to 7.071 mV	
T/R Port - uV/mV/V EMF	0.141 uV to 14.14 mV	
T/R Port - dBuV PD	-23 to +77 dBuV	
T/R Port - dBuV EMF	-17 to +83 dBuV	
GEN Port - dBm	-130 to +10 dBm	
GEN Port - uV/mV/V PD	0.071 uV to 707.1 mV	
GEN Port - uV/mV/V EMF	0.141 uV to 1.414 V	
GEN Port - dBuV PD	-23 to +117 dBuV	
GEN Port - dBuV EMF	-17 to +123 dBuV	
	Exact values above are modified for AM and Offsets	
Increment	Config - RF Gen	Config - RF Gen
Duplex (DX) Offset	Config - Offsets	Config - Offsets
Mod Source 1		
Enable	Off On	On
Frequency	1.0 Hz to 20 kHz	1 kHz
FM Deviation	0 Hz to 150 kHz	2.5 kHz
AM Depth	0.0 to 99%	10%
Mod Source 2		
Enable	Off On	Off
Frequency	1.0 Hz to 20 kHz	300 Hz
FM Deviation	0 Hz to 150 kHz	2.5 kHz
AM Depth	0.0 to 99%	10%

Test - Generators (cont)

	Values or Ranges	Defaults
Mod Source 3		
Enable	Off On	Off
Frequency	1.0 Hz to 20 kHz	3.4 kHz
FM Deviation	0 Hz to 150 kHz	2.5 kHz
AM Depth	0.0 to 99%	10%
Mod Ext Source		
Enable	Off On	Off
Source	Audio 2 Audio 2 600 Ohm Mic	Audio 2 (duplex)
FM Deviation	0 Hz to 150 kHz	2.5 kHz
AM Depth	0.0 to 99%	10%
AF Source 1		
Enable	Off On	On
Frequency - Sine	0.1 Hz to 40 kHz	300 Hz
Frequency - Square	0.1 Hz to 4 kHz	300 Hz
Frequency - Triangle	0.1 Hz to 40 kHz	1 kHz
Frequency - Ramp	0.1 Hz to 40 kHz	1 Hz
Code - DCS	Appendix A	023
Code - DCSINV	Appendix A	023
Sequency - DTMF	0 to 9999999	01234567
Level	1.0 mV to 5 V (RMS)	100 mV
Shape	Sine Square	Sine
AF Source 2		
Enable	Off On	Off
Frequency - Sine	0.1 Hz to 40 kHz	300 Hz
Frequency - Square	0.1 Hz to 4 kHz	300 Hz
Frequency - Triangle	0.1 Hz to 40 kHz	1 kHz
Frequency - Ramp	0.1 Hz to 40 kHz	1 Hz
Code - DCS	Appendix A	023
Code - DCSINV	Appendix A	023
Sequency - DTMF	0 to 9999999	01234567
Level	1.0 mV to 5 V (RMS)	100 mV
Shape	Sine Square	Sine
AF Source 3		
Enable	Off On	Off
Frequency - Sine	0.1 Hz to 40 kHz	300 Hz
Frequency - Square	0.1 Hz to 4 kHz	300 Hz
Frequency - Triangle	0.1 Hz to 40 kHz	1 kHz
Frequency - Ramp	0.1 Hz to 40 kHz	1 Hz
Code - DCS	Appendix A	023
Code - DCSINV	Appendix A	023
Sequency - DTMF	0 to 9999999	01234567
Level	1.0 mV to 5 V (RMS)	100 mV
Shape	Sine Square	Sine

	Values or Ranges	Defaults
Test - Harmonics and Spurious		
Spurious measurements		
Start frequency	100 kHz to 2.7 GHz	10 MHz
Stop frequency	100 kHz to 2.7 GHz	200 MHz
Threshold	-65 to 0 dBc	-50 dBc
Test - Meters		
RF Power		
Measurement Type	Test - Analyzers	Test - Analyzers
T/R Port - Units	Config - RF Ana / Meas	Config - RF Ana / Meas
ANT Port - Units	Config - RF Ana / Meas	Config - RF Ana / Meas
Scale		
T/R Port - BB - W	Auto 1 mW to 1 kW in 1, 2, 5 steps	Auto
T/R Port - BB - dBW	Auto -30 to 30 dB in 10 dB steps	Auto
T/R Port - BB - dBm	Auto 0 to 60 dBm in 10 dB steps	Auto
T/R Port - IB - W	Auto 1 mW to 1 kW in 1, 2, 5 steps	Auto
T/R Port - IB - dBW	Auto -60 to 30 dB in 10 dB steps	Auto
T/R Port - IB - dBm	Auto -30 to 60 dBm in 10 dB steps	Auto
ANT Port - IB - W	Auto 1 uW to 1 W in 1, 2, 5 steps	Auto
ANT Port - IB - dBW	Auto -120 to 0 dB in 10 dB steps	Auto
ANT Port - IB - dBm	Auto -90 to 30 dBm in 10 dB steps	Auto
ANT Port - IB - V	Auto 1 to 20 V in 1, 2, 5 steps	Auto
ANT Port - IB - dBuV	Auto 20 to 140 dBuV in 10 dB steps	Auto
Peak Hold Enable	Off On	Off
RF Offset Frequency		
Scale	Auto 100 Hz to 200 kHz in 1, 2, 5 steps	Auto
Peak Hold Enable	Off On	Off

Test - Meters (cont)

	Values or Ranges	Defaults
AF Level		
Scale - Bal Input	Auto -10, 0, 10, 20 dBm	Auto
Scale - Unbal Input	Auto 20 mV to 10 V in 1, 2, 5 steps	Auto
Peak Hold Enable	Off On	Off
Demod		
FM		
Scale	Auto 1 to 200 kHz in 1, 2, 5 steps	Auto
Peak Hold Enable	Off On	Off
AM		
Scale	Auto 10, 20, 50, 100%	Auto
Peak Hold Enable	Off On	Off
Demod Noise		
Distortion		
Scale	Auto 1 to 100% in 1, 2, 5 steps	Auto
Peak Hold Enable	Off On	Off
Hum and Noise		
Scale	Auto 1 to 100% in 1, 2, 5 steps	Auto
Peak Hold Enable	Off On	Off
SINAD		
Scale	Auto 90, 80, 50, 0 dB	Auto
Peak Hold Enable	Off On	Off
Signal to Noise Ratio		
Scale	Auto -100 to 100 dBr in 1, 2, 5 steps	Auto
Peak Hold Enable	Off On	Off
AF Noise		
Distortion		
Scale	Auto 1 to 100% in 1, 2, 5 steps	Auto
Peak Hold Enable	Off On	Off
Hum and Noise		
Scale	Auto 1 to 100% in 1, 2, 5 steps	Auto
Peak Hold Enable	Off On	Off
SINAD		
Scale	Auto 90, 80, 50, 0 dB	Auto
Peak Hold Enable	Off On	Off
Signal to Noise Ratio		
Scale	Auto -100 to 100 dBr in 1, 2, 5 steps	Auto
Peak Hold Enable	Off On	Off

Test - Scope

	Values or Ranges	Defaults
Coupling Trace A / B	AC DC GND	AC
Filter	No Reject Noise Reject HF Reject	No Reject
Markers		
Enable	Enable Disable	Disable
Mode	Unlocked Locked	Unlocked
Position 1	0 to RHS of screen as defined by time/div and lock mode	0 ms
Position 2	0 to RHS of screen as defined by time/div and lock mode	0 ms
Position	-8.00 to +8.00 divisions	0.00/div
Time / div	1 us to 1 s in 1, 2, 5 steps	1 ms
Trace A & B		
Accumulate	Off On	Off
Coupling	AC DC GND	AC
Source	OFF Channel 1 Channel 2 Audio Audio Filtered Demod Demod Filtered	Off
Trigger Settings		
Edge	Rising Falling	Rising
Level	+/- 8 times vertical /div setting	0.0 mV
Source	Trace A Trace B Ext	Trace A
Sweep Mode	Single Repeat	Repeat
Trigger Mode	Auto Normal	Auto
Vertical /div		
(Sources not Demod)	2 mV to 20 V in 1, 2, 5 steps	1 V
(Source = Demod AM)	5, 10, 20, 50%	10%
(Source = Demod FM)	500 Hz to 50 kHz in 1, 2, 5 steps	2 kHz

Test - Spectrum Analyzer

	Values or Ranges	Defaults
Coupling		
Start - Stop & Center - Span		
RBW	300 Hz, 3 kHz, 30 kHz, 60 kHz, 300 kHz, 6 MHz	
RBW Mode	Auto Manual	Auto
VBW	300 Hz, 1 kHz, 3 kHz, 10 kHz, 30 kHz, 100 kHz, 300 kHz, 1 MHz, None	
VBW Mode	Auto Manual	Auto
Sweep Time	200 ms to 100 s in 1, 2, 5 steps	
Sweep Time Mode	Auto Manual	Auto
Zero Span Mode		
RBW	300 Hz, 3 kHz, 30 kHz, 60 kHz,	
VBW	300 Hz, 1 kHz, 3 kHz, 10 kHz, 30 kHz, 100 kHz, 300 kHz, 1 MHz, None	
VBW Enable	Auto Manual	Auto
Frequency Ranges		
Start - Stop Mode		
Start	100 kHz to 2.7 GHz	Analyzer Frequency minus 5 MHz
Stop	100 kHz to 2.7 GHz	Analyzer Frequency plus 5 MHz
Center - Span Mode		
Center Freq	100 kHz to 2.7 GHz	Analyzer Frequency
Span	2 kHz to 2.7 GHz	2 MHz
Zero Span Mode		
Frequency	100 kHz to 2.7 GHz	Analyzer Frequency
Sweep	50 ms to 100 s in 1, 2, 5 steps	100 ms
Markers		
Start - Stop & Center - Span Modes		
Enable	Enable Disable	Disable
Mode	Unlocked Locked	Unlocked
Mkr1 Position	Between Start and Stop Freq	Left Hand Edge / Start Freq
Mkr2 Position	Between Start and Stop Freq	Right Hand Edge / Stop Freq
Zero Span Mode		
Enable	Enable Disable	Disable
Mode	Unlocked Locked	Unlocked
Mkr1 Position	Between 0 and Sweep value	100 ms
Mkr2 Position	Between 0 and Sweep value	100 ms
Measurement Mode	Single Repeat	Repeat
Ref Level	T/R: -60 to +60 dBm ANT: -100 to +10 dBm when no offset set	-20 dBm
RF In (Source)	T/R ANT	T/R
Scaling (dB /div)	1, 2, 5, 10	10 dB /div
Span Mode	Start - Stop Center - Span Zero Span	Center - Span

	Values or Ranges	Defaults
Test - Spectrum Analyzer (cont)		
Trace		
Averages	1 to 250	10
Enable	Off On	Off
Mode	Normal Reference	Normal
Peak Hold Enable	Off On	Off
Tracking Generator		
Enable	Off On	Off
USB to Serial		
Open	0 to 15	
Close	0 to 15	
Baudrate	B300 | B1200 | B2400 | B4800 | B9600 | B19200 | B38400 | B57600 | B115200 | B230400	B19200
Character Size	CS7 CS8	CS8
Parity	None Even Odd Space	None
Hardware Flow Control	Off On	Off
Software Flow Control	Off On	Off
Timeout Setting	Sets timeout value in µs	10000000 µs
Termination Character	Sets termination character	13

Chapter 3

Analog Duplex Quick Reference Guide

Introduction

This chapter is the Quick Reference Guide for Analog Duplex remote commands. The commands in each of these listings are arranged alphabetically within the hierarchy. The figure below describes the Remote Command Quick Reference Guide format.

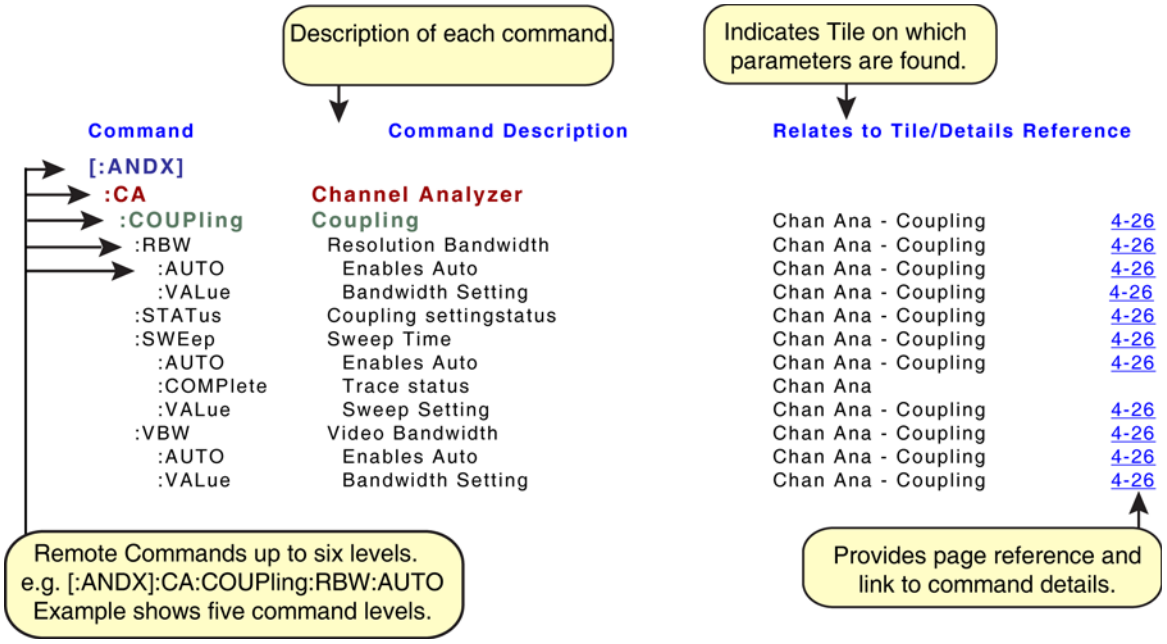

Fig. 3-1 Quick Reference Guide Illustrated Diagram

NOTE

Audio Analyzer (:AA) commands are only valid when Audio Analyzer (390XOPT055) is installed in Test Set.

Tracking Generator (:TRKGen) commands are only valid when Tracking Generator Option (390XOPT061) is installed in Test Set.

Harmonious and Spurious (:SPURHARM) commands are only valid when Harmonics and Spurious Test Option (390XOPT060) is installed in Test Set.

Command	Command Description	Relates to Tile/Details Reference	
[:ANDX]			
:AA	**Audio Analyzer**		
:AVG	**Averages**		
:CLEar	Clears Averages readings	Audio Analyzer	4-32
:ENABle	Enables Average readings	Audio Analyzer	4-32
:MKR*n*	Marker *n* (where *n* = Marker 1 or 2)	Audio Analyzer	4-32
:LEVel?	Returns Level at Marker position (dBm)	Audio Analyzer	4-32
:VALue	Sets number of Averages	Audio Analyzer	4-32
:LIVE	**Returns Live Trace**		
:ENABle	Enables Live Trace	Audio Analyzer	4-32
:MKR*n*	Marker *n* (where *n* = Marker 1 or 2)	Audio Analyzer	4-32
:LEVel?	Returns Level at Marker position (dBm)	Audio Analyzer	4-32
:HORizontal	**Horizontal**		
:FREQuency	Start-Stop/Center-Span Frequencies		
:STARt	Start Frequency	Audio Analyzer	4-32
:STOP	Stop Frequency	Audio Analyzer	4-32
:MKR*n*	**Marker *n*** (where *n* = Marker 1 or 2)		
:ENABle	Enables Marker	Audio Analyzer	4-32
:POSition	Marker Position	Audio Analyzer	4-32
:PEAK	**Returns Peak Trace**		
:CLEar	Clears Peak readings	Audio Analyzer	4-32
:ENABle	Enables Peak readings	Audio Analyzer	4-32
:MKR*n*	Marker *n* (where *n* = Marker 1 or 2)	Audio Analyzer	4-32
:LEVel?	Returns Level at Marker position (dBm)	Audio Analyzer	4-32
:SOURce	**Selects Trace Source**		
:VERTical	**Vertical**		
:SCAle	Vertical Scale (Top of Screen)	Audio Analyzer	4-32
:TOS	Top of Scale (v/div)	Audio Analyzer	4-32
:ABORt	**Abort**		
:CA	**Channel Analyzer Sweeps**		
	Stops Channel Analyzer Sweeps		
:SA	**Spectrum Analyzer Sweeps**		
	Stops Spectrum Analyzer Sweeps		

Command	Command Description	Relates to Tile/Details	Reference
[:ANDX]			
:AF	AF Settings		
:ANALyzer	Analyzer		
:DISTortion	Distortion Measurement	Meters Tile	4-44
:HOLD	Peak Hold Measurement	Meters Tile	4-44
:ENABle	Enables Peak Hold Measurement	Meters Tile	4-44
:RESet	Resets Peak Hold Measurement	Meters Tile	4-44
:HN	Hum and Noise	Meters Tile	4-44
:HOLD	Peak Hold Measurement	Meters Tile	4-44
:ENABle	Enables Peak Hold Measurement	Meters Tile	4-44
:RESet	Resets Peak Hold Measurement	Meters Tile	4-44
:LEVel	Level Measurement	Meters Tile	4-44
:HOLD	Peak Hold Measurement	Meters Tile	4-44
:ENABle	Enables Peak Hold Measurement	Meters Tile	4-44
:RESet	Resets Peak Hold Measurement	Meters Tile	4-44
:MFILter	Post Detection Filter	Analyzers Tile	4-14
:NTYPe	Noise Measurement Type	Analyzers Tile	4-14
:SINad	SINAD Measurement	Meters Tile	4-44
:HOLD	Peak Hold Measurement	Meters Tile	4-44
:ENABle	Enables Peak Hold Measurement	Meters Tile	4-44
:RESet	Resets Peak Hold Measurement	Meters Tile	4-44
:SEARch			
:AVERage	Sets Averaging	Sensitivity Search Tile	
:CALibration			
:ENABle	Starts/Stops Sinad Search Calibration	Sensitivity Search Tile	
:DURation	Sets time period for Sinad Search run	Sensitivity Search Tile	
:ENABle	Starts Sinad Search	Sensitivity Search Tile	
:FILe	Names data file	Sensitivity Search Tile	
:INTerval	Sets reading rate	Sensitivity Search Tile	
:LEVel	Sets Sinad Search level	Sensitivity Search Tile	
:SNR	Signal to Noise Ratio	Meters Tile	4-44
:HOLD	Peak Hold Measurement	Meters Tile	4-44
:ENABle	Enables Peak Hold Measurement	Meters Tile	4-44
:RESet	Resets Peak Hold Measurement	Meters Tile	4-44

Command	Command Description	Relates to Tile/Details Reference	
[:ANDX]			
:AF	AF Settings (cont)		
:GENerator	Generator	Generators Tile	4-38
:ESOurce	External Modulation Source	Generators Tile	4-38
:AM	AM	Generators Tile	4-38
:ENABle	Enables External Source	Generators Tile	4-38
:FM	FM	Generators Tile	4-38
:SOURce[1]	Source 1	Generators Tile	4-38
:ENABle	Enables Source	Generators Tile	4-38
:END	Dead time between DTMF tones	Generators Tile	4-38
:LEVel	Source Level	Generators Tile	4-38
:MARK	Length of time DTMF burst is ON	Generators Tile	4-38
:SEQuence	DTMF sequence	Generators Tile	4-38
:SEQMode	DTMF sequence mode of operation	Generators Tile	4-38
:SHAPe	Source Shape	Generators Tile	4-38
:SINE	Sine Wave	Generators Tile	4-38
:FREQuency	Frequency	Generators Tile	4-38
:SPACe	Dead time between DTMFtone sequences when Continuous Sequence mode is selected	Generators Tile	4-38
:SQUare	Square Wave	Generators Tile	4-38
:FREQuency	Frequency	Generators Tile	4-38
:SOURce2	Source 2	Generators Tile	4-38
:ENABle	Enables Source	Generators Tile	4-38
:END	Dead time between DTMF tones	Generators Tile	4-38
:LEVel	Source Level	Generators Tile	4-38
:MARK	Length of time DTMF burst is ON	Generators Tile	4-38
:SEQuence	DTMF sequence	Generators Tile	4-38
:SEQMode	DTMF sequence mode of operation	Generators Tile	4-38
:SHAPe	Source Shape	Generators Tile	4-38
:SINE	Sine Wave	Generators Tile	4-38
:FREQuency	Frequency	Generators Tile	4-38
:SPACe	Dead time between DTMFtone sequences when Continuous Sequence mode is selected	Generators Tile	4-38
:SQUare	Square Wave	Generators Tile	4-38
:FREQuency	Frequency	Generators Tile	4-38
:SOURce3	Source 3	Generators Tile	4-38
:ENABle	Enables Source	Generators Tile	4-38
:END	Dead time between DTMF tones	Generators Tile	4-38
:LEVel	Source Level	Generators Tile	4-38
:MARK	Length of time DTMF burst is ON	Generators Tile	4-38
:SEQuence	DTMF sequence	Generators Tile	4-38
:SEQMode	DTMF sequence mode of operation	Generators Tile	4-38
:SHAPe	Source Shape	Generators Tile	4-38
:SINE	Sine Wave	Generators Tile	4-38
:FREQuency	Frequency	Generators Tile	4-38
:SPACe	Dead time between DTMFtone sequences when Continuous Sequence mode is selected	Generators Tile	4-38
:SQUare	Square Wave	Generators Tile	4-38
:FREQuency	Frequency	Generators Tile	4-38

Command	Command Description	Relates to Tile/Details Reference	
[:ANDX]			
:ASsign	Assign Key		
:SQUelch	Squelch Control		
	Sets Squelch level		
:VOLume	Volume Control		
	Sets volume level		
:CALibrate	Calibration		
:USER			
:RUN	Starts User Calibration	UTILS - Operational Status Tile	
:SETPoint	Sets Temperature Change Threshold	UTILS - Operational Status Tile	
:STATus?	Returns calibration status	UTILS - Operational Status Tile	
:UNCAL?	Indicates if calibration needs done	UTILS - Operational Status Tile	
:CA	Channel Analyzer		
:COUPling	Coupling	Channel Analyzer	4-34
:RBW	Resolution Bandwidth	Channel Analyzer	4-34
:AUTO	Enables Auto	Channel Analyzer	4-34
:VALue	Bandwidth Setting	Channel Analyzer	4-34
:STATus?	Returns Coupling setting status	Channel Analyzer	4-34
:SWEep	Sweep Time	Channel Analyzer	4-34
:AUTO	Enables Auto	Channel Analyzer	4-34
:COMPlete?	Returns Trace status	Channel Analyzer	4-34
:VALue	Sweep Setting	Channel Analyzer	4-34
:VBW	Video Bandwidth	Channel Analyzer	4-34
:AUTO	Enables Auto	Channel Analyzer	4-34
:VALue	Bandwidth Setting	Channel Analyzer	4-34
:HORizontal	Horizontal		
:FREQuency	Start-Stop / Center Span Frequencies	Channel Analyzer	4-34
:CENTer	Center Frequency	Channel Analyzer	4-34
:RELative	Relative to Analyzer	Channel Analyzer	4-34
:SPAN	Span Frequency	Channel Analyzer	4-34
:STARt	Start Frequency	Channel Analyzer	4-34
:RELative	Relative to Analyzer	Channel Analyzer	4-34
:STOP	Stop Frequency	Channel Analyzer	4-34
:RELative	Relative to Analyzer	Channel Analyzer	4-34
:MODE	Locked / Unlocked	Channel Analyzer	4-34
:SPAN	Sets Span	Channel Analyzer	4-34
:FULL	To Full Span	Channel Analyzer	4-34
:ZERO	Zero Span Values	Channel Analyzer	4-34
:CENTer	Center Frequency	Channel Analyzer	4-34
:RELative	Relative to Analyzer	Channel Analyzer	4-34
:SWEep	Sweep Time	Channel Analyzer	4-34

Command	Command Description	Relates to Tile/Details Reference	
[:ANDX]			
:CA	**Channel Analyzer (cont)**		
:MARKer	**Markers**		
:DELTa	Marker Delta	Channel Analyzer	4-34
:LEVel?	Returns Level between Mkr1 and Mkr2 level values)	Channel Analyzer	4-34
:POSition?	Returns distance between markers	Channel Analyzer	4-34
:MKR*n*	Marker where *n* = Marker 1 or 2	Channel Analyzer	4-34
:ENABle	Enables Marker	Channel Analyzer	4-34
:LEFT	Moves Marker left to next peak	Channel Analyzer	4-34
:LEVel?	Returns Level at Marker position	Channel Analyzer	4-34
:MINimum	Moves Marker to minimum point	Channel Analyzer	4-34
:PEAK	Moves Marker to peak point	Channel Analyzer	4-34
:POSition	Marker Position	Channel Analyzer	4-34
:RIGHt	Moves Marker right to next peak	Channel Analyzer	4-34
:SCF	Sets Center Freq. to Marker Position	Channel Analyzer	4-34
:SREF	Sets Ref Level to Marker Position Level	Channel Analyzer	4-34
:MODE	Locked / Unlocked	Channel Analyzer	4-34
:PAVG?	Returns average of readings between Mkr1 and Mkr2 data	Channel Analyzer	4-34
:PLIVe?	Returns average of Live readings between Mkr1 and Mkr2 data	Channel Analyzer	4-34
:PPEAK?	Returns average of Peak readings between Mkr1 and Mkr2 data	Channel Analyzer	4-34
:PPKAV?	Returns average of Peak average readings between Mkr1 and Mkr2 data	Channel Analyzer	4-34
:SSS	Markers set Start - Stop Span	Channel Analyzer	4-34
:SVERtical	Markers set (Nearest) Vertical Range	Channel Analyzer	4-34
:TRACe	**Trace**	Channel Analyzer	4-34
:AVG?	Returns Average trace data	Channel Analyzer	4-34
:AVERage	Averages	Channel Analyzer	4-34
:CURRent?	Returns count of Averages Progress	Channel Analyzer	4-34
:ENABle	Enables Average readings	Channel Analyzer	4-34
:VALue	Required number of Averages	Channel Analyzer	4-34
:LIVE?	Returns Live Trace	Channel Analyzer	4-34
:MAXimum	Enables Maximum Hold	Channel Analyzer	4-34
:PEAK?	Returns Peak Trace	Channel Analyzer	4-34
:PKAV?	Returns Peak Average Trace	Channel Analyzer	4-34
:TRIGger	**Trigger**		
:MODE	Gate Mode	Channel Analyzer	4-34
:VERTical	**Vertical**		
:LEVel	Level (Top of Screen)	Channel Analyzer	4-34
:VDIV	Vertical / div	Channel Analyzer	4-34

Command	Command Description	Relates to Tile/Details Reference	
[:ANDX]			
:CONFigure	Configure		
:AF	AF	AF Measurements Config	4-3
:ANALyzer	Analyzer / Measure	AF Measurements Config	4-3
:DISTortion	Distortion	AF Measurements Config	4-3
:AVERage	Number of Averages	AF Measurements Config	4-3
:FREQuency	Modulation frequency	AF Measurements Config	4-3
:MTYPe	Modulation type	AF Measurements Config	4-3
:WIDTh	Frequency bandwidth	AF Measurements Config	4-3
:FREQuency	Frequency	AF Measurements Config	4-3
:AVERage	Number of Averages	AF Measurements Config	4-3
:HN	Hum and Noise	AF Measurements Config	4-3
:AVERage	Number of Averages	AF Measurements Config	4-3
:OFFset	Sets Offset value	Remote Programming only	
:REFerence	Locks reference to current meter reading	AF Measurements Config	4-3
:LEVel	Level	AF Measurements Config	4-3
:AUDio	Audio Level	AF Measurements Config	4-3
:UNIts	Unit of measure	AF Measurements Config	4-3
:AVERage	Number of Averages	AF Measurements Config	4-3
:BALanced	Balanced Level	AF Measurements Config	4-3
:UNIts	Unit of measure	AF Measurements Config	4-3
:SINad	SINAD Measurement	AF Measurements Config	4-3
:AVERage	Number of Averages	AF Measurements Config	4-3
:MTYPe	Measurement type	AF Measurements Config	4-3
:SNR	Signal to Noise Ratio	AF Measurements Config	4-3
:AVERage	Returns Number of Averages	AF Measurements Config	4-3
:MODE	Switches SNR meter to Normal or Hum and Noise mode	AF Measurements Config	4-3
:SOURce	Source	AF Measurements Config	4-3
:AUD1	Audio 1	AF Measurements Config	4-3
:LOAD	Audio 1 load	AF Measurements Config	4-3
:AUD2	Audio 2	AF Measurements Config	4-3
:LOAD	Audio 2 load	AF Measurements Config	4-3
:ENABle	Enables selected Source	AF Measurements Config	4-3
:LOAD	Source load	AF Measurements Config	4-3
:MFILter	Sets weight of psoph filter	AF Measurements Config	4-3
:MFILter	Measurement Filter	AF Measurements Config	4-3
	Type of Measurement Filter	AF Measurements Config	4-3

Command	Command Description	Relates to Tile/Details Reference	
[:ANDX]			
:CONFigure	Configure (cont)		
:MOD	Modulation	Mod Measurements Config	4-6
:ANALyzer	Analyzer / Measure	Mod Measurements Config	4-6
:AM	AM Depth Measurement	Mod Measurements Config	4-6
:AVERage	Number of Averages	Mod Measurements Config	4-6
:DISTortion	Distortion Measurement	Mod Measurements Config	4-6
:AVERage	Number of Averages	Mod Measurements Config	4-6
:FREQuency	Notch Filter frequency	Mod Measurements Config	4-6
:MTYPe	Measurement type	Mod Measurements Config	4-6
:WIDTh	Notch Filter bandwidth	Mod Measurements Config	4-6
:FM	FM Deviation Measurement	Mod Measurements Config	4-6
:AVERage	Number of Averages	Mod Measurements Config	4-6
:MTYPe	Measurement type	Mod Measurements Config	4-6
:FREQuency	Frequency	Mod Measurements Config	4-6
:AVERage	Number of Average	Mod Measurements Config	4-6
:HN	Hum and Noise	Mod Measurements Config	4-6
:AVERage	Number of Averages	Mod Measurements Config	4-6
:REFerence	Locks reference to current meter reading	Mod Measurements Config	4-6
:SINad	SINAD Measurement	Mod Measurements Config	4-6
:AVERage	Number of Averages	Mod Measurements Config	4-6
:MTYPe	Measurement type	Mod Measurements Config	4-6
:SNR	Signal to Noise Ratio	Mod Measurements Config	4-6
:AVERage	Returns Number of Averages	Mod Measurements Config	4-6
:MODE	Hum and Noise mode	Switches SNR meter to Normal or Mod Measurements Config	4-6
:GENerator	Generator	Mod Gen Config	4-5
:ESOurce	External Modulation Source	Mod Gen Config	4-5
:MFILter	Sets weight of psoph filter	Mod Measurements Config	4-6
:OFFSet	Offsets	Offsets Config	4-9
:ANALyzer	RF Analyzer	Offsets Config	4-9
:ENABle	Enables Offset	Offsets Config	4-9
:VALue	Offset Value	Offsets Config	4-9
:DUPLex	RF Analyzer	Offsets Config	4-9
:LOCK	Lock/Unlock	Offsets Config	4-9
:VALue	Offset Value	Offsets Config	4-9
:GENerator	RF Generator	Offsets Config	4-9
:ENABle	Enables Offset	Offsets Config	4-9
:VALue	Offset Value	Offsets Config	4-9
:PORT	Port	Ports Config (Input/Output)	4-9
:AUDio	Audio	Ports Config (Input/Output)	4-9
:BALanced	Allow balanced	Ports Config (Input/Output)	4-9
:FGEN	Fctn Gen / Demod Out selection	Ports Config (Input/Output)	4-9
:LOUDspeaker	Loudspeaker	Ports Config (Input/Output)	4-9
:MPPower	Microphone Phantom Power	Ports Config (Input/Output)	4-9

Command	Command Description	Relates to Tile/Details Reference	
[:ANDX]			
:CONFigure	Configure (cont)		
:RF	RF Settings		
:ANALyzer	Analyzer		
:AIPower	ANT Inband Power		
:AVERage	Number of Averages	RF Measurements Config	4-13
:LOWer	Lower Limit	RF Limits Config	4-10
:ENABle	Enables set limit	RF Limits Config	4-10
:VALue	Lower Limit value	RF Limits Config	4-10
:UNIts	Unit of measurement	RF Measurements Config	4-13
:UPPer	Upper Limit	RF Limits Config	4-10
:ENABle	Enables set limit	RF Limits Config	4-10
:VALue	Upper limit value	RF Limits Config	4-10
:FINCrement	Frequency Increment	RF Measurements Config	4-13
:FOFFset	Frequency Offset	RF Measurements Config	4-13
:MTYPe	Measurement type	RF Measurements Config	4-13
:FRESolution	Frequency Resolution	RF Measurements Config	4-13
:THREsh	Sets AutoTune Threshold value	RF Measurements Config	4-13
:TRBPower	T/R BroadBand Power	RF Measurements Config	4-13
:AVERage	Number of Averages	RF Measurements Config	4-13
:LOWer	Lower Limit	RF Limits Config	4-10
:ENABle	Enables set limit	RF Limits Config	4-10
:VALue	Lower Limit value	RF Limits Config	4-10
:UNIts	Unit of measurement	RF Measurements Config	4-13
:UPPer	Upper Limit	RF Limits Config	4-10
:ENABle	Enables set limit	RF Limits Config	4-10
:VALue	Upper limit value	RF Limits Config	4-10
:TRIPower	T/R Inband Power	RF Measurements Config	4-13
:AVERage	Number of Averages	RF Measurements Config	4-13
:LOWer	Lower Limit	RF Limits Config	4-10
:ENABle	Enables set limit	RF Limits Config	4-10
:VALue	Lower Limit value	RF Limits Config	4-10
:UNIts	Unit of measurement	RF Measurements Config	4-13
:UPPer	Upper Limit	RF Limits Config	4-10
:ENABle	Enables set limit	RF Limits Config	4-10
:VALue	Upper limit value	RF Limits Config	4-10
:GENerator	Generator	RF Gen Config	4-9
:FINCrement	Frequency Increment	RF Gen Config	4-9
:LINCrement	Level Increment	RF Gen Config	4-9
:PTTOut	Push to Talk Out Control (MIC)	RF Gen Config	4-9
:PTTControl	Push to Talk Control (RF Out)	RF Gen Config	4-9
:LTYPe	Level Type	RF Measurements Config	4-13

Command	Command Description	Relates to Tile/Details	Reference
[:ANDX]			
:FETCh	Fetch		
:AA	Audio Analyzer		
:AVG	Average Trace		
:TRAce?	Returns Average trace data when Average trace has been enabled	Active Tile	
:CAPture	Captures Trace		
:TRAce?	Returns Captured Trace data when a Trace has been captured	Active Tile	
:LIVe	Live Trace		
:TRAce?	Returns Live trace data when Live trace has been enabled	Active Tile	
:PEAk	Peak Trace		
:TRAce?	Returns Peak trace data when Peak trace has been enabled	Active Tile	
:AF	AF Measurements		
:ANALyzer	Analyzer	Analyzers Tile	4-14
:DISTortion?	Distortion Measurement	Analyzers Tile	4-14
:DISTortion	Distortion Measurement	Analyzers Tile	4-14
:HOLD?	Peak Hold Measurement	Analyzers Tile	4-14
:FREQuency?	Frequency	Analyzers Tile	4-14
:HN?	Hum and Noise Measurement	Analyzers Tile	4-14
:HN	Hum and Noise Measurement	Analyzers Tile	4-14
:HOLD?	Peak Hold Measurement	Analyzers Tile	4-14
:LEVel?	Level	Analyzers Tile	4-14
:LEVel	Level	Analyzers Tile	4-14
:HOLD?	Peak Hold Measurement	Analyzers Tile	4-14
:SINad?	SINAD Measurement	Analyzers Tile	4-14
:SINad	SINAD Measurement	Analyzers Tile	4-14
:HOLD?	Peak Hold Measurement	Analyzers Tile	4-14
:SNR?	Signal to Noise Ratio Measurement	Analyzers Tile	4-14
:SNR	Signal to Noise Ratio Measurement	Analyzers Tile	4-14
:HOLD?	Peak Hold Measurement	Analyzers Tile	4-14
:MOD	Modulation		
:ANALyzer	Analyzer	Analyzers Tile	4-14
:AM?	AM Depth Measurement	Analyzers Tile	4-14
:AM	AM Depth Measurement	Analyzers Tile	4-14
:HOLD?	Peak Hold Measurement	Analyzers Tile	4-14
:DISTortion?	Distortion Measurement	Analyzers Tile	4-14
:DISTortion	Distortion Measurement	Analyzers Tile	4-14
:HOLD?	Peak Hold Measurement	Analyzers Tile	4-14
:FM?	FM Deviation Measurement	Analyzers Tile	4-14
:FM	FM Deviation Measurement	Analyzers Tile	4-14
:HOLD?	Peak Hold Measurement	Analyzers Tile	4-14
:FREQuency?	Frequency Measurement	Analyzers Tile	4-14
:HN?	Hum and Noise Measurement	Analyzers Tile	4-14
:HN	Hum and Noise Measurement	Analyzers Tile	4-14
:HOLD?	Peak Hold Measurement	Analyzers Tile	4-14
:SINad?	SINAD Measurement	Analyzers Tile	4-14
:SINad	SINAD Measurement	Analyzers Tile	4-14
:HOLD?	Peak Hold Measurement	Analyzers Tile	4-14
:SNR?	Signal to Noise Ratio Measurement	Analyzers Tile	4-14
:SNR	Signal to Noise Ratio Measurement	Analyzers Tile	4-14
:HOLD?	Peak Hold Measurement	Analyzers Tile	4-14

Command	Command Description	Relates to Tile/Details Reference	
[:ANDX]			
:FETCh	Fetch (cont)		
:RF	RF Measurements		
:ALARM	Returns overload status	Active Tile when overload occurs	
:GEN	Returns Generator overload status	Active Tile when overload occurs	
:REC	Returns Receiver overload status	Active Tile when overload occurs	
:ANALyzer	Analyzer	Analyzers Tile	4-14
:AIPower?	ANT Inband Power Measurement	Analyzers Tile	4-14
:AIPower	ANT Inband Power Measurement	Analyzers Tile	4-14
:HOLD?	Peak Hold Measurement	Analyzers Tile	4-14
:FOFFset?	Frequency Offset Measurement	Analyzers Tile	4-14
:FOFFset	Frequency Offset Measurement	Analyzers Tile	4-14
:HOLD?	Peak Hold Measurement	Analyzers Tile	4-14
:FREQuency?	Frequency Measurement	Analyzers Tile	4-14
:TRBPower?	T/R BroadBand Power Measurement	Analyzers Tile	4-14
:TRBPower	T/R BroadBand Power Measurement	Analyzers Tile	4-14
:HOLD?	Peak Hold Measurement	Analyzers Tile	4-14
:TRIPower?	T/R Inband Power Measurement	Analyzers Tile	4-14
:TRIPower	T/R Inband Power Measurement	Analyzers Tile	4-14
:HOLD?	Peak Hold Measurement	Analyzers Tile	4-14
:INITiate	Initiate		
:CONTinuous	Continuous (Repeat)		
:CA	Channel Analyzer Sweep	Channel Analyzer	4-37
:SA	Spectrum Analyzer Sweep	Spectrum Analyzer	4-49
:SCOPe	Scope Measurements	Scope	4-47
:IMMediate	Immediate (Single)		
:CA	Channel Analyzer Sweep	Channel Analyzer	4-37
:SA	Spectrum Analyzer Sweep	Spectrum Analyzer	4-49
:SCOPe	Scope Measurements	Scope	4-47
:LIMits	Limits		
:AF	AF Measurements		
:DISTortion	Distortion Measurement	AF Limits Config Tile	4-2
:UPPer	Upper Limit	AF Limits Config Tile	4-2
:ENABle	Enables Upper limit	AF Limits Config Tile	4-2
:VALue	Sets Upper limit value	AF Limits Config Tile	4-2
:HN	Hum and Noise	AF Limits Config Tile	4-2
:LOWer	Lower Limit	AF Limits Config Tile	4-2
:ENABle	Enables Lower limit	AF Limits Config Tile	4-2
:VALue	Sets Lower limit value	AF Limits Config Tile	4-2
:UPPer	Upper Limit	AF Limits Config Tile	4-2
:ENABle	Enables Upper limit	AF Limits Config Tile	4-2
:VALue	Sets Upper limit value	AF Limits Config Tile	4-2
:LEVel	Level	AF Limits Config Tile	4-2
:LOWer	Lower Limit	AF Limits Config Tile	4-2
:ENABle	Enables Lower limit	AF Limits Config Tile	4-2
:VALue	Sets Lower limit value	AF Limits Config Tile	4-2
:UPPer	Upper Limit	AF Limits Config Tile	4-2
:ENABle	Enables Upper limit	AF Limits Config Tile	4-2
:VALue	Sets Upper limit value	AF Limits Config Tile	4-2
:SINad	SINAD Measurement	AF Limits Config Tile	4-2
:LOWer	Lower Limit	AF Limits Config Tile	4-2
:ENABle	Enables Lower limit	AF Limits Config Tile	4-2
:VALue	Sets Lower limit value	AF Limits Config Tile	4-2

Command	Command Description	Relates to Tile/Details Reference	
[:ANDX]			
:LIMits	Limits (cont)		
:AF	AF Measurement (cont)		
:SNR	Signal to Noise Ratio	AF Limits Config Tile	4-2
:LOWer	Lower Limit	AF Limits Config Tile	4-2
:ENABle	Enables Lower limit	AF Limits Config Tile	4-2
:VALue	Sets Lower limit value	AF Limits Config Tile	4-2
:UPPer	Upper Limit	AF Limits Config Tile	4-2
:ENABle	Enables Upper limit	AF Limits Config Tile	4-2
:VALue	Sets Upper limit value	AF Limits Config Tile	4-2
:MOD	Mod Measurement		
:AM	AM Depth Measurement	Mod Meas Limits Config Tile	4-7
:LOWer	Lower Limit	Mod Meas Limits Config Tile	4-7
:ENABle	Enables Lower limit	Mod Meas Limits Config Tile	4-7
:VALue	Sets Lower limit value	Mod Meas Limits Config Tile	4-7
:UPPer	Upper Limit	Mod Meas Limits Config Tile	4-7
:ENABle	Enables Upper limit	Mod Meas Limits Config Tile	4-7
:VALue	Sets Upper limit value	Mod Meas Limits Config Tile	4-7
:DISTortion	Distortion Measurement	Mod Meas Limits Config Tile	4-7
:UPPer	Upper Limit	Mod Meas Limits Config Tile	4-7
:ENABle	Enables Upper limit	Mod Meas Limits Config Tile	4-7
:VALue	Sets Upper limit value	Mod Meas Limits Config Tile	4-7
:FM	FM Deviation Measurement	Mod Meas Limits Config Tile	4-7
:LOWer	Lower Limit	Mod Meas Limits Config Tile	4-7
:ENABle	Enables Lower limit	Mod Meas Limits Config Tile	4-7
:VALue	Sets Lower limit value	Mod Meas Limits Config Tile	4-7
:UPPer	Upper Limit	Mod Meas Limits Config Tile	4-7
:ENABle	Enables Upper limit	Mod Meas Limits Config Tile	4-7
:VALue	Sets Upper limit value	Mod Meas Limits Config Tile	4-7
:FMRMS	FM Root Mean Square	Mod Meas Limits Config Tile	4-7
:LOWer	Lower Limit	Mod Meas Limits Config Tile	4-7
:ENABle	Enables Lower limit	Mod Meas Limits Config Tile	4-7
:VALue	Sets Lower limit value	Mod Meas Limits Config Tile	4-7
:UPPer	Upper Limit	Mod Meas Limits Config Tile	4-7
:ENABle	Enables Upper limit	Mod Meas Limits Config Tile	4-7
:VALue	Sets Upper limit value	Mod Meas Limits Config Tile	4-7
:HN	Hum and Noise	Mod Meas Limits Config Tile	4-7
:LOWer	Lower Limit	Mod Meas Limits Config Tile	4-7
:ENABle	Enables Lower limit	Mod Meas Limits Config Tile	4-7
:VALue	Sets Lower limit value	Mod Meas Limits Config Tile	4-7
:UPPer	Upper Limit	Mod Meas Limits Config Tile	4-7
:ENABle	Enables Upper limit	Mod Meas Limits Config Tile	4-7
:VALue	Sets Upper limit value	Mod Meas Limits Config Tile	4-7
:SINad	SINAD Measurement	Mod Meas Limits Config Tile	4-7
:LOWer	Lower Limit	Mod Meas Limits Config Tile	4-7
:ENABle	Enables Lower limit	Mod Meas Limits Config Tile	4-7
:VALue	Sets Lower limit value	Mod Meas Limits Config Tile	4-7
:SNR	Signal to Noise Ratio	Mod Meas Limits Config Tile	4-7
:LOWer	Lower Limit	Mod Meas Limits Config Tile	4-7
:ENABle	Enables Lower limit	Mod Meas Limits Config Tile	4-7
:VALue	Sets Lower limit value	Mod Meas Limits Config Tile	4-7
:UPPer	Upper Limit	Mod Meas Limits Config Tile	4-7
:ENABle	Enables Upper limit	Mod Meas Limits Config Tile	4-7
:VALue	Sets Upper limit value	Mod Meas Limits Config Tile	4-7

Command	Command Description	Relates to Tile/Details Reference	
[:ANDX]			
:LIMits	Limits (cont)		
:RF	RF		
:AIPower	ANT Inband Power	RF Limits Config Tile	4-10
:LOWer	Lower Limit	RF Limits Config Tile	4-10
:ENABle	Enables Lower limit	RF Limits Config Tile	4-10
:VALue	Sets Lower limit value	RF Limits Config Tile	4-10
:UPPer	Upper Limit	RF Limits Config Tile	4-10
:ENABle	Enables Upper limit	RF Limits Config Tile	4-10
:VALue	Sets Upper limit value	RF Limits Config Tile	4-10
:FOFFset	Frequency Offset	RF Limits Config Tile	4-10
:UPPer	Upper Limit	RF Limits Config Tile	4-10
:ENABle	Enables Upper limit	RF Limits Config Tile	4-10
:VALue	Sets Upper limit value	RF Limits Config Tile	4-10
:TRBPower	T/R BroadBand Power	RF Limits Config Tile	4-10
:LOWer	Lower Limit	RF Limits Config Tile	4-10
:ENABle	Enables Lower limit	RF Limits Config Tile	4-10
:VALue	Sets Lower limit value	RF Limits Config Tile	4-10
:UPPer	Upper Limit	RF Limits Config Tile	4-10
:ENABle	Enables Upper limit	RF Limits Config Tile	4-10
:VALue	Sets Upper limit value	RF Limits Config Tile	4-10
:TRIPower	T/R Inband Power	RF Limits Config Tile	4-10
:LOWer	Lower Limit	RF Limits Config Tile	4-10
:ENABle	Enables Lower limit	RF Limits Config Tile	4-10
:VALue	Sets Lower limit value	RF Limits Config Tile	4-10
:UPPer	Upper Limit	RF Limits Config Tile	4-10
:ENABle	Enables Upper limit	RF Limits Config Tile	4-10
:VALue	Sets Upper limit value	RF Limits Config Tile	4-10
:MOD	Mod(ulation) / DeMod Settings		
:ANALyzer	Analyzer		
:AM	AM Depth Measurement	Meters Tile	4-44
:HOLD	Peak Hold Measurement	Meters Tile	4-44
:ENABle	Enables Peak Hold measurement	Meters Tile	4-44
:RESet	Resets Peak Hold measurement	Meters Tile	4-44
:DISTortion	Distortion Measurement	Meters Tile	4-44
:HOLD	Peak Hold Measurement	Meters Tile	4-44
:ENABle	Enables Peak Hold measurement	Meters Tile	4-44
:RESet	Resets Peak Hold measurement	Meters Tile	4-44
:FM	FM Deviation Measurement	Meters Tile	4-44
:HOLD	Peak Hold Measurement	Meters Tile	4-44
:ENABle	Enables Peak Hold measurement	Meters Tile	4-44
:RESet	Resets Peak Hold measurement	Meters Tile	4-44
:HN	Hum and Noise Measurement	Meters Tile	4-44
:HOLD	Peak Hold Measurement	Meters Tile	4-44
:ENABle	Enables Peak Hold measurement	Meters Tile	4-44
:RESet	Resets Peak Hold measurement	Meters Tile	4-44
:MFILter	Post Detection Filter	Analyzers Tile	4-14
:NTYPe	Noise Measurement Type	Analyzers Tile	4-14
:OUTPut	Output Port select	Analyzers Tile	4-14
:SINad	SINAD Measurement	Meters Tile	4-44
:HOLD	Peak Hold Measurement	Meters Tile	4-44
:ENABle	Enables Peak Hold measurement	Meters Tile	4-44
:RESet	Resets Peak Hold measurement	Meters Tile	4-44
:SNR	Signal to Noise Ratio Measurement	Meters Tile	4-44
:HOLD	Peak Hold Measurement	Meters Tile	4-44
:ENABle	Enables Peak Hold measurement	Meters Tile	4-44
:RESet	Resets Peak Hold measurement	Meters Tile	4-44

Command	Command Description	Relates to Tile/Details Reference	
[:ANDX]			
:MOD	Mod(ulation) / DeMod Settings (cont)		
:GENerator	Generator		
:ESOURce	External Modulation Source	Generators Tile	4-38
:AM	AM	Generators Tile	4-38
:ENABle	Enables External Source	Generators Tile	4-38
:FM	FM	Generators Tile	4-38
:SOURce1	Source 1	Generators Tile	4-38
:AM	AM	Generators Tile	4-38
:ENABle	Enables Source	Generators Tile	4-38
:FM	FM	Generators Tile	4-38
:SINE	Sine Wave	Generators Tile	4-38
:FREQuency	Frequency for Source	Generators Tile	4-38
:SOURce2	Source 2	Generators Tile	4-38
:AM	AM	Generators Tile	4-38
:ENABle	Enables Source	Generators Tile	4-38
:FM	FM	Generators Tile	4-38
:SINE	Sine Wave	Generators Tile	4-38
:FREQuency	Frequency for Source	Generators Tile	4-38
:SOURce3	Source 3	Generators Tile	4-38
:AM	AM	Generators Tile	4-38
:ENABle	Enables Source	Generators Tile	4-38
:FM	FM	Generators Tile	4-38
:SINE	Sine Wave	Generators Tile	4-38
:FREQuency	Frequency for Source	Generators Tile	4-38
:RF	RF Settings		
:ANALyzer	Analyzer		
:AGC	Automatic Gain Control	Analyzers Tile	4-14
:LEVel	Level	Analyzers Tile	4-14
:MODE	Locked / Unlocked	Analyzers Tile	4-14
:AIPower	ANT Inband Power	Meters Tile	4-44
:HOLD	Peak Hold	Meters Tile	4-44
:ENABle	Enables Peak Hold	Meters Tile	4-44
:RESet	Resets Peak Hold	Meters Tile	4-44
:AMIF	AM IF Bandwidth	Analyzers Tile	4-14
:DISTortion	Distortion Measurement	Meters Tile	4-44
:HOLD	Peak Hold Measurement	Meters Tile	4-44
:ENABle	Enables Peak Hold	Meters Tile	4-44
:RESet	Resets Hold value	Meters Tile	4-44
:FINCrement	Frequency Increment value	Analyzers Tile	4-14
:FMIF	FM IF Bandwidth	Analyzers Tile	4-14
:FMODe	AutoTune Frequency Mode of operation	Analyzers Tile	4-14
:START	Sets start frequency of AutoTune range	Analyzers Tile	4-14
:ENABle	Enables		
:STOP	Sets stop frequency of AutoTune range	Analyzers Tile	4-14
:ENABle	Enables		
:THREsh	Sets AutoTune Threshold value	Analyzers Tile	4-14

Command	Command Description	Relates to Tile/Details Reference	
[:ANDX]			
:RF	RF Settings (cont)		
:ANALyzer	Analyzer (cont)		
:FOFFset	Frequency Offset	RF Measurements Config Tile	4-13
:AVERage	Frequency offset average	RF Measurements Config Tile	4-13
:RESet	Resets average reading	RF Measurements Config Tile	4-13
:ENABle	Enables frequency offset	Analyzers Tile	4-14
:HOLD	Peak Hold	Meters Tile	4-44
:ENABle	Enables Peak Hold	Meters Tile	4-44
:RESet	Resets Peak Hold	Meters Tile	4-44
:RELative	Sets Frequency Offset relative to Analyzer	Meters Tile	4-44
:FREQuency	Manual Mode Frequency	Analyzers Tile	4-14
:HN	Hum and Noise Measurement	Meters Tile	4-44
:HOLD	Peak Hold Measurement	Meters Tile	4-44
:ENABle	Enables Peak Hold Measurement	Meters Tile	4-44
:RESet	Resets Peak Hold Measurement	Meters Tile	4-44
:MOD	Modulation Type	Analyzers Tile	4-14
:PMType	Power Measurement type	Analyzers Tile	4-14
:PORT	Port (RF In)	Analyzers Tile	4-14
:RECeiver	Receiver	Ports Config Tile	
:AMP	Receiver Pre-AMP	Ports Config Tile	
:TIMEBase	Sets frequency reference	UTILS - Frequency Reference Tile	
:SINad	Sinad Measurement	Meters Tile	4-44
:HOLD	Peak Hold Measurement	Meters Tile	4-44
:ENABle	Enables Peak Hold Measurement	Meters Tile	4-44
:RESet	Resets Peak Hold Measurement	Meters Tile	4-44
:SNR	Signal to Noise Ratio Measurement	Meters Tile	4-44
:HOLD	Peak Hold Measurement	Meters Tile	4-44
:ENABle	Enables Peak Hold Measurement	Meters Tile	4-44
:RESet	Resets Peak Hold Measurement	Meters Tile	4-44
:THREsh	Sets AutoTune threshold value	Remote Programming Only	
:TRBPower	TR Broadband Power Measurement	Meters Tile	4-44
:HOLD	Peak Hold Measurement	Meters Tile	4-44
:ENABle	Enables Peak Hold Measurement	Meters Tile	4-44
:RESet	Resets Peak Hold Measurement	Meters Tile	4-44
:TRIPower	TR Inband Power Measurement	Meters Tile	4-44
:HOLD	Peak Hold Measurement	Meters Tile	4-44
:ENABle	Enables Peak Hold Measurement	Meters Tile	4-44
:RESet	Resets Peak Hold Measurement	Meters Tile	4-44
:GENerator	Generator		
:ENABle	Enable RF Generator	Generators Tile	4-38
:FDECrement	Frequency Decrement	Generators Tile	4-38
:FINCrement	Frequency Increment	Generators Tile	4-38
:FREQuency	Frequency	Generators Tile	4-38
:LEVel	Level	Generators Tile	4-38
:MOD	Modulation	Generators Tile	4-38
:PORT	Port (RF Out)	Generators Tile	4-38
:POWer			
:DETector	Power Detector	Meters Tile	4-44
:ZERO	Zeroes Power Detector	Meters Tile	4-44
:RESet	Power Reset	HW Settings / Operational Status	
:OVERLoad	Resets Power Overload feature	HW Settings / Operational Status	

Command	Command Description	Relates to Tile/Details Reference	
[:ANDX]			
:SA	**Spectrum Analyzer**		
:COUPling	**Coupling**	Spectrum Analyzer	4-49
:RBW	Resolution Bandwidth	Spectrum Analyzer	4-49
:AUTO	Enables Auto	Spectrum Analyzer	4-49
:VALue	Bandwidth Setting	Spectrum Analyzer	4-49
:STATus?	Returns Coupling setting status	Spectrum Analyzer	4-49
:SWEep	Sweep Time	Spectrum Analyzer	4-49
:AUTO	Enables Auto	Spectrum Analyzer	4-49
:COMPlete?	Returns Trace status	Spectrum Analyzer	4-49
:VALue	Sweep Value	Spectrum Analyzer	4-49
:VBW	Video Bandwidth	Spectrum Analyzer	4-49
:AUTO	Enables Auto	Spectrum Analyzer	4-49
:VALue	Bandwidth Setting	Spectrum Analyzer	4-49
:HORizontal	**Horizontal**	Spectrum Analyzer	4-49
:FREQuency	Start-Stop / Center-Span Frequencies	Spectrum Analyzer	4-49
:CENTer	Center Frequency	Spectrum Analyzer	4-49
:SPAN	Span Frequency	Spectrum Analyzer	4-49
:STARt	Start Frequency	Spectrum Analyzer	4-49
:STOP	Stop Frequency	Spectrum Analyzer	4-49
:MODE	Mode	Spectrum Analyzer	4-49
:SPAN	Sets Span	Spectrum Analyzer	4-49
:FULL	To Full Span	Spectrum Analyzer	4-49
:ZERO	Zero Span Values	Spectrum Analyzer	4-49
:SWEep	Sweep Time	Spectrum Analyzer	4-49
:MARKer	**Markers**	Spectrum Analyzer	4-49
:DELTa	Marker Delta	Spectrum Analyzer	4-49
:LEVel?	Returns Level between Mkr1 and Mkr2 level values)	Spectrum Analyzer	4-49
:POSition?	Returns distance between markers	Spectrum Analyzer	4-49
:MKR*n*	Marker where *n* = Marker 1 or 2	Spectrum Analyzer	4-49
:ENABle	Enables Marker	Spectrum Analyzer	4-49
:LEFT	Moves Marker left to next peak	Spectrum Analyzer	4-49
:LEVel?	Returns Level at Marker position	Spectrum Analyzer	4-49
:MINimum	Moves Marker to minimum point	Spectrum Analyzer	4-49
:PEAK	Moves Marker to peak point	Spectrum Analyzer	4-49
:POSition	Marker Position	Spectrum Analyzer	4-49
:RIGHt	Moves Marker right to next peak	Spectrum Analyzer	4-49
:SCF	Sets Center Freq. to Marker Position	Spectrum Analyzer	4-49
:SREF	Sets Ref Level to Marker Position level	Spectrum Analyzer	4-49
:MODE	Locked / Unlocked	Spectrum Analyzer	4-49
:PAVG?	Returns average of readings between Mkr1 and Mkr2 data	Spectrum Analyzer	4-49
:PLIVe?	Returns average of Live readings between Mkr1 and Mkr2 data	Spectrum Analyzer	4-49
:PPEAK?	Returns average of Peak readings between Mkr1 and Mkr2 data	Spectrum Analyzer	4-49
:PPKAV?	Returns average of Peak average readings between Mkr1 and Mkr2 data	Spectrum Analyzer	4-49
:SSS	Markers set Start - Stop Span	Spectrum Analyzer	4-49
:SVERtical	Markers set (Nearest) Vertical Range	Spectrum Analyzer	4-49
:MODE	**Mode**		
:SOURce	**Source**		

Command	Command Description	Relates to Tile/Details Reference	
[:ANDX]			
:SA	**Spectrum Analyzer (cont)**		
:TRACe	**Trace**		
:AVERage	Averages	Spectrum Analyzer	4-49
:CURRent?	Returns count of Averages Progress	Spectrum Analyzer	4-49
:ENABle	Enables Average readings	Spectrum Analyzer	4-49
:VALue	Trace average	Spectrum Analyzer	4-49
:LIVE?	Returns Live trace data	Spectrum Analyzer	4-49
:MAXimum	Enables Maximum Hold	Spectrum Analyzer	4-49
:PEAK?	Returns Peak Trace data	Spectrum Analyzer	4-49
:PKAV?	Returns Peak Average Trace data	Spectrum Analyzer	4-49
:REFMode	Enables reference mode of operation	Spectrum Analyzer	4-49
:SETReference	Sets Generator trace reference	Spectrum Analyzer	4-49
:TRKGen	**Tracking Generator**		
:ENABle	Enables Tracking Generator	Spectrum Analyzer	4-49
:TRIGger	**Trigger**		
:MODE	Gate Mode	Spectrum Analyzer	4-49
:VERTical	**Vertical**		
:LEVel	Level (Top of Screen)	Spectrum Analyzer	4-49
:VDIV	Vertical / div	Spectrum Analyzer	4-49
:SCOPe	**Oscilloscope**		
:ATRace	**Trace A**		
:COUPling	Coupling	Scope	4-47
:MKR*n?*	Returns reading at user defined Marker Position where *n* = Marker 1 or 2	Scope	4-47
:SOURce	Source	Scope	4-47
:VDIV	Vertical /div	Scope	4-47
:AM	In % (when source is demod AM)	Scope	4-47
:FM	In Hz (when source is demod FM)	Scope	4-47
:VOLT	In Volts	Scope	4-47
:VPOSition	Vertical Position /div	Scope	4-47
:XTRAce?	Returns Trace time data	Scope	4-47
:YTRAce?	Returns Trace vertical data	Scope	4-47
:BTRace	**Trace B**		
:COUPling	Coupling	Scope	4-47
:MKR*n?*	Returns reading at user defined Marker position where *n* = Marker 1 or 2	Scope	4-47
:SOURce	Source	Scope	4-47
:VDIV	Vertical /div	Scope	4-47
:AM	In % (when source is demod AM)	Scope	4-47
:FM	In Hz (when source is demod FM)	Scope	4-47
:VOLT	In Volts	Scope	4-47
:VPOSition	Vertical Position /div	Scope	4-47
:XTRAce?	Returns Trace time data	Scope	4-47
:YTRAce?	Returns Trace vertical data	Scope	4-47
:HDIV	**Horizontal /div**		
:MKR	**Marker**		
:ENABle	Enables Marker	Scope	4-47
:LOCK	Lock / Unlock Marker offset	Scope	4-47
:MKR*n*	**Marker where *n* = Marker 1 or 2**		
:ENABle	Enables Marker	Scope	4-47

Command	Command Description	Relates to Tile/Details Reference	
[:ANDX]			
:SCOPe	Oscilloscope (cont)		
:TRIGger	Trigger	Scope	4-47
:EDGE	Trigger Edge	Scope	4-47
:FILTer	Trigger Filter	Scope	4-47
:LEVel	Trigger Level	Scope	4-47
:MODE	Trigger Mode	Scope	4-47
:SOURce	Trigger Source	Scope	4-47
:SPURHARM			
:SPURious	Spurious measurements		
:START	Sets start frequency for Spurious measurement sweeps	Harmonics and Spurious	4-5
:STOP	Sets stop frequency for Spurious measurement sweeps	Harmonics and Spurious	4-5
:THREShold	Defines threshold for Spurious measurements	Harmonics and Spurious	4-5
:TRIGger	Trigger		
:MODE	Trigger Mode		
[:USBTOSERial]			
:OPEN	Open		
	Opens selected port		
:CLOSe	Close		
	Closes opened port		
:BAUDrate	Baud Rate		
	Sets baud rate at which data is transmitted		
:READ?	Read		
	Reads string data		
:WRITe	Write		
	Send string data		
:QUERy?	Query		
	Read and writes string as send parameter		
:RESet	Reset		
	Send 1 to reset communications		
:CHARsize	Character Size		
	Sets character size		
:PARIty	Parity		
	Sets parity		
:HWFLowcontrol	Hardware Flow Control		
	Sets hardware flow control		
:SWFLowcontrol	Software Flow Control		
	Sets software flow control		
:TIMEout	Timeout Setting		
	Sets timeout value in µs		
:TERMchar	Termination Character		
	Sets Termination Character decimal value		

Chapter 4

Analog Duplex Detailed Remote Commands

Introduction

This chapter describes the Analog Duplex Detailed Remote Commands. The commands in each of these listings are arranged alphabetically within the hierarchy.

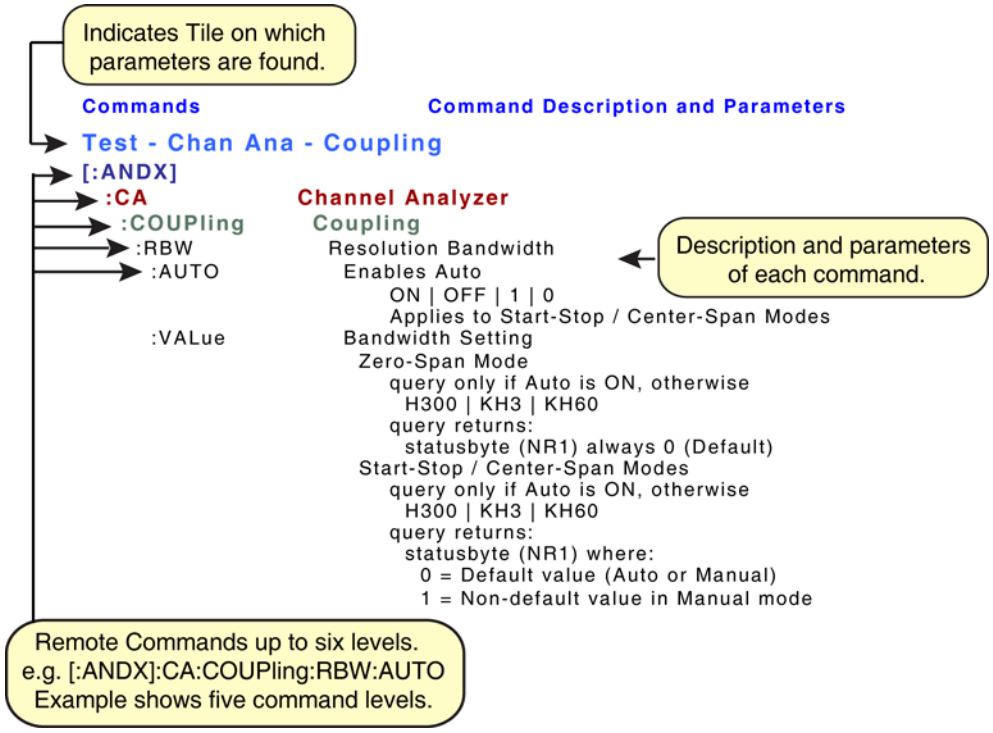

Fig. 4-1 Detailed Remote Commands Illustrated Diagram

NOTE

Upper range value of 2.7 GHz applies to the 3902 and 3920 with 2.7 GHz Frequency Range option (390XOPT058) installed. The upper range value for the 3901 and standard 3920 is 1.05 GHz.

Audio Analyzer (:AA) commands are only valid when Audio Analyzer (390XOPT055) is installed in Test Set.

Tracking Generator (:TRKGen) commands are only valid when Tracking Generator Option (390XOPT061) is installed in Test Set.

Harmonious and Spurious (:SPURHARM) commands are only valid when Harmonics and Spurious Test Option (390XOPT060) is installed in Test Set.

Commands	Command Description and Parameters

Config - AF Limits

[:ANDX]

:LIMits — **Limits**

:AF — **AF Measurements**

:DISTortion — Distortion

:UPPer — Upper Limit

:ENABle — Enables Upper limit
OFF | ON | 0 | 1

:VALue — Sets Upper limit value
range: 0.0 to 100%
query returns: (NR2) within specified range

:HN — Hum and Noise Measurement

:LOWer — Lower Limit

:ENABle — Enables Lower limit
OFF | ON | 0 | 1

:VALue — Sets Lower limit value
<NRf>
range: -100 to 100 dBr
query returns: dBr (NR1) within specified range

:UPPer — Upper Limit

:ENABle — Enables Upper limit
OFF | ON | 0 | 1

:VALue — Sets Upper limit value
<NRf>
range: -100 to 100 dBr
query returns: dBr (NRf) within specified range

:LEVel — Level

:LOWer — Lower Limit

:ENABle — Enables Lower limit
OFF | ON | 0 | 1

:VALue — Sets Lower limit value
<NRf> [mV] | V
range: 1.0 mV to 10 V
query returns: mV (NR1) within specified range

:UPPer — Upper Limit

:ENABle — Enables Upper limit
OFF | ON | 0 | 1

:VALue — Sets Upper limit value
<NRf> [mV] | V
range: 1.0 mV to 10 V
query returns: mV (NR1) within specified range

:SINad — SINAD

:LOWer — Lower Limit

:ENABle — Enables Lower limit
OFF | ON | 0 | 1

:VALue — Sets Lower limit value
range: 0.0 to 100
query returns: dB (NR2) within specified range

Commands	Command Description and Parameters

Config - AF Limits (cont)

[:ANDX]

:LIMits — Limits (cont)

:AF — AF Measurements (cont)

:SNR — Signal to Noise Ratio

:LOWer — Lower Limit

:ENABle — Enables Lower limit
OFF | ON | 0 | 1

:VALue — Sets Lower limit value
<NRf>
range: -100 to 100 dB
query returns: dB (NR1) within specified range

:UPPer — Upper Limit

:ENABle — Enables Upper limit
OFF | ON | 0 | 1

:VALue — Sets Upper limit value
<NRf>
range: -100 to 100 dB
query returns: dB (NR1) within specified range

Config - AF Measurements

[:ANDX]

:CONFigure — Configure

:AF — AF Measurements (cont)

:ANALyzer — Analyzer / Measure

:DISTortion — Distortion Measurement

:AVERage — Number of Averages
range: 1 to 250
query returns: (NR1) within specified range

:FREQuency — Modulation frequency
Hz | kHz
range: 1 Hz to 40 kHz
query returns: (NR1) within specified range

:MTYPe — Modulation type
AVERage | WCASe

:WIDTh — Sets Frequency bandwidth
11.7 Hz | 25.2 Hz | 82.0 Hz | 105.5 HZ | 128.9 Hz | 152.3 Hz
query returns: (NR2) Hz

:FREQuency — Frequency

:AVERage — Number of Averages
range: 1 to 250
query returns: (NR1) within specified range

:HN — Hum and Noise

:AVERage — Returns Number of Averages
range: 1 to 250
query returns: (NR1) within specified range

:OFFset — Sets Offset value
mV | V
range: 1.0 mV to 5 V
0 = No Offset
query returns: (NRf) within specified range

:REFerence — Locks Reference to current meter reading
no parameters, no query

Commands	Command Description and Parameters

Config - AF Measurements (cont)

[:ANDX]

:CONFigure — Configure (cont)

:AF — AF Measurements (cont)

:ANALyzer — Analyzer / Measure (cont)

:LEVel — Level

:AUDio — Audio Level

:UNIts — Level unit of measurement
<NRf> [V] | dBr | dBV]
query returns: unit

:AVERage — Number of Averages
range: 1 to 250
query returns: (NR1) within specified range

:BALanced — Balanced Level

:UNIts — Level unit of measurement
<NRf> [dBm | dBr]
query returns: units

:SEARch

:AVERage — Number of Averages
range: 1 to 250
query returns: (NR1) within specified range

:CALibration

:ENABle — Enables Sinad Search Calibration
OFF | ON | 0 | 1

:DURation — Sets Sinad Search run time
range: 1 to 10,080
query returns: seconds (NR1) within specified range

:ENABle — Starts Sinad Search
OFF | ON | 0 | 1

:FILe — Names data file
file_name (ascii-string), 120 char max

:INTerval — Sets reading rate
range: 1 to 3600
query returns: seconds (NR1) within specified range

:LEVel — Sets Sinad Search level
range: 1.0 to 60.0
query returns: dBr (NR1) within specified range

:SINad — SINAD Measurement

:AVERage — Number of Averages
range: 1 to 250
query returns: (NR1) within specified range

:MTYPe — Modulation type
AVERage | WCASe

:MFILter — Measurement filter
CMESs | CCITt

Commands	Command Description and Parameters

Config - AF Measurements (cont)

[:ANDX]

:CONFigure — **Configure (cont)**

:AF — **AF Measurements (cont)**

:ANALyzer — Analyzer / Measure (cont)

:SNR — Signal to Noise Ratio

:AVERage — Returns Number of Averages
range: 1 to 250
query returns: (NR1) within specified range

:MODE — Switches SNR meter to Normal or Hum and Noise mode
query returns (NR1) where:
0 = Hum and Noise
1 = Normal

:SOURce — Source
AUD1 | AUD2 | BAL | MIC

:AUD1 — Audio 1

:LOAD — Changes impedance of Audio 1 whether selected or not.
UNBHI | UNB600

:AUD2 — Audio 2

:LOAD — Changes impedance of Audio 2 whether selected or not.
UNBHI | UNB600

:ENABle — Enables selected source
OFF | ON | 0 | 1

:LOAD — Changes impedance of selected source
UNBHI | UNB600

Config - Harmonics and Spurious Limits

[:ANDX]

:LIMits — **Limits**

:HARMonic — **Harmonic measurements**

:HAR2 — 2nd Harmonic

:UPPer — Upper Limit

:ENABle — Enables Upper limit
OFF | ON | 0 | 1

:VALue — Sets Upper limit value
-70 to 0.0 dBc
query returns: (NR2) within specified range

:HAR3 — 2nd Harmonic

:UPPer — Upper Limit

:ENABle — Enables Upper limit
OFF | ON | 0 | 1

:VALue — Sets Upper limit value
-70 to 0.0 dBc
query returns: (NR2) within specified range

Config - Mod Gen

[:ANDX]

:CONFigure — **Configure**

:MOD — **Modulation**

:GENerator — Generator

:ESOurce — External Modulation Source
AUD1HI | AUD2HI | MIC | BAL

Commands	Command Description and Parameters

Config - Mod Measurements

[:ANDX]

:CONFigure Configure

:MFILter Measurement filter
CMESs | CCITt

:MOD Modulation Measurements

:ANALyzer Analyzer / Measure

:AM AM

:AVERage Number of Averages
range: 1 to 250
query returns: (NR1) within specified range

:DISTortion Distortion

:AVERage Number of Averages
range: 1 to 250
query returns: (NR1) within specified range

:FREQuency Notch Filter frequency
Hz | kHz
query returns: (NR1) 1 Hz to 20 Hz

:MTYPe Measurement type
AVERage | WCASe

:WIDTh Notch Filter bandwidth
11.7 Hz | 25.2 Hz | 82.0 Hz | 105.5 HZ | 128.9 Hz | 152.3 Hz
query returns: (NR2) Hz

:FM FM

:AVERage Number of Averages
range: 1 to 250
query returns: (NR1) within specified range

:MTYPe Measurement type
PEAK | RMS

:FREQuency Frequency

:AVERage Number of Averages
range: 1 to 250
query returns: (NR1) within specified range

:HN Hum and Noise

:AVERage Returns Number of Averages
range: 1 to 250
query returns: (NR1) within specified range

:REFerence Locks Reference to current meter reading
no parameters, no query

:SINad SINAD

:AVERage Number of Averages
range: 1 to 250
query returns: (NR1) within specified range

:MTYPe Measurement type
AVERage | WCASe

:SNR Signal to Noise Ratio

:AVERage Returns Number of Averages
range: 1 to 250
query returns: (NR1) within specified range

:MODE Switches SNR meter to Normal or Hum and Noise mode
(NR1) where:
0 = Hum and Noise
1 = Normal

:MFILter Measurement filter
CMESs | CCITt

Commands	Command Description and Parameters

Config - Mod Meas Limits

```
[:ANDX]
  :LIMits          Limits
   :MOD             Modulation Measurements
    :AM              AM Depth Measurement
     :LOWer           Lower Limit
      :ENABle          Enables Lower limit
                          OFF | ON | 0 | 1
      :VALue           Sets Lower limit value
                          range: 0.0 to 100%
                          query returns: (NR2) within specified range
     :UPPer           Upper Limit
      :ENABle          Enables Upper limit
                          OFF | ON | 0 | 1
      :VALue           Sets Upper limit value
                          range: 0.0 to 100%
                          query returns: (NR2) within specified range
    :DISTortion      Distortion Measurement
     :UPPer           Upper Limit
      :ENABle          Enables Upper limit
                          OFF | ON | 0 | 1
      :VALue           Sets Upper limit value
                          range: 0.0 to 100%
                          query returns: (NR2) within specified range
    :FM              FM Deviation Measurement
     :LOWer           Lower Limit
      :ENABle          Enables Lower limit
                          OFF | ON | 0 | 1
      :VALue           Sets Lower limit value
                          <NRf> [Hz] | kHz
                          range: 0 Hz to 100 kHz
                          query returns: Hz (NR1) within specified range
     :UPPer           Upper Limit
      :ENABle          Enables Upper limit
                          OFF | ON | 0 | 1
      :VALue           Sets Upper limit value
                          <NRf> [Hz] | kHz
                          range: 0 Hz to 100 kHz
                          query returns: Hz (NR1) within specified range
    :FMRMS           FM Root Mean Square
     :LOWer           Lower Limit
      :ENABle          Enables Lower limit
                          OFF | ON | 0 | 1
      :VALue           Sets Lower limit value
                          <NRf> [Hz] | kHz
                          range: 0 Hz to 100 kHz
                          query returns: Hz (NR1) within specified range
     :UPPer           Upper Limit
      :ENABle          Enables Upper limit
                          OFF | ON | 0 | 1
      :VALue           Sets Upper limit value
                          <NRf> [Hz] | kHz
                          range: 0 Hz to 100 kHz
                          query returns: Hz (NR1) within specified range
```

Commands	Command Description and Parameters

Config - Mod Meas Limits (cont)

[:ANDX]
:LIMits — Limits (cont)
:MOD — Modulation Measurements (cont)

:HN — Hum and Noise Measurement
:LOWer — Lower Limit
:ENABle — Enables Lower limit
OFF | ON | 0 | 1
:VALue — Sets Lower limit value
<NRf>
range: -100 to 100 dBr
query returns: dBr (NR1) within specified range
:UPPer — Upper Limit
:ENABle — Enables Upper limit
OFF | ON | 0 | 1
:VALue — Sets Upper limit value
<NRf>
range: -100 to 100 dBr
query returns: dBr (NR1) within specified range

:SINad — SINAD Measurement
:LOWer — Lower Limit
:ENABle — Enables Lower limit
OFF | ON | 0 | 1
:VALue — Sets Lower limit value
range: 0.0 to 100
query returns: dB (NR2) within specified range

:SNR — Signal to Noise Ratio
:LOWer — Lower Limit
:ENABle — Enables Lower limit
OFF | ON | 0 | 1
:VALue — Sets Lower limit value
<NRf>
range: -100 to 100 dB
query returns: dB (NR1) within specified range
:UPPer — Upper Limit
:ENABle — Enables Upper limit
OFF | ON | 0 | 1
:VALue — Sets Upper limit value
<NRf>
range: -100 to 100 dB
query returns: dB (NR1) within specified range

Commands	Command Description and Parameters

Config - Offsets

[:ANDX]

:CONFigure — **Configure**

:OFFSet — **Offsets**

:ANALyzer — RF Analyzer

:ENABle — Enables Offset
OFF | ON | 0 | 1

:VALue — Offset value
range: -40.0 to 40.0
query returns: dB (NR2) within specified range

:DUPLex — Duplex

:LOCK — Lock / Unlocked
OFF | ON | 0 | 1

:VALue — Offset value
<NRf> [Hz] | kHz | MHz
range: -999.999999 to 999.999999 MHz
query returns: Hz (NR2) within specified range

:GENerator — RF Generator

:ENABle — Enables Offset
OFF | ON | 0 | 1

:VALue — Offset value
range: -40.0 to 40.0
query returns: dB (NR2) within specified range

Config - Ports (Input / Output)

[:ANDX]

:CONFigure — **Configure**

:PORT — **Port**

:FGEN — Fctn Gen / Demod Out selection
FGEN | AUDio | FAUDio | DEMod | DDEMod | FDEMod | FDDEMod

:LOUDspeaker — Loudspeaker
OFF | AUDio | FAUDio | DEMod | DDEMod | FDEMod | FDDEMod

:MPPower — Microphone Phantom Power
OFF | ON | 0 | 1

Config - RF Gen

[:ANDX]

:CONFigure — **Configure**

:RF — **RF Measurements**

:GENerator — Generator

:FINCrement — Frequency Increment
<NRf> [kHz] | Hz | MHz
range: 1 Hz to 999 MHz
query returns: Hz (NR1) within specified range

:LINCrement — Level Increment
range: 0.1 to 100.0 dB
query returns: dB (NR2) within specified range

:PTTOut — Push to Talk Out Control (MIC)
OFF | ON | 0 | 1

:PTTControl — Push to Talk Control
OFF | ON | 0 | 1

Commands	Command Description and Parameters

Config - RF Limits

[:ANDX]

:LIMits — **Limits**

:RF — **RF Measurements**

:AIPower — ANT Inband Power

:LOWer — Lower Limit

:ENABle — Enables Lower limit
OFF | ON | 0 | 1

:VALue — Sets Lower Limit value
<limitvalue as NRf> [units]
query returns:
parameter: always in dBm
returns: limitvalue
where:
units: uW | mW | W | dBW | dBm | uV | mV | V | dBuV
limitvalue ranges:
W: 0 uW to 1 W
dBW: -140.0 to 0.0 dBW
dBm: -110 to +30 dBm
uV: 0 uV to 120 V
dBuV: 0 to +140 dBuV

:UPPer — Upper Limit

:ENABle — Enables Upper limit
OFF | ON | 0 | 1

:VALue — Sets Upper limit value
<limitvalue as NRf> [units]
query returns:
parameter: always in dBm
returns: limitvalue
where:
units:
uW | mW | W | dBW | dBm| uV | mV | V | dBuV
limitvalue ranges:
W: 0 uW to 1 W
dBW: -140.0 to 0.0 dBW
dBm: -110 to +30 dBm
uV: 0 uV to 120 V
dBuV: 0 to +140 dBuV

:FOFFset — Frequency Offset

:UPPer — Upper Limit

:ENABle — Enables Upper limit
OFF | ON | 0 | 1

:VALue — Sets Upper limit value
<NRf> [Hz] | kHz
range: 0 Hz to 150 kHz
query returns: Hz (NR1) within specified range

Commands	Command Description and Parameters

Config - RF Limits (cont)

[:ANDX]

:LIMits — **Limits (cont)**

:RF — **RF Measurements (cont)**

:TRBPower — T/R BroadBand Power

:LOWer — Lower Limit

:ENABle — Enables Upper limit
OFF | ON | 0 | 1

:VALue — Sets Lower limit value
<limitvalue as NRf> [units]
query returns:
parameter: always in W
returns: limitvalue
where:
units:
mW | W | dBW | dBm
limitvalue ranges:
W: 0.0 mW to 1 kW
dBW: -50.0 to +30.0 dBW
dBm: -20 to +60 dBm

:UPPer — Upper Limit

:ENABle — Enables Upper limit
OFF | ON | 0 | 1

:VALue — Sets Upper limit value
<limitvalue as NRf> [units]
query returns:
parameter: always in W
returns: limitvalue
where:
units:
mW | W | dBW | dBm
limitvalue ranges:
W: 0.0 mW to 1 kW
dBW: -50.0 to +30.0 dBW
dBm: -20 to +60 dBm

Commands	Command Description and Parameters

Config - RF Limits (cont)

[:ANDX]

:LIMits — **Limits (cont)**

:RF — **RF Measurements (cont)**

:TRIPower — T/R Inband Power

:LOWer — Lower Limit

:ENABle — Enables Upper limit
OFF | ON | 0 | 1

:VALue — Sets Lower limit value
<limitvalue as NRf> [units]
query returns:
parameter: always in dBm
returns: limitvalue
where:
units:
uW | mW | W | dBW | dBm | uV | mV | V | dBuV
limitvalue ranges:
W: 0.0 mW to 1 kW
dBW: -80.0 to +30.0 dBW
dBm: -50 to +60 dBm
dBuV: 60 to 170 dBuV
V: 1 mV to 320 V

:UPPer — Upper Limit

:ENABle — Enables Upper limit
OFF | ON | 0 | 1

:VALue — Sets Upper limit value
<limitvalue as NRf> [units]
query returns:
parameter: always in dBm
returns: limitvalue
where:
units:
uW | mW | W | dBW | dBm | uV | mV | V | dBuV
limitvalue ranges:
W: 0.0 mW to 1kW
dBW: -80.0 to +30.0 dBW
dBm: -50 to +60 dBm
dBuV: 60 to 170 dBuV
V: 1 mV to 320 V

Commands	Command Description and Parameters

Config - RF Measurements

[:ANDX]

:CONFigure Configure

:RF RF Measurements

:ANALyzer Analyzer

:AIPower ANT Inband Power

:AVERage Number of Averages
range: 1 to 250
query returns: (NR1) within specified range

:UNIts Unit of measure
W | dBW | dBm | V | dBuV

:FINCrement Frequency Increment
<NRf> [kHz] | Hz | MHz
range: 1 Hz to 999 MHz
query returns: Hz (NR1) within specified range

:FOFFset Frequency Offset

:MTYPe Measurement Type
AVERage | WCASe

:FRESolution Frequency Resolution
1 | 10 | .1
query returns: (NR1) 1 | 10 | .1

:THREsh Sets AutoTune Threshold value
range: -120 dB to +10 dB
query returns: (NR2) within specified range

:TRBPower T/R BroadBand Power

:AVERage Number of Averages
range: 1 to 250
query returns: (NR1) within specified range

:UNIts Unit of measure
W | dBW | dBm

:TRIPower T/R Inband Power

:AVERage Number of Averages
range: 1 to 250
query returns: (NR1) within specified range

:UNIts Unit of measure
W | dBW | dBm | V | dBuV

:LTYPe Level setting
EMF | PD

Commands	Command Description and Parameters

Test - Analyzers

[:ANDX]

:AF — **AF Settings**

:ANALyzer — **Analyzer**

:MFILter — Post Detection Filter
LP1 | LP2 | LP3 | LP4 | BP1 | BP2 | BP3 | BP4 | HP1 | PSOPh | None
where:
LP1 = 300 Hz LP
LP2 = 5 kHz LP
LP3 = 20 kHz LP
LP4 = 15 kHz low pass
BP1 = 0.3 to 3.4 kHz
BP2 = 0.3 to 5 kHz
BP3 = 0.3 to 20 kHz
BP4 = 0.3 to 15 kHz band pass
HP1 = 300 Hz HP
PSOPh = Psophometric CMESS or CCITT
None = No Filter

:NTYPe — Noise Measurement type
DISTortion | SINad

:FETCh — **Fetch**

:AA — **Audio Analyzer**

:AVG — Average Trace

:TRAce? — Returns Average trace data when Average trace has been enabled
query only, no parameters

:CAPture — Captures Trace

:TRAce? — Returns Captured Trace data when a Trace has been captured
query only, no parameters

:LIVe — Live Trace

:TRAce? — Returns Live trace data when Live trace has been enabled
query only, no parameters

:PEAk — Peak Trace

:TRAce? — Returns Peak trace data when Peak trace has been enabled
query only, no parameters

NOTE

The :FETch:AA commands can be used at any time so long as the corresponding trace type (i.e., Live Trace) has been enabled before the command is sent.

:AA commands are only valid when Audio Analyzer (390XOPT055) is installed in Test Set.

Commands	Command Description and Parameters

Test - Analyzers (cont)

[:ANDX]

:FETCh — **Fetch (cont)**

:AF — **AF Measurements**

:ANALyzer — Analyzer

:DISTortion? — Distortion Measurement

query returns:
- statusbyte (NR1) where:
  - 0 = Valid
  - 1 = Invalid
  - 2 = Settling
  - 4 = Inaccurate
  - 6 = Setting and Inaccurate
  - 7 = Settling, Inaccurate and Invalid
- failbyte (NR1) where:
  - 0 = All limit checks passed
  - 1 = Average upper failed limit
  - 4 = Worst case upper failed limit
- avgcount (NR1),
- avg % (NR2),
- wc % (NR2)

:DISTortion — Distortion Measurement

:HOLD? — Peak Hold Measurement

query returns:
- statusbyte (NR1:
  - 0 = Valid
  - 1 = Invalid
- failbyte (NR1) where:
  - 0 = All limit checks passed
  - 1 = Average upper failed limit
  - 4 = Worst case upper failed limit
- avg % (NR2),
- wc % (NR2)

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.

:FREQuency? — Frequency

query returns:
- statusbyte (NR1) where:
  - 0 = Valid
  - 1 = Invalid
  - 2 = Settling
  - 4 = Inaccurate
  - 6 = Setting and Inaccurate
  - 7 = Settling, Inaccurate and Invalid
- avgcount (NR1),
- avg (Hz) (NR2)

NOTE

Statusbyte may return more than one condition as a bitmask.

Commands	Command Description and Parameters

Test - Analyzers (cont)

[:ANDX]

:FETCh — **Fetch (cont)**

:AF — **AF Measurements**

:ANALyzer — Analyzer (cont)

:HN? — Hum and Noise Measurement

query returns:

statusbyte (NR1) where:
- 0 = Valid
- 1 = Invalid
- 2 = Settling
- 4 = Inaccurate
- 6 = Setting and Inaccurate
- 7 = Settling, Inaccurate and Invalid

failbyte (NR1) where:
- 0 = All limit checks passed
- 1 = Average upper failed limit
- 2 = Average lower failed limit

avgcount (NR1),
avg dB (NR2),

:HN — Hum and Noise Measurement

:HOLD? — Peak Hold Measurement

query returns:

statusbyte (NR1) where:
- 0 = Valid
- 1 = Invalid

failbyte (NR1) where:
- 0 = All limit checks passed
- 1 = Average upper failed limit
- 2 = Average lower failed limit

avg dB (NR2),

NOTE

Statusbyte may return more than one condition as a bitmask.

Commands	Command Description and Parameters

Test - Analyzers (cont)

[:ANDX]

:FETCh — **Fetch (cont)**

:AF — **AF Measurements**

:ANALyzer — Analyzer (cont)

:LEVel? — Level Measurement

query returns:
- statusbyte (NR1) where:
  - 0 = Valid
  - 1 = Invalid
  - 2 = Settling
  - 4 = Inaccurate
  - 6 = Setting and Inaccurate
  - 7 = Settling, Inaccurate and Invalid
- failbyte (NR1) where:
  - 0 = All limit checks passed
  - 1 = Average upper failed limit
  - 2 = Average lower failed limit
- avgcount (NR1),
- avg mV(Unbal) dBm(Bal) (NR2)

:LEVel — Level Measurement

:HOLD? — Peak Hold Measurement

query returns:
- statusbyte (NR1) where:
  - 0 = Valid
  - 1 = Invalid
  - 2 = Settling
  - 4 = Inaccurate
  - 6 = Setting and Inaccurate
  - 7 = Settling, Inaccurate and Invalid
- failbyte (NR1) where:
  - 0 = All limit checks passed
  - 1 = Average upper failed limit
  - 2 = Average lower failed limit
- avg mV(Unbal) dBm(Bal) (NR2)

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.

Commands	Command Description and Parameters

Test - Analyzers (cont)

[:ANDX]

:FETCh — **Fetch (cont)**

:AF — **AF Measurements**

:ANALyzer — Analyzer (cont)

:SINad? — SINAD measurement
query returns:
statusbyte (NR1) where:
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Setting and Inaccurate
7 = Settling, Inaccurate and Invalid
failbyte (NR1) where:
0 = All limit checks passed
2 = Average lower failed limit
8 = Worst case lower failed limit
avg db (NR2),
wc dB (NR2)

:SINad — SINAD measurement

:HOLD? — Peak Hold Measurement
query returns:
statusbyte (NR1) where:
0 = Valid
1 = Invalid
failbyte (NR1) where:
0 = All limit checks passed
2 = Average lower failed limit
8 = Worst case lower failed limit
avg db (NR2),
wc dB (NR2)

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.

Commands	Command Description and Parameters

Test - Analyzers (cont)

[:ANDX]

:FETCh — **Fetch (cont)**

:AF — **AF Measurements**

:ANALyzer — Analyzer (cont)

:SNR? — Signal to Noise Ratio

query returns:

statusbyte (NR1) where:
- 0 = Valid
- 1 = Invalid
- 2 = Settling
- 4 = Inaccurate
- 6 = Setting and Inaccurate
- 7 = Settling, Inaccurate and Invalid

failbyte (NR1) where:
- 0 = All limit checks passed
- 1 = Average upper failed limit
- 2 = Average lower failed limit

avgcount (NR1),
avg (NR2)

:SNR — Signal to Noise Ratio

:HOLD? — Peak Hold Measurement

query returns:

statusbyte (NR1) where:
- 0 = Valid
- 1 = Invalid

failbyte (NR1) where:
- 0 = All limit checks passed
- 1 = Average upper failed limit
- 2 = Average lower failed limit

avg (NR2),

NOTE

Statusbyte may return more than one condition as a bitmask.

Commands	Command Description and Parameters

Test - Analyzers (cont)

[:ANDX]

:FETCh — **Fetch (cont)**

:MOD — **Modulation Measurements**

:ANALyzer — Analyzer

:AM? — AM

query returns:
- statusbyte (NR1) where:
  - 0 = Valid
  - 1 = Invalid
  - 2 = Settling
  - 4 = Inaccurate
  - 6 = Setting and Inaccurate
  - 7 = Settling, Inaccurate and Invalid
  - 8 = Squelch
- failbyte (NR1) where:
  - 0 = All limit checks passed
  - 1 = Peak to peak upper limit failed
  - 2 = Peak to peak lower limit failed
  - 4 = Positive peak upper limit failed
  - 8 = Positive peak lower limit failed
  - 16 = Negative peak upper limit failed
  - 32 = Negative peak lower limit failed
- avgcount (NR1),
- pk-pk/2 % (NR2),
- pospeak % (NR2)
- negpeak % (NR2)

:AM — AM

:HOLD? — Peak Hold Measurement

query returns:
- statusbyte (NR1) where:
  - 0 = Valid
  - 1 = Invalid
- failbyte (NR1) where:
  - 0 = All limit checks passed
  - 1 = Peak to peak upper limit failed
  - 2 = Peak to peak lower limit failed
  - 4 = Positive peak upper limit failed
  - 8 = Positive peak lower limit failed
  - 16 = Negative peak upper limit failed
  - 32 = Negative peak lower limit failed
- pk-pk/2 % (NR2),
- pospeak % (NR2),
- negpeak % (NR2)

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.

Commands	Command Description and Parameters

Test - Analyzers (cont)

[:ANDX]

:FETCh — **Fetch (cont)**

:MOD — **Modulation Measurements**

:ANALyzer — Analyzer (cont)

:DISTortion? — Distortion measurement

query returns:
- statusbyte (NR1) where:
  - 0 = Valid
  - 1 = Invalid
  - 2 = Settling
  - 4 = Inaccurate
  - 6 = Setting and Inaccurate
  - 7 = Settling, Inaccurate and Invalid
  - 8 = Squelch
- failbyte (NR1) where:
  - 0 = All limit checks passed
  - 1 = Average upper failed limit
  - 4 = Worst case upper failed limit
- avgcount (NR1),
- avg % (NR2),
- wc % (NR2)

:DISTortion — Distortion measurement

:HOLD? — Peak Hold Measurement

query returns:
- statusbyte (NR1) where:
  - 0 = Valid
  - 1 = Invalid
- failbyte (NR1) where:
  - 0 = All limit checks passed
  - 1 = Average upper failed limit
  - 4 = Worst case upper failed limit
- avg % (NR2),
- wc % (NR2)

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.

Commands	Command Description and Parameters

Test - Analyzers (cont)

[:ANDX]

:FETCh — **Fetch (cont)**

:MOD — **Modulation Measurements**

:ANALyzer — Analyzer (cont)

:FM? — FM

query returns:
statusbyte (NR1) where:
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Setting and Inaccurate
7 = Settling, Inaccurate and Invalid
8 = Squelch
failbyte (NR1) where:
0 = All limit checks passed
1 = Peak to peak upper limit failed
2 = Peak to peak lower limit failed
4 = Positive peak upper limit failed
8 = Positive peak lower limit failed
16 = Negative peak upper limit failed
32 = Negative peak lower limit failed
64 = RMS upper limit failed
128 = RMS lower limit failed
avgcount (NR1),
pk-pk/2 Hz (NR1),
pospeak Hz (NR1),
negpeak Hz (NR1),
RMS Hz (NR1)

:FM — FM

:HOLD? — Peak Hold Measurement

query returns:
statusbyte (NR1) where:
0 = Valid
1 = Invalid
failbyte (NR1) where:
0 = All limit checks passed
1 = Peak to peak upper limit failed
2 = Peak to peak lower limit failed
4 = Positive peak upper limit failed
8 = Positive peak lower limit failed
16 = Negative peak upper limit failed
32 = Negative peak lower limit failed
64 = RMS upper limit failed
128 = RMS lower limit failed
pk-pk/2 Hz (NR1),
pospeak Hz (NR1),
negpeak Hz (NR1),
RMS Hz (NR1)

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.

Commands	Command Description and Parameters

Test - Analyzers (cont)

[:ANDX]

:FETCh — **Fetch (cont)**

:MOD — **Modulation Measurements (cont)**

:ANALyzer — Analyzer (cont)

:FREQuency? — Frequency

query returns:
- statusbyte (NR1) where:
  - 0 = Valid
  - 1 = Invalid
  - 2 = Settling
  - 4 = Inaccurate
  - 6 = Setting and Inaccurate
  - 7 = Settling, Inaccurate and Invalid
  - 8 = Squelch
- avgcount (NR1),
- avg dB (NR2)

NOTE

Statusbyte may return more than one condition as a bitmask.

:HN? — Hum and Noise Measurement

query returns:
- statusbyte (NR1) where:
  - 0 = Valid
  - 1 = Invalid
  - 2 = Settling
  - 4 = Inaccurate
  - 6 = Setting and Inaccurate
  - 7 = Settling, Inaccurate and Invalid
  - 8 = Squelch
- failbyte (NR1) where:
  - 0 = All limit checks passed
  - 2 = Average lower failed limit
  - 8 = Worst case lower failed limit
- avgcount (NR1),
- avg dB (NR2),

:HN — Hum and Noise Measurement

:HOLD? — Peak Hold Measurement

query returns:
- statusbyte (NR1) where:
  - 0 = Valid
  - 1 = Invalid
- failbyte (NR1) where:
  - 0 = All limit checks passed
  - 2 = Average lower failed limit
  - 8 = Worst case lower failed limit
- avg dB (NR2),

NOTE

Statusbyte may return more than one condition as a bitmask.

Commands	Command Description and Parameters

Test - Analyzers (cont)

[:ANDX]

:FETCh — **Fetch (cont)**

:MOD — **Modulation Measurements**

:ANALyzer — Analyzer (cont)

:SINad? — Sinad Measurement

query returns:
- statusbyte (NR1) where:
  - 0 = Valid
  - 1 = Invalid
  - 2 = Settling
  - 4 = Inaccurate
  - 6 = Setting and Inaccurate
  - 7 = Settling, Inaccurate and Invalid
  - 8 = Squelch
- failbyte (NR1) where:
  - 0 = All limit checks passed
  - 2 = Average lower failed limit
  - 8 = Worst case lower failed limit
- avgcount (NR1),
- avg dB (NR2),
- wc dB (NR2)

:SINad — Sinad Measurement

:HOLD? — Peak Hold Measurement

query returns:
- statusbyte (NR1) where:
  - 0 = Valid
  - 1 = Invalid
- failbyte (NR1) where:
  - 0 = All limit checks passed
  - 2 = Average lower failed limit
  - 8 = Worst case lower failed limit
- avg dB (NR2),
- wc dB (NR2)

NOTE

Statusbyte may return more than one condition as a bitmask.

Commands	Command Description and Parameters

Test - Analyzers (cont)

[:ANDX]

:FETCh — **Fetch (cont)**

:MOD — **Modulation Measurements**

:ANALyzer — Analyzer (cont)

:SNR? — Signal to Noise Ratio

query returns:

statusbyte (NR1) where:
- 0 = Valid
- 1 = Invalid
- 2 = Settling
- 4 = Inaccurate
- 6 = Setting and Inaccurate
- 7 = Settling, Inaccurate and Invalid
- 8 = Squelch

failbyte (NR1) where:
- 0 = All limit checks passed
- 1 = Average upper failed limit
- 2 = Average lower failed limit

avgcount (NR1),
avg dB (NR2),

:SNR — Signal to Noise Ratio

:HOLD? — Peak Hold Measurement

query returns:

statusbyte (NR1) where:
- 0 = Valid
- 1 = Invalid

failbyte (NR1) where:
- 0 = All limit checks passed
- 1 = Average upper failed limit
- 2 = Average lower failed limit

avg dB (NR2),

NOTE

Statusbyte may return more than one condition as a bitmask.

Commands	Command Description and Parameters

Test - Analyzers (cont)

[:ANDX]

:FETCh — **Fetch (cont)**

:RF — **RF**

:ANALyzer — Analyzer

:AIPower? — ANT Inband Power
query returns:
parameter: [units]
returns:
statusbyte (NR1) where:
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Setting and Inaccurate
7 = Settling, Inaccurate and Invalid
failbyte (NR1) where:
0 = All limit checks passed
1 = Average upper failed limit
2 = Average lower failed limit
avgcount (NR1)
avg <units> (NR2)
where:
units: dBm | mW | dBW | mV

:AIPower — ANT Inband Power

:HOLD? — ANT Inband Power Peak Hold Measurement
query returns:
parameter: [units]
returns:
statusbyte (NR1) where:
0 = Valid
1 = Invalid
failbyte (NR1) where:
0 = All limit checks passed
1 = Average upper failed limit
2 = Average lower failed limit
avg <units> (NR2)
where:
units: dBm | mW | dBW | mV

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.

Commands	Command Description and Parameters

Test - Analyzers (cont)

[:ANDX]

:FETCh — **Fetch (cont)**

:RF — **RF (cont)**

:ANALyzer — Analyzer (cont)

:FOFFset? — Frequency Offset

query returns:
- statusbyte (NR1) where:
  - 0 = Valid
  - 1 = Invalid
  - 2 = Settling
  - 4 = Inaccurate
  - 6 = Setting and Inaccurate
  - 7 = Settling, Inaccurate and Invalid
- failbyte (NR1) where:
  - 0 = All limit checks passed
  - 1 = Average upper failed limit
  - 4 = Worst case upper failed limit
- avgcount (NR1),
- avg Hz (NR2),
- wc Hz (NR2)

:FOFFset — Frequency Offset

:HOLD? — Peak Hold Measurement

query returns:
- statusbyte (NR1) where:
  - 0 = Valid
  - 1 = Invalid
- failbyte (NR1) where:
  - 0 = All limit checks passed
  - 1 = Average upper failed limit
  - 4 = Worst case upper failed limit
- avg Hz (NR2),
- wc Hz (NR2)

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.

:FREQuency? — Frequency

query returns:
- statusbyte (NR1) where:
  - 0 = Valid
  - 1 = Invalid
  - 4 = Inaccurate
- freq Hz (NR1)

Commands	Command Description and Parameters

Test - Analyzers (cont)

[:ANDX]

:FETCh — **Fetch (cont)**

:RF — **RF (cont)**

:ANALyzer — Analyzer (cont)

:TRBPower? — TR Broadband Power

query returns:
parameter: [units]
returns:
statusbyte (NR1) where:
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Setting and Inaccurate
7 = Settling, Inaccurate and Invalid
failbyte (NR1) where:
0 = All limit checks passed
1 = Average upper failed limit
2 = Average lower failed limit
avgcount (NR1),
avg <units> (NR2)
where:
units: W | dBW | dBm

:TRBPower — TR Broadband Power

:HOLD? — Peak Hold Measurement

query returns:
parameter: [units]
returns:
statusbyte (NR1) where:
0 = Valid
1 = Invalid
failbyte (NR1) where:
0 = All limit checks passed
1 = Average upper failed limit
2 = Average lower failed limit
avg <units> (NR2)
where:
units: W | dBW | dBm

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.

Commands	Command Description and Parameters

Test - Analyzers (cont)

[:ANDX]

:FETCh — **Fetch (cont)**

:RF — **RF (cont)**

:ANALyzer — Analyzer (cont)

:TRIPower? — TR Inband Power

query returns:
parameter: [units]
returns:
statusbyte (NR1) where:
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Setting and Inaccurate
7 = Settling, Inaccurate and Invalid
failbyte (NR1) where:
0 = All limit checks passed
1 = Average upper failed limit
2 = Average lower failed limit
avgcount (NR1),
avg <units> (NR2)
where:
units: W | dBW | dBm

:TRIPower — TR Inband Power

:HOLD? — Peak Hold Measurement

query returns:
parameter: [units]
returns:
statusbyte (NR1) where:
0 = Valid
1 = Invalid
failbyte (NR1) where:
0 = All limit checks passed
1 = Average upper failed limit
2 = Average lower failed limit
avg <units> (NR2)
where:
units: W | dBW | dBm

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.

Commands	Command Description and Parameters

Test - Analyzers (cont)

[:ANDX]

:MOD — **Mod(ulation) / DeMod Settings**

:ANALyzer — **Analyzer**

:MFILter — Post Detection Filter
LP1 | LP2 | LP3 | LP4 | | BP1 | BP2 | BP3 | BP4 | HP1 | PSOPh | None
where:
LP1 = 300 Hz LP
LP2 = 5 kHz LP
LP3 = 20 kHz LP
LP4 = 15 kHz low pass
BP1 = 0.3 to 3.4 kHz
BP2 = 0.3 to 5 kHz
BP3 = 0.3 to 20 kHz
BP4 = 0.3 to 15 kHz band pass
HP1 = 300 Hz HP
PSOPh = Psophometric CMESS or CCITT
None = No Filter

:NTYPe — Noise Measurement type
DISTortion | SINad

:OUTPut — Output
OFF | MIC | MD
where:
MIC = MIC / ACC Connector
MD = MIC & Demod Out

:RF — **RF Settings**

:ANALyzer — **Analyzer**

:AGC — Automatic Gain Control

:LEVel — Level
dBm <NRf>
range:
T/R: -60 to +60 dBm
ANT: -100 to 10 dBm
when no offset set
query returns: dBm (NR2) within specified ranges

:MODE — Mode
AUTO | MANual

:AMIF — AM IF Bandwidth
<bandwidth as NRf>
query returns: kHz (NRf) from bandwidth list)
where: Bandwidth can be 6.25, 8.33, 10, 12.5, 25 or 30 kHz

:DISTortion — Distortion Measurement

:HOLD — Peak Hold Measurement

:ENABle — Enables Peak Hold
OFF | ON | 0 | 1

:RESet — Resets Peak Hold
no parameters, no query

:FINCrement — Frequency Increment
<NRf> [kHz] | Hz | MHz
range: 1 Hz to 999 MHz
query returns: Hz (NR1) within specified range

:FMIF — FM IF Bandwidth
<bandwidth as NRf>
query returns: kHz (NRf - from bandwidth list)
where: Bandwidth can be 6.25, 10, 12.5, 25, 30, 100 or 300 kHz

Commands	Command Description and Parameters

Test - Analyzers (cont)

[:ANDX]

:RF — **RF Settings**

:ANALyzer — **Analyzer**

:FMODe	AutoTune Frequency mode of operation AUTo | MANual
:START	Sets start frequency of AutoTune range (when in Auto mode) range: 100 kHz to 2.7 GHz query returns: (NR2) within specified range
:ENABle	Enables OFF | ON | 0 | 1
:STATus	Returns status of AutoTUne mode query only, no parameters query returns: (NR1) where: 0 = Not running 1 = Running
:STOP	Sets stop frequency of AutoTune range (when in Auto mode) range: 100 kHz to 2.7 GHz query returns: (NR2) within specified range
:ENABle	Enables OFF | ON | 0 | 1
:THREsh	Sets AutoTune Threshold value range: -120 dB to +10 dB query returns: (NR2) within specified range
:FOFFset	Frequency Offset
:AVERage	Number of Averages range: 1 to 250 query returns: (NR1) within specified range
:RESet	Resets Average measurement
:ENABle	Enables Frequency Offset value OFF | ON | 0 | 1
:FREQuency	Frequency
:MOD	Modulation AM | FM | FM50 | FM75 | FM750 | AMUSB | AMLSB
:PMType	Power Measurement type IB | BB where: IB = Inband BB = BroadBand
:PORT	Output TR | ANT
:RECeiver	Receiver
:AMP	Receiver Pre-AMP OFF | ON | 0 | 1
:TIMEBase	Sets frequency reference EXTernal | INTernal

Commands	Command Description and Parameters

Test - Audio Analyzer

:AA — Audio Analyzer

:AVG — Average Trace

:CLEar — Clears and resets Average Trace
no query, no parameters

:ENABle — Enables Average Trace
ON | OFF | 1 | 0

:MKR*n* — Marker *n* (where *n* = Marker 1 to 2)

:LEVel? — Average Level reading at Marker position
query only, no parameters
query returns: marker level in dBm

:VALue — Sets number of Averages
range: 1 to 250
query returns: (NR1) within specified range

:HORiz — Horizontal

:FREQuency — Start-Stop/Center-Span Frequencies
Minimum span between Start/Stop frequencies is 2 kHz

:STARt — Start Frequency
kHz | Hz
range: 24.0 kHz to 0.0 Hz
query returns: Hz (NR2) within specified range

:STOP — Stop Frequency
kHz | Hz
range: 24.0 kHz to 0.0 Hz
query returns: Hz (NR2) within specified range

:LIVE — Live Trace

:ENABle — Enables Live Trace
ON | OFF | 1 | 0

:MKR*n* — Marker *n* (where *n* = Marker 1 to 2)

:LEVel? — Live Level reading at Marker position
query only, no parameters
query returns: marker level in dBm

:MKR*n* — Marker *n* (where *n* = Marker 1 to 2)

:ENABle — Enables Marker
ON | OFF | 1 | 0

:POSition — Sets Marker Position
Stop-Start / Center-Span Modes
kHz | Hz
range: 24.0 kHz to 0.0 Hz
query returns: Hz (NR2) within specified range

:PEAK — Peak Trace

:CLEar — Clears and resets Peak Trace
no query, no parameters

:ENABle — Enables Peak Trace
ON | OFF | 1 | 0

:MKR*n* — Marker *n* (where *n* = Marker 1 to 2)

:LEVel? — Peak Level reading at Marker position
query only, no parameters
query returns: marker level in dBm

:SOURce — Selects Trace Source

DEMod | AUDio

Commands	Command Description and Parameters

Test - Audio Analyzer (cont)

[:ANDX]

:AA — **Audio Analyzer (cont)**

:VERTical — **Vertical**

:SCAle — Sets Vertical Scale
- Start-Stop / Center-Span Modes
- no query
- range: 1 to 20 dBm in 1, 2, 5 steps
- query returns: dBm (NR2) in 1, 2, 5, steps within specified range

:TOS — Sets Top of Scale
- Start-Stop / Center-Span Modes
- range: -150.0 to 0.0 dBm
- query returns: dBm (NR2) within specified range

Commands	Command Description and Parameters

Test - Channel Analyzer

[:ANDX]

:ABORt — **Abort**

:CA — **Stops Channel Analyzer Sweeps**

no query, no parameters

:CA — **Channel Analyzer**

:COUPling — **Coupling**

:RBW — Resolution Bandwidth

:AUTO — Enables Auto Coupling mode in Start-Stop / Center-Span Modes

ON | OFF | 1 | 0

:VALue — Bandwidth Setting

Zero-Span Mode

query only if Auto is ON, otherwise

H300 | KH3 | KH60

query returns:

statusbyte (NR1) always 0

Start-Stop / Center-Span Mode

query only if Auto is ON, otherwise

H300 | KH3 | KH60

query returns: statusbyte (NR1) where:

0 = Default value (Auto or Manual)

1 = Non-default value in Manual mode

:STATus? — Coupling setting status

query returns: statusbyte (NR1) where:

0 = Valid

1 = Invalid

2 = Uncalibrated configuration

:SWEep — Sweep Time

:AUTO — Enables Auto

ON | OFF | 1 | 0

Applies to Start-Stop / Center-Span Modes

:COMPlete? — Returns trace status

query returns: statusbyte (NR1) where:

0 = Trace Incomplete

1 = Trace Complete

:VALue — Sweep Value

Applies to Start-Stop / Center-Span Modes

query only if Auto is ON, otherwise

<NRf>[ms] | s

range: (200 ms to 100 s)

query returns:

statusbyte (NR1) where:

0 = Default value (Auto or Manual)

1 = Non-default value in Manual mode

ms (NR1) in 1, 2, 5 steps within specified range

:VBW — Video Bandwidth

:AUTO — Enables Auto

ON | OFF | 1 | 0

Applies to Current Mode

:VALue — Bandwidth Setting

Applies to Current Mode

query only if Auto is ON, otherwise

H300 | KH1 | KH3 | KH10 | KH30 | NONE

query returns: statusbyte (NR1) where:

0 = Default value (Auto or Manual)

1 = Non-default value in Manual mode

Commands	Command Description and Parameters

Test - Channel Analyzer (cont)

[:ANDX]

:CA — **Channel Analyzer (cont)**

:HORizontal — **Horizontal**

:FREQuency — Frequency Values (Start-Stop, Center-Span)

:CENTer — Center Frequency
<NRf>[Hz] | kHz | MHz | GHz
range: 100 kHz to 2.7 GHz, within 2.5 MHz of System Receiver Frequency
query returns: Hz (NR2) within specified range

:RELative — Relative to Analyzer
<NRf>[Hz] | kHz | MHz
range: -2.5 to +2.5 MHz
query returns: Hz (NR2) within specified range

:SPAN — Span Frequency
<NRf>[Hz] | kHz | MHz
range: 2 kHz to 5 MHz
query returns: Hz (NR2) within specified range

:STARt — Start Frequency
<NRf>[Hz] | kHz | MHz | GHz
range: 100 kHz to 2.7 GHz, within 2.5 MHz of System Receiver Frequency
query returns: Hz (NR2) within specified range

:RELative — Relative to Analyzer
<NRf>[Hz] | kHz | MHz
range: -2.5 to +2.5 MHz
query returns: Hz (NR2) within specified range

:STOP — Stop Frequency
<NRf>[Hz] | kHz | MHz | GHz
range: 100 kHz to 2.7 GHz, within 2.5 MHz of System Receiver Frequency
query returns: Hz (NR2) within specified range

:RELative — Relative to Analyzer
<NRf>[Hz] | kHz | MHz
range: -2.5 to +2.5 MHz
query returns: Hz (NR2) within specified range

:MODE — Mode
SS | CS | ZS
Start-Stop | Center-Span | Zero Span

:SPAN — Sets Span

:FULL — To Full Span
Applies to Start-Stop / Center-Span Modes
no query, no parameters

:ZERO — Zero Span Values

:CENTer — Center Frequency
<NRf>[Hz] | kHz | MHz | GHz
range: 100 kHz to 2.7 GHz, within 2.5 MHz of System Receiver Frequency
query returns: Hz (NR2) within specified range

:RELative — Relative to Analyzer
<NRf>[Hz] | kHz | MHz
range: -2.5 to +2.5 MHz
query returns: Hz (NR2) within specified range

:SWEep — Sweep Time
<NRf>[ms] | s
range: 1 ms to 100 s
query returns: ms (NR1) in 1, 2, 5 steps within specified range

Commands	Command Description and Parameters

Test - Channel Analyzer (cont)

[:ANDX]

:CA — **Channel Analyzer (cont)**

:MARKer — **Markers**

:DELTa	Delta Level
:LEVel?	Level (Between Mkr1 and Mkr2 (dB) level values) query returns: statusbyte (NR1) where: 1 = Unlocked 2 = Locked dB (NR2) Difference value
:POSition?	Distance (Between Mkr1 and Mkr2) query returns: Stop-Start / Center-Span Modes Hz (NR1) Difference Zero-Span Mode ms (NR2) Difference
:MKR*n*	Marker where *n* = Marker 1 or 2
:ENABle	Enables Marker ON | OFF | 1 | 0
:LEFT	Moves Marker left to next peak no query, no parameters
:LEVel?	Level at Marker position query returns: statusbyte (NR1) always 2 (Locked) dBm (NR2)
:MINimum	Moves Marker to minimum point Zero-Span Mode only no query, no parameters
:PEAK	Moves Marker to peak point no query, no parameters
:POSition	Position Stop-Start / Center-Span Modes <NRf> [Hz] | kHz | MHz | GHz (Between Start and Stop frequencies) query returns: Hz (NR1) Actual frequency position Zero-Span Mode <NRf> [ms] | s (Between 0 and Sweep value) query returns: ms (NR2) Actual time position
:RIGHt	Moves Marker right to next peak no query, no parameters
:SCF	Sets Center Freq. to Marker Position Applies to Start-Stop / Center-Zero Modes no query, no parameters
:SREF	Sets Ref Level to Marker Position Level no query, no parameters
:MODE	Locked / Unlocked UNLOCKed | LOCKed
:PAVG?	Returns current Average reading between Mkr1 and Mkr2 query only, no parameters
:PLIVe?	Returns current Live reading between Mkr1 and Mkr2 query only, no parameters
:PPEAK?	Returns current Peak reading between Mkr1 and Mkr2 query only, no parameters
:PPKAV?	Returns current average of Peak average between Mkr1 and Mkr2 query only, no parameters

Commands	Command Description and Parameters

Test - Channel Analyzer (cont)

[:ANDX]

:CA — **Channel Analyzer (cont)**

- **:MARKer** — **Markers (cont)**
  - :SSS — Markers set Start - Stop Span
    - Applies to Start-Stop / Center-Zero Modes
    - no query, no parameters
  - :SVERtical — Markers set (Nearest) Vertical Range
    - Applies to Zero-Span Mode only
    - no query, no parameters
- **:TRACe** — **Trace**
  - :AVG? — Returns Average trace data
    - query only, no parameters
  - :AVERage — Averages
    - :CURRent? — Count of Averages Progress
      - query returns: (NR1) 0 to 200 (0 if averaging OFF)
    - :ENABle — Enables Trace
      - ON | OFF | 1 | 0
    - :VALue — Required number of Averages
      - <NRf>
      - range: 1 to 200
      - query returns: (NR1) within specified range
  - :LIVE? — Live Trace
    - Returns current Live trace data
    - query only, no parameters
  - :MAXimum — Enables Maximum Hold
    - ON | OFF | 1 | 0
    - When on, returned marker data is max hold Data
  - :PEAK? — Peak Hold Trace
    - Returns Peak hold trace data
    - query only, no parameters
  - :PKAV? — Peak Average
    - Returns average Peak hold data
    - query only, no parameters
- **:TRIGger** — **Trigger**
  - :MODE — Gate Mode
    - FRUN
- **:VERTical** — **Vertical**
  - :LEVel — Level (Top of Screen)
    - dBm (<NRf> - (no Offset set)
      - T/R: -60 to +60 dBm
      - ANT: -100 to +10 dBm
    - query returns: dBm (NR2) within specified ranges
  - :VDIV — Vertical / div
    - 1 | 2 | 5 | 10

:INITiate — **Initiate**

- **:CONTinuous** — **Continuous (Repeat)**
  - :CA — Channel Analyzer Sweep
    - ON | OFF | 1 | 0
- **:IMMediate** — **Immediate (Single)**
  - :CA — Channel Analyzer Sweep
    - no query, no parameters

Commands	Command Description and Parameters

Test - Generators

[:ANDX]

:AF — **AF Measurements**

:GENerator — **Generator**

:SOURce[1] — Source 1

:CODEword “xxx” — Defines the DCS Code where xxx is the DCS code which must be encased in double quotation marks (Refer to Appendix A for supported DCS codes)

:ENABle — Enables Source
- OFF | ON | 0 | 1

:END — Dead time between DTMF tones (in ms)
- range: 0 to 6,000,000 ms
- query returns: ms (NR1) within specified range

:FREQuency — Defines Source Frequency
- <NRf> [kHz] | Hz
- range: 1 Hz to 20 kHz
- query returns: Hz (NR2) within specified range

:LEVel — Sets Level for Source
- <NRf> [mV] | V
- range: 1.0 mV to 5 V (RMS)
- query returns: mV (NR2) within specified range

:MARK — Length of time DTMF burst is on (in ms)
- range: 0 to 6,000,000
- query returns: ms (NR1) within specified range

:SEQuence — DTMF sequence
- maximum of 16 characters in double quotes
- valid characters:
  - 0 to 9, A, B, C, D, #, *
- query returns: current DTMF sequence in double quotes

:SEQMode — DTMF sequence mode of operation
- where:
  - 0 = Single
  - 1 = Continuous

:SHAPe — Defines waveform for Source
- SINE | SQUare | TRIAngle | RAMP | DCS | DCSINV | DTMF

:SINE — Sine Wave

:FREQuency — Frequency
- <NRf> [Hz] | kHz
- range: 0.1 Hz to 40 kHz
- query returns: Hz (NR2) within specified range

:SPACe — Dead time in ms between DTMF tone sequences when Continuous Sequence Mode is selected
- range: 0 to 6,000,000
- query returns: ms (NR1) within specified range

:SQUare — Square Wave

:FREQuency — Frequency
- <NRf> [Hz] | kHz
- range: 0.1 Hz to 4 kHz
- query returns: Hz (NR2) within specified range

Commands	Command Description and Parameters

Test - Generators (cont)

[:ANDX]

:AF — **AF Measurements (cont)**

:GENerator — **Generator (cont)**

:SOURce2	Source 2
:CODEword “xxx”	Defines the DCS Code where xxx is the DCS code which must be encased in double quotation marks (Refer to Appendix A for supported DCS codes)
:ENABle	Enables Source OFF | ON | 0 |
:FREQuency	Defines Source Frequency <NRf> [kHz] | Hz range: 1 Hz to 20 kHz query returns: Hz (NR2) within specified range
:LEVel	Sets Level <NRf> [mV] | V range: 1.0 mV to 5 V (RMS) query returns: mV (NR2) within specified range
:SHAPe	Defines waveform for Source SINE | SQUare | TRIAngle | RAMP | DCS | DCSINV
:SINE	Sine Wave
:FREQuency	Frequency <NRf> [Hz] | kHz range: 0.1 Hz to 40 kHz query returns: Hz (NR2) within specified range
:SQUare	Square Wave
:FREQuency	Frequency <NRf> [Hz] | kHz range: 0.1 Hz to 4 kHz query returns: Hz (NR2) within specified range
:SOURce3	Source 3
:CODEword “xxx”	Defines the DCS Code where xxx is the DCS code which must be encased in double quotation marks (Refer to Appendix A for supported DCS codes)
:ENABle	Enables Source OFF | ON | 0 | 1
:FREQuency	Defines Source Frequency <NRf> [kHz] | Hz range: 1 Hz to 20 kHz query returns: Hz (NR2) within specified range
:LEVel	Sets Level <NRf> [mV] | V range: 1.0 mV to 5 V (RMS) query returns: mV (NR2) within specified range
:SHAPe	Defines waveform for Source SINE | SQUare | TRIAngle | RAMP | DCS | DCSINV
:SINE	Sine Wave
:FREQuency	Frequency <NRf> [Hz] | kHz range: 0.1 Hz to 40 kHz query returns: Hz (NR2) within specified range
:SQUare	Square Wave
:FREQuency	Frequency <NRf> [Hz] | kHz range: 0.1 Hz to 4 kHz query returns: Hz (NR2) within specified range

Commands	Command Description and Parameters

Test - Generators (cont)

[:ANDX]

:MOD — **Mod(ulation) / DeMod Settings**

:GENerator — **Generator**

:ESOurce	External Modulation Source
:AM	AM range: 0.0 to 99% query returns: (NR2) within specified range
:ENABle	Enables External Source OFF | ON | 0 | 1
:FM	FM <NRf> [kHz] | Hz range: 0 Hz to 150 kHz query returns: Hz (NR2) within specified range
:SOURce[1]	Source 1
:AM	AM range: 0.0 to 99% query returns: (NR2) within specified range
:CODEword “xxx”	Defines the DCS Code where xxx is the DCS code which must be encased in double quotation marks (Refer to Appendix A for supported DCS codes)
:ENABle	Enables Source OFF | ON | 0 | 1
:END	Dead time between DTMF tones (in ms) range: 0 to 6,000,000 ms query returns: ms within specified range
:FM	FM <NRf> [kHz] | Hz range: 0 Hz to 150 kHz query returns: Hz (NR2) within specified range
:FREQuency	Defines Source Frequency <NRf> [kHz] | Hz range: 1 Hz to 20 kHz query returns: Hz (NR2) within specified range
:MARK	Length of time DTMF burst is on (in ms) range: 0 to 6,000,000 query returns: ms within specified range
:SEQuence	DTMF sequence maximum of 16 characters in double quotes valid characters: 0 to 9, A, B, C, D, #, * query returns: current DTMF sequence in double quotes
:SEQMode	DTMF sequence mode of operation where: 0 = Single 1 = Continuous
:SHAPe	Defines waveform for Source SINE | SQUare | TRIAngle | RAMP | DCS
:SINE	Sine Wave
:FREQuency	Frequency <NRf> [kHz] | Hz range: 1 Hz to 20 kHz query returns: Hz (NR2) within specified range
:SPACe	Dead time in ms between DTMF tone sequences when Continuous Sequence Mode is selected range: 0 to 6,000,000 query returns: ms (NR1) within specified range

Commands	Command Description and Parameters

Test - Generators (cont)

[:ANDX]

:MOD — **Mod(ulation) / DeMod Settings**

:GENerator — **Generator (cont)**

:SOURce2	Source 2
:AM	AM range: 0.0 to 99% query returns: (NR2) within specified range
:CODEword “xxx”	Defines the DCS Code where xxx is the DCS code which must be encased in double quotation marks (Refer to Appendix A for supported DCS codes)
:ENABle	Enables Source OFF | ON | 0 | 1
:FM	FM <NRf> [kHz] | Hz range: 0 Hz to 150 kHz query returns: Hz (NR2) within specified range
:FREQuency	Defines Source Frequency <NRf> [kHz] | Hz (1 Hz to 20 kHz) query returns: Hz (NR2) within specified range
:SHAPe	Defines waveform for Source SINE | SQUAre | TRIAngle | RAMP | DCS
:SINE	Sine Wave
:FREQuency	Frequency <NRf> [kHz] | Hz range: 1 Hz to 20 kHz query returns: Hz (NR2) within specified range
:SOURce3	Source 3
:AM	AM range: 0.0 to 99% query returns: (NR2) within specified range
:CODEword “xxx”	Defines the DCS Code where xxx is the DCS code which must be encased in double quotation marks (Refer to Appendix A for supported DCS codes)
:ENABle	Enables Source OFF | ON | 0 | 1
:FM	FM <NRf> [kHz] | Hz range: 0 Hz to 150 kHz query returns: Hz (NR2) within specified range
:FREQuency	Defines Source Frequency <NRf> [kHz] | Hz range: 1 Hz to 20 kHz query returns: Hz (NR2) within specified range
:SHAPe	Defines waveform for Source SINE | SQUAre | TRIAngle | RAMP | DCS
:SINE	Sine Wave
:FREQuency	Frequency <NRf> [kHz] | Hz range: 1 Hz to 20 kHz query returns: Hz (NR2) within specified range

Commands	Command Description and Parameters

Test - Generators (cont)

[:ANDX]

:RF — **RF Measurements**

:GENerator — **Generator**

:ENABle — Enables Generator
OFF | ON | 0 | 1

:FREQuency — Frequency
<NRf> [MHz] | kHz | MHz
range: 100 kHz to 2.7 GHz
query returns: Hz (NR1) within specified range

:LEVel — Level
<levelvalue as NRf> [units]
parameter: [units]
returns: levelvalue
where:
units: dBm | uV | mV | V | dBuV
levelvalue:
dBm:
(T/R) -130.0 to -30.0
(GEN) -130.0 to +10.0
uV/mV/V (PD):
(T/R) 0.071 uV to 7.071 mV
(GEN) 0.071 uV to 707.1 mV
uV/mV/V (EMF):
(T/R) 0.141 uV to 14.140 mV
(GEN) 0.141 uV to 1.414 V
dBuV (PD):
(T/R) -23.0 to 77.0
(GEN) -23.0 to 117.0
dBuV (EMF):
(T/R) -17.0 to 83.0
(GEN) -17.0 to 123.0

NOTE

Levels are modified for AM and Offsets

:MOD — Modulation
OFF | AM | FM | FM50 | FM75 | FM750 | AMUSB | AMLSB

:PORT — Output
TR | GEN

Commands **Command Description and Parameters**

Test - Harmonics and Spurious

[:ANDX]

:SPURHARM

:MEASure? **Returns detected Spurious and Harmonic measurement data**

query only, no parameters
query returns data stream as follows:
fundamental frequency,fundamental level;harmonic2 frequency,harmonic2 level;harmonic2 upper limit statusbyte,harmonic2 upper limit failbyte;harmonic3 frequency,harmonic3 level,harmonic3 upper limit statusbyte,harmonic3 upper limit failbyte:spurious frequency,spurious level,spurious threshold statusbyte,spurious threshold failbyte
where returned data is:
fundamental frequency in MHz
fundamental level in dBm
harmonic2 frequency in MHz
harmonic2 level in dBc
hramonic2 upper limit statusbyte (NR1)
0 = Disable
1 = Enable
harmonic2 upper limit failbyte
harmonic3 frequency in MHz
harmonic3 level in dBc
harmonic3 upper limit statusbyte (NR1)
0 = Disable
1 = Enable
harmonic3 upper limit failbyte
where failbyte (NR1):
0 = Pass
1 = Fail
when no spurious data is detected no data follows harmonic return values
when spurious data is present, query returns data stream as follows:
spurious frequency in MHz
spurious level in dBc
spurious threshold statusbyte (NR1) always 1
spurious threshold failbyte (NR1) always 1

:SPURious **Spurious measurements**

:START Sets start frequency for Spurious measurement sweeps
range: 100 kHz to 2.7 GHz
query returns: current Start frequency setting

:STOP Sets stop frequency for Spurious measurement sweeps
range: 100 kHz to 2.7 GHz
query returns: current Stop frequency setting

:THREShold Defines threshold for Spurious measurements
range: -65 to 0 dBc
query returns: current Threshold setting

Commands	Command Description and Parameters
Test - Meters	
[:ANDX]	
:AF	**AF Measurements**
:ANALyer	**Analyzer**
:DISTortion	Distortion Measurement
:HOLD	Peak Hold Measurement
:ENABle	Enables Peak Hold Measurement OFF | ON | 0 | 1
:RESet	Resets Peak Hold Measurement no parameters, no query
:HN	Hum and Noise Measurement
:HOLD	Peak Hold Measurement
:ENABle	Enables Peak Hold Measurement OFF | ON | 0 | 1
:RESet	Resets Peak Hold Measurement no parameters, no query
:LEVel	Level
:HOLD	Peak Hold Measurement
:ENABle	Enables Peak Hold Measurement OFF | ON | 0 | 1
:RESet	Resets Peak Hold Measurement no parameters, no query
:SINad	SINAD Measurement
:HOLD	Peak Hold Measurement
:ENABle	Enables Peak Hold Measurement OFF | ON | 0 | 1
:RESet	Resets Peak Hold Measurement no parameters, no query
:SNR	Signal to Noise Ratio Measurement
:HOLD	Peak Hold Measurement
:ENABle	Enables Peak Hold Measurement OFF | ON | 0 | 1
:RESet	Resets Peak Hold Measurement no parameters, no query

Commands	Command Description and Parameters

Test - Meters (cont)

[:ANDX]

:MOD — **Mod(ulation) / DeMod Measurements**

:ANALyzer — **Analyzer**

:AM	AM Depth Measurement
:HOLD	Peak Hold Measurement
:ENABle	Enables Peak Hold Measurement OFF | ON | 0 | 1
:RESet	Resets Peak Hold Measurement no parameters, no query
:DISTortion	Distortion Measurement
:HOLD	Peak Hold Measurement
:ENABle	Enables Peak Hold Measurement OFF | ON | 0 | 1
:RESet	Resets Peak Hold no parameters, no query
:FM	FM Deviation Measurement
:HOLD	Peak Hold Measurement
:ENABle	Enables Peak Hold Measurement OFF | ON | 0 | 1
:RESet	Resets Peak Hold no parameters, no query
:HN	Hum and Noise Measurement
:HOLD	Peak Hold Measurement
:ENABle	Enables Peak Hold Measurement OFF | ON | 0 | 1
:RESet	Resets Peak Hold Measurement no parameters, no query
:SINad	SINAD Measurement
:HOLD	Peak Hold Measurement
:ENABle	Enables Peak Hold Measurement OFF | ON | 0 | 1
:RESet	Resets Peak Hold no parameters, no query
:SNR	Signal to Noise Ratio Measurement
:HOLD	Peak Hold Measurement
:ENABle	Enables Peak Hold Measurement OFF | ON | 0 | 1
:RESet	Resets Peak Hold Measurement no parameters, no query

Commands	Command Description and Parameters
Test - Meters (cont)	
[:ANDX]	
:RF	**RF Measurements**
:ANALyzer	**Analyzer**
:AIPower	ANT Inband Power
:HOLD	Peak Hold Measurement
:ENABle	Enables Peak Hold Measurement OFF | ON | 0 | 1
:RESet	Resets Peak Hold Measurement no parameters, no query
:DISTortion	Distortion Measurement
:HOLD	Peak Hold Measurement
:ENABle	Enables Peak Hold Measurement OFF | ON | 0 | 1
:RESet	Resets Peak Hold Measurement no parameters, no query
:HN	Hum and Noise Measurement
:HOLD	Peak Hold reading
:ENABle	Enables Peak Hold reading OFF | ON | 0 | 1
:RESet	Resets Peak Hold no parameters, no query
:SINAD	SINAD Measurement
:HOLD	Peak Hold reading
:ENABle	Enables Peak Hold reading OFF | ON | 0 | 1
:RESet	Resets Peak Hold no parameters, no query
:SNR	Signal to Noise Ratio Measurement
:HOLD	Peak Hold reading
:ENABle	Enables Peak Hold reading OFF | ON | 0 | 1
:RESet	Resets Peak Hold no parameters, no query
:TRBPower	TR Broadband Power Measurement
:HOLD	Peak Hold Measurement
:ENABle	Enables Peak Hold Measurement OFF | ON | 0 | 1
:RESet	Resets Peak Hold Measurement no parameters, no query
:TRIPower	TR Inband Power Measurement
:HOLD	Peak Hold Measurement
:ENABle	Enables Peak Hold Measurement OFF | ON | 0 | 1
:RESet	Resets Peak Hold Measurement no parameters, no query

Commands	Command Description and Parameters
Test - Scope	
[:ANDX]	
:INITiate	**Initiate**
:CONTinuous	**Continuous (Repeat)**
:SCOPe	Scope Measurements ON | OFF | 1 | 0
:IMMediate	**Immediate (Single) measurement trace**
:SCOPe	Scope Measurements no parameters, no query
:SCOPe	**Oscilloscope**
:ATRace	**Trace A**
:COUPling	Coupling AC | DC | GND
:MKR*n*?	Returns reading at user defined marker position where *n* = 1 or 2 query returns: parameter: time_position (NRf - 0 to RHS of screen) returns: statusbyte (NR1) always 0 (Valid) value mV | % | Hz (NR2)
:XTRace?	Returns trace time data query returns: ATrace time data
:YTRace?	Returns trace vertical data query returns: ATrace vertical data
:SOURce	Source OFF | CH1 | CH2 | AUD | FAUD | DEMod | FDEMod
:VDIV	Vertical /div
:AM	In % (when source is demod AM) range: % (5 to 50%) query returns: % (NR1) 5, 10, 20 or 50%
:FM	In Hz (when source is demod FM) <NRf> [kHz] | Hz range: (500 Hz to 50 kHz) query returns: Hz (NR2) in 1, 2, 5 steps within specified range
:VOLT	In Volts <NRf> [mV] | V range: (2 mV to 220 V) query returns: mV (NR2) in 1, 2, 5 steps within specified range

Commands	Command Description and Parameters

Test - Scope (cont)

[:ANDX]

:SCOPe — **Oscilloscope (cont)**

:BTRace — **Trace B**

:COUPling — Coupling
AC | DC | GND

:MKR*n*? — Returns reading at user defined marker position where *n* = 1 or 2
query returns:
parameter:
time_position (NRf - 0 to RHS of screen)
returns:
statusbyte (NR1) always 0 (Valid)
value - in mV | % | Hz (NR2)

:XTRace? — Returns trace time data
query returns: BTrace time data

:YTRace? — Returns trace vertical data
query returns: BTrace vertical data

:SOURce — Source
OFF | CH1 | CH2 | AUD | FAUD | DEMod | FDEMod

:VDIV — Vertical /div

:AM — In % (when source is demod AM)
range: % (5 to 50%)
query returns: % (NR1) 5, 10, 20 or 50%

:FM — In Hz (when source is demod FM)
<NRf> [kHz] | Hz
range: 500 Hz to 50 kHz
query returns: Hz (NR2) in 1, 2, 5 steps within specified range

:VOLT — In Volts
<NRf> [mV] | V
range: 2 mV to 220 V
query returns: mV (NR2) in 1, 2, 5 steps within specified range

:HDIV — **Horizontal /div**
<NRf> [ms] | us | s
range: 1 us to 1 s
query returns: us (NR1) in 1, 2, 5 steps within specified range

:MKR — **Locked / Unlocked**
UNLOCKed | LOCKed

:MKR*n* — **Marker where *n* = Marker 1 or 2**

:ENABle — Enables Marker
ON | OFF | 1 | 0

:TRIGger — **Trigger**

:EDGE — Edge
RISE | FALL

:FILTer — Trigger Filter
0 | 1 | 2
query returns:
statusbyte (NR1) where:
0 = No Reject
1 = Noise Reject
2 = HF Reject

:LEVel — Level
<NRf>[mV] | V (up to ±8 times the vertical/div setting)
query returns:
mV (NR1) up to ±8 times the setting

:MODE — Sets Trigger Mode
AUTO | NORMal

:SOURce — Sets Trigger Source
ATRace | BTRace | EXT

Commands **Command Description and Parameters**

Test - Spectrum Analyzer

[:ANDX]

:ABORt **Abort**
- **:SA** **Spectrum Analyzer Sweeps**
  - no query, no parameters

:INITiate **Initiate**
- **:CONTinuous** **Continuous (Repeat)**
  - :SA Spectrum Analyzer Sweep
    - ON | OFF | 1 | 0
- **:IMMediate** **Immediate (Single)**
  - :SA Spectrum Analyzer Sweep
    - no query, no parameters

:SA **Spectrum Analyzer**
- **:COUPling** **Coupling**
  - :RBW Resolution Bandwidth
    - :AUTO Enables Auto
      - ON | OFF | 1 | 0
      - Applies to Start-Stop / Centre-Span Modes
    - :VALue Bandwidth Setting
      - Zero-Span Modes
        - H300 | KH3 | KH30 | KH60 | KH300 | MH60
        - query returns:
          - statusbyte (NR1) where:
            - 0 = Default value (Auto or Manual)
            - 1 = Non-default value in Manual mode
      - Start-Stop / Center-Span Modes
        - query only if Auto is ON, otherwise
        - H300 | KH3 | KH30 | KH60 | KH300 | MH60
        - query returns:
          - statusbyte (NR1) where:
            - 0 = Default value (Auto or Manual)
            - 1 = Non-default value in Manual mode
  - :STATus? Coupling setting status
    - query returns:
      - statusbyte (NR1) where:
        - 0 = Valid
        - 1 = Invalid
        - 2 = Uncalibrated configuration
  - :SWEep Sweep Time
    - :AUTO Enables Auto
      - ON | OFF | 1 | 0
      - Applies to Start-Stop / Center-Span Modes
    - :COMPlete? Returns trace status
      - query returns:
        - statusbyte (NR1) where:
          - 0 = Trace Incomplete
          - 1 = Trace Complete
    - :VALue The Value
      - Applies to Start-Stop / Center-Span Modes
      - query only if Auto is ON, otherwise
        - <NRf>[ms] | s
        - range: 200 ms to 100 s
      - query returns:
        - statusbyte (NR1) where:
          - 0 = Default value (Auto or Manual)
          - 1 = Non-default value in Manual mode
        - ms (NR1) in 1, 2, 5 steps within specified range

Commands	Command Description and Parameters

Test - Spectrum Analyzer (cont)

[:ANDX]

:SA — **Spectrum Analyzer (cont)**

:COUPling — **Coupling (cont)**

:VBW — Video Bandwidth

:AUTO — Enables Auto
Applies to Current Mode
ON | OFF | 1 | 0

:VALue — Bandwidth Setting
query only if Auto is ON, otherwise
H300 | KH1 | KH3 | KH10 | KH30 | H100 | KH300 | MH1 | NONE
query returns:
statusbyte (NR1) where:
0 = Default value (Auto or Manual)
1 = Non-default value in Manual mode

:HORizontal — **Horizontal**

:FREQuency — Frequency Values (Start-Stop, Center-Span)

:CENTer — Center Frequency
<NRf>[Hz] | kHz | MHz | GHz
range: (100 kHz to 2.7 GHz)
query returns: Hz (NR1) within specified range

:SPAN — Span Frequency
<NRf>[Hz] | kHz | MHz | GHz
range: (2 kHz to 2.7 GHz)
query returns: Hz (NR1) within specified range

:STARt — Start Frequency
<NRf>[Hz] | kHz | MHz | GHz
range: (100 kHz to 2.7 GHz)
query returns: Hz (NR1) within specified range

:STOP — Stop Frequency
<NRf>[Hz] | kHz | MHz | GHz
range: (100 kHz to 2.7 GHz)
query returns: Hz (NR1) within specified range

:MODE — Sets Span Mode
SS | CS | ZS
Start-Stop | Center-Span | Zero Span)

:SPAN — Sets Span

:FULL — To Full Span
Applies to Start-Stop / Center-Span Modes
no parameters. no query

:ZERO — Zero Span Values

:SWEep — Sweep Time
Applies to Zero - Span Mode
<NRf> [ms] | s
range: (50 ms to 100 s)
query returns: ms (NR1) in 1, 2, 5, steps within specified range

Commands	Command Description and Parameters

Test - Spectrum Analyzer (cont)

[:ANDX]

:SA — **Spectrum Analyzer (cont)**

:MARKer — **Markers**

:DELTa	Marker Delta
:LEVel?	Level (Between Mkr1 and Mkr2 (dBm) level values) query returns: statusbyte (NR1) where: 1 = Unlocked 2 = Locked dBm (NR2) Difference value
:POSition?	Distance (Between Mkr1 and Mkr2) query returns: Stop-Start / Center-Span Modes Hz (NR1) Difference Zero-Span Mode ms (NR2) Difference
:MKR*n*	Marker where *n* = Marker 1 or 2
:ENABle	Enables Marker ON | OFF | 1 | 0
:LEFT	Moves Marker left to next peak no query, no parameters
:LEVel?	Level at Marker position query returns: statusbyte (NR1) always 2 (Locked) dBm (NR2)
:MINimum	Moves Marker to minimum point Zero-Span Mode only no query, no parameters
:PEAK	Moves Marker to peak point no query, no parameters
:POSition	Marker Position Stop-Start / Center-Span Modes <NRf> [Hz] | kHz | MHz | GHz (Between Start / Stop frequencies) query returns: Hz (NR1) Actual frequency position Zero-Span Mode <NRf> [ms] | s (Between 0 and Sweep value) query returns: Hz (NR1) Actual time position
:RIGHt	Moves Marker right to next peak no query, no parameters
:SCF	Sets Center Freq. to Marker Position Applies to Start-Stop / Center-Zero Modes no query, no parameters
:SREF	Sets Ref Level to Marker Position level no query, no parameters

Commands	Command Description and Parameters

Test - Spectrum Analyzer (cont)

[:ANDX]

:SA — **Spectrum Analyzer (cont)**

:MARKer — **Markers (cont)**

:MODE	Locked / Unlocked UNLOCKed | LOCKed
:PAVG?	Returns current Average reading between Mkr1 and Mkr2 query only, no parameters
:PLIVe?	Returns current Live reading between Mkr1 and Mkr2 query only, no parameters
:PPEAK?	Returns current Peak reading between Mkr1 and Mkr2 query only, no parameters
:PPKAV?	Returns current average of Peak average between Mkr1 and Mkr2 query only, no parameters
:SSS	Markers set Start - Stop Span Applies to Start-Stop / Center-Zero Modes no query, no parameters
:SVERtical	Markers set (Nearest) Vertical Range Applies to Zero-Span Mode only no query, no parameters

:MODE — **Sweep Mode**

CHANnel | FULL

:SOURce — **Source (RF In)**

TR | ANT

:TRACe — **Trace**

:AVG?	Average Trace query returns: Average trace data
:AVERage	Averages
:CURRent?	Query returns Count of Averages Progress statusbyte (NR1) 0 to 200, 0 if averaging OFF
:ENABle	Enables Trace ON | OFF | 1 | 0
:VALue	Required Number of Averages <NRf> range: 1 to 200 query returns: (NR1) within specified range
:LIVE?	Query returns Live Trace query only, no parameters
:MAXimum	Enables Maximum Hold ON | OFF | 1 | 0 When on, returned marker data is max hold Data
:PEAK?	Query returns Peak Hold Trace query only, no parameters
:PKAV?	Query returns Peak Average query only, no parameters
:REFMode	Enables reference mode of operation ON | OFF | 1 | 0
:SETReference	Sets Generator reference trace to trace that is active when command is issued ON | OFF | 1 | 0

:TRKGen — **Tracking Generator**

:ENABle	Enables Tracking Generator ON | OFF | 1 | 0

:TRIGger — **Trigger**

:MODE	Gate Mode FRUN

Commands	Command Description and Parameters

Test - Spectrum Analyzer (cont)

[:ANDX]

:SA — **Spectrum Analyzer (cont)**

:VERTical — **Vertical**

:LEVel — Level (Top of Screen)
dBm (<NRf> - (no offset set)
T/R: -60 to +60 dBm
ANT: -100 to +10 dBm
query returns: dBm (NR2) within specified ranges

:VDIV — Vertical / div
1 | 2 | 5 | 10

Universal Commands

The following commands are valid in all 3900 operating Systems.

Overload Alarm - Active Tile

:FETCh — **Fetch**

:RF — **RF**

:ALARM — Returns overload status

:GEN — Returns Generator overload status
NORMAL | OVERLOADED

:REC — Returns Receiver overload status
NORMAL | OVERLOADED

Utils - Calibration

:CALibrate — **Calibration**

:USER — **User Calibration**

:RUN — Start User Calibration
no query, no parameters

:SETPoint — Sets Temperature Change Threshold
range: 0.1 to 10.00 dB
query returns: (NR2) within specified range

:STATus? — Returns Calibration status
query returns:
statusbyte (NR1) where:
2 to 25 = calibration is running,
0 = calibration passed,
negative value = calibration failed

:UNCAL? — Returned data indicates Calibration state
query returns:
statusbyte (NR1) where:
0 = calibration not required
1 = calibration required

Utils - Save/Recall

:SYSTem — **System**

:STORe “filename”
Saves file to Test Set’s internal database.
Beginning and ending quotation marks are required.
Do not include file extension in filename.
Do not include spaces in filename.
no query

:RECAll “filename”
Recalls file from Test Set’s internal database.
Beginning and ending quotation marks are required.
Do not include file extension in filename.
Do not include spaces in filename.
Do not include forward slash (/) at beginning of directory name.
no query

Commands	Command Description and Parameters

Utils - USB to Serial

:USBTOSERial USB to Serial Port

:OPEN **Open**

Opens selected port
range: 0 to 15
query returns: (NR1) within specified range

:CLOSe **Close**

Closes opened port
range: 0 to 15
query returns: (NR1) within specified range

:BAUDrate **Sets Baud Rate at which data is transmitted**

B300 | B1200 | B2400 | B4800 | B9600 | B19200 | B38400 | B57600 | B115200 | B230400

:READ? **Reads string data**

query only, no parameters

:WRITe **Write sends string data**

no query, no parameters

:QUERy? **Query reads and writes string as send parameter**

query only, no parameters

NOTE

Use :USBTOSERial:TIMEout command to set the time between write and read from RS232 when executing :USBTOSERial:QUERy? “send string” command.

:RESet **Send 1 to reset communications**

no query, no parameters

:CHARsize **Sets Character Size**

CS7 | CS8

:PARIty **Sets Parity**

NONE | EVEN | ODD | SPACE

:HWFLowcontrol

Hardware Flow Control

OFF | ON | 0 | 1

:SWFLowcontrol

Software Flow Control

OFF | ON | 0 | 1

:TIMEout **Sets Timeout Setting in µs**

:TERMchar **Sets Termination Character decimal value**

Chapter 5

3900 Series Compatibility Commands

Introduction

This chapter describes 3900 Series Compatibility Commands that Aeroflex has developed to support commands utilized by other service monitors currently being used in the industry. The Detailed Remote Command listings include parameter inputs and responses. The commands in each of these listings are arranged alphabetically within the hierarchy.

Format

The following variables are included in the command structure for the 3900 Compatibility Commands:

(_)

Indicates a space is to be included in the command string.

For example, :AFGenerator1:AM:STATe(_), followed by defined parameter would appear as :AFGenerator1:AM:STATe ON.

'p'

'p´ is used to represent a user defined parameter.

For example, :AFGenerator1:DESTination(_)'p' would appear as :AFGenerator1:DESTination 'AM'.

'u'

'u´ is used to represent a user defined unit of measure.

For example, :OSCilloscope:SCALe:VERTical:OFFset(_)p(_)u would appear as :OSCilloscope:SCALe:VERTical:OFFset 1(_)dB.

PCT

PCT is used to indicate a measurement which is displayed as a percent (%).

No Op

No Op indicates a non-operational command. Commands with this designation are intended to No Op indicates a non-operational command. Commands with this designation are intended to serve as "place holders" in existing command scripts and are colored coded grey for easy recognition. Non-operational commands must be configured to maintain script integrity. Query commands that are non-operational do not return valid information.

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AF Generator Commands

AF Generator Commands must adhere to the following guidelines:

1. Define Destination first, then Modulation if AM or FM is the defined Destination, followed by the modulation rate or audio output frequency.
2. Increment value must follow the numeric field to which it applies: e.g., :AFGenerator2:FREQuency:INCRement 10.
3. INCRement value must be defined prior to INCRement UP or DOWN command.

Command	Command Description and Parameters
Configure Commands	
:CONFigure	
:ARTSwitching?	**Returns parameter setting** No Op
:ARTSwitching'p'	**Defines display switch between Rx and Tx control tiles** AUTO | Manual No Op
:BADDress?	**Returns GPIB Address** query only, no parameters
:BADDress(_)p	**Sets GPIB address of Test Set**
:INCRement?	Returns parameter setting query only, no parameters
:INCRement(_)UP	Increases Address setting by default increment value (1) no query, no parameters
:INCRement(_)DOWN	Decreases Address setting by default increment value (1) no query, no parameters
:BEEPer?	**Returns parameter setting** No Op
:BEEPer(_)'p'	**Sets Beeper state** OFF | QUIET | LOUD No Op
:BMODe?	**Returns parameter setting** No Op
:BMODe(_)'p'	**Sets Beeper mode** TALK&LSTN No Op
:DATE?	**Returns parameter setting** No Op
:DATE	**Sets Date of internal clock** MMDDYYYY (Month Day Year) No Op
:EDISk?	**Returns parameter setting** No Op
:EDISk(_)'p'	**External Disk Specification** No Op
:INTensity?	**Returns parameter setting** query only, no parameters
:INTensity(_)p	**Sets Screen Intensity level from 1 to 8** where: 1 = Dim... 8 = Bright
:INCRement?	Returns parameter setting query only, no parameters
:INCRement(_)UP	Increases Intensity setting by default increment value (1) no query, no parameters
:INCRement(_)DOWN	Decreases Intensity setting by default increment value (1) no query, no parameters
:KNOB?	**Returns parameter setting ON** Always in ON state No Op
:KNOB(_)'ON'	**Rotary Knob** Always in ON state No Op

Command	Command Description and Parameters
Configure Commands (cont)	
:CONFigure (cont)	
:OFLevel	**Offset Frequency Level**
:ANTenna?	Returns parameter setting in dB
:ANTenna(_)p(_)DB	Sets Offset Level value for Antenna in dB
:DUNits?	Returns parameter setting in dB No Op
:DUNits(_)DB	Sets parameters display units in dB No Op
:INCRement?	Returns parameter setting in dB query only, no parameters
:INCRement(_)UP	Increases Offset Level by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)DOWN	Decreases Offset Level by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)p	Sets Increment value in dB
:DIVide	Divides Increment value by 10 no query, no parameters
:DUNits?	Returns parameter setting in dB No Op
:DUNits(_)DB	Sets parameter display units in dB No Op
:MODE?	Returns parameter setting query only, no parameters
:MODE(_)p	Defines Increment Mode LINear | LOGarithm
:MULTiply	Multiplies Increment value by 10 no query, no parameters
:UNITs?	Returns parameter setting in dB query only, no parameters
:UNITs(_)DB	Sets Offset Level units in dB

Command	Command Description and Parameters
Configure Commands (cont)	
:CONFigure (cont)	
:OFLevel (cont)	
:DUPLex?	Returns parameter setting in dB query only, no parameters
:DUPLex(_)p(_)DB	Sets Duplex Offset Level in dB where: p is a real value in dB
:DUNits?	Returns parameter setting in dB No Op
:DUNits(_)DB	Sets parameter display units in dB No Op
:INCRement?	Returns parameter setting in dB query only, no parameters
:INCRement(_)UP	Increases Offset Level by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)DOWN	Decreases Offset Level by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)p	Sets Increment value in dB
:DIVide	Divides Increment value by 10 no query, no parameters
:DUNits?	Returns parameter setting in dB No Op
:DUNits(_)DB	Sets parameter display units in dB No Op
:MODE?	Returns parameter setting query only, no parameters
:MODE(_)p	Defines Increment Mode LINear | LOGarithm
:MULTiply	Multiplies Increment value by 10 no query, no parameters
:UNITs?	Returns parameter setting in dB query only, no parameters
:UNITs(_)DB	Sets Offset Level units in dB
:MODE?	Returns parameter setting query only, no parameters
:MODE(_)'p'	Enables/Disables Offset Frequency Level OFF | ON

Command	Command Description and Parameters
Configure Commands (cont)	
:CONFigure (cont)	
:OFLevel (cont)	
:RFINout?	Returns parameter setting in dB query only, no parameters
:RFINout(_)p(_)DB	Sets Offset Level for RF In/Out where: p is a real value in dB
:DUNits?	Returns real value in dB No Op
:DUNits(_)DB	Sets parameter in dB No Op
:INCRement?	Returns parameter setting in dB query only, no parameters
:INCRement(_)UP	Increases Offset Level by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)DOWN	Decreases Offset Level by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)p	Sets Increment value in dB
:DIVide	Divides Increment value by 10 no query, no parameters
:DUNits?	Returns parameter setting in dB No Op
:DUNits(_)DB	Sets parameter display units in dB No Op
:MODE?	Returns parameter setting query only, no parameters
:MODE(_)p	Defines Increment Mode LINear | LOGarithm
:MULTiply	Multiplies Increment value by 10 no query, no parameters
:UNITs?	Returns parameter setting in dB query only, no parameters
:UNITs(_)DB	Sets Offset Level units in dB
:OFRequency?	**Returns parameter setting in Hz** query only, no parameters
:OFRequency(_)p(_)MHZ/HZ/KHZ	**Sets Offset Frequency in MHz** where p is a real value in MHz
:DUNits?	Returns parameter setting in MHz No Op
:DUNits(_)MHZ	Sets parameter display units in MHz No Op
:UNITs?	Returns parameter setting in Hz query only, no parameters
:UNITs(_)Hz	Sets Offset Frequency in Hz
:OMODe?	**Returns parameter setting** query only, no parameters
:OMODe(_)'p'	**Enables/Disables defined Offset Frequency** Returns ON | OFF in double quotes
:OPERation	**Defines Autoranging/Autotuning routine**
:AUTO	Enables Autoranging / autotuning routines No Op
:HOLD	Disables Autoranging / autotuning routines No Op
:NOTChmode?	**Returns parameter setting** query only, no parameters
:NOTChmode'p'	**Sets Notch coupling mode** AFGEN1 Always AFGEN1

Command	Command Description and Parameters
Configure Commands (cont)	
:CONFigure (cont)	
:PDOWn?	**Returns parameter setting** No Op
:PDOWn(_)'p'	**Sets Power Down parameter** 1 min | 2 min | 5 min | 10 min | Disable No Op
:PRINt	**Printer settings**
:ADDRess?	Returns parameter setting No Op
:ADDRess	Sets Printer Address No Op
:INCRement?	Returns parameter setting No Op
:INCRement(_)UP	Increases Printer Address by default increment value (1) No Op
:INCRement(_)DOWN	Decreases Printer Address by default increment value (1) No Op
:DESTination?	Returns parameter setting No Op
:DESTination(_)'p'	Selects Printer port Serial | HPIB | Parallel No Op
:FFEnd(_)'p'	Enables/Disables form feed at end of printing YES | NO No Op
:FFSTart(_)'p'	Enables/Disables form feed at start of printing YES | NO No Op
:HPMOdel?	Returns parameter setting No Op
:HPModel?	Returns parameter setting No Op
:HPMOdel(_)'p'	Selects printer model ThinkJet | QuietJet | PaintJet | Epson(_)FX-80 | Epson(_)LQ-850 | DeskJet | LaserJet No Op
:HPModel(_)'p'	Selects printer model ThinkJet | QuietJet | PaintJet | Epson(_)FX-80 | Epson(_)LQ-850 | DeskJet | LaserJet No Op
:LINEs?	Returns parameter setting No Op
:LINes?	Returns parameter setting No Op
:LINEs(_)p	Sets the number of lines printed per page No Op
:LINes(_)p	Sets the number of lines printed per page No Op
:INCREment?	Returns parameter setting No Op
:INCRement(_)UP	Increases Printer Address by default Increment value (1) No Op
:INCRement(_)DOWN	Decreases Printer Address by default Increment value (1) No Op
:PRINter?	Returns parameter setting No Op
:PRINter(_)'p'	Selects printer model ThinkJet | QuietJet | PaintJet | Epson(_)FX-80 | Epson(_)LQ-850 | DeskJet | LaserJet No Op

Command	Command Description and Parameters
Configure Commands (cont)	
:CONFigure (cont)	
:PRINt (cont)	
:TITLe?	Returns parameter setting No Op
:TITLe(_)'pppppppp'	Defines title to be printed at top of each page Up to 50 characters No Op
:RFIMpedance?	**Returns current RF Impedance setting** No Op
:RFIMpedance(_)'p'	**Defines RF Impedance setting** where: p = value is 50(_)OHM or EMF No Op
:RTSWitching?	**Returns parameter setting** No Op
:RTSWitching(_)'p'	**Sets automatic screen changes between Rx and Tx test screens** Carrier | PTT No Op

Command	Command Description and Parameters

AF Analyzer Commands

NOTE

To reset measurement on Detector HOLD commands send :MEAS:RESet or :SELect detector.

:AFANalyzer

:AIN?	**Returns parameter setting** query only, no parameters
:AIN(_)'p'	**Selects AF Analyzer Input** where: GND = Ground (Audio 1) FLOAT = Hi Z (Audio 2) 600(_)To(_)Hi = 600 Balanced
:DEMPhasis?	**Returns parameter setting** No Op
:DEMPhasis(_)'p'	**Enables/Disables de-emphasis networks in AF Analyzer** where: 750µs = Enables OFF = Disables No Op
:GAIN?	Returns parameter setting No Op
:GAIN(_)'p'	Sets AF Analyzer De-Emphasis Amplifier Gain 0 DB | 10 DB | 20 DB | 30 DB No Op
:DETector?	**Returns parameter setting** query only, no parameters
:DETector(_)'p'	**Sets Detector types when measuring and displaying AF signal levels.** Applies to :MEAS:AFR:AM, :MEAS:AFR:FM, and :MEAS:AFR:ACLevel meters RMS | RMS*SQRT2 | PK+ | PK- | PK+-/2 | PK+-MAX | PK+(_)HOLD | PK-(_)HOLD | PK+-/2(_)HD | PK+-MX(_)HD
:PKLocation?	Returns parameter setting No Op
:PKLocation(_)'Filters'	Sets signal source for Peak Detector to Filtered Filters | De-emp No Op
:SETTling?	Returns parameter setting No Op
:SETTling(_)'p'	Sets Settling Time for Audio Measurements FAST | SLOW No Op

Command	Command Description and Parameters
AF Analyzer Commands (cont)	
:AFANalyzer (cont)	
:ELResistor?	**Returns parameter setting in ohms**
	No Op
:ELResistor(_)p(_)OHM	**Sets Resistor setting where p is a real value in ohms**
	No Op
:DUNits?	Returns parameter setting
	No Op
:DUNits(_)OHM	Sets parameter display units in ohms
	No Op
:INCRement?	Returns parameter setting
	No Op
:INCRement(_)UP	Increases Analyzer Resistor setting by value defined in :INCRement(_)p command
	No Op
:INCRement(_)DOWN	Decreases Analyzer Resistor setting by value defined in :INCRement(_)p command
	No Op
:INCRement(_)p(_)OHM	Sets Increment value in ohms
	No Op
:DIVide	Divides Increment value by 10
	No Op
:DUNits?	Returns parameter setting
	No Op
:DUNits(_)OHM	Sets parameter display units in ohms
	No Op
:MODE?	Returns parameter setting
	No Op
:MODE(_)p	Sets Resistor Mode
	LINear | LOGarithm
	No Op
:MULTiply	Multiplies Increment value by 10
:UNITs?	Returns parameter setting
	No Op
:UNITs(_)OHM	Sets unit of measure in ohms
	No Op
:FILTer1?	**Returns parameter setting**
:FILTer1(_)'p'	**Selects AF Analyzer Filter**
	<20Hz(_)HPF | 50Hz(_)HPF | 300Hz(_)HPF | Optional Filters
:FILTer2?	**Returns parameter setting**
:FILTer2(_)'p'	**Selects AF Analyzer Filter**
	300Hz LPF | 3kHz LPF | 15kHz LPF | >99kHz LP | Optional Filters

Command	Command Description and Parameters
AF Analyzer Commands (cont)	
:AFANalyzer (cont)	
:GTIMe?	**Returns parameter setting in mS**
	No Op
:GTIMe(_)p(_)MS	**Sets Gate Time**
	where: p is a real value in mS
	No Op
:DUNits?	Returns real value in mS
	No Op
:DUNits(_)MS	Sets parameter display units in mS
	No Op
:INCRement?	Returns parameter setting in mS
	No Op
:INCRement UP	Increases Gate Time setting by value defined in :INCRement(_)pms command
	No Op
:INCRement DOWN	Decreases Gate Time setting by value defined in :INCRement(_)pms command
	No Op
:INCRement(_)p(_)MS	Sets Gate Time Increment value
	where: p is a real value in mS
	No Op
:DIVide	Divides Increment value by 10
	No Op
:DUNits?	Returns parameter setting in ms
	No Op
:DUNits(_)MS	Sets parameter display units in ms
	No Op
:MODE?	Returns parameter setting in ms
	No Op
:MODE(_)p	Sets Gate Time Increment mode
	LINear | LOGarithm
	No Op
:MULTiply	Multiplies Increment value by 10
	No Op
:UNITs?	Returns unit in seconds
	No Op
:UNITs(_)S	Sets GPIB units in seconds
	No Op
:INPut?	**Returns parameter setting**
	query only, no parameters
:INPut(_)'p'	**Sets AF Analyzer Input source**
	FM(_)DEMOD | AM(_)DEMOD | SSB(_)DEMOD| AUDIO(_)IN
:GAIN?	Returns parameter setting
	No Op
:GAIN(_)'p(_)DB'	Sets gain setting of AF Analyzer Input Amplifier
	0 DB | 20 DB | 40 DB
	where: p is a real value in DB
	No Op

Command	Command Description and Parameters
AF Analyzer Commands (cont)	
:AFANalyzer (cont)	
:NOTCh	
:FREQuency?	Returns parameter setting in Hz query only, no parameters
:FREQuency(_)p(_)HZ/KHZ	Sets center frequency of Frequency Notch Filter where: p is a real value kHz/Hz Based on :AFAN:INPUT setting
:DUNits?	Returns parameter setting in kHz No Op
:DUNits(_)KHZ	Sets parameter display units in kHz No Op
:INCRement?	Returns real value in kHz query only, no parameters
:INCRement UP	Increases Gate Time setting by value defined in :INCRement(_)p command no query, no parameters
:INCRement DOWN	Decreases Gate Time setting by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)p(_)HZ/KHZ	Sets parameter display units where: p is a real value in Hz
:DIVide	Divides Increment value by 10 no query, no parameters
:DUNits?	Returns parameter setting in kHz No Op
:DUNits(_)KHZ	Sets parameter display units in kHz No Op
:MODE?	Returns parameter setting query only, no parameters
:MODE(_)p	Sets Notch Frequency Increment mode LINear | LOGarithm
:MULTiply	Multiplies Increment value by 10 no query, no parameters
:UNITs?	Returns parameter setting in Hz query only, no parameters
:UNITs(_)HZ	Sets GPIB units in HZ
:GAIN?	Returns parameter setting in dB No Op
:GAIN(_)'p'	Sets AF Analyzer Notch filter amplifier gain setting 0 DB | 10 DB | 20 DB | 30 DB | 40 DB where p is a real value in dB No Op
:RANGing?	**Returns parameter setting** No Op
:RANGing(_)'p'	**Sets AF Analyzer Gain Control** AUTO | HOLD No Op
:SMPoint?	**Returns parameter setting** No Op
:SMPoint(_)'p'	**Sets Notch filter** De-emp | Filters | Input | Notch No Op

Command	Command Description and Parameters
AF Analyzer Commands (cont)	
:AFANalyzer (cont)	
:SPEaker	
:MODE?	Returns parameter setting query only, no parameters
:MODE(_)'p'	Enables/Disables speaker OFF | ON | 0 | 1
:VOLume?	Returns parameter setting query only, no parameters
:VOLume(_)'p'	Sets speaker volume OFF | Pot where: OFF = Sets volume to 0 Pot = Sets volume to 90 PCT
AF Generator1 Commands	
:AFGenerator1	
:AM?	**Returns real value in PCT** query only, no parameters
:AM(_)p(_)PCT	**Sets AM depth when DESTination is set to AM** where: p is real value in PCT
:DUNits?	Returns parameter setting as a PCT query only, no parameters
:DUNits(_)PCT	Sets parameter display units as a PCT
:INCRement?	Returns parameter setting as a PCT query only, no parameters
:INCRement(_)UP	Increases Generator setting by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)DOWN	Decreases Generator setting by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)p(_)PCT	Sets Increment value where: p is real value in PCT
:DIVide	Divides Increment value by 10 no query, no parameters
:DUNits?	Returns parameter setting as a PCT query only, no parameters
:DUNits(_)PCT	Sets parameter display units as a PCT
:MODE?	Returns parameter setting query only, no parameters
:MODE(_)p	Defines Increment Mode LINear | LOGarithm
:MULTiply	Multiplies Increment value by 10 no query, no parameters
:STATe?	Returns current state of Generator (or AM) query only, no parameters
:STATe(_)p	Sets state of Generator when DESTination is set to AM OFF | ON | 0 | 1
:UNITs?	Returns parameter setting as a PCT query only, no parameters
:UNITs(_)PCT	Sets GPIB units as a PCT
:DESTination?	**Returns parameter setting in quotes** query only, no parameters
:DESTination(_)'p'	**Sets AF Generator output port** AM | FM | Audio(_)Out where: AM = AM Modulator FM = FM Modulator Audio Out = FGEN/DEMOD Connector

Command	Command Description and Parameters
AF Generator1 Commands (cont)	
:AFGenerator1 (cont)	
:FM?	**Returns real value in Hz** query only, no parameters
:FM(_)p(_)KHZ/HZ	**Sets FM deviation when DESTination is set to FM** where: p is a real value in kHz/Hz
:DUNits?	Returns parameter setting in kHz No Op
:DUNits(_)kHz	Sets parameter display units in kHz No Op
:INCRement?	Returns real value in Hz query only, no parameters
:INCRement(_)UP	Increases Generator setting by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)DOWN	Decreases Generator setting by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)p(_)KHZ/HZ	Sets Increment value where: p is a real value in kHz/Hz
:DIVide	Divides Increment value by 10 no query, no parameters
:DUNits?	Returns parameter setting in Hz No Op
:DUNits(_)KHZ/HZ	Sets parameter display units in kHz/Hz No Op
:MODE?	Returns parameter setting query only, no parameters
:MODE(_)p	Defines Increment Mode LINear | LOGarithm
:MULTiply	Multiplies Increment value by 10 no query, no parameters
:STATe?	Returns current state of Generator (or FM) query only, no parameters
:STATe(_)p	Sets state of Generator when DESTination is set to FM OFF | ON | 0 | 1
:UNITs?	Returns parameter setting in Hz query only, no parameters
:UNITs(_)Hz	Sets GPIB units in Hz

Command	Command Description and Parameters
AF Generator1 Commands (cont)	
:AFGenerator1 (cont)	
:FREQuency?	**Returns real value in Hz** query only, no parameters
:FREQuency(_)p.pp(_)HZ/KHZ	**Sets Generator output frequency** where: p is a real value in Hz/kHz
:DUNits?	Returns Display unit setting as kHz No Op
:DUNits(_)kHz	Sets parameter display units in kHz No Op
:INCRement?	Returns real value in Hz query only, no parameters
:INCRement(_)UP	Increases Generator setting by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)DOWN	Decreases Generator setting by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)p(_)HZ/KHZ	Sets Increment value where: p is a real value in Hz
:DIVide	Divides Increment value by 10 no query, no parameters
:DUNits?	Returns parameter setting in kHz No Op
:DUNits(_)kHz	Sets parameter display units in kHz No Op
:MODE?	Returns setting of Increment Mode query only, no parameters
:MODE(_)p	Defines Increment Mode LINear | LOGarithm
:MULTiply	Multiplies Increment value by 10 no query, no parameters
:UNITs(_)Hz	Sets GPIB units in Hz
:UNITs?	Returns parameter setting in Hz query only, no parameters

Command	Command Description and Parameters
AF Generator1 Commands (cont)	
:AFGenerator1 (cont)	
:OUTPut?	**Returns real value in V** query only, no parameters
:OUTPut(_)p(_)MV/V/DBUV	**Sets amplitude when DESTination is set to Audio Out** where: p is a real value in mV/V
:DUNits?	Returns parameter setting in mV No Op
:DUNits(_)mV	Sets parameter display units in mV No Op
:INCRement?	Returns real value in V query only, no parameters
:INCRement(_)UP	Increases Generator setting by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)DOWN	Decreases Generator setting by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)p(_)MV/V/DBUV	Sets Increment value where: p is a real value in mV
:DIVide	Divides Increment value by 10 no query, no parameters
:DUNits(_)mV	Sets parameter display units in mV No Op
:DUNits?	Returns parameter setting in mV No Op
:MODE?	Returns parameter setting query only, no parameters
:MODE(_)p	Defines Increment Mode LINear | LOGarithm
:MULTiply	Multiplies Increment value by 10 no query, no parameters
:STATe?	Returns current state of Generator query only, no parameters
:STATe(_)p	Sets state of Generator when DESTination is set to Audio OFF | ON | 0 | 1
:UNITs(_)V/DBUV	Sets GPIB units in V
:UNITs?	Returns parameter setting in V query only, no parameters

Command	Command Description and Parameters
AF Generator2 Commands	
:AFGenerator2	
:AM?	**Returns parameter setting as a PCT** query only, no parameters
:AM(_)p(_)PCT	**Sets AM depth when DESTination is set to AM** where: p is a real value in PCT
:DUNits?	Returns parameter setting as a PCT query only, no parameters
:DUNits(_)PCT	Sets parameter display units as a PCT
:INCRement?	Returns real value as a PCT query only, no parameters
:INCRement(_)UP	Increases Generator setting by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)DOWN	Decreases Generator setting by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)p(_)PCT	Sets Increment value where: p is a real value in PCT
:DIVide	Divides Increment value by 10 no query, no parameters
:DUNits?	Returns parameter setting as a PCT query only, no parameters
:DUNits(_)PCT	Sets parameter display units as a PCT
:MODE?	Returns parameter setting query only, no parameters
:MODE(_)p	Defines Increment Mode LINear | LOGarithm
:MULTiply	Multiplies Increment value by 10 no query, no parameters
:STATe?	Returns current state of Generator (or AM) query only, no parameters
:STATe(_)p	Sets state of Generator when DESTination is set to AM OFF | ON | 0 | 1
:UNITs(_)PCT	Sets GPIB units as a PCT
:UNITs?	Returns parameter setting as a PCT query only, no parameters
:DESTination?	**Returns parameter setting as a PCT** query only, no parameters
:DESTination(_)'p'	**Sets AF Generator output port** AM | FM | Audio(_)Out where: AM = AM Modulator FM = FM Modulator Audio Out = FGEN/DEMOD Connector
:FILTER?	**Returns parameter setting** No Op
:FILTER(_)'p'	**Sets pre-modulation Filter when :FILTER:MODE is set to ON where 'p' equals Filter type** NONE | 20kHz(_)LPF | 250Hz(_)LPF | 150Hz(_)LPF No Op
:MODE?	Returns parameter setting No Op
:MODE(_)'p'	Sets state of Filter OFF | ON No Op

Command	Command Description and Parameters
AF Generator2 Commands (cont)	
:AFGenerator2 (cont)	
:FM?	**Returns real value in Hz** query only, no parameters
:FM(_)p(_)KHZ/HZ	**Sets FM deviation when DESTination is set to FM** where: p is a real value in kHz/Hz
:DUNits?	Returns parameter setting in kHz No Op
:DUNits(_)KHZ	Sets parameter display units in kHz No Op
:INCRement?	Returns real value in Hz query only, no parameters
:INCRement(_)UP	Increases Generator setting by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)DOWN	Decreases Generator setting by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)p(_)HZ/KHZ	Sets Increment value where: p is a real value in kHz
:DIVide	Divides Increment value by 10 no query, no parameters
:DUNits?	Returns parameter setting in kHz No Op
:DUNits(_)KHZ	Sets parameter display units in kHz No Op
:MODE?	Returns parameter setting query only, no parameters
:MODE(_)p	Defines Increment Mode LINear | LOGarithm
:MULTiply	Multiplies Increment value by 10 no query, no parameters
:STATe?	Returns current state of Generator (or FM) query only, no parameters
:STATe(_)p	Sets state of Generator when DESTination is set to FM OFF | ON | 0 | 1
:UNITs?	Returns parameter setting in Hz query only, no parameters
:UNITs(_)HZ	Sets GPIB units in Hz

Command	Command Description and Parameters
AF Generator2 Commands (cont)	
:AFGenerator2 (cont)	
:FREQuency?	**Returns real value in Hz** query only, no parameters
:FREQuency(_)p.pp(_)HZ/KHZ	**Sets Generator output frequency** where: p is a real value in kHz/Hz
:DUNits?	Returns parameter setting in kHz No Op
:DUNits(_)HZ/KHZ	Sets parameter display units in kHz No Op
:INCRement?	Returns parameter setting
:INCRement(_)UP	Increases Generator setting by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)DOWN	Decreases Generator setting by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)p(_)KHZ/HZ	Defines Increment value in kHz
:DIVide	Divides Increment value by 10 no query, no parameters
:DUNits?	Returns parameter setting in kHz No Op
:DUNits(_)KHZ	Sets parameter display units in kHz No Op
:MODE?	Returns parameter setting query only, no parameters
:MODE(_)p	Defines Increment Mode LINear | LOGarithm
:MULTiply	Multiplies Increment value by 10 no query, no parameters
:UNITs(_)HZ	Sets GPIB units in Hz
:UNITs?	Returns parameter setting in Hz query only, no parameters
:MODE(_)'p'	**Sets AF Generator 2 mode** FUNC(_)GEN | TONE(_)SEQ | DTMF | CDCSS | DIGI(_)PAGE | AMPS(_)TACS | NAMP-NTACS | NMT | MPT(_)1327 | LTR | EDACS No Op

Command	Command Description and Parameters
AF Generator2 Commands (cont)	
:AFGenerator2 (cont)	
:OUTPut?	**Returns real value in V** query only, no parameters
:OUTPut(_)p(_)MV/V/DBUV	**Sets amplitude when DESTination is set to Audio Out** where: p is a real value in mV/V
:DUNits?	Returns Display units in mV No Op
:DUNits(_)MV	Sets parameter display units in mV No Op
:INCRement?	Returns real value in V query only, no parameters
:INCRement(_)UP	Increases Generator setting by value defined in the :INCRement(_)p command no query, no parameters
:INCRement(_)DOWN	Decreases Generator setting by value defined in the :INCRement(_)p command no query, no parameters
:INCRement(_)p(_)MV/V/DBUV	Sets Increment value where: p is a real value in mV
:DIVide	Divides Increment value by 10 no query, no parameters
:DUNits(_)MV	Sets parameter display units in mV No Op
:DUNits?	Returns parameter setting in mV No Op
:MODE?	Returns parameter setting query only, no parameters
:MODE(_)p	Defines Increment Mode LINear | LOGarithm
:MULTiply	Multiplies Increment value by 10 no query, no parameters
:STATe(_)p	Sets state of Generator OFF | ON | 0 | 1
:STATe?	Returns current state of Generator when DESTination is set to Audio query only, no parameters
:UNITs(_)V/DBUV	Sets GPIB units in V
:UNITs?	Returns parameter setting in V query only, no parameters
:PEMPhasis(_)'p'	**Enables/Disables Pre-emphasis** OFF | ON | 0 | 1 No Op
:POLarity	**Returns parameter setting** No Op
:POLarity(_)'p'	**Sets polarity of AF Generator 2** NORM | INVERT No Op
:SEND	**Sends output message** No Op
:MODE?	Returns parameter setting No Op
:MODE(_)'p'	Sets AF Generator 2 mode SINGLE | BURST | CONT | STEP No Op
:STOP	**Stops output message** No Op

Command	Command Description and Parameters

Oscilloscope Commands

NOTE

Must send :AFAN:INPUT command to set Scope trace prior to sending any Scope commands.

:OSCilloscope	
:CONTrol?	**Returns parameter setting**
	No Op
:CONTrol(_)'p'	**Selects Control Screen**
	MAIN | TRIGGER | MARKER
	No Op
:MARKer	
:NPEak	Moves Marker to the lowest measured value
	No Op
:PPEak	Moves Marker to the highest measured value
	No Op
:POSition?	Returns parameter setting
	query only, no parameters
:POSition(_)p(_)DIV	Sets Marker position
:DUNits?	Returns parameter setting
	query only, no parameters
:DUNits(_)DIV	Sets parameter display units in divisions
	query only, no parameters
:INCRement?	Returns parameter setting
	query only, no parameters
:INCRement(_)p(_)DIV	Defines Increment value
	where: p = real value in divisions
:DIVide	Divides Increment value by 10
	no query, no parameters
:DUNits?	Returns parameter setting
	query only, no parameters
:DUNits(_)DIV	Sets parameter display units in divisions
:MODE?	Returns parameter setting
	query only, no parameters
:MODE(_)p	Defines Increment Mode
	LINear | LOGarithm
:MULTiply	Multiplies Increment value by 10
	no query, no parameters
:UNITs?	Returns parameter setting
	query only, no parameters
:UNITs(_)DIV	Sets GPIB units as DIV

Command	Command Description and Parameters
Oscilloscope Commands (cont)	
:OSCilloscope (cont)	
:SCALe	
:TIME?	Returns parameter setting query only, no parameters
:TIME(_)'p(_)MS'	Defines horizontal sweep time per division 200 ms to 1 uS in 1, 2, 5 steps
:VERTical	
:AM?	Returns parameter setting query only, no parameters
:AM(_)'p(_)%'	Defines vertical scale for AM measurements 5 to 50 % in 1, 2, 5 steps where: p is a real value in PCT Applies to AF Analog and AM Demod
:FM?	Returns parameter setting query only, no parameters
:FM(_)'p(_)KHZ'	Defines vertical scale for FM measurements where: p is a real value in kHz 500 Hz to 50 kHz in 1, 2, 5 steps Applies to AF Analog and FM Demod
:OFFSet?	Returns parameter setting query only, no parameters
:OFFSet(_)p(_)u	Sets Offset value where: p = real value in divisions u = unit of measure (DIV)
:INCRement?	Returns parameter setting
:INCRement(_)p(_)u	Defines Vertical Offset Increment setting where: p = real value in divisions u = unit of measure (DIV)
:DIVide	Divides Increment value by 10 no query, no parameters
:DUNits?	Returns parameter setting query only, no parameters
:DUNits(_)DIV	Sets parameter display units in divisions
:MODE?	Returns parameter setting query only, no parameters
:MODE(_)p	Defines Increment Mode LINear | LOGarithm
:MULTiply	Multiplies Increment value by 10 no query, no parameters
:UNITs?	Returns parameter setting query only, no parameters
:UNITs(_)DIV	Command for RCI only Divisions as default unit of measurement
:VOLTs?	Returns parameter setting query only, no parameters
:VOLTs(_)'p(_)V'	Defines Vertical Offset in Volts where: p is a real value in Volts 20 V to 2 mV in 1, 2, 5 steps

Command	Command Description and Parameters
Oscilloscope Commands (cont)	
:OSCilloscope (cont)	
:TRIGger	
:LEVel?	Returns parameter setting query only, no parameters
:LEVel(_)p.pp(_)DIV	Sets Trigger level in divisions
:INCRement?	Returns parameter setting query only, no parameters
:INCRement(_)UP	Increases level setting by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)DOWN	Decreases level setting by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)p(_)u	Defines Increment value where: p = real value u = unit of measure (DIV)
:DIVide	Divides Increment value by 10 no query, no parameters
:MULTiply	Multiplies Increment value by 10 no query, no parameters
:DELay?	Returns parameter setting No Op
:DELay(_)p(_)u	Defines settling rate No Op
:INCRement?	Returns parameter setting No Op
:INCRement(_)UP	Increases delay setting by value defined in :INCRement(_)p command No Op
:INCRement(_)DOWN	Decreases delay setting by value defined in :INCRement(_)p command No Op
:INCRement(_)p(_)u	Defines Increment value where: p = real value u = unit of measure (S) No Op
:DIVide	Divides Increment value by 10 No Op
:MULTiply	Multiplies defined Marker position by 10 No Op
:MODE?	Returns parameter setting query only, no parameters
:MODE(_)'p'	Defines trigger sweep mode Cont | Single where: Cont = Continuous sweep Single = Single sweep

Command	Command Description and Parameters
Oscilloscope Commands (cont)	
:OSCilloscope (cont)	
:TRIGger (cont)	
:PRETrigger?	Returns parameter setting No Op
:PRETrigger(_)p.pp(_)DIV	Sets number of horizontal divisions displayed prior to trigger point No Op
:INCRement?	Returns parameter setting No Op
:INCRement(_)UP	Increases pretrigger setting by value defined in :INCRement(_)p command No Op
:INCRement(_)DOWN	Decreases pretrigger setting by value defined in :INCRement(_)p command No Op
:INCRement(_)0.1(_)DIV	Defines Increment value in divisions No Op
:DIVide	Divides Increment value by 10 No Op
:MULTiply	Multiplies defined Marker position by 10 No Op
:RESet	Resets scope trigger when :MODE:SINGle is selected no query, no parameters
:SENSe?	Returns parameter setting query only, no parameters
:SENSe(_)'p'	Sets whether triggering occurs at positive or negative POS | NEG where: POS = Positive going signal NEG = Negative going signal
:SOURce?	Returns parameter setting query only, no parameters
:SOURce(_)'p'	Selects Trigger Source Internal | Ext(TTL) | Encoder where: Internal = Uses displayed signal for trigger source. External = Uses EXT Scope Trigger Input for trigger source.
:TYPE?	Returns parameter setting query only, no parameters
:TYPE(_)'p'	Sets how trigger level is set Auto | Norm where: Auto = Triggers automatically Norm = Triggers only when conditions are met.

Command	Command Description and Parameters

Measure Commands

AF Frequency - AC Level Measure Commands

:MEASure	
:AFRequency	
:ACLevel?	Returns parameter setting in V query only, no parameters
:ACLevel	
:AUNits?	Returns parameter setting query only, no parameters
:AUNits(_)V	Defines unit of measure for AC Level measurements 0.0 to 5 V (RMS)
:AVERage?	Returns parameter setting query only, no parameters
:AVERage(_)p	Sets number of averages taken to calculate measurement
:RESet	Resets AC Level average measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables average measurements ON | OFF | 0 | 1
:VALue(_)p	Sets number of averages taken to calculate measurement
:DUNits?	Returns parameter setting No Op
:DUNits(_)MV	Sets parameter display units No Op
:HLIMit?	Returns parameter setting in V query only, no parameters
:HLIMit(_)p(_)MV/V	Sets High Limit value in mV 0.0 to 5 V (RMS)
:DUNits?	Returns current Title parameter No Op
:DUNits(_)MV	Sets parameter display units in mV No Op
:EXCeeded?	Indicates if measurement has exceeded defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets High Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined High Limit OFF | ON | 0 | 1
:VALue(_)p(_)MV/V	Sets AC Level High Limit in mV 0.0 to 5 V (RMS)

Command	Command Description and Parameters

AF Frequency - AC Level Commands (cont)

:MEASure (cont)

:AFRequency (cont)

:ACLevel (cont)

:LLIMit?	Returns parameter setting in V query only, no parameters
:LLIMit(_)p(_)MV/V	Sets Low Limit value in mV 0.0 to 5 V (RMS)
:DUNits?	Returns parameter setting No Op
:DUNits(_)MV	Sets parameter display units in mV No Op
:EXCeeded?	Indicates if measurement is below defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets Low Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined Low Limit OFF | ON | 0 | 1
:VALue(_)p(_)MV/V	Sets Low Limit in mV 0.0 to 5 V (RMS)
:METer?	Returns parameter setting No Op
:METer(_)p	Enables/Disable Meter readings OFF | ON | 0 | 1 No Op
:STATe?	Returns parameter setting No Op
:STATe(_)p	Enables/Disables Meter readings OFF | ON | 0 | 1 No Op
:HEND?	Returns parameter setting in V No Op
:HEND(_)p(_)MV	Sets high end of scale in mV No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)MV	Sets parameter display units in mV No Op
:INTerval?	Returns parameter setting No Op
:INTerval(_)p	Sets number of divisions on the meter where: p is the number of divisions No Op
:LEND?	Returns parameter setting in V No Op
:LEND(_)p(_)MV	Sets low end of scale in mV No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)MV	Sets parameter display units in mV No Op

Command	Command Description and Parameters

AF Frequency - AC Level Commands (cont)

:MEASure (cont)

:AFRequency (cont)

:ACLevel (cont)	
:REFerence?	Returns parameter setting in V query only, no parameters
:REFerence(_)p(_)MV/V	Sets reference in mV/V
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables reference OFF | ON | 0 | 1
:VALue(_)p(_)MV/V	Sets reference value for AC Level measurements
:STATe?	Returns parameter setting No Op
:STATe(_)p	Enables/Disables AC Level meter OFF | ON | 0 | 1 No Op
:UNITs?	Returns parameter setting query only, no parameters
:UNITs(_)V	GPIB units for AC Level measurements

Command	Command Description and Parameters

AF Frequency - AM Measure Commands

:MEASure	
:AFRequency	
:AM?	Returns parameter measurement in PCT
:AM	
:AUNits?	Returns parameter setting query only, no parameters
:AUNits(_)PCT	Defines unit of measure for AM measurements 0.0 to 100
:AVERage?	Returns parameter setting query only, no parameters
:AVERage(_)p	Sets number of averages taken to calculate measurement
:RESet	Resets AM average measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables average measurements ON | OFF | 0 | 1
:VALue(_)p	Sets number of averages taken to calculate measurement
:DUNits?	Returns parameter setting query only, no parameters
:DUNits(_)PCT	Sets parameter display units as a PCT
:HLIMit?	Returns parameter setting in PCT query only, no parameters
:HLIMit(_)p(_)PCT	Sets High Limit value as a PCT 0.0 to 100 PCT (0.0 to 100)
:DUNits?	Returns parameter setting query only, no parameters
:DUNits(_)PCT	Sets parameter display units as a PCT
:EXCeeded?	Indicates if measurement has exceeded defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets High Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined High Limit OFF | ON | 0 | 1
:VALue(_)p(_)PCT	Sets High Limit as a PCT 0.0 to 100
:LLIMit?	Returns parameter setting in PCT query only, no parameters
:LLIMit(_)p(_)PCT	Sets Low Limit value as a PCT 0.0 to 100
:DUNits?	Returns parameter setting query only, no parameters
:DUNits(_)PCT	Sets parameter display units as PCT
:EXCeeded?	Indicates if measurement has exceeded defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets Low Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined Low Limit OFF | ON | 0 | 1
:VALue(_)p(_)PCT	Sets Low Limit as a PCT 0.0 to 100

Command	Command Description and Parameters
AF Frequency - AM Commands (cont)	
:MEASure (cont)	
:AFRequency (cont)	
:AM (cont)	
:METer?	Returns parameter setting No Op
:METer(_)p	Enables/Disable Meter readings OFF | ON | 0 | 1 No Op
:STATe?	Returns parameter setting No Op
:STATe(_)ON	Enables/Disables Meter readings OFF | ON | 0 | 1 No Op
:HEND?	Returns parameter setting in PCT No Op
:HEND(_)p(_)PCT	Sets high end of scale as a PCT No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)PCT	Sets parameter display units as a PCT No Op
:INTerval?	Returns parameter setting No Op
:INTerval(_)p	Sets number of divisions on the meter where: p is the number of divisions No Op
:LEND?	Returns parameter setting in PCT No Op
:LEND(_)p(_)PCT	Sets low end of scale as a PCT No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)PCT	Sets parameter display units as a PCT No Op
:REFerence?	Returns parameter setting in PCT query only, no parameters
:REFerence(_)p(_)PCT	Sets reference as a PCT
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables reference OFF | ON | 0 | 1
:VALue(_)p(_)PCT	Sets reference for AM measurements
:STATe?	Returns parameter setting No Op
:STATe(_)p	Enables/Disables Meter readings OFF | ON | 0 | 1 No Op
:UNITs?	Returns parameter setting query only, no parameters
:UNITs(_)PCT	Sets AM Measurement units as a PCT

Command	Command Description and Parameters

AF Frequency - DISTN Measure Commands

NOTE

Based on :AFAN:INPUT command:

For Demod Distortion = AM Demod, FM Demod or SSB Demod

For Audio Distortion = Audio In

:MEASure	
:AFRequency	
:DISTN?	Returns parameter setting in PCT/dB query only, no parameters
:DISTN	Distortion Measurement
:AUNits?	Returns parameter setting query only, no parameters
:AUNits(_)PCT	Defines unit of measure for Distortion measurements
:AVERage?	Returns parameter setting query only, no parameters
:AVERage(_)p	Sets number of averages taken to calculate measurement 1 to 100
:RESet	Resets Distortion average measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables average measurements ON | OFF
:VALue(_)p	Sets number of averages taken to calculate measurement
:DUNits?	Returns parameter setting No Op
:DUNits(_)PCT	Sets parameter display units as a PCT or in dB No Op
:HLIMit?	Returns parameter setting in PCT query only, no parameters
:HLIMit(_)p(_)PCT/DB	Sets High Limit value as a PCT 0.0 to 100
:DUNits?	Returns parameter setting No Op
:DUNits(_)PCT/DB	Sets parameter display units as a PCT or in dB No Op
:EXCeeded?	Indicates if measurement has exceeded defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets High Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined High Limit OFF | ON | 0 | 1
:VALue(_)p(_)PCT/DB	Sets high limit value in PCT/dB 0.0 to 100

Command	Command Description and Parameters
AF Frequency - DISTN Commands (cont)	
:MEASure (cont)	
:AFRequency (cont)	
:DISTN (cont)	
:LLIMit?	Returns parameter setting in PCT query only, no parameters
:LLIMit(_)p(_)PCT/DB	Sets Low Limit value as a PCT/DB 0.0 to 100
:DUNits?	Returns parameter setting No Op
:DUNits(_)PCT/DB	Sets parameter display units as a PCT or in dB No Op
:EXCeeded?	Indicates if measurement is below defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets Low Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined Low Limit OFF | ON | 0 | 1
:VALue(_)p(_)PCT/DB	Sets Low Limit as a PCT/DB 0.0 to 100
:METer?	Returns parameter setting No Op
:METer(_)p	Enables/Disable Meter readings OFF | ON | 0 | 1 No Op
:STATe?	Returns parameter setting No Op
:STATe(_)ON	Enables/Disables Meter readings OFF | ON | 0 | 1 No Op
:HEND?	Returns parameter setting No Op
:HEND(_)p(_)PCT/DB	Sets high end of scale as a PCT or in dB No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)PCT	Sets parameter display units as a PCT or in dB No Op
:INTerval?	Returns parameter setting No Op
:INTerval(_)p	Sets number of divisions on the meter where: p is the number of divisions No Op
:LEND?	Returns parameter setting in PCT No Op
:LEND(_)p(_)PCT/DB	Sets low end of scale as a PCT or in dB No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)PCT	Sets parameter display units as a PCT/DB No Op

Command	Command Description and Parameters
AF Frequency - DISTN Commands (cont)	
:MEASure (cont)	
:AFRequency (cont)	
:DISTN (cont)	
:REFerence?	Returns parameter setting in PCT query only, no parameters
:REFerence(_)p(_)PCT/DB	Sets reference as a PCT or in dB
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables reference OFF | ON | 0 | 1
:VALue(_)p(_)PCT/DB	Sets reference value for Distortion measurements
:STATe?	Returns parameter setting No Op
:STATe(_)p	Sets the state of the Distortion Meter OFF | ON | 0 | 1 No Op
:UNITs?	Returns parameter setting query only, no parameters
:UNITs(_)PCT/DB	Sets units of measurement as a PCT or in dB

Command	Command Description and Parameters
AF Frequency - Distortion Measure Commands	
:MEASure	
:AFRequency	
:DISTortion?	Returns parameter setting in PCT/DB query only, no parameters
:DISTortion	
:AUNits?	Returns parameter setting query only, no parameters
:AUNits(_)PCT	Defines unit of measure for Distortion measurements
:AVERage?	Returns parameter setting query only, no parameters
:AVERage(_)p	Sets number of averages taken to calculate measurement where: p = number of averages (1 to 100)
:RESet	Resets Distortion average measurement no query, no parameters
:STATe?	Returns parameter setting No Op
:STATe(_)p	Enables/Disables average measurements ON | OFF
:VALue(_)p	Sets number of averages taken to calculate measurement
:DUNits?	Returns parameter setting No Op
:DUNits(_)PCT/DB	Sets parameter display units as a PCT or in dB No Op
:HLIMit?	Returns parameter setting in PCT query only, no parameters
:HLIMit(_)p(_)PCT/DB	Sets High Limit value as a PCT/DB 0.0 to 100 PCT
:DUNits?	Returns parameter setting No Op
:DUNits(_)PCT	Sets parameter display units as a PCT No Op
:EXCeeded?	Indicates if measurement has exceeded defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets High Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined High Limit OFF | ON | 0 | 1
:VALue(_)p(_)PCT/DB	Sets Distortion High Limit as a PCT 0.0 to 100

Command	Command Description and Parameters

AF Frequency - Distortion Commands (cont)

:MEASure (cont)

:AFRequency (cont)

:DISTortion (cont)

:LLIMit?	Returns parameter setting in PCT query only, no parameters
:LLIMit(_)p(_)PCT/DB	Sets Low Limit value as a PCT/DB 0.0 to 100
:DUNits?	Returns parameter setting No Op
:DUNits(_)PCT	Sets parameter display units as a PCT No Op
:EXCeeded?	Indicates if measurement is below defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets Low Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined Low Limit OFF | ON | 0 | 1
:VALue(_)p(_)PCT/DB	Sets Low Limit as a PCT/DB 0.0 to 100
:METer?	Returns parameter setting No Op
:METer(_)p	Enables/Disable Meter readings OFF | ON | 0 | 1 No Op
:HEND?	Returns parameter setting in PCT No Op
:HEND(_)p(_)PCT/DB	Sets high end of scale as a PCT or in dB No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)PCT	Sets parameter display units as a PCT No Op
:INTerval?	Returns parameter setting No Op
:INTerval(_)p	Sets number of divisions on the meter where: p is the number of divisions No Op
:LEND?	Returns parameter setting in PCT No Op
:LEND(_)p(_)PCT	Sets low end of scale as a PCT or in dB No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)PCT	Sets parameter display units as a PCT No Op
:STATe?	Returns parameter setting No Op
:STATe(_)p	Enables/Disables Meter readings OFF | ON | 0 | 1 No Op

Command	Command Description and Parameters
AF Frequency - Distortion Commands (cont)	
:MEASure (cont)	
:AFRequency (cont)	
:DISTortion (cont)	
:REFerence?	Returns parameter setting in PCT query only, no parameters
:REFerence(_)p(_)PCT/DB	Sets reference as a PCT or in dB
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables reference OFF | ON | 0 | 1
:VALue(_)p(_)PCT/DB	Sets reference for Distortion measurements as a PCT or in dB
:STATe?	Returns parameter setting No Op
:STATe(_)p	Sets the state of the Distortion Meter OFF | ON | 0 | 1 No Op
:UNITs?	Returns parameter setting query only, no parameters
:UNITs(_)PCT/DB	Sets GPIB units as a PCT or in dB

Command	Command Description and Parameters

AF Frequency - FM Measure Commands

:MEASure	
:AFRequency	
:FM?	Returns parameter measurement in Hz query only, no parameters
:FM	
:AUNits(_)HZ	Defines unit of measurement in Hz
:AVERage(_)p	Sets number of averages taken to calculate measurement
:AVERage?	Returns parameter setting query only, no parameters
:RESet	Resets average measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables average measurements ON | OFF
:VALue(_)p	Sets number of averages taken to calculate measurement
:DUNits?	Returns parameter setting No Op
:DUNits(_)HZ	Sets parameter display units in Hz No Op
:HLIMit?	Returns parameter setting in Hz query only, no parameters
:HLIMit(_)p(_)HZ/KHZ	Sets High Limit value in kHz 0 to 150 kHz
:DUNits?	Returns parameter setting No Op
:DUNits(_)KHZ	Sets parameter display units in kHz No Op
:EXCeeded?	Indicates if measurement has exceeded defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets High Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined High Limit OFF | ON | 0 | 1
:VALue(_)p(_)HZ/KHZ	Sets High Limit in kHz 0 to 150 kHz
:LLIMit?	Returns parameter setting in Hz query only, no parameters
:LLIMit(_)p(_)HZ/KHZ	Sets Low Limit value in kHz 0 to 150 kHz
:DUNits?	Returns parameter setting No Op
:DUNits(_)KHZ	Sets parameter display units in kHz No Op
:EXCeeded?	Indicates if measurement is below defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets Low Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined Low Limit OFF | ON | 0 | 1
:VALue(_)p(_)HZ/KHZ	Sets Low Limit in kHz 0 to 150 kHz

Command	Command Description and Parameters
AF Frequency - FM Commands (cont)	
:MEASure (cont)	
:AFRequency (cont)	
:FM (cont)	
:METer?	Returns parameter setting No Op
:METer(_)p	Enables/Disable Meter readings OFF | ON | 0 | 1 No Op
:HEND?	Returns parameter setting in Hz No Op
:HEND(_)p(_)HZ/KHZ	Sets high end of scale in Hz/kHz No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)KHZ	Sets parameter display units in kHz No Op
:INTerval?	Returns parameter setting No Op
:INTerval(_)p	Sets number of divisions on the meter where: p is the number of divisions No Op
:LEND?	Returns parameter setting in Hz No Op
:LEND(_)p(_)HZ/KHZ	Sets low end of scale in Hz/kHz No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)KHZ	Sets low end of scale unit of measurement No Op
:REFerence?	Returns parameters setting in Hz query only, no parameters
:REFerence(_)p(_)HZ/KHZ	Sets reference in Hz/kHz
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables reference OFF | ON | 0 | 1
:VALue(_)p(_)KHZ/HZ	Sets reference value for FM measurements in kHz
:STATe?	Returns parameter setting No Op
:STATe(_)p	Sets state of the FM Meter OFF | ON | 0 | 1 No Op
:UNITs?	Returns parameter setting query only, no parameters
:UNITs(_)HZ	Sets GPIB units for FM reading in Hz

Command	Command Description and Parameters

AF Frequency - Frequency Measure Commands

NOTE

Based on :AFAN:INPUT command:

For Demod Frequency = AM Demod, FM Demod or SSB Demod

For Audio Frequency = Audio In

:MEASure	
:AFRequency	
:FREQuency?	Returns parameter setting in Hz query only, no parameters
:FREQuency	
:AUNits?	Returns parameter setting in Hz query only, no parameters
:AUNits(_)HZ	Defines GPIB units in Hz
:AVERage(_)p	Sets number of averages taken to calculate measurement
:AVERage?	Returns parameter setting query only, no parameters
:RESet	Resets average measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables average measurements ON | OFF
:VALue(_)p	Sets number of averages taken to calculate measurement
:DUNits?	Returns parameter setting No Op
:DUNits(_)HZ/KHZ	Sets parameter display units in Hz/kHz No Op
:HLIMit?	Returns parameter setting in Hz query only, no parameters
:HLIMit(_)p(_)HZ/KHZ	Sets High Limit value in Hz/kHz Audio In: 1 Hz to 40 kHz Demod: 1 Hz to 20 kHz
:DUNits?	Returns parameter setting No Op
:DUNits(_)KHZ	Sets parameter display units in kHz No Op
:EXCeeded?	Indicates if measurement has exceeded defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets High Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined High Limit OFF | ON | 0 | 1
:VALue(_)p(_)HZ/KHZ	Sets High Limit in Hz/kHz Audio In: 1 Hz to 40 kHz Demod: 1 Hz to 20 kHz

Command	Command Description and Parameters
AF Frequency - Frequency Commands (cont)	
:MEASure (cont)	
:AFRequency (cont)	
:FREQuency (cont)	
:LLIMit?	Returns parameter setting in Hz query only, no parameters
:LLIMit(_)p(_)HZ/KHZ	Sets Low Limit value in Hz/kHz Audio In: 1 Hz to 40 kHz Demod: 1 Hz to 20 kHz
:DUNits?	Returns parameter setting No Op
:DUNits(_)HZ/KHZ	Sets parameter display units in Hz/kHz No Op
:EXCeeded?	Indicates if measurement is below defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets Low Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined Low Limit OFF | ON | 0 | 1
:VALue(_)p(_)HZ/KHZ	Sets Low Limit in Hz/kHz Audio In: 1 Hz to 40 kHz Demod: 1 Hz to 20 kHz
:METer?	Returns parameter setting No Op
:METer(_)p	Enables/Disable Meter readings OFF | ON | 0 | 1 No Op
:HEND?	Returns parameter setting in Hz No Op
:HEND(_)p(_)HZ/KHZ	Sets high end of scale in Hz/kHz No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)HZ/KHZ	Sets parameter display units in Hz/kHz No Op
:INTerval?	Returns parameter setting No Op
:INTerval(_)p	Sets number of divisions on the meter where: p is the number of divisions No Op
:LEND?	Returns parameter setting in Hz No Op
:LEND(_)p(_)HZ/KHZ	Sets low end of scale in Hz/kHz No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)HZ/KHZ	Sets parameter display units in Hz/kHz No Op

Command	Command Description and Parameters
AF Frequency - Frequency Commands (cont)	
:MEASure (cont)	
:AFRequency (cont)	
:FREQuency (cont)	
:REFerence?	Returns parameter setting in Hz query only, no parameters
:REFerence(_)p(_)HZ/KHZ	Sets frequency reference in Hz/kHz Audio In: 1 Hz to 40 kHz Demod: 1 Hz to 20 kHz
:DUNits?	Returns parameter setting query only, no parameters
:DUNits(_)HZ/KHZ	Sets parameter display units in Hz/kHz
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables reference OFF | ON | 0 | 1
:VALue(_)p(_)HZ/KHZ	Sets reference value in Hz/kHz
:STATe?	Returns parameter setting No Op
:STATe(_)p	Enables/Disables AF Frequency measurements OFF | ON | 0 | 1 No Op
:UNITs?	Returns parameter setting query only, no parameters
:UNITs(_)HZ	Sets GPIB units for measurement
AF Frequency - Select Commands	
:MEASure	
:AFRequency	
:SELect?	Retuns parameters setting query only, no parameters
:SELect(_)'p'	Displays Meters or DMM screen depending on selection DISTN | SINAD | AF(_)FREQ | SNR | DC(_)Level | Current

Command	Command Description and Parameters

AF Frequency - SINAD Measure Commands

NOTE

Based on :AFAN:INPUT command:

For Demod SINAD = AM Demod, FM Demod or SSB Demod

For Audio SINAD = Audio In

:MEASure	
:AFRequency	
:SINAD?	Returns parameter setting in dB/PCT query only, no parameters
:SINAD	
:AUNits?	Returns parameter setting in dB query only, no parameters
:AUNits(_)DB/PCT	Sets attribute units to dB
:AVERage?	Returns parameter setting query only, no parameters
:AVERage(_)p	Sets number of averages taken to calculate measurement 1 to 100
:RESet	Resets average measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables average measurements OFF | ON | 0 | 1
:VALue(_)p	Sets number of averages taken to calculate measurement
:DUNits?	Returns parameter setting in dB/PCT No Op
:DUNits(_)DB/PCT	Sets parameter display units as a PCT or in dB/PCT No Op
:HLIMit?	Returns parameter setting in dB/PCT query only, no parameters
:HLIMit(_)p(_)DB/PCT	Sets High Limit value in dB/PCT -100 to 100 dB
:DUNits?	Returns parameter setting in dB No Op
:DUNits(_)DB/PCT	Sets parameter display units as a PCT or in dB No Op
:EXCeeded?	Indicates if measurement has exceeded defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets High Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined High Limit OFF | ON | 0 | 1
:VALue(_)p(_)DB/PCT	Sets High Limit in dB/PCT -100 to 100 dB

Command	Command Description and Parameters
AF Frequency - SINAD Commands (cont)	
:MEASure (cont)	
:AFRequency (cont)	
:SINAD (cont)	
:LLIMit?	Returns parameter setting in dB/PCT query only, no parameters
:LLIMit(_)p(_)DB/PCT	Sets Low Limit value in dB/PCT -100 to 100 dB
:DUNits?	Returns parameter setting No Op
:DUNits(_)DB/PCT	Sets parameter display units as a PCT or in dB No Op
:EXCeeded?	Indicates if measurement is below defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets Low Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined Low Limit OFF | ON | 0 | 1
:VALue(_)p(_)DB/PCT	Sets Low Limit in dB/PCT -100 to 100 dB
:METer?	Returns parameter setting No Op
:METer(_)p	Enables/Disable Meter readings OFF | ON | 0 | 1 No Op
:HEND?	Returns parameter setting in dB/PCT No Op
:HEND(_)p(_)DB/PCT	Sets high end of scale in dB/PCT No Op
:DUNits?	Returns parameter setting in dB No Op
:DUNits(_)DB	Sets parameter display units in dB No Op
:INTerval?	Returns parameter setting No Op
:INTerval(_)p	Sets number of divisions on the meter where: p is the number of divisions No Op
:LEND?	Returns parameter setting in dB/PCT No Op
:LEND(_)p(_)DB/PCT	Sets low end of scale in dB/PCT No Op
:DUNits?	Returns parameter setting in dB No Op
:DUNits(_)DB	Sets parameter display units in dB No Op

Command	Command Description and Parameters
AF Frequency - SINAD Commands (cont)	
:MEASure (cont)	
:AFRequency (cont)	
:SINAD (cont)	
:REFerence?	Returns parameter setting in dB/PCT query only, no parameters
:REFerence(_)p(_)DB/PCT	Sets reference as a PCT or in dB
:STATe?	Returns parameter setting in dB query only, no parameters
:STATe(_)p	Enables/Disables reference OFF | ON | 0 | 1
:VALue(_)p(_)DB/PCT	Sets reference value for Sinad measurements
:STATe?	Returns parameter setting in dB No Op
:STATe(_)p	Sets state of Sinad Meter OFF | ON | 0 | 1 No Op
:UNITs?	Returns parameter setting in dB query only, no parameters
:UNITs(_)DB/PCT	Sets unit of measurement in dB/PCT

Command	Command Description and Parameters

AF Frequency - SNR Measure Commands

NOTE

Based on :AFAN:INPUT command:

For Demod SNR = AM Demod, FM Demod or SSB Demod

For Audio SNR = Audio In

:MEASure	
:AFRequency	
:SNR?	Returns parameter setting in dB/PCT query only, no parameters
:SNR	
:AUNits?	Returns parameter setting in dB query only, no parameters
:AUNits(_)DB/PCT	Sets attribute units in dB
:AVERage?	Returns parameter setting in dB query only, no parameters
:AVERage(_)p	Sets number of averages taken to calculate measurement
:RESet	Resets average measurement no query, no parameters
:STATe?	Returns parameter setting in dB query only, no parameters
:STATe(_)p	Enables/Disables average measurements OFF | ON
:VALue(_)p	Sets number of averages taken to calculate measurement
:DUNits?	Returns parameter setting in dB No Op
:DUNits(_)DB	Sets parameter display units in dB No Op
:HLIMit?	Returns parameter setting in dB/PCT query only, no parameters
:HLIMit(_)p(_)DB/PCT	Sets High Limit value in dB -100 to 100 dB
:DUNits?	Returns parameter setting in dB No Op
:DUNits(_)DB	Sets parameter display units in dB No Op
:EXCeeded?	Indicates if measurement has exceeded defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets High Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined High Limit OFF | ON | 0 | 1
:VALue(_)p(_)DB/PCT	Sets High Limit in dB/PCT -100 to 100 dB

Command	Command Description and Parameters
AF Frequency - SNR Commands (cont)	
:MEASure (cont)	
:AFRequency (cont)	
:SNR (cont)	
:LLIMit?	Returns parameter setting in dB/PCT query only, no parameters
:LLIMit(_)p(_)DB/PCT	Sets Low Limit value in dB/PCT -100 to 100 dB
:DUNits?	Returns parameter setting No Op
:DUNits(_)DB	Sets parameter display units in dB No Op
:EXCeeded?	Indicates if measurement is below defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets Low Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined Low Limit OFF | ON | 0 | 1
:VALue(_)p(_)DB/PCT	Sets Low Limit in dB/PCT -100 to 100 dB
:METer?	Returns parameter setting No Op
:METer(_)p	Enables/Disable Meter readings OFF | ON | 0 | 1 No Op
:HEND?	Returns parameter setting in dB/PCT No Op
:HEND(_)p(_)DB/PCT	Sets high end of scale in dB No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)DB	Sets parameter display units in dB No Op
:INTerval?	Returns parameter setting No Op
:INTerval(_)p	Sets number of divisions on the meter where: p is the number of divisions No Op
:LEND?	Returns parameter setting in dB/PCT No Op
:LEND(_)p(_)DB/PCT	Sets low end of scale in dB/PCT No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)DB	Sets parameter display units in dB No Op

Command	Command Description and Parameters
AF Frequency - SNR Commands (cont)	
:MEASure (cont)	
:AFRequency (cont)	
:SNR (cont)	
:REFerence?	Returns parameter setting in dB/PCT query only, no parameters
:REFerence(_)p(_)DB/PCT	Sets reference in dB
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables reference OFF | ON | 0 | 1
:VALue(_)p(_)DB/PCT	Sets reference value for SNR measurements in dB/PCT
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables SNR Meter OFF | ON | 0 | 1
:UNITs?	Returns parameter setting query only, no parameters
:UNITs(_)DB/PCT	Sets GPIB units of measurement

Command	Command Description and Parameters
Oscilloscope Measure Commands	
:MEASure	
:OSCilloscope	
:MARKer	
:LEVel	
:AM?	Returns parameter setting as a PCT query only, no parameters
:AM	
:AUNits?	Returns parameter setting query only, no parameters
:AUNits(_)PCT	Defines unit of measure for Average readings
:AVERage?	Returns parameter setting No Op
:AVERage(_)p	Sets number of averages taken to calculate measurement No Op
:RESet	Resets average measurement No Op
:STATe?	Returns parameter setting No Op
:STATe(_)p	Enables/Disables average measurements ON | OFF No Op
:VALue(_)p	Sets number of averages taken to calculate measurement No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)PCT	Sets parameter display units as a PCT No Op
:HLIMit?	Returns parameter setting in PCT query only, no parameters
:HLIMit(_)p(_)PCT	Sets High Limit value as a PCT -100 to 100 PCT
:DUNits?	Returns parameter setting in PCT No Op
:DUNits(_)PCT	Sets parameter display units as a PCT No Op
:EXCeeded?	Indicates if measurement has exceeded defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets High Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined High Limit OFF | ON | 0 | 1
:VALue(_)p(_)PCT	Sets High Limit value as a PCT -100 to 100 PCT

Command	Command Description and Parameters
Oscilloscope Commands (cont)	
:MEASure (cont)	
:OSCilloscope (cont)	
:MARKer (cont)	
:LEVel (cont)	
:AM (cont)	
:LLIMit?	Returns parameter setting in PCT query only, no parameters
:LLIMit(_)p(_)PCT	Sets Low Limit value as a PCT -100 to 100 PCT
:DUNits?	Returns parameter setting No Op
:DUNits(_)PCT	Sets parameter display units as a PCT No Op
:EXCeeded?	Indicates if measurement is below defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets Low Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined Low Limit OFF | ON | 0 | 1
:VALue(_)p(_)PCT	Sets Low Limit as a PCT -100 to 100 PCT
:REFerence?	Returns parameter setting in PCT
:REFerence(_)p(_)PCT	Sets reference as a PCT
:DUNits?	Returns parameter setting No Op
:DUNits(_)PCT	Sets parameter display units as a PCT No Op
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables reference OFF | ON | 0 | 1
:VALue(_)p(_)PCT	Sets reference value for Marker Level measurements as a PCT
:STATe?	Returns parameter setting No Op
:STATe(_)p	Enables/Disables Marker measurements OFF | ON | 0 | 1 No Op
:UNITs?	Returns parameter setting query only, no parameters
:UNITs(_)PCT	Sets GPIB units of measurement

Command	Command Description and Parameters
Oscilloscope Commands (cont)	
:MEASure (cont)	
:OSCilloscope (cont)	
:MARKer (cont)	
:LEVel (cont)	
:FM?	Returns parameter setting in Hz query only, no parameters
:FM	
:AUNits?	Returns parameter setting query only, no parameters
:AUNits(_)HZ	Defines unit of measurement
:AVERage?	Returns parameter setting No Op
:AVERage(_)p	Sets number of averages taken to calculate measurement No Op
:RESet	Resets average measurement No Op
:STATe?	Returns parameter setting No Op
:STATe(_)p	Enables/Disables average measurements ON | OFF No Op
:VALue(_)p	Sets number of averages taken to calculate measurement No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)HZ/KHZ	Sets parameter display units in Hz/kHz No Op
:HLIMit?	Returns parameter setting in Hz query only, no parameters
:HLIMit(_)p(_)HZ/KHZ	Sets High Limit value in kHz -150 to 150 kHz
:DUNits?	Returns parameter setting No Op
:DUNits(_)HZ/KHZ	Sets parameter display units in Hz/kHz No Op
:EXCeeded?	Indicates if measurement has exceeded defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets High Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined High Limit OFF | ON | 0 | 1
:VALue(_)p(_)HZ/KHZ	Sets High Limit value in Hz -150 to 150 kHz

Command	Command Description and Parameters
Oscilloscope Commands (cont)	
:MEASure (cont)	
:OSCilloscope (cont)	
:MARKer (cont)	
:LEVel (cont)	
:FM (cont)	
:LLIMit?	Returns parameter setting in Hz query only, no parameters
:LLIMit(_)p(_)HZ/KHZ	Sets Low Limit value in Hz -150 to 150 kHz
:DUNits?	Returns parameter setting No Op
:DUNits(_)HZ/KHZ	Sets parameter display units in Hz/kHz No Op
:EXCeeded?	Indicates if measurement is below defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets Low Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined Low Limit OFF | ON | 0 | 1
:VALue(_)p(_)HZ/KHZ	Sets Low Limit in Hz
:REFerence?	Returns parameter setting in Hz query only, no parameters
:REFerence(_)p(_)HZ/KHZ	Sets reference in Hz/kHz
:DUNits?	Returns parameter setting No Op
:DUNits(_)HZ/KHZ	Sets parameter display units in Hz/kHz No Op
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables reference OFF | ON | 0 | 1
:VALue(_)p(_)HZ/KHZ	Sets reference value in Hz/kHz
:STATe?	Returns parameter setting No Op
:STATe(_)p	Enables/Disables Marker measurements OFF | ON | 0 | 1 No Op
:UNITs?	Returns parameter setting query only, no parameters
:UNITs(_)HZ	Sets GPIB units to Hz

Command	Command Description and Parameters
Oscilloscope Commands (cont)	
:MEASure (cont)	
:OSCilloscope (cont)	
:MARKer (cont)	
:LEVel (cont)	
:VOLTs?	Returns parameter setting in Volts query only, no parameters
:VOLTs	
:AUNits?	Returns parameter setting query only, no parameters
:AUNits(_)V	Defines unit of measure for measurement -80 to 80 V
:AVERage?	Returns parameter setting No Op
:AVERage(_)p	Sets number of averages taken to calculate measurement No Op
:RESet	Resets average measurement No Op
:STATe?	Returns parameter setting No Op
:STATe(_)p	Enables/Disables average measurements ON | OFF No Op
:VALue(_)p	Sets number of averages taken to calculate measurement No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)V	Sets parameter display units in Volts No Op
:HLIMit?	Returns parameter setting in Volts query only, no parameters
:HLIMit(_)p(_)V	Sets High Limit value in Volts -80 to 80 V
:DUNits?	Returns parameter setting No Op
:DUNits(_)V	Sets parameter display units in Volts No Op
:EXCeeded?	Indicates if measurement has exceeded defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets High Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined High Limit OFF | ON | 0 | 1
:VALue(_)p(_)V	Sets High Limit value in Volts -80 to 80 V

Command	Command Description and Parameters
Oscilloscope Commands (cont)	
:MEASure (cont)	
:OSCilloscope (cont)	
:MARKer (cont)	
:LEVel (cont)	
:VOLTs (cont)	
:LLIMit?	Returns parameter setting in Volts query only, no parameters
:LLIMit(_)p(_)V	Sets Low Limit value in V -80 to 80 V
:DUNits?	Returns parameter setting No Op
:DUNits(_)V	Sets parameter display units in Volts No Op
:EXCeeded?	Indicates if measurement is below defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets Low Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined Low Limit OFF | ON | 0 | 1
:VALue(_)p(_)V	Sets Low Limit in V -80 to 80 V
:REFerence?	Returns parameter setting query only, no parameters
:REFerence(_)p(_)V	Sets reference in Volts
:DUNits?	Returns parameter setting in Volts No Op
:DUNits(_)V	Sets parameter display units in Volts No Op
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables reference OFF | ON | 0 | 1
:VALue(_)p(_)V	Sets reference in Volts
:STATe?	Returns parameter setting No Op
:STATe(_)p	Enables/Disables reference OFF | ON | 0 | 1 No Op
:UNITs?	Returns parameter setting query only, no parameters
:UNITs(_)V	Sets GPIB units for Marker level as Volts

Command	Command Description and Parameters
Oscilloscope Commands (cont)	
:MEASure (cont)	
:OSCilloscope (cont)	
:MARKer (cont)	
:TIME?	Returns parameter setting query only, no parameters
:TIME	
:AUNits?	Returns parameter setting query only, no parameters
:AUNits(_)S	Defines unit of measure for measurement in seconds
:AVERage?	Returns parameter setting No Op
:AVERage(_)p	Sets number of averages taken to calculate measurement No Op
:RESet	Resets average measurement No Op
:STATe?	Returns parameter setting No Op
:STATe(_)p	Enables/Disables average measurements ON | OFF No Op
:VALue(_)p	Sets number of averages taken to calculate measurement No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)S	Sets parameter display units in seconds No Op
:HLIMit?	Returns parameter setting in seconds query only, no parameters
:HLIMit(_)p(_)S	Sets High Limit value in seconds 0 to 10 S
:DUNits?	Returns parameter setting No Op
:DUNits(_)S	Sets parameter display units in seconds No Op
:EXCeeded?	Indicates if measurement has exceeded defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets High Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined High Limit OFF | ON | 0 | 1
:VALue(_)p(_)S	Sets High Limit value in seconds

Command	Command Description and Parameters
Oscilloscope Commands (cont)	
:MEASure (cont)	
:OSCilloscope (cont)	
:MARKer (cont)	
:TIME (cont)	
:LLIMit?	Returns parameter setting query only, no parameters
:LLIMit(_)p(_)S	Sets Low Limit value in seconds 0 to 10 S
:DUNits?	Returns parameter setting No Op
:DUNits(_)S	Sets parameter display units in seconds No Op
:EXCeeded?	Indicates if measurement is below defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets Low Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined Low Limit OFF | ON | 0 | 1
:VALue(_)p(_)S	Sets Low Limit in seconds 0 to 10 S
:REFerence?	Returns parameter setting query only, no parameters
:REFerence(_)p(_)S	Sets reference in seconds
:DUNits?	Returns parameter setting No Op
:DUNits(_)S	Sets parameter display units in seconds No Op
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables reference OFF | ON | 0 | 1
:VALue(_)p(_)S	Sets reference value in seconds
:STATe?	Returns parameter setting No Op
:STATe(_)p	Sets the state of the Marker time OFF | ON | 0 | 1 No Op
:UNITs?	Returns parameter setting query only, no parameters
:UNITs(_)S	Sets GPIB units for Marker time measurements in seconds
:TRACe?	Returns parameter setting No Op

Command	Command Description and Parameters
RF Frequency - Frequency Measure Commands	
:MEASure	
:RFRequency	
:FREQuency	
:ABSolute?	Returns parameter setting in Hz query only, no parameters
:ABSolute	
:AUNits?	Returns parameter setting query only, no parameters
:AUNits(_)HZ	Sets attribute units of RF absolute frequency in Hz
:AVERage?	Returns parameter setting
:AVERage(_)p	Sets number of averages taken to calculate measurement
:RESet	Resets average measurement
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables average measurements OFF | ON | 0 | 1
:VALue(_)p	Sets number of averages taken to calculate measurement
:DUNits?	Returns parameter setting No Op
:DUNits(_)MHZ	Sets parameter display units in MHz No Op
:HLIMit?	Returns parameter setting in Hz query only, no parameters
:HLIMit(_)p(_)MHZ/HZ/KHZ	Sets High Limit value in MHz 0 to 2700 MHz
:DUNits?	Returns parameter setting No Op
:DUNits(_)MHZ	Sets parameter display units in MHz No Op
:EXCeeded?	Indicates if measurement has exceeded defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets High Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables average measurements ON | OFF

Command	Command Description and Parameters
RF Frequency - Frequency Commands (cont)	
:MEASure (cont)	
:RFRequency (cont)	
:FREQuency (cont)	
:ABSolute (cont)	
:LLIMit?	Returns parameter setting in Hz query only, no parameters
:LLIMit(_)p(_)MHZ/KHZ/HZ	Sets Low Limit value in MHz 0 to 2700 MHz
:DUNits?	Returns parameter setting No Op
:DUNits(_)MHZ	Sets parameter display units in MHz No Op
:EXCeeded?	Indicates if measurement is below defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets Low Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined Low Limit OFF | ON | 0 | 1
:VALue(_)p(_)MHZ/HZ/KHZ	Sets Low Limit in MHz 0 to 2700 MHz
:METer?	Returns parameter setting No Op
:METer(_)p	Enables/Disable Meter readings OFF | ON | 0 | 1 No Op
:HEND?	Returns parameter setting in Hz No Op
:HEND(_)p(_)MHZ/HZ/KHZ	Sets high end of scale in MHz/Hz/kHz No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)MHZ	Sets parameter display units in MHz No Op
:INTerval?	Returns parameter setting No Op
:INTerval(_)p	Sets number of divisions on the meter where: p is the number of divisions No Op
:LEND?	Returns parameter setting in Hz No Op
:LEND(_)p(_)MHZ/HZ/KHZ	Sets low end of scale in MHz/Hz/kHz No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)MHZ	Sets parameter display units in MHz No Op

Command	Command Description and Parameters
RF Frequency - Frequency Commands (cont)	
:MEASure (cont)	
:RFRequency (cont)	
:FREQuency (cont)	
:ABSolute (cont)	
:REFerence?	Returns parameter setting in Hz query only, no parameters
:REFerence(_)p(_)MHZ/HZ/KHZ	Sets reference in MHz/Hz/kHz
:DUNits?	Returns parameter setting No Op
:DUNits(_)MHZ	Sets parameter display units in MHz No Op
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables reference OFF | ON | 0 | 1
:VALue(_)p(_)MHZ/HZ/KHZ	Sets reference value in MHZ/HZ/KHZ
:STATe?	Returns parameter setting No Op
:STATe(_)p	Sets RF absolute frequency state OFF | ON | 0 | 1 No Op
:UNITs?	Returns parameter setting query only, no parameters
:UNITs(_)HZ	Sets GPIB units for RF absolute frequency measurement as Hz
:ERRor?	Returns parameter setting in Hz query only, no parameters
:ERRor	
:AUNits?	Returns parameter setting query only, no parameters
:AUNits(_)HZ	Sets attribute unit for RF Error Frequency measurements as Hz
:AVERage(_)p	Sets number of averages taken to calculate measurement
:AVERage?	Returns parameter setting query only, no parameters
:RESet	Resets average measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables average measurements ON | OFF
:VALue(_)p	Sets number of averages taken to calculate measurement
:DUNits?	Returns parameter setting No Op
:DUNits(_)KHZ	Sets parameter display units in kHz No Op

Command	Command Description and Parameters
RF Frequency - Frequency Commands (cont)	
:MEASure (cont)	
:RFRequency (cont)	
:FREQuency (cont)	
:ERRor (cont)	
:HLIMit?	Returns parameter setting in Hz query only, no parameters
:HLIMit(_)p(_)MHZ/HZ/KHZ	Sets High Limit value in kHz 0 to 5 MHz
:DUNits?	Returns parameter setting No Op
:DUNits(_)KHZ	Sets parameter display units in kHz No Op
:EXCeeded?	Indicates if measurement has exceeded defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets High Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined High Limit OFF | ON | 0 | 1
:VALue(_)p(_)MHZ/HZ/KHZ	Sets High Limit in kHz 0 to 5 MHz
:LLIMit?	Returns parameter setting in Hz query only, no parameters
:LLIMit(_)p(_)MHZ/HZ/KHZ	Sets Low Limit value in kHz 0 to 5 MHz
:DUNits?	Returns parameter setting No Op
:DUNits(_)KHZ	Sets parameter display units in kHz No Op
:EXCeeded?	Indicates if measurement is below defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets Low Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined Low Limit OFF | ON | 0 | 1
:VALue(_)p(_)MHZ/HZ/KHZ	Sets Low Limit in kHz 0 to 5 MHz

RF Frequency - Frequency Commands (cont)

Command	Command Description and Parameters
:MEASure (cont)	
:RFRequency (cont)	
:FREQuency (cont)	
:ERRor (cont)	
:METer?	Returns parameter setting No Op
:METer(_)p	Enables/Disable Meter readings OFF | ON | 0 | 1 No Op
:HEND?	Returns parameter setting in Hz No Op
:HEND(_)p(_)MHZ/HZ/KHZ	Sets high end of scale in kHz No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)KHZ	Sets parameter display units in kHz No Op
:INTerval?	Returns parameter setting No Op
:INTerval(_)p	Sets number of divisions on the meter where: p is the number of divisions No Op
:LEND?	Returns parameter setting in Hz No Op
:LEND(_)p(_)MHZ/HZ/KHZ	Sets low end of scale in kHz No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)KHZ	Sets parameter display units in kHz No Op
:REFerence?	Returns parameter setting in Hz query only, no parameters
:REFerence(_)p(_)MHZ/HZ/KHZ	Sets reference in MHz/Hz/kHz
:DUNits?	Returns parameter setting No Op
:DUNits(_)KHZ	Sets parameter display units in kHz No Op
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables reference OFF | ON | 0 | 1
:VALue(_)p(_)MHZ/HZ/KHZ	Sets reference value in MHz/Hz/kHz
:STATe?	Returns parameter setting No Op
:STATe(_)p	Sets state of RF Error frequency OFF | ON | 0 | 1 No Op
:UNITs?	Returns parameter setting query only, no parameters
:UNITs(_)HZ	Sets GPIB units for RF Error measurements as Hz

Command	Command Description and Parameters
RF Frequency - Power Measure Commands	
:MEASure	
:RFRequency	
:POWer?	Returns parameter setting in Watts or dBm query only, no parameters
:POWer	
:AUNits?	Returns parameter setting query only, no parameters
:AUNits(_)W	Sets attribute units for RF Power measurements as Watts
:AVERage(_)p	Sets number of averages taken to calculate measurement
:AVERage?	Returns parameter setting query only, no parameters
:RESet	Resets average measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables average measurements OFF | ON | 0 | 1
:VALue(_)p	Sets number of averages taken to calculate measurement
:DUNits?	Returns parameter setting No Op
:DUNits(_)W	Sets parameter display units in Watts No Op
:HLIMit?	Returns parameter setting in Watts query only, no parameters
:HLIMit(_)p(_)W/DBM	Sets High Limit value in W W: 0 to 10,000 dBm: -140 to 40
:DUNits?	Returns parameter setting No Op
:DUNits(_)W	Sets parameter display units in Watts No Op
:EXCeeded?	Indicates if measurement has exceeded defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets High Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined High Limit OFF | ON | 0 | 1
:VALue(_)p(_)W/DBM	Sets High Limit in W W: 0 to 10,000 dBm: -140 to 40

Command	Command Description and Parameters
RF Frequency - Power Commands (cont)	
:MEASure (cont)	
:RFRequency (cont)	
:POWer (cont)	
:LLIMit?	Returns parameter setting in Watts query only, no parameters
:LLIMit(_)p(_)W/DBM	Sets Low Limit value in W W: 0 to 10,000 dBm: -140 to 40
:DUNits?	Returns parameter setting No Op
:DUNits(_)W	Sets parameter display units in Watts No Op
:EXCeeded?	Indicates if measurement is below defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets Low Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined Low Limit OFF | ON | 0 | 1
:VALue(_)p(_)W/DBM	Sets Low Limit in W W: 0 to 10,000 dBm: -140 to 40
:METer?	Returns parameter setting No Op
:METer(_)p	Enables/Disable Meter readings OFF | ON | 0 | 1 No Op
:STATe?	Returns parameter setting No Op
:STATe(_)p	Enables/Disables Meter readings OFF | ON | 0 | 1 No Op
:HEND?	Returns parameter setting in Watts No Op
:HEND(_)p(_)W/DBM	Sets high end of scale in W/dBm No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)W	Sets parameter display units in Watts No Op
:INTerval?	Returns parameter setting No Op
:INTerval(_)p	Sets number of divisions on the meter where: p is the number of divisions No Op
:LEND?	Returns parameter setting in Watts No Op
:LEND(_)p(_)W/DBM	Sets low end of scale in W/dBm No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)W	Sets parameter display units in Watts No Op

Command	Command Description and Parameters
RF Frequency - Power Commands (cont)	
:MEASure (cont)	
:RFRequency (cont)	
:POWer (cont)	
:REFerence?	Returns parameter setting in Watts query only, no parameters
:REFerence(_)p(_)W/DBM	Sets reference in W/dBm
:DUNits?	Returns parameter setting No Op
:DUNits(_)DBM	Sets parameter display units in dBm No Op
:STATe(_)p	Enables/Disables reference OFF | ON | 0 | 1
:VALue(_)p(_)W/DBM	Sets reference value in W/dBm
:STATe?	Returns parameter setting No Op
:STATe(_)p	Sets state of RF Power Measurements OFF | ON | 0 | 1 No Op
:UNITs?	Returns parameter setting query only, no parameters
:UNITs(_)W/DBM	Sets GPIB units for RF Power Measurements as Watts or dBm

Command	Command Description and Parameters

Spectrum Analyzer Measure Commands

NOTE

Test Set must have Spectrum Analyzer Tile selected for Remote Commands to be valid :DISPlay(_)SANalyzer.

:MEASure	
:SANalyzer	
:MARKer	
:FREQuency?	Returns Spectrum Analyzer marker frequency in Hz
:AUNits?	Returns parameter setting query only, no parameters
:AUNits(_)HZ	Sets attribute units to Hz
:AVERage?	Returns parameter setting No Op
:AVERage(_)p	Sets number of averages taken to calculate measurement No Op
:RESet	Resets average measurement No Op
:STATe?	Returns parameter setting No Op
:STATe(_)p	Enables/Disables average measurements ON | OFF No Op
:VALue(_)p	Sets number of averages taken to calculate measurement No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)KHZ	Sets parameter display units in kHz No Op
:HLIMit?	Returns parameter setting in Hz query only, no parameters
:HLIMit(_)p(_)MHZ/HZ/KHZ	Sets High Limit value in MHz/Hz/kHz 0 to 2700 MHz
:DUNits?	Returns parameter setting query only, no parameters
:DUNits(_)MHZ	Sets parameter display units in MHz
:EXCeeded?	Indicates if measurement has exceeded defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets High Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined High Limit OFF | ON | 0 | 1
:VALue(_)p(_)MHZ/HZ/KHZ	Sets High Limit in Hz/kHz 0 to 2700 MHz

Command	Command Description and Parameters
Spectrum Analyzer Commands (cont)	
:MEASure (cont)	
:SANalyzer (cont)	
:MARKer (cont)	
:FREQuency (cont)	
:LLIMit?	Returns parameter setting in Hz query only, no parameters
:LLIMit(_)p(_)MHZ/HZ/KHZ	Sets Low Limit value in Hz/kHz 0 to 2700 MHz
:DUNits?	Returns parameter setting query only, no parameters
:DUNits(_)KHZ	Sets parameter display units in kHz
:EXCeeded?	Indicates if measurement is below defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets Low Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined Low Limit OFF | ON | 0 | 1
:VALue(_)p(_)MHZ/HZ/KHZ	Sets Low Limit in Hz/kHz 0 to 2700 MHz
:REFerence?	Returns parameter setting in Hz
:REFerence(_)p(_)MHZ/HZ/KHZ	Sets reference in Hz/kHz
:DUNits?	Returns parameter setting No Op
:DUNits(_)KHZ	Sets parameter display units in kHz No Op
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables reference OFF | ON | 0 | 1
:VALue(_)p(_)MHZ/HZ/KHZ	Sets reference value in Hz/kHz
:STATe?	Returns parameter setting No Op
:STATe(_)p	Sets state of the marker frequency OFF | ON | 0 | 1 No Op
:UNITs?	Returns parameter setting query only, no parameters
:UNITs(_)HZ	Sets GPIB units for marker frequency in Hz

Command	Command Description and Parameters
Spectrum Analyzer Commands (cont)	
:MEASure (cont)	
:SANalyzer (cont)	
:MARKer (cont)	
:LEVel?	Returns parameter setting in Watts or dBm
:AUNits?	Returns parameter setting query only, no parameters
:AUNits(_)DBM	Sets attribute units in dBm
:AVERage(_)p	Sets number of averages taken to calculate measurement No Op
:AVERage?	Returns parameter setting No Op
:RESet	Resets average measurement No Op
:STATe?	Returns parameter setting No Op
:STATe(_)p	Enables/Disables average measurements ON | OFF No Op
:VALue(_)p	Sets number of averages taken to calculate measurement No Op
:DUNits?	Returns parameter setting No Op
:DUNits(_)DBM	Sets parameter display units in dBm No Op
:HLIMit?	Returns parameter setting in dBm query only, no parameters
:HLIMit(_)p(_)W/DBM	Sets High Limit value in dBm -140 to 60 dBm
:DUNits?	Returns parameter setting No Op
:DUNits(_)DBM	Sets parameter display units in dBm No Op
:EXCeeded?	Indicates if measurement has exceeded defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets High Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined High Limit OFF | ON | 0 | 1
:VALue(_)p(_)W/DBM	Sets High Limit value in dBm -140 to 60 dBm

Command	Command Description and Parameters
Spectrum Analyzer Commands (cont)	
:MEASure (cont)	
:SANalyzer (cont)	
:MARKer (cont)	
:LEVel (cont)	
:LLIMit?	Returns parameter setting in dBm query only, no parameters
:LLIMit(_)p(_)W/DBM	Sets Low Limit value in dBm -140 to 60 dBm
:DUNits?	Returns parameter setting No Op
:DUNits(_)DBM	Sets parameter display units in dBm No Op
:EXCeeded?	Indicates if measurement is below defined limit where: 0 = Not exceeded 1 = Exceeded
:RESet	Resets Low Limit measurement no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined Low Limit OFF | ON | 0 | 1
:VALue(_)p(_)DBM	Sets Low Limit in dBm -140 to 60 dBm
:REFerence?	Returns parameter setting in dBm query only, no parameters
:REFerence(_)p(_)W/DBM	Sets reference in dBm query only, no parameters
:DUNits?	Returns parameter setting No Op
:DUNits(_)DBM	Sets parameter display units in dBm No Op
:STATe(_)p	Enables/Disables reference OFF | ON | 0 | 1
:VALue(_)p(_)W/DBM	Sets reference value in dBm
:STATe?	Returns parameter setting No Op
:STATe(_)p	Enables/Disables Spectrum Analyzer Marker Level measurements OFF | ON | 0 | 1 No Op
:UNITs?	Returns parameter setting query only, no parameters
:UNITs(_)W/DBM	Sets GPIB units for Spectrum Analyzer Marker Level in dBm
:TRACe?	Returns 520 data point from the Spectrum Analyzer Live Trace

Command	Command Description and Parameters
RF Analyzer Commands	
:RFANalyzer	
:ATTenuator?	**Returns parameter setting in dB**
:ATTenuator(_)'p(_)dB'	**Sets attenuator value in dB**
	40(_)dB | 20(_)dB | 0(_)dB
:MODE?	Returns parameter setting
	query only, no parameters
:MODE(_)'p'	Sets Attenuator Mode
	Auto | Hold
:FREQuency?	**Returns parameter setting in Hz**
	query only, no parameters
:FREQuency(_)pp.ppp(_)MHZ/HZ/KHZ	
	Sets Frequency in MHz/Hz/kHz
	100 kHz to 2700 MHz
:DUNits?	Returns parameter setting
	No Op
:DUNits(_)MHZ	Sets parameter display units in MHz
	No Op
:INCRement?	Returns parameter setting
	query only, no parameters
:INCRement(_)UP	Increases frequency by value defined in :INCRement(_)p command
	no query, no parameters
:INCRement(_)DOWN	Decreases frequency by value defined in :INCRement(_)p command
	no query, no parameters
:INCRement(_)p(_)MHZ/HZ/KHZ	Sets Increment value in MHz/Hz/kHz
:DIVide	Divides Increment value by 10
	no query, no parameters
:DUNits?	Returns parameter setting
	query only, no parameters
:DUNits(_)MHz	Sets parameter display units in MHz
:MODE?	Returns parameter setting
	query only, no parameters
:MODE(_)p	Defines Increment Mode
	LINear | LOGarithm
:MULTiply	Multiplies Increment value by 10
	no query, no parameters
:UNITs?	Returns parameter setting
	query only, no parameters
:UNITs(_)Hz	Sets GPIB units of measurement
:GTIMe?	**Returns parameter setting**
	No Op
:GTIMe(_)300(_)ms	**Sets Gate Time in ms**
	No Op
:DUNits?	Returns parameter setting
	No Op
:DUNits(_)MS	Sets parameter display units in ms
	No Op
:UNITs?	Returns parameter setting
	No Op
:UNITs(_)S	Sets parameter units in seconds
	No Op
:IFBW?	**Returns parameter setting**
	query only, no parameters
:IFBW(_)'p(_)kHz'	**Sets IF Bandwidth in kHz**
	15(_)kHz | 230(_)kHz
:INPut?	**Returns parameter setting**
	query only, no parameters

Command	Command Description and Parameters
RF Analyzer Commands (cont)	
:RFANalyzer (cont)	
:INPut(_)'p'	**Sets RF Analyzer Input port** RF(_)In | ANT
:PMEasurement	
:DETector?	Returns parameter setting No Op
:DETector(_)'p'	Sets Detector mode Peak | Sample No Op
:SENSitivity?	**Returns parameter setting** No Op
:SENSitivity(_)'p'	**Sets Analyzer sensitivity level** Normal | High No Op
:SQUelch?	**Returns parameter setting** No Op
:SQUelch 'Pot'	**Sets Squelch setting** Pot | Open | Fixed No Op
:SRLocation?	**Returns parameter setting** No Op
:SRLocation(_)'p'	**Sets location for Storing/Recalling files** INTERNAL | CARD | RAM | DISK No Op
:TMODe(_)'p'	**Sets RF Analyzer Tune Mode** Auto | Manual
:TMODe?	**Returns parameter setting** query only, no parameters
:TKEY?	**Returns parameter setting for out PTT**
:TKEY(_)'p'	**Enables/Disables PTT** OFF | ON

Command	Command Description and Parameters
RF Generator Commands	
:RFGenerator	
:AMPLitude?	**Returns parameter setting in dBm/W/V/DBUV** query only, no parameters
:AMPLitude(_)p(_)dBm/W/V/DBUV	**Sets RF Generator Amplitude** where: p is a real value in dBm
:DUNits?	Returns parameter setting in dBm query only, no parameters
:DUNits(_)dBm	Sets parameter display units in dBm
:INCRement?	Returns parameter setting in dBm/W/V/DBUV query only, no parameters
:INCRement_UP	Increases Amplitude by value defined in :INCrement(_)p(_)dBm command no query, no parameters
:INCRement_DOWN	Decreases Amplitude by value defined in :INCrement(_)p(_)dBm command no query, no parameters
:INCRement(_)p(_)dBm/W/V/DBUV	Sets Increment value for Amplitude
:DIVide	Divides Increment value by 10 no query, no parameters
:DUNits?	Returns parameter setting in dBm No Op
:DUNits(_)DBM	Sets parameter display units in dBm No Op
:MODE?	Returns parameter setting query only, no parameters
:MODE(_)p	Sets Amplitude Increment mode LINear | LOGarithm
:MULTiply	Multiplies Increment value by 10 no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Enables/Disables defined Amplitude OFF | ON | 0 | 1
:UNITs?	Returns parameter setting in dBm query only, no parameters
:UNITs(_)DBM/W/V/DBUV	Sets GPIB units in dBm/W/V/DBUV
:ATTenuator?	**Returns parameter setting** query only, no parameters
:ATTenuator(_)'p'	**Enables/Disables Attenuator** OFF | ON
:FM	
:DCZero	Zeroes DC meter No Op
:COUPling?	Returns parameter setting No Op
:COUPling	Coupling setting AC | DC No Op

Command	Command Description and Parameters
RF Generator Commands (cont)	
:RFGenerator (cont)	
:FREQuency?	**Returns parameter setting in Hz** query only, no parameters
:FREQuency(_)pp.ppp(_)MHZ/HZ/KHZ	Sets RF Generator Frequency where: p is a real value
:DUNits?	Returns parameter setting in MHz No Op
:DUNits(_)MHz	Sets parameter display units in MHz No Op
:INCRement?	Returns parameter setting in Hz query only, no parameters
:INCRement_UP	Increases Frequency by value defined in :INCrement(_)pMHz command no query, no parameters
:INCRement_DOWN	Decreases Frequency by value defined in :INCrement(_)pMHz command no query, no parameters
:INCRement(_)p(_)MHZ/HZ/KHZ	Sets Increment value for RF Generator Frequency
:DIVide	Divides Increment value by 10 no query, no parameters
:DUNits?	Returns parameter setting in dBm No Op
:DUNits(_)MHZ	Sets parameter display units in dBm No Op
:MODE?	Returns parameter setting query only, no parameters
:MODE(_)p	Sets Frequency Increment mode LINear | LOGarithm
:MULTiply	Multiplies Increment value by 10 no query, no parameters
:UNITs?	Returns parameter setting in Hz query only, no parameters
:UNITs(_)HZ	Sets RF Generator Frequency GPIB units in Hz

Command	Command Description and Parameters
RF Generator Commands (cont)	
:RFGenerator (cont)	
:MODulation	
:AOUT?	Returns parameter setting No Op
:AOUT(_)'p'	Sets Audio Out AC | DC No Op
:EXTernal	
:AM?	Returns parameter setting as a PCT query only, no parameters
:AM(_)p(_)PCT	Sets AM depth when DESTination is set to AM where: p is a real value in percent
:DUNits?	Returns parameter setting as a PCT query only, no parameters
:DUNits(_)PCT	Sets parameter display units as a PCT
:INCRement?	Returns parameter setting as a PCT query only, no parameters
:INCRement(_)UP	Increases Modulator setting by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)DOWN	Decreases Modulator setting by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)p(_)PCT	Sets Increment value where: p is a real value in percent
:DIVide	Divides Increment value by 10 no query, no parameters
:DUNits?	Returns parameter setting as a PCT query only, no parameters
:DUNits(_)PCT	Sets parameter display units as a PCT
:MODE?	Returns parameter setting query only, no parameters
:MODE(_)p	Defines Increment Mode LINear | LOGarithm
:MULTiply	Multiplies Increment value by 10 no query, no parameters
:STATe?	Returns parameter setting (or AM) query only, no parameters
:STATe(_)p	Sets state of Modulator when destination is set to AM OFF | ON | 0 | 1
:UNITs?	Returns parameter setting query only, no parameters
:UNITs(_)PCT	Sets GPIB units of measurement

Command	Command Description and Parameters
RF Generator Commands (cont)	
:RFGenerator (cont)	
:MODulation (cont)	
:EXTernal (cont)	
:FM?	Returns parameter setting in Hz query only, no parameters
:FM(_)p(_)KHZ/HZ	Sets FM deviation when Modulation source is set to External where: p is a real value in kHz/Hz
:DUNits?	Returns parameter setting in kHz No Op
:DUNits(_)KHZ	Sets parameter display units in kHz No Op
:INCRement?	Returns parameter setting in Hz query only, no parameters
:INCRement(_)UP	Increases Modulation by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)DOWN	Decreases Modulation by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)p(_)KHZ/HZ	Sets Increment value where: p is a real value in kHz/Hz
:DIVide	Divides Increment value by 10 no query, no parameters
:DUNits?	Returns parameter setting in Hz No Op
:DUNits(_)KHZ/HZ	Sets parameter display units in kHz/Hz No Op
:MODE?	Returns parameter setting query only, no parameters
:MODE(_)p	Defines Increment Mode LINear | LOGarithm
:MULTiply	Multiplies Increment value by 10 no query, no parameters
:STATe?	Returns parameter setting (or FM) query only, no parameters
:STATe(_)p	Sets state of Modulator when DESTination is set to FM OFF | ON | 0 | 1
:UNITs?	Returns parameter setting in Hz query only, no parameters
:UNITs(_)HZ	Sets GPIB units for measurement in Hz
:DESTination?	Returns parameter setting
:DESTination(_)'p'	Sets RF Generator external source AM(_)(/Vpk) | FM(_)(/Vpk) | Audio(_)Out where: AM(_)(/Vpk) = AM Modulator FM(_)(/Vpk) = FM Modulator Audio(_)Out = FGEN/DEMOD Connector
:PEMPhasis?	Returns parameter setting No Op
:PEMPhasis(_)'p'	Enables/Disables Pre-emphasis OFF | ON No Op
:MODE?	Returns parameter setting No Op
:MODE(_)'p'	Selects Pre-emphasis Mode AUTO | HOLD No Op

Command	Command Description and Parameters

RF Generator Commands (cont)

:RFGenerator (cont)

:OUTPut(_)'p'	**Set RF Generator Output port** RF(_)Out | Dupl
:OUTPut?	**Returns parameter setting** query only, no parameters

Spectrum Analyzer Commands

NOTE

Test Set must have Spectrum Analyzer Tile selected for Remote Commands to be valid :DISPlay(_)SANalyzer.

:SANalyzer

:ATTenuator?	**Returns parameter setting in dB** query only, no parameters
:ATTenuator(_)'p(_)DB'	**Sets attenuator** 0(_)dB | 20(_)dB | 40(_)dB where: p is a real value in dB
:MODE?	Returns parameter setting, always 'AUTO' query only, no parameters
:MODE(_)p	Sets Attenuator mode, always 'AUTO' Set by adjusting Spectrum Analyzer Reference Level
:CFRequency?	**Returns parameter setting in Hz** query only, no parameters
:CFRequency(_)p(_)MHZ/KHZ	**Sets Center Frequency of Spectrum Analyzer** where: p is a real value in MHz
:DUNits?	Returns parameter setting in Hz No Op
:DUNits(_)HZ	Sets parameter display units in Hz No Op
:INCRement?	Returns parameter setting in MHz query only, no parameters
:INCRement(_)UP	Increases Center Frequency value by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)DOWN	Decreases Center Frequency value by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)p(_)MHZ/KHZ	Sets Increment value in MHz
:DIVide	Divides Increment value by 10 no query, no parameters
:DUNits?	Returns parameter setting in Hz No Op
:DUNits(_)HZ	Sets parameter display units in Hz No Op
:MODE?	Returns parameter setting query only, no parameters
:MODE(_)p	Sets Center Frequency Increment mode LINear | LOGarithm
:MULTiply	Multiplies Increment value by 10 no query, no parameters
:UNITs?	Returns parameter setting in Hz query only, no parameters
:UNITs(_)HZ	Sets Increment value in Hz
:CONTrol?	**Returns parameter setting** No Op
:CONTrol(_)'p'	**Selects Control Screen to be selected** MAIN | RFGEN | MARKer | AUXiliary No Op

Command	Command Description and Parameters
Spectrum Analyzer Commands (cont)	
:SANalyzer (cont)	
:DISPlay	
:SCALe?	Returns parameter setting in dB/div query only, no parameters
:SCALe(_)'p(_)DB/DIV'	Sets Display scale where: p is a real value in dB/div 1(_)dB/div | 2(_)dB/div | 10(_)dB/div
:INPut(_)'p'	**Sets Spectrum Analyzer Input source** RF(_)In | ANT
:INPut?	**Returns parameter setting** query only, no parameters
:MARKer	**Marker**
:CFRequency	Sets Center Frequency to Marker position no query, no parameters
:EXCursion?	Returns parameter setting No Op
:EXCursion(_)p	Sets Excursion value where: p = integer value No Op
:INCRement(_)UP	Increases excursion value by default value (1) No Op
:INCRement(_)DOWN	Decreases excursion value by default value (1) No Op
:NPEak	Moves Marker to next peak no query, no parameters
:NPLevel?	Returns parameter setting
:NPLevel(_)p(_)DBM	Sets NP Level
:DUNits?	Returns parameter setting in dBm query only, no parameters
:DUNits(_)DBM	Sets parameter display units in dBm
:INCRement?	Returns parameter setting in divisions query only, no parameters
:INCRement(_)UP	Increases next peal level value by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_) DOWN	Decreases next peak level value by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)p(_)DBM	Sets Increment value in divisions
:DIVide	Divides Increment value by 10 no query, no parameters
:DUNits?	Returns parameter setting query only, no parameters
:DUNits(_)DBM	Sets parameter display units in divisions
:MODE?	Returns parameter setting query only, no parameters
:MODE(_)p	Sets Center Frequency Increment mode LINear | LOGarithm
:MULTiply	Multiplies Increment value by 10 no query, no parameters
:UNITs?	Sets parameter units in divisions query only, no parameters
:UNITs(_)DBM	Sets GPIB units for NP Level
:PEAK	Moves Marker to peak point no query, no parameters
:RLEVel	Sets Reference Level to Marker position no query, no parameters

Command	Command Description and Parameters
Spectrum Analyzer Commands (cont)	
:SANalyzer (cont)	
:MARKer (cont)	
:POSition1?	Returns parameter setting query only, no parameters
:POSition1(_)p(_)DIV	Sets Marker 1 position in divisions
:DUNits?	Returns parameter setting query only, no parameters
:DUNits(_)DIV	Sets parameter display units in divisions
:INCRement?	Returns parameter setting query only, no parameters
:INCRement(_)UP	Increases position by value defined in :INCrement(_)p command no query, no parameters
:INCRement(_)DOWN	Decreases position by value defined in :INCrement(_)p command no query, no parameters
:INCRement(_)p(_)DIV	Sets position value in divisions
:DIVide	Divides defined Increment value by 10 :POSition:INCRement(_)p.ppdiv command must be issued prior to :DIVide command no query, no parameters
:DUNits?	Returns parameter setting query only, no parameters
:DUNits(_)DIV	Sets parameter display units in divisions
:MODE?	Returns parameter setting query only, no parameters
:MODE(_)p	Defines Position Mode setting LINear | LOGarithm
:MULTiply	Multiplies defined Increment value by 10 :POSition:INCRement(_)p.ppdiv command must be issued prior to :MULTiply command no query, no parameters
:UNITs?	Returns parameter setting query only, no parameters
:UNITs(_)DIV	Sets GPIB units in divisions

Command	Command Description and Parameters
Spectrum Analyzer Commands (cont)	
:SANalyzer (cont)	
:RLEVel?	**Returns parameter setting in dBm/W/V/DBUV** query only, no parameters
:RLEVel(_)p(_)DBM/W/V/DBUV	**Sets reference level or Top of Scale** where: p is a real value in dBm
:DUNits?	Returns parameter setting in dBm/W/V/DBUV query only, no parameters
:DUNits(_)DBM	Sets parameter display units in dBm
:INCRement?	Returns parameter setting query only, no parameters
:INCRement(_)UP	Increases Reference Level by value defined in :INCrement(_)p command no query, no parameters
:INCRement(_)DOWN	Decreases Reference Level by value defined in :INCrement(_)p command no query, no parameters
:INCRement(_)p(_)DBM/W/V/DBUV	Defines Increment value in dBm/W/V/DBUV
:DIVide	Divides defined Increment value by 10 :INCRement(_)pdBm command must be issued prior to :DIVide command no query, no parameters
:DUNits?	Returns parameter setting in dBm No Op
:DUNits(_)dBm	Sets parameter display units in dBm No Op
:MODE?	Returns parameter setting query only, no parameters
:MODE(_)p	Defines Mode setting LINear | LOGarithm
:MULTiply	Multiplies defined Increment value by 10 :INCRement(_)pdBm command must be issued prior to :MULTiply command no query, no parameters
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)p	Sets state of Generator when destination is set to Audio OFF | ON | 0 | 1
:UNITs?	Returns parameter setting no query, no parameters
:UNITs(_)DBM/W/V/DBUV	Defines Reference Level unit in dBm
:RFGenerator?	**Returns parameter setting** query only, no parameters
:RFGenerator(_)'p'	**Selects generator type** TRACK | FIXED

Command	Command Description and Parameters
Spectrum Analyzer Commands (cont)	
:SANalyzer (cont)	
:SPAN?	**Returns parameter setting in Hz**
:SPAN(_)p(_)MHZ/KHZ	**Sets Span in kHz**
:DUNits?	Returns parameter setting No Op
:DUNits(_)KHZ	Sets parameters display unit in kHz No Op
:INCRement?	Returns parameter setting query only, no parameters
:INCRement(_)UP	Increases span value by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)DOWN	Decreases span value by value defined in :INCRement(_)p command no query, no parameters
:INCRement(_)p(_)MHZ/KHZ	Sets Increment value in MHz/kHz
:DIVide	Divides defined Increment value by 10 no query, no parameters
:DUNits?	Sets parameter display units in MHz/kHz No Op
:DUNits(_)KHZ	Sets Increment Display unit value in kHz No Op
:MODE?	Returns parameter setting query only, no parameters
:MODE(_)p	Defines Increment Mode LINear | LOGarithm
:MULTiply	Multiplies defined Increment value by 10 :POSition:INCRement(_)p.ppdiv command must be issued prior to :MULTiply command no query, no parameters
:STATe?	Returns parameter setting No Op
:STATe(_)p	Sets span state OFF | ON | 0 | 1 No Op
:UNITs?	Returns parameter setting query only, no parameters
:UNITs(_)HZ	Sets Span in Hz

Command	Command Description and Parameters
Spectrum Analyzer Commands (cont)	
:SANalyzer (cont)	
:TGENerator	
:AMPLitude?	Returns parameter setting in dBm query only, no parameters
:AMPLitude(_)p(_)DBM	Sets Tracking Generator Amplitude in dBm
:DUNits?	Returns parameter setting query only, no parameters
:DUNits(_)DBM	Sets parameter display units in dBm
:INCRement?	Returns parameter setting in dBm query only, no parameters
:INCRement_UP	Increases Amplitude setting by value defined in :INCrement_p_dBm command
:INCRement_DOWN	Decreases Amplitude setting by value defined in :INCrement_p_dBm command
:INCRement(_)p(_)DBM	Defines Increment value for Amplitude measurement
:DIVide	Divides Increment value by 10
:DUNits?	Returns parameter setting No Op
:DUNits(_)DBM	Sets parameter display units in dBm No Op
:MODE?	Returns parameter setting query only, no parameters
:MODE(_)p	Defines Mode setting LINear | LOGarithm
:MULTiply	Multiplies defined Increment value by 10 no query, no parameters
:UNITs?	Returns parameter setting query only, no parameters
:UNITs(_)DBM	Sets Tracking Generator Amplitude GPIB unit
:STATe?	Returns parameter setting query only, no parameters
:STATe(_)ON	Enables Tracking Generator

Command	Command Description and Parameters
Spectrum Analyzer Commands (cont)	
:SANalyzer (cont)	
:TGENerator (cont)	
:OFRequency?	Returns parameter setting in Hz No Op
:OFRequency(_)p(_)HZ	Sets Offset Frequency value in Hz No Op
:DUNits?	Returns parameter setting in Hz No Op
:DUNits(_)HZ	Sets parameter display units in HZ No Op
:INCRement?	Returns parameter setting in Hz No Op
:INCRement(_)UP	Increases Offset Frequency by value defined in the :INCRement(_)p command No Op
:INCRement(_)DOWN	Decreases Offset Frequency by value defined in the :INCRement(_)p command No Op
:INCRement(_)p(_)HZ	Sets Offset Frequency Increment value in Hz No Op
:DIVide	Divides defined Increment value by 10 No Op
:DUNits?	Sets parameter display units in Hz No Op
:DUNits(_)HZ	Sets Displayed Offset Frequency Increment value in Hz No Op
:MULTiply	Multiplies defined Increment value by 10 No Op
:UNITs?	Returns parameter setting in Hz No Op
:UNITs(_)Hz	Sets parameter in Hz No Op
:DESTination?	Returns parameter setting query only, no parameters
:DESTination(_)'p'	Selects Tracking Generator port RF(_)Out | Dupl
:SWEep?	Returns parameter setting query only, no parameters
:SWEep(_)'p'	Selects Tracking Generator Sweep Method NORM (always Normal sweep)

Command	Command Description and Parameters
Spectrum Analyzer Commands (cont)	
:SANalyzer (cont)	
:TRACe	
:MHOLD?	Returns parameter setting query only, no parameters
:MHOLD(_)'p'	Sets Measurement Hold parameter No(_)Pk/Avg | Pk(_)Hold | Avg(_)n | OFF where: No Pk/Avg = Peak hold and video averaging are OFF Pk Hold = Peak hold is ON Avg(_)n = Enables video averaging over n measurements where n = 1, 2, 3, 4, 5, 10, 20, 50 or 100 OFF = Peak hold and video averaging are OFF
:NORMalize?	Returns parameter setting query only, no parameters
:NORMalize(_)'p'	Sets Normalize operation mode A(_)Only | A-B where: A Only = Provides live display. A-B = Displays difference between SAVE B trace and currently displayed trace. Note: :TRACe:SAVE command must be issued prior to :NORMalizeA-B command to obtain A-B reference reading
:SAVE	Saves currently displayed trace (Save B) for reference with Normalize A-B operation
Save/Recall Files	
:REGister	
:CLEar(_)'filename'	Deletes saved file: do not include file extension in filename.
:ALL	Deletes all saved files. no query, no parameters
:RECall(_)'filename'	Recalls file settings: do not include file extension in filename. no query, no parameters
:SAVE(_)'filename'	Saves file settings: do not include file extension in filename. no query, no parameters

Command	Command Description and Parameters

Trigger Commands

NOTE

:TRIGger commands apply to the Spectrum Analyzer.

Trigger Commands

:TRIGger

:ABORt	**Stops current measurement cycle** no query, no parameters
:IMMediate	**Immediately starts measurement cycle** no query, no parameters
:MODE	**Sets trigger mode**
:RETRigger?	Returns parameter setting query only, no parameters
:RETRigger(_)p	Selects Trigger mode REPetitive | SINGle where: SING = Trigger cycle stops after a single measurement is obtained: returns 1 measurement value. REP = Measurement cycle repeats continuously: returns consecutive measured values.
:SETTling?	Returns parameter setting query only, no parameters
:SETTling(_)p	Sets Settling Time for Audio Measurements FAST | FULL where: FAST = No delays are introduced to signal. FULL = Introduces delay appropriate to measurement being performed.

Command	Command Description and Parameters

Display Commands

NOTE

Commands display relevant 3900 Display Tile.

:DISPlay?	Commands return screen names set when screen is supported by the 3900. Commands which set screens not supported by the 3900 return DUPL for the Analog Duplex Tile.
:DISPlay(_)ACNTrol	Call Control Display No Op (returns DUPL)
:DISPlay(_)ACPower	Adjacent Channel Power No Op (returns DUPL)
:DISPlay(_)AFANalyzer	Displays Analyzer Tile within maximized Analog Duplex system Tile
:DISPlay(_)AUTHentication	Authentication No Op (returns DUPL)
:DISPlay(_)CBIT	Call Bit No Op (returns DUPL)
:DISPlay(_)CCNFigure	Call Configure No Op (returns DUPL)
:DISPlay(_)CDATa	Call Data No Op (returns DUPL)
:DISPlay(_)CMEasure	Analog Measure No Op (returns DUPL)
:DISPlay(_)CONFigure	Configure Screen
:DISPlay(_)DECoder	Decoder Screen No Op (returns DUPL)
:DISPlay(_)DUPLex	Displays Analog Duplex Screen
:DISPlay(_)ENCoder	Encoder Screen No Op (returns DUPL)
:DISPlay(_)HELP	Help Screen No Op (returns DUPL)
:DISPlay(_)IOConfigure	I/O Configure Screen No Op (returns DUPL)
:DISPlay(_)MESSage	Message Screen No Op (returns DUPL)
:DISPlay(_)OSCilloscope	Displays maximized view of Oscilloscope Tile
:DISPlay(_)PCONfigure	Print Configure Screen No Op (returns DUPL)
:DISPlay(_)PDCtest	PDC Cellular Test Screen No Op (returns DUPL)
:DISPlay(_)PHPtest	PHP Cellular Test Screen No Op (returns DUPL)
:DISPlay(_)RFANalyzer	Displays maximized view of Analyzer Tile
:DISPlay(_)RFGen	Displays maximized view of Generators Tile
:DISPlay(_)RINTerface	Displays Radio Interface Screen No Op (returns DUPL)
:DISPlay(_)RX	Displays maximized view of Generators Tile within Analog Duplex system
:DISPlay(_)SANalyzer	Displays Spectrum Analyzer Tile
:DISPlay(_)SERVice	Service Screen No Op (returns DUPL)
:DISPlay(_)TCONfigure	Tests (External Devices) Screen No Op (returns DUPL)
:DISPlay(_)TDMAtest	TDMA Dual Mode Cellular Test No Op (returns DUPL)

Display Commands (cont)

Command	Command Description and Parameters
:DISPlay(_)TESTs	Tests Main Menu Screen No Op (returns DUPL)
:DISPlay(_)TFReq	Tests Channel Information Screen No Op (returns DUPL)
:DISPlay(_)THLP	Tests Help Screen No Op (returns DUPL)
:DISPlay(_)TIBasic	Tests Basic Controller Screen No Op (returns DUPL)
:DISPlay(_)TMAKe	Tests Save/Delete Procedure Screen No Op (returns DUPL)
:DISPlay(_)TPARm	Tests Parameters Screen No Op (returns DUPL)
:DISPlay(_)TPRint	Tests Printer Setup Screen No Op (returns DUPL)
:DISPlay(_)TSEQn	Tests Order of Tests Screen No Op (returns DUPL)
:DISPlay(_)TSPec	Tests Pass/Fail Limits Screen No Op (returns DUPL)
:DISPlay(_)TX	Tx Test Screen: Displays maximized Analyzers Tile within Analog Duplex system

Appendix A

Supported DCS Codes

Low Series	100 Series	200 Series	300 Series	400 Series	500 Series	600 Series	700 Series
023	114	205	306	411	503	606	703
025	115	223	311	412	506	612	712
026	116	226	315	413	516	624	723
031	125	243	331	423	532	627	731
032	131	244	343	431	546	631	732
043	132	245	346	432	565	632	734
047	134	251	351	445		654	743
051	143	261	364	464		662	754
054	152	263	365	465		664	
065	155	265	371	466			
071	156	271					
072	162						
073	165						
074	172						
	174						

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Appendix B

Compatibility Commands Conversion Chart

The following table identifies industry standard commands and their equivalent 3900 Series Remote Commands. Unless otherwise indicated, when more than one 3900 command is listed as replacement commands, both commands must be used.

Refer to appropriate chapters in the 3900 Series Remote Programming Manual for detailed descriptions of 3900 Remote Commands.

NOTE

3900 Commands that indicate two command options are dependent on the selected :AFAN:INPUT parameter.

For AM Demod and FM Demod use 3900 commands that contain :MOD in the command string.

For Audio In use 3900 commands that contain :AF in the command string.

For example:

:CONF:AF:ANAL:DIST:AVER? Is the command string used when Audio is the selected AF Analyzer input.
:CONF:MOD:ANAL:DIST:AVER? Is the command string used when AM or FM Demod is the selected AF Analyzer input.

Compatibility Commands	3900 Commands
:AFANalyzer:AIN 'GND'	:CONF:AF:ANAL:SOUR AUD1
:AFANalyzer:INPut 'FM Demod'	:RF:ANAL:MOD FM
:AFANalyzer:SPEaker:VOLume 'Pot'	:CONF:PORT:LOUD AUD :ASSign:VOLume 50
:AFANalyzer:SPEaker:VOLume?	:CONF:PORT:LOUD? :ASSign:VOLume?
:CONFigure:OFRequency 0.000 MHz	:CONF:OFFS:DUPL:VAL 0.000 MHz
:CONFigure:OFRequency?	:CONF:OFFS:DUPL:VAL?
:CONFigure:OMODe 'Off'	:CONF:OFFS:DUPL:LOCK OFF
:CONFigure:OMODe?	:CONF:OFFS:DUPL:LOCK?
:CONFigure:OFLevel:MODE 'On'	:CONF:OFFS:ANAL:ENAB 0 :CONF:OFFS:GEN:ENAB 0
:CONFigure:OFLevel:MODE?	:CONF:OFFS:ANAL:ENAB? :CONF:OFFS:GEN:ENAB?
:CONFigure:OFLevel:RFINout 0 dB	:CONF:OFFS:GEN:VAL 0 dB :CONF:OFFS:ANAL:VAL 0dB
:CONFigure:OFLevel:RFINout?	:CONF:OFFS:GEN:VAL? :CONF:OFFS:ANAL:VAL?
:CONFigure:OFLevel:DUPLex 0 dB	:CONF:OFFS:GEN:VAL 0 dB
:CONFigure:OFLevel:DUPLex?	:CONF:OFFS:GEN:VAL?
:CONFigure:OFLevel:ANTenna 0 dB	:CONF:OFFS:ANAL:VAL 0 dB
:CONFigure:OFLevel:ANTenna?	:CONF:OFFS:ANAL:VAL?
:OSCilloscope:SCALe:TIME '200 ms'	:SCOP:HDIV 200 [ms]
:OSCilloscope:SCALe:TIME?	:SCOP:HDIV?
:OSCilloscope:SCALe:VERTical:AM '50 %'	:SCOP:ATR:VDIV:AM 50 %
:OSCilloscope:SCALe:VERTical:AM?	:SCOP:ATR:VDIV:AM?
:OSCilloscope:SCALe:VERTical:FM '50 kHz'	:SCOP:ATR:VDIV:FM 50 [kHz]
:OSCilloscope:SCALe:VERTical:FM?	:SCOP:ATR:VDIV:FM?
:OSCilloscope:SCALe:VERTical:VOLTs '20 V'	:SCOP:ATR:VDIV:VOLT 20 V
:OSCilloscope:SCALe:VERTical:VOLTs?	:SCOP:ATR:VDIV:VOLT?
:OSCilloscope:TRIGger:MODE 'Cont'	:INIT:CONT:SCOP ON
:OSCilloscope:TRIGger:MODE?	:INIT:CONT:SCOP?
:OSCilloscope:TRIGger:RESet	:INIT:IMM:SCOP
:OSCilloscope:TRIGger:SENSe 'Pos'	:SCOP:TRIG:EDGE RISE
:OSCilloscope:TRIGger:SENSe?	:SCOP:TRIG:EDGE?
:OSCilloscope:TRIGger:SOURce 'Internal'	:SCOP:TRIG:SOUR ATR
:OSCilloscope:TRIGger:SOURce?	:SCOP:TRIG:SOUR?
:OSCilloscope:TRIGger:TYPE 'Auto'	:SCOP:TRIG:MODE AUTO
:OSCilloscope:TRIGger:TYPE?	:SCOP:TRIG:MODE?
:RFANalyzer:ATTenuator '40 dB'	:RF:ANAL:AGC:LEV 40 dBm
:RFANalyzer:ATTenuator?	:RF:ANAL:AGC:LEV?
:RFANalyzer:ATTenuator:MODE 'Auto'	:RF:ANAL:AGC:MODE AUTO
:RFANalyzer:ATTenuator:MODE?	:RF:ANAL:AGC:MODE?
:RFANalyzer:FREQuency 30.000 MHz	:RF:ANAL:FREQ 30.000 MHz
:RFANalyzer:FREQuency?	:RF:ANAL:FREQ?
:RFANalyzer:IFBW '15 kHz'	:RF:ANAL:AMIF (for AM source) or :RF:ANAL:FMIF (for FM source)
:RFANalyzer:INPut 'RF In'	:RF:ANAL:PORT TR
:RFANalyzer:INPut?	:RF:ANAL:PORT?
:RFANalyzer:PMEasurement:ZERO	:RF:P:DET:ZER 1
:RFANalyzer:TMODe 'Auto'	:RF:ANAL:FMOD AUT
:RFANalyzer:TMODe?	:RF:ANAL:FMOD?
:RFGenerator:AMPLitude -137	:RF:GEN:LEV -137
:RFGenerator:AMPLitude?	:RF:GEN:LEV?
:RFGenerator:AMPLitude:STATe ON	:RF:GEN:ENAB ON

Compatibility Commands	3900 Commands
:RFGenerator:AMPLitude:STATe?	:RF:GEN:ENAB?
:RFGenerator:FREQuency 30.000 MHz	:RF:GEN:FREQ 30.000 [MHz]
:RFGenerator:FREQuency?	:RF:GEN:FREQ?
:RFGenerator:OUTPut 'RF Out'	:RF:GEN:PORT TR
:RFGenerator:OUTPut?	:RF:GEN:PORT?
:SANalyzer:CFRequency 150 MHz	:SA:HOR:FREQ:CENT 100 kHz
:SANalyzer:CFRequency?	:SA:HOR:FREQ:CENT?
:SANalyzer:DISPlay:SCALe '1 dB/div'	:SA:VERT:VDIV 1
:SANalyzer:DISPlay:SCALe?	:SA:VERT:VDIV?
:SANalyzer:INPut 'RF In'	:SA:SOUR TR
:SANalyzer:INPut?	:SA:SOUR?
:SANalyzer:MARKer:CFRequency	:SA:MARK:MKR1:SCF
:SANalyzer:MARKer:PEAK	:SA:MARK:MKR1:PEAK
:SANalyzer:MARKer:RLEVel	:SA:MARK:MKR1:SREF
:SANalyzer:SPAN 100.000 kHz	:SA:HOR:FREQ:SPAN 100 kHz
:SANalyzer:TRACe:MHOLD 'No Pk/Avg'	:SA:TRAC:AVER:ENAB ON :SA:TRAC:AVER:VAL 10 :SA:TRAC:PEAK
:MEASure:AFRequency:ACLevel:AVERage?	:FETC:AF:ANAL:LEV?
:MEASure:AFRequency:ACLevel:AVERage 10	:CONF:AF:ANAL:LEV:AVER 10
:MEASure:AFRequency:ACLevel:AVERage:VALue 10	:CONF:AF:ANAL:LEV:AVER 10
:MEASure:AFRequency:ACLevel:AVERage?	:CONF:AF:ANAL:LEV:AVER?
:MEASure:AFRequency:ACLevel:HLIMit 900 mV	:LIM:AF:LEV:UPP:VAL 900 mV
:MEASure:AFRequency:ACLevel:HLIMit:VALue 900 mV	:LIM:AF:LEV:UPP:VAL 900 mV
:MEASure:AFRequency:ACLevel:HLIMit?	:LIM:AF:LEV:UPP:VAL?
:MEASure:AFRequency:ACLevel:HLIMit:STATe ON	:LIM:AF:LEV:UPP:ENAB ON
:MEASure:AFRequency:ACLevel:HLIMit:STATe?	:LIM:AF:LEV:UPP:ENAB?
:MEASure:AFRequency:ACLevel:LLIMit 0 mV	:LIM:AF:LEV:LOW:VAL 0 mV
:MEASure:AFRequency:ACLevel:LLIMit:VALue 0 mV	:LIM:AF:LEV:LOW:VAL 0 mV
:MEASure:AFRequency:ACLevel:LLIMit?	:LIM:AF:LEV:LOW:VAL?
:MEASure:AFRequency:ACLevel:LLIMit:STATe ON	:LIM:AF:LEV:LOW:ENAB ON
:MEASure:AFRequency:ACLevel:LLIMit:STATe?	:LIM:AF:LEV:LOW:ENAB?
:MEASure:AFRequency:AM:AVERage?	:FETC:MOD:ANAL:AM?
:MEASure:AFRequency:AM:AVERage 10	:CONF:MOD:ANAL:AM:AVER 10
:MEASure:AFRequency:AM:AVERage:VALue 10	:CONF:MOD:ANAL:AM:AVER 10
:MEASure:AFRequency:AM:AVERage?	:CONF:MOD:ANAL:AM:AVER?
:MEASure:AFRequency:AM:HLIMit 90 %	:LIM:MOD:AM:UPP:VAL 90 %
:MEASure:AFRequency:AM:HLIMit:VALue 90 %	:LIM:MOD:AM:UPP:VAL 90 %
:MEASure:AFRequency:AM:HLIMit?	:LIM:MOD:AM:UPP:VAL?
:MEASure:AFRequency:AM:HLIMit:STATe ON	:LIM:MOD:AM:UPP:ENAB ON
:MEASure:AFRequency:AM:HLIMit:STATe?	:LIM:MOD:AM:UPP:ENAB?
:MEASure:AFRequency:AM:LLIMit 0 %	:LIM:MOD:AM:LOW:VAL 0 %
:MEASure:AFRequency:AM:LLIMit:VALue 0 %	:LIM:MOD:AM:LOW:VAL 0 %
:MEASure:AFRequency:AM:LLIMit?	:LIM:MOD:AM:LOW:VAL?
:MEASure:AFRequency:AM:LLIMit:STATe ON	:LIM:MOD:AM:LOW:ENAB ON
:MEASure:AFRequency:AM:LLIMit:STATe?	:LIM:MOD:AM:LOW:ENAB?
:MEASure:AFRequency:DISTN?	:FETC:AF:ANAL:DIST? or :FETC:MOD:ANAL:DIST?
:MEASure:AFRequency:DISTortion?	:FETC:AF:ANAL:DIST? or :FETC:MOD:ANAL:DIST?
:MEASure:AFRequency:DISTN:AVERage 10	:CONF:AF:ANAL:DIST:AVER 10 or :CONF:MOD:ANAL:DIST:AVER 10

Compatibility Commands	3900 Commands
:MEASure:AFRequency:DISTN:AVERage:VALue 10	:CONF:AF:ANAL:DIST:AVER 10 or :CONF:MOD:ANAL:DIST:AVER 10
:MEASure:AFRequency:DISTortion:AVERage 10	:CONF:AF:ANAL:DIST:AVER 10 or :CONF:MOD:ANAL:DIST:AVER 10
:MEASure:AFRequency:DISTortion:AVERage:VALue 10	:CONF:AF:ANAL:DIST:AVER 10 or :CONF:MOD:ANAL:DIST:AVER 10
:MEASure:AFRequency:DISTN:AVERage?	:CONF:AF:ANAL:DIST:AVER? or :CONF:MOD:ANAL:DIST:AVER?
:MEASure:AFRequency:DISTortion:AVERage?	:CONF:AF:ANAL:DIST:AVER? or :CONF:MOD:ANAL:DIST:AVER?
:MEASure:AFRequency:DISTN:HLIMit 90 %	:LIM:AF:DIST:UPP:VAL 90 % or :LIM:MOD:DIST:UPP:VAL 90 %
:MEASure:AFRequency:DISTortion:HLIMit 90 %	:LIM:AF:DIST:UPP:VAL 90 % or :LIM:MOD:DIST:UPP:VAL 90 %
:MEASure:AFRequency:DISTN:HLIMit:VALue 90 %	:LIM:AF:DIST:UPP:VAL 90 % or :LIM:MOD:DIST:UPP:VAL 90 %
:MEASure:AFRequency:DISTortion:HLIMit:VALue 90 %	:LIM:AF:DIST:UPP:VAL 90 % or :LIM:MOD:DIST:UPP:VAL 90 %
:MEASure:AFRequency:DISTN:HLIMit?	:LIM:AF:DIST:UPP:VAL? or :LIM:MOD:DIST:UPP:VAL?
:MEASure:AFRequency:DISTortion:HLIMit?	:LIM:AF:DIST:UPP:VAL? or :LIM:MOD:DIST:UPP:VAL?
:MEASure:AFRequency:DISTN:HLIMit:STATe ON	:LIM:AF:DIST:UPP:ENAB ON or :LIM:MOD:DIST:UPP:ENAB ON
:MEASure:AFRequency:DISTortion:HLIMit:STATe ON	:LIM:AF:DIST:UPP:ENAB ON or :LIM:MOD:DIST:UPP:ENAB ON
:MEASure:AFRequency:DISTN:HLIMit:STATe?	:LIM:AF:DIST:UPP:ENAB? or :LIM:MOD:DIST:UPP:ENAB?
:MEASure:AFRequency:DISTortion:HLIMit:STATe?	:LIM:AF:DIST:UPP:ENAB? or :LIM:MOD:DIST:UPP:ENAB?
:MEASure:AFRequency:FM?	:FETC:MOD:ANAL:FM?
:MEASure:AFRequency:FM:AVERage 10	:CONF:MOD:ANAL:FM:AVER 10
:MEASure:AFRequency:FM:AVERage:VALue 10	:CONF:MOD:ANAL:FM:AVER 10
:MEASure:AFRequency:FM:AVERage?	:CONF:MOD:ANAL:FM:AVER?
:MEASure:AFRequency:FM:HLIMit 5 kHz	:LIM:MOD:FM:UPP:VAL 5 kHz
:MEASure:AFRequency:FM:HLIMit:VALue 5 kHz	:LIM:MOD:FM:UPP:VAL 5 kHz
:MEASure:AFRequency:FM:HLIMit?	:LIM:MOD:FM:UPP:VAL?
:MEASure:AFRequency:FM:HLIMit:STATe ON	:LIM:MOD:FM:UPP:ENAB ON
:MEASure:AFRequency:FM:HLIMit:STATe?	:LIM:MOD:FM:UPP:ENAB?
:MEASure:AFRequency:FM:LLIMit 0 kHz	:LIM:MOD:FM:LOW:VAL 0 kHz
:MEASure:AFRequency:FM:LLIMit:VALue 0 kHz	:LIM:MOD:FM:LOW:VAL 0 kHz
:MEASure:AFRequency:FM:LLIMit?	:LIM:MOD:FM:LOW:VAL?

Compatibility Commands	3900 Commands
:MEASure:AFRequency:FM:LLIMit:STATe ON	:LIM:MOD:FM:LOW:ENAB ON
:MEASure:AFRequency:FM:LLIMit:STATe?	:LIM:MOD:FM:LOW:ENAB?
:MEASure:AFRequency:FREQuency?	:FETC:AF:ANAL:FREQ? or :FETC:MOD:ANAL:FREQ?
:MEASure:AFRequency:FREQuency:AVERage?	:CONF:AF:ANAL:FREQ:AVER? or :CONF:MOD:ANAL:FREQ:AVER?
:MEASure:AFRequency:FREQuency:AVERage 10	:CONF:AF:ANAL:FREQ:AVER 10 or :CONF:MOD:ANAL:FREQ:AVER 10
:MEASure:AFRequency:FREQuency:AVERage?	:CONF:AF:ANAL:FREQ:AVER? or :CONF:MOD:ANAL:FREQ:AVER?
:MEASure:AFRequency:SINAD?	:FETC:AF:ANAL:SIN? or :FETC:MOD:ANAL:SIN?
:MEASure:AFRequency:SINAD:AVERage 10	:CONF:AF:ANAL:SIN:AVER 10 or :CONF:MOD:ANAL:SIN:AVER 10
:MEASure:AFRequency:SINAD:AVERage:VALue 10	:CONF:AF:ANAL:SIN:AVER 10 or :CONF:MOD:ANAL:SIN:AVER 10
:MEASure:AFRequency:SINAD:AVERage?	:CONF:AF:ANAL:SIN:AVER? or :CONF:MOD:ANAL:SIN:AVER?
:MEASure:AFRequency:SINAD:LLIMit 0 dB	:LIM:AF:SIN:LOW:VAL 0 dB or :LIM:MOD:SIN:LOW:VAL 0 dB
:MEASure:AFRequency:SINAD:LLIMit:VALue 0 dB	:LIM:AF:SIN:LOW:VAL 0 dB or :LIM:MOD:SIN:LOW:VAL 0 dB
:MEASure:AFRequency:SINAD:LLIMit?	:LIM:AF:SIN:LOW:VAL? or :LIM:MOD:SIN:LOW:VAL?
:MEASure:AFRequency:SINAD:LLIMit:STATe ON	:LIM:AF:SIN:LOW:ENAB ON or :LIM:MOD:SIN:LOW:ENAB ON
:MEASure:AFRequency:SINAD:LLIMit:STATe?	:LIM:AF:SIN:LOW:ENAB? or :LIM:MOD:SIN:LOW:ENAB?
:MEASure:AFRequency:SNR?	:FETC:AF:ANAL:SNR? or :FETC:MOD:ANAL:SNR?
:MEASure:AFRequency:SNR:AVERage 10 :MEASure:AFRequency:SNR:AVERage:VALue 10	:CONF:AF:ANAL:SNR:AVER 10 or :CONF:MOD:ANAL:SNR:AVER 10
:MEASure:AFRequency:SNR:AVERage?	:CONF:AF:ANAL:SNR:AVER? or :CONF:MOD:ANAL:SNR:AVER?
:MEASure:AFRequency:SNR:HLIMit 80 dB	:LIM:AF:SNR:UPP:VAL 80 dB or :LIM:MOD:SNR:UPP:VAL 80 dB
:MEASure:AFRequency:SNR:HLIMit:VALue 80 dB	:LIM:AF:SNR:UPP:VAL 80 dB or :LIM:MOD:SNR:UPP:VAL 80 dB

Compatibility Commands	3900 Commands
:MEASure:AFRequency:SNR:LLIMit 0 dB	:LIM:AF:SNR:LOW:VAL 0 dB or :LIM:MOD:SNR:LOW:VAL 0 dB
:MEASure:AFRequency:SNR:LLIMit:VALue 0 dB	:LIM:AF:SNR:LOW:VAL 0 dB or :LIM:MOD:SNR:LOW:VAL 0 dB
:MEASure:AFRequency:SNR:LLIMit?	:LIM:AF:SNR:LOW:VAL? or :LIM:MOD:SNR:LOW:VAL?
:MEASure:AFRequency:SNR:LLIMit:STATe ON	:LIM:AF:SNR:LOW:ENAB ON or :LIM:MOD:SNR:LOW:ENAB ON
:MEASure:AFRequency:SNR:LLIMit:STATe?	:LIM:AF:SNR:LOW:ENAB? or :LIM:MOD:SNR:LOW:ENAB?
:MEASure:AFRequency:SNR:HLIMit:STATe?	:LIM:AF:SNR:UPP:ENAB? or :LIM:MOD:SNR:UPP:ENAB?
:MEASure:AFRequency:SNR:HLIMit:STATe?	:LIM:AF:SNR:UPP:ENAB? or :LIM:MOD:SNR:UPP:ENAB?
:MEASure:RFRequency:FREQuency:ERRor?	:FETC:RF:ANAL:FOFF?
:MEASure:RFRequency:FREQuency:ERRor:AVERage?	:CONF:RF:ANAL:FOFF:AVER?
:MEASure:RFRequency:FREQuency:ERRor:AVERage 10	:CONF:RF:ANAL:FOFF:AVER 10
:MEASure:RFRequency:FREQuency:ERRor:AVERage:VALue 10	:CONF:RF:ANAL:FOFF:AVER 10
:MEASure:RFRequency:FREQuency:ERRor:HLIMit:STATe?	:LIM:RF:FOFF:UPP:ENAB?
:MEASure:RFRequency:FREQuency:ERRor:HLIMit:STATe ON	:LIM:RF:FOFF:UPP:ENAB ON
:MEASure:RFRequency:FREQuency:ERRor:HLIMit?	:LIM:RF:FOFF:UPP:VAL?
:MEASure:RFRequency:FREQuency:ERRor:HLIMit 10 KHZ	:LIM:RF:FOFF:UPP:VAL 10 KHZ
:MEASure:RFRequency:FREQuency:ERRor:HLIMit:VAL: 10 KHZ	:LIM:RF:FOFF:UPP:VAL 10 KHZ
:MEASure:RFRequency:POWer?	:FETCH:RF:ANAL:TRBP?
:MEASure:RFRequency:POWer:AVERage 10	:CONF:RF:ANAL:TRB:AVER 10
:MEASure:RFRequency:POWer:AVERage:VALue 10	:CONF:RF:ANAL:TRB:AVER 10
:MEASure:RFRequency:POWer:AVERage?	:CONF:RF:ANAL:TRB:AVER?
:MEASure:RFRequency:POWer:HLIMit 100 W	:LIM:RF:TRBP:UPP:VAL 100 W
:MEASure:RFRequency:POWer:HLIMit:VALue 100 W	:LIM:RF:TRBP:UPP:VAL 100 W
:MEASure:RFRequency:POWer:HLIMit?	:LIM:RF:TRBP:UPP:VAL?
:MEASure:RFRequency:POWer:HLIMit:STATe ON	:LIM:RF:TRBP:UPP:ENAB ON
:MEASure:RFRequency:POWer:HLIMit:STATe?	:LIM:RF:TRBP:UPP:ENAB?
:MEASure:RFRequency:POWer:LLIMit 0 W	:LIM:RF:TRBP:LOW:VAL 0 W
:MEASure:RFRequency:POWer:LLIMit:VALue 0 W	LIM:RF:TRBP:LOW:VAL 0 W
:MEASure:RFRequency:POWer:LLIMit?	:LIM:RF:TRBP:LOW:VAL?
:MEASure:RFRequency:POWer:LLIMit:STATe ON	:LIM:RF:TRBP:LOW:ENAB ON
:MEASure:RFRequency:POWer:LLIMit:STATe?	:LIM:RF:TRBP:LOW:ENAB?
:MEASure:SANalyzer:MARKer:FREQuency?	:SA:MARK:MKR1:POS?
:MEASure:SANalyzer:MARKer:LEVel?	:SA:MARK:MKR1:LEV?

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As we are always seeking to improve our products, the information in this document gives only a general indication of the product capacity, performance and suitability, none of which shall form part of any contract. We reserve the right to make design changes without notice.

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Our passion for performance is defined by three attributes represented by these three icons: solution-minded, performance-driven, customer-focused.