Agilent Technologies 8935 Series E6380A CDMA Cellular/PCS Base Station Test Set

GPIB Syntax Reference Guide

Firmware Version: B.02.00 and above

Agilent Part Number E6380-90073

Revision E

Printed in UK

September 2000

Agilent Technologies

Notice

Contents

Regulatory Information

Manufacturer's Declaration

This statement is provided to comply with the requirements of the German Sound Emission Directive, from 18 January 1991.

This product has the following sound pressure emission specification:

- sound pressure Lp <70 dB(A)
- at the operator position
- under normal operation
- according to ISO 7779:1988/EN 27779:1991 (Type Test).

Herstellerbescheinigung

Diese Information steht im Zusammenhang mit den Anforderungen der Maschinenlärminformationsverordnung vom 18 Januar 1991.

- Schalldruckpegel Lp < 70 dB(A).
- Am Arbeitsplatz.
- Normaler Betrieb.
- Nach ISO 7779:1988/EN 27779:1991 (Typprüfung).

Safety

GENERAL

This product and related documentation must be reviewed for familiarization with safety markings and instructions before operation.

This product has been designed and tested in accordance with IEC Publication 1010, "Safety Requirements for Electronic Measuring Apparatus," and has been supplied in a safe condition. This instruction documentation contains information and warnings which must be followed by the user to ensure safe operation and to maintain the product in a safe condition.

SAFETY SYMBOLS

Indicates instrument damage can occur if indicated operating limits are exceeded. Refer to the instructions in this guide.

Indicates hazardous voltages.

Indicates earth (ground) terminal

WARNING **A WARNING note denotes a hazard. It calls attention to a procedure, practice, or the like, which, if not correctly performed or adhered to, could result in personal injury. Do not proceed beyond a WARNING sign until the indicated conditions are fully understood and met.**

CAUTION A CAUTION note denotes a hazard. It calls attention to an operation procedure, practice, or the like, which, if not correctly performed or adhered to, could result in damage to or destruction of part or all of the product. Do not proceed beyond an CAUTION note until the indicated conditions are fully understood and met.

Safety Considerations for this Instrument

SAFETY EARTH GROUND

A uninterruptible safety earth ground must be provided from the main power source to the product input wiring terminals, power cord, or supplied power cord set.

CHASSIS GROUND TERMINAL

To prevent a potential shock hazard, always connect the rear-panel chassis ground terminal to earth ground when operating this instrument from a dc power source.

WARNING

This product is a Safety Class I instrument (provided with a protective earthing ground incorporated in the power cord). The mains plug shall only be inserted in a socket outlet provided with a protective earth contact. Any interruption of the protective conductor inside or outside of the product is likely to make the product dangerous. Intentional interruption is prohibited.

This product is not intended for use in wet or damp environments. Do not expose this product to excessive moisture. Operate this product only within the temperature and humidity ranges specified in the user's manual.

This instrument is equipped with internal ground fault circuit interrupter class A.

- **This device does not protect against electrical shock due to contact with both circuit conductors or a fault in supply wiring to product.**
- **Do not use extension cord to connect this product to power receptacle. Attention-ne pas utiliser de rallonge pour raccorder le detecteur-disjoncteur a la prise de courant.**
- **Replace cordset only with Agilent Technologies 8120 series. Attention - Remplacer uniquement par un cordon amovible numero 8120.**
- **Do not use in wet location. Ne pas utiliser dans un emplacement mouille.**

WARNING **Whenever it is likely that the protection has been impaired, the instrument must be made inoperative and be secured against any unintended operation.**

If this instrument is to be energized via an autotransformer (for voltage reduction), make sure the common terminal is connected to the earth terminal of the power source.

If this product is not used as specified, the protection provided by the equipment could be impaired. This product must be used in a normal condition (in which all means for protection are intact) only.

No operator serviceable parts in this product. Refer servicing to qualified personnel. To prevent electrical shock, do not remove covers.

Servicing instructions are for use by qualified personnel only. To avoid electrical shock, do not perform any servicing unless you are qualified to do so.

The opening of covers or removal of parts is likely to expose dangerous voltages. Disconnect the product from all voltage sources while it is being opened.

Adjustments described in the manual are performed with power supplied to the instrument while protective covers are removed. Energy available at many points may, if contacted, result in personal injury.

The power cord is connected to internal capacitors that my remain live for 5 seconds after disconnecting the plug from its power supply.

For Continued protection against fire hazard, replace the line fuse(s) with T 250 V 5.0 A fuse(s) or the same current rating and type (for example, normal blow or time delay). Do not use repaired fuses or short circuited fuseholders.

CAUTION

Always use the three-prong ac power cord supplied with this product. Failure to ensure adequate earth grounding by not using this cord may cause personal injury and/or product damage.

This product is designed for use in Installation Category II and Pollution Degree 2 per IEC 1010 and IEC 664 respectively. For indoor use only.

This product has autoranging line voltage input, be sure the supply voltage is within the specified range.

Ventilation Requirements: When installing the product in a cabinet, the convection into and out of the product must not be restricted. The ambient temperature (outside the cabinet) must be less than the maximum operating temperature of the product by 4° C for every 100 watts dissipated in the cabinet. If the total power dissipated in the cabinet is greater than 800 watts, then forced convection must be used.

To prevent electrical shock, disconnect instrument from mains (line) before cleaning. Use a dry cloth or one slightly dampened with water to clean the external case parts. Do not attempt to clean internally.

Product Markings

CE - the CE mark is a registered trademark of the European Union. A CE mark accompanied by a year indicated the year the design was proven.

CSA - the CSA mark is a registered trademark of the Canadian Standards Association.

Certification

Agilent Technologies certifies that this product met its published specifications at the time of shipment from the factory. Agilent further certifies that its calibration measurements are traceable to the United States National Institute of Standards and Technology, to the extent allowed by the Institute's calibration facility, and to the calibration facilities of other International Standards Organization members.

DECLARATION OF CONFORMITY

according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name: **Agilent Technologies**

Manufacturer's Address: **Spokane Site**
24001 E. Mission Avenue
Liberty Lake, Washington 99019-9599

declares that the product

Product Name: Agilent Technologies 8935 CDMA Cellular/PCS Base Station Test Set

Model Number: Agilent Technologies E6380A

Product Options:

conforms to the following Product specifications:

Safety: IEC 1010-1:1990+A1 / EN 61010-1:1993

EMC: CISPR 11:1990/EN 55011:1991- Group 1, Class A
IEC 1000-3-2:1995 / EN 61000-3-2: 1995
IEC 1000-3-2:1995 / EN 61000-3-3: 1994
EN 50082-1:1992
IEC 801-2:1991 4kV CD, 8kV AD
IEC 801-3:1984 3V/m

Supplementary Information:

This product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC and carries the CE-marking accordingly.

Spokane, Washington USA November 20,1998

Vince Roland
Reliability & Regulatory Engineer

European Contact: Your local Agilent Technologies and Service Office or Agilent Technologies GmbH Department ZQ/Standards Europe, Herrenberger Strasse 130, D-71034 Böblinger, Germany (FAX+49-7031-14-3143)

Agilent Technologies Warranty Statement for Commercial Products

Agilent Technologies 8935 Series E6380A CDMA Cellular/PCS Base Station Test Set

Duration of Warranty: 1 Year

1. Agilent Technologies warrants Agilent hardware, accessories and supplies against defects in materials and workmanship for the period specified above. If Agilent Technologies receives notice of such defects during the warranty period, Agilent Technologies will, at its option, either repair or replace products which prove to be defective. Replacement products may be either new or like-new.
2. Agilent Technologies warrants that Agilent software will not fail to execute its programming instructions, for the period specified above, due to defects in material and workmanship when properly installed and used. If Agilent Technologies receives notice of such defects during the warranty period, Agilent will replace software media which does not execute its programming instructions due to such defects.
3. Agilent Technologies does not warrant that the operation of Agilent products will be uninterrupted or error free. If Agilent Technologies is unable, within a reasonable time, to repair or replace any product to a condition as warranted, customer will be entitled to a refund of the purchase price upon prompt return of the product.
4. Agilent Technologies products may contain remanufactured parts equivalent to new in performance or may have been subject to incidental use.
5. The warranty period begins on the date of delivery or on the date of installation if installed by Agilent Technologies. If customer schedules or delays Agilent installation more than 30 days after delivery, warranty begins on the 31st day from delivery.
6. Warranty does not apply to defects resulting from (a) improper or inadequate maintenance or calibration, (b) software, interfacing, parts or supplies not supplied by Agilent Technologies, (c) unauthorized modification or misuse, (d) operation outside of the published environmental specifications for the product, or (e) improper site preparation or maintenance.

7. TO THE EXTENT ALLOWED BY LOCAL LAW, THE ABOVE WARRANTIES ARE EXCLUSIVE AND NO OTHER WARRANTYOR CONDITION, WHETHER WRITTEN OR ORAL IS EXPRESSED OR IMPLIED AND AGILENT TECHNOLOGIES SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES OR CONDITIONS OR MERCHANTABILITY, SATISFACTORY QUALITY, AND FITNESS FOR A PARTICULAR PURPOSE.

8. Agilent Technologies will be liable for damage to tangible property per incident up to the greater of $300,000 or the actual amount paid for the product that is the subject of the claim, and for damages for bodily injury or death, to the extent that all such damages are determined by a court of competent jurisdiction to have been directly caused by a defective Agilent Technologies product.

9. TO THE EXTENT ALLOWED BY LOCAL LAW, THE REMEDIES IN THIS WARRANTY STATEMENT ARE CUSTOMER'S SOLE AND EXCLUSIVE REMEDIES. EXCEPT AS INDICATED ABOVE, IN NO EVENT WILL AGILENT TECHNOLOGIES OR ITS SUPPLIERS BE LIABLE FOR LOSS OF DATA OR FOR DIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFIT OR DATA), OR OTHER DAMAGE, WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE.

   FOR CONSUMER TRANSACTIONS IN AUSTRALIA AND NEW ZEALAND: THE WARRANTY TERMS CONTAINED IN THIS STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE RESTRICT OR MODIFY AND ARE IN ADDITION TO THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT TO YOU.

Assistance

Maintenance Agreements

Product maintenance agreements and other customer assistance agreements are available for Agilent Technologies products. For any assistance, contact your nearest Agilent Technologies Sales and Service Office.

Regional Sales and Service Offices

Table 1 Regional Sales and Service Offices

United States of America: Agilent Technologies Test and Measurement Call Center P.O. Box 4026 Englewood, CO 80155-4026 (tel) 1 800 452 4844	Canada: Agilent Technologies Canada Inc. 5150 Spectrum Way Mississauga, Ontario L4W 5G1 (tel) 1 877 894 4414	Europe: Agilent Technologies European Marketing Organization P.O. Box 999 1180 AZ Amstelveen The Netherlands (tel) (3120) 547 9999
Japan: Agilent Technologies Japan Ltd. Measurement Assistance Center 9-1 Takakura-Cho, Hachioji-Shi, Tokyo 192-8510, Japan (tel) (81) 456-56-7832 (fax) (81) 426-56-7840	Latin America: Agilent Technologies Latin America Region Headquarters 5200 Blue Lagoon Drive, Suite #950 Miami, Florida 33126 U.S. A. (tel) (305) 267 4245 (fax) (305) 267 4286	Australia/New Zealand: Agilent Technologies Australia Pty Ltd. 347 Burwood Highway Forest Hill, Victoria 3131 (tel) 1 800 629 485 (Australia) (fax) (61 3) 9272 0749 (tel) 0 800 738 378 (New Zealand) (fax) (64 4) 802 6881
Asia Pacific: Agilent Technologies 24/F, Cityplaza One, 111 Kings Road, Taikoo Shing, Hong Kong (tel) (852) 3197 7777 (fax) (852) 2506 9233		

Power Cables

Table 2 Power Cables

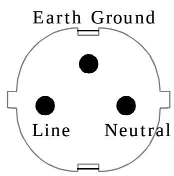
Plug Type	**Plug Descriptions male/female**	**Agilent Part # (cable & plug)**	**Cable Descriptions**
	**Straight/Straight** **Straight/90°**	**8120-1689** **8120-1692**	**79 inches, mint gray** **79 inches, mint gray**
Used in the following locations			
Afghanistan, Albania, Algeria, Angola, Armenia, Austria, Azerbaijan, Azores			
Bangladesh, Belgium, Benin, Bolivia, Boznia-Herzegovina, Bulgaria, Burkina Faso, Burma, Burundi, Byelarus			
Cameroon, Canary Islands, Central AfricanRepublic, Chad, Chile, Comoros, Congo, Croatia, Czech Republic, Czechoslovakia			
Denmark, Djibouti			
East Germany, Egypt, Estonia, Ethiopia			
Finland, France, French Guiana, French Indian Ocean Areas			
Gabon, Gaza Strip, Georgia, Germany, Gozo, Greece			
Hungary			
Iceland, Indonesia, Iran, Iraq, Israel, Italy, Ivory Coast			
Jordan			
Kazakhstan, Korea, Kyrgystan			
Latvia, Lebanon, Libya, Lithuania, Luxembourg			
Macedonia, Madeira Islands, Malagasy Republic, Mali, Malta, Mauritania, Miquelon, Moldova, Mongolia, Morocco, Mozambique			
Nepal, Netherlands, Netherlands Antilles, Niger, Norway			
Oman			
Pakistan, Paraguay, Poland, Portugal			
Rep. South Africa, Romania, Russia, Rwanda			
Saudi Arabia (220V), Senegal, Slovak Republic, Slovenia, Somalia, Spain, Spanish Africa, Sri Lanka, St.Pierce Islands			
Sweden, Syria			
Tajikistan, Thailand, Togo, Tunisia, Turkey, Turkmenistan			

Table 2 Power Cables

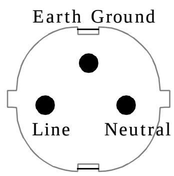
Plug Type	Plug Descriptions male/female	Agilent Part # (cable & plug)	Cable Descriptions
	**Straight/Straight** **Straight/90°**	**8120-1689** **8120-1692**	**79 inches, mint gray** **79 inches, mint gray**
USSR, Ukraine, Uzbekistan			
Western Africa, Western Sahara			
Yugoslavia			
Zaire			

Table 3 Power Cables

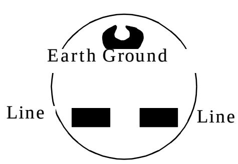
Plug Type	Plug Descriptions male/female	Agilent Part # (cable & plug)	Cable Descriptions
	Straight/Straight	8120-0698	90 inches, black
Used in the following locations			
Peru			

Table 4 Power Cables

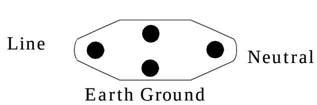
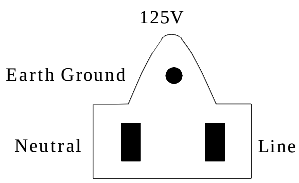
Plug Type	Plug Descriptions male/female	Agilent Part # (cable & plug)	Cable Descriptions
	Straight/Straight Straight/90°	8120-2104 8120-2296	79 inches, gray 79 inches, gray
Used in the following locations			
Switzerland			

Table 5 Power Cables

Plug Type	Plug Descriptions male/female	Agilent Part # (cable & plug)	Cable Descriptions
	Straight/Straight Straight/90 Straight/Straight	8120-1378 8120-1521 8120-1751	90 inches, jade gray 90 inches, jade gray 90 inches, jade gray

Used in the following locations
American Samoa
Bahamas, Barbados, Belize, Bermuda, Brazil,
Caicos, Cambodia, Canada, Cayman Islands, Columbia, Costa Rica, Cuba
Dominican Republic
Ecuador, El Salvador
French West Indies
Guam, Guatemala, Guyana
Haiti, Honduras
Jamaica
Korea
Laos, Leeward and Windward Is., Liberia
Mexico, Midway Islands
Nicaragua
Other Pacific Islands
Panama, Philippines, Puerto Rico
Saudi Arabia (115V,127V), Suriname
Taiwan, Tobago, Trinidad, Trust Territories of Pacific Islands
Turks Island
United States
Venezuela, Vietnam, Virgin Islands of the US
Wake Island

Table 6 Power Cables

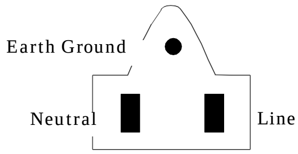
Plug Type	Plug Descriptions male/female	Agilent Part # (cable & plug)	Cable Descriptions
JIS C 8303, 100 V 	Straight/Straight Straight/90°	8120-4753 8120-4754	90 inches, dark gray 90 inches, dark gray
Used in the following locations			
Japan			

Table 7 Power Cables

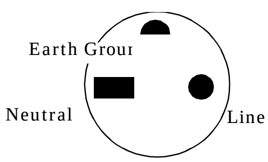
Plug Type	Plug Descriptions male/female	Agilent Part # (cable & plug)	Cable Descriptions
	90° /STRAIGHT 90°/90° Straight/Straight	8120-2956 8120-2957 8120-3997	79 inches, gray 79 inches, gray 79 inches, gray
Used in the following locations			
Denmark			
Greenland			

Table 8 Power Cables

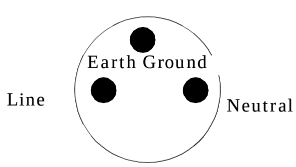
Plug Type	Plug Descriptions male/female	Agilent Part # (cable & plug)	Cable Descriptions
	Straight/Straight Straight/90°	8120-4211 8120-4600	79 inches, mint gray 79 inches, mint gray
Used in the following locations			
Botswana			
India			

Table 8 Power Cables

Plug Type	**Plug Descriptions male/female**	**Agilent Part # (cable & plug)**	**Cable Descriptions**
Lesotho			
Malawi			
South-West Africa (Namibia), Swaziland			
Zambia, Zimbabwe			

Table 9 Power Cables

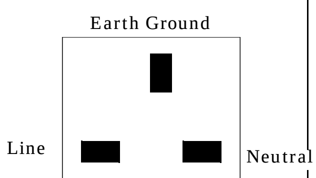
Plug Type (Male)	**Plug Descriptions male/female**	**Agilent Part # (cable & plug)**	**Cable Descriptions**
	90°/Straight 90°/90°	8120-1351 8120-1703	90 inches, mint gray 90 inches, mint gray
Used in the following locations			
Bahrain, British Indian Ocean Terr., Brunei			
Canton, Cyprus			
Enderbury Island, Equatorial Guinea			
Falkland Islands, French Pacific Islands			
Gambia, Ghana, Gibraltar, Guinea			
Hong Kong			
Ireland			
Kenya, Kuwait			
Macao, Malaysia, Mauritius			
Nigeria			
Qatar			
Seychelles, Sierra Leone, Singapore, Southern Asia, Southern Pacific Islands, St. Helena, Sudan			
Tanzania			
Uganda, United Arab Emirates, United Kingdom			
Yeman (Aden & Sana)			

Table 10 Power Cables

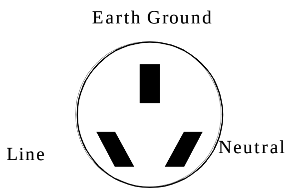
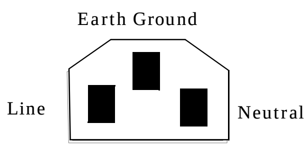
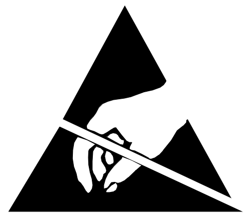
Plug Type	Plug Descriptions male/female	Agilent Part # (cable & plug)	Cable Descriptions
	Straight/Straight Straight/90°	8120-1369 8120-0696	79 inches, gray 80 inches, gray
Used in the following locations			
Argentina, Australia			
China (People’s Republic)			
New Zealand			
Papua New Guinea			
Uruguay			
Western Samoa			

Table 11 Power Cables

Plug Type	Plug Descriptions male/female	Agilent Part # (cable & plug)	Cable Descriptions
	Straight/Straight Straight/Straight Straight/90° Straight/90°	8120-1860 8120-1575 8120-2191 8120-4379	60 inches, jade gray 30 inches, jade gray 60 inches, jade gray 15.5 inches, jade gray
Used in the following locations			
System Cabinets			

Attention



ATTENTION

Static Sensitive
Devices

This instrument was constructed in an ESD (electro-static discharge) protected environment. This is because most of the semiconductor devices used in this instrument are susceptible to damage by static discharge.

Depending on the magnitude of the charge, device substrates can be punctured or destroyed by contact or mere proximity of a static charge. The result can cause degradation of device performance, early failure, or immediate destruction.

These charges are generated in numerous ways such as simple contact, separation of materials, and normal motions of persons working with static sensitive devices.

When handling or servicing equipment containing static sensitive devices, adequate precautions must be taken to prevent device damage or destruction.

Only those who are thoroughly familiar with industry accepted techniques for handling static sensitive devices should attempt to service circuitry with these devices.

Conventions Used in This Manual

The following conventions are used throughout this manual to help clarify instructions and reduce unnecessary text:

- "Test Set" refers to the Agilent Technologies 8935 CDMA Cellular/PCS Base Station Test Set.
- Test Set keys are indicated like this: **Preset**
- Test Set screen information, such as a measurement result or an error message, is shown like this: `TX Channel Power -1.3 dBm`

NOTE HP-IB and GPIB are one and the same.

Trademark Acknowledgments

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HyperTerminal© is a registered trademark of Hilgraeve, Incorporated.

Pentium® is a registered trademark of Intel Corporation.

Which Documents are Required

The following documents are part of the Test Set's document set. Use the table to help you decide which document you need.

Table 12 Document Navigation

Document	Part Number	Usage
CDMA Application Guide	E6380-90016	Use this manual for basic CDMA measurements and for getting started with the Test Set.
AMPS Application Guide	E6380-90017	Use this manual for making AMPS base station measurements.
Reference Guide	E6380-90019	Use this manual for screen and field descriptions and general operation information about the Test Set.
Programmer's Guide	E6380-90018	Use this manual to learn HP-IB syntax and for learning how to program the Test Set.
Assembly Level Repair Guide (this manual)	E6380-90015	Use this manual to perform calibration on the Test Set and for general service information.
Technical Specifications Publication	5966-0512E	Test Set's specifications data sheet
CDROM	E6380-90027	Includes all of the above documents.

1 GPIB Command Dictionary

This is the GPIB command dictionary. It contains syntax and guidelines for the GPIB commands available in the Test Set.

Notice

Using This Dictionary

This dictionary is arranged according to GPIB subsystem. Each subsystem contains syntax for a specific set of functions within the Test Set.

NOTE For all intents and purposes, GPIB and HP-IB may be considered one and the same protocol throughout this manual.

When using the electronic form of this guide, you can cut-and-paste the syntax into your programming code. It is set up especially for this purpose, and where possible, the syntax includes the limits or expected values for the command.

Description of Commands

The typical format of each entry is as follows:

```
root:branch1:branch2:branch3:command parameter !limits
```

```
root:branch1:branch2:branch3:command ‘argument’
```

Equivalent Commands

Commands separated by a vertical bar | are equivalent. For example,

for the command AFG2|ENCoder:AMPS:BUSY ‘Idle’, either

AFG2:AMPS:BUSY ‘Idle’

or

ENC:AMPS:BUSY ‘Idle’

will set the AMPS encoder to the idle state.

Optional Commands

Commands enclosed in square brackets [ ] are optional. For example,

for the command AFG2|ENC:NAMP|NTAC[:FOCC]:AM 30 either

AFG2:NAMP:FOCC:AM 30

or

AFG2:NAMP:AM 30

will set the NAMPS encoder’s data level on the forward control channel to AM. (Other combinations are possible with the above command.)

AFANalyzer subsystem

:AIN <string>
:AIN?

These commands set/query the input state of the AUDIO IN LO connector.

Syntax

```
AFAN:AIN 'Gnd'
         'Float'
         '600 to Hi'
AFAN:AIN?
```

Screen/field equivalent

AFAN:AIN sets the **Audio In Lo** field on the AF ANALYZER screen.

:DEMPhasis <string>
:DEMPhasis?

These commands set/query the state of the de-emphasis networks in the audio analyzer and speaker circuitry.

Syntax

```
AFAN:DEMP '750 us'
          'Off'
AFAN:DEMP?
```

Screen/field equivalent

AFAN:DEMP sets the **De-Emphasis** field on the AF ANALYZER screen.

:DEMPhasis:GAIN <string>
:DEMPhasis:GAIN?

These commands set/query the AF analyzer’s amplifier gain. This command is only effective when autoranging is turned off using the AFAN:RANG ‘Hold’ command.

Gain is automatically set when the AFAN:RANG ‘Auto’ command is used. If autoranging is enabled (AFAN:RANG ‘Auto’) and you attempt to change the gain setting by sending the AFAN:DEMP:GAIN command, the value you send will be overridden by the autoranging function.

Syntax

```
AFAN:DEMP:GAIN ‘0 dB’

               ‘10 dB’

               ‘20 dB’

               ‘30 dB’

AFAN:DEMP:GAIN?
```

Screen/field equivalent

AFAN:DEMP:GAIN sets the **De-Emp Gain** field on the AF ANALYZER screen when the **Gain Cntl** field is set to **Hold**.

:DETector <string>
:DETector?

These commands set/query the type of detector used for AF signals.

Syntax

```
AFAN:DET ‘RMS’
         'RMS*SQRT2'
         'PK+'
         'PK-'
         'PK+-/2'
         'PK+-MAX'
         'PK+ HOLD'
         'PK- HOLD'
         'PK+-/2 Hd'
         'PK+-MX Hd'
AFAN:DET?
```

Screen/field equivalent

AFAN:DET controls the **Detector** field on the AF ANALYZER screen.

:DETector:PKLocation <string>
:DETector:PKLocation?

These commands set/query the signal source for the peak detector measurements.

Syntax

```
AFAN:DET:PKL ‘Filters’
             ‘De-Emp’
AFAN:DET:PKL?
```

Screen/field equivalent

AFAN:DET:PKL controls the **Pk Det To** field on the AF ANALYZER screen.

:DETector:SETTling <string>
:DETector:SETTling?

These commands set/query the settling time for audio measurements. (Use Fast when measuring signals greater than 200 Hz).

Syntax

```
AFAN:DET:SETT ‘Fast’
              ‘Slow’
```

```
AFAN:DET:SETT?
```

Screen/field equivalent

AFAN:DET SETT controls the **Settling** field on the AF ANALYZER screen.

:ELResistor <real number>
:ELResistor?

These commands set/query the external load resistance for measurements using the AUDIO IN HI and LO connectors.

This command utilizes the “Real Number Setting Syntax” on page 299, but does not use the :STATe command.

Syntax

```
AFAN:ELR <real number> !valid from 1 ohm to 1 megohm
```

```
AFAN:ELR? !returns the value in ohms
```

Screen/field equivalent

AFAN:ELR controls the **Ext Load R** field on the AF ANALYZER screen.

:FILT1|FILTER1 <string>
:FILT1?|FILTER1?

These commands set/query the audio filter 1 selection.

Syntax

```
AFAN:FILT1 ‘20Hz HPF’
           ‘50HZ HPF’
           ‘300Hz HPF’
           ‘C MESSAGE’
AFAN:FILT1?
```

Screen/field equivalent

AFAN:FILT1 controls the **`Filter 1`** field on the AF ANALYZER screen

:FILT2|FILTER2 <string>
:FILT2?|FILTER2?

These commands set/query the audio filter 2 selection.

Syntax

```
AFAN:FILT2 ‘300Hz LPF’
           ‘3kHz LPF’
           ‘15kHz LPF’
           ‘>99kHz LP’
           ‘6kHz BPF’
AFAN:FILT2?
```

Screen/field equivalent

AFAN:FILT2 controls the **`Filter 2`** field on the AF ANALYZER screen.

:GTIMe <real number>
:GTIMe?

This command sets the gate time (how long the AF counter samples the input signal) for the audio frequency counter.

This command utilizes the “Real Number Setting Syntax” on page 299, but does not use the :STATe command.

Syntax

```
AFAN:GTIM <real number> !valid from 10 milliseconds to 1
second
```

```
AFAN:GTIM?
```

Screen/field equivalent

AFAN:GTIM controls the **AF Cnt Gate** field on the AF ANALYZER screen.

:INPut <string>
:INPut?

These commands set/query the input to the audio analyzer.

Syntax

```
AFAN:INP ‘FM Demod’
         ‘AM Demod’
         ‘SSB Demod’
         ‘Audio In’
         ‘Ext Mod’
         ‘FM Mod’
         ‘AM Mod’
         ‘Audio Out’
AFAN:INP?
```

Screen/field equivalent

AFAN:INP controls the **AF Anl In** field on the AF ANALYZER screen.

:INPut:GAIN <string>
:INPut:GAIN?

These commands set/query the input gain setting for the audio analyzer. This command is only effective when autoranging is turned off using the AFAN:RANG ‘Hold’ command.

Gain is automatically set when the AFAN:RANG ‘Auto’ command is used. If autoranging is enabled (AFAN:RANG ‘Auto’) and you attempt to change the gain setting by sending the AFAN:INP:GAIN command, the value you send will be overridden by the autoranging function.

Syntax

```
AFAN:INP:GAIN ‘0 dB’
              ‘20 dB’
              ‘40 dB’
AFAN:INP:GAIN?
```

Screen/field equivalent

AFAN:INP:GAIN controls the **Input Gain** field on the AF ANALYZER screen when the **Gain Cntl** field is set to **Hold**.

:NOTCh:GAIN <string>
:NOTCh:GAIN?

These commands set/query the gain of the AF analyzer's notch filter amplifier. This command is only effective when autoranging is turned off using the AFAN:RANG 'Hold' command.

Gain is automatically set when the AFAN:RANG 'Auto' command is used. If autoranging is enabled (AFAN:RANG 'Auto') and you attempt to change the gain setting by sending the AFAN:NOTC:GAIN command, the value you send will be overridden by the autoranging function.

Syntax

```
AFAN:NOTC:GAIN ‘0 dB’
               ‘10 dB’
               ‘20 dB’
               ‘30 dB’
               ‘40 dB’
AFAN:NOTC:GAIN?
```

Screen/field equivalent

AFAN:NOTC:GAIN controls the **Notch Gain** field on the AF ANALYZER screen when the **Gain Cntl** field is set to **Hold**.

:NOTCh:FREQuency <real number>
:NOTCh:FREQuency?

These commands set/query the center frequency for the variable frequency notch filter. This command utilizes the "Real Number Setting Syntax" on page 299, but does not use the :STATe command.

Syntax

```
AFAN:NOTC:FREQ <real number> !valid 330 Hz to 10 kHz
AFAN:NOTC:FREQ?
```

Screen/field equivalent

AFAN:NOTC:FREQ controls the **Notch Freq** field on the AF ANALYZER screen.

:RANGing <string>
:RANGing?

These commands set/query the gain control mode of the AF analyzer.

Syntax

```
AFAN:RANG 'Auto'
          'Hold'
AFAN:RANG?
```

Screen/field equivalent

AFAN:RANG controls the **Gain Cntl** field on the AF ANALYZER screen.

:SMPoint <string>
:SMPoint?

These commands set/query the signal source for the oscilloscope.

Syntax

```
AFAN:SMP 'De-Emp'
         'Filters'
         'Input'
         'Notch'
AFAN:SMP?
```

Screen/field equivalent

AFAN:SMP controls the **Scope To** field on the AF ANALYZER screen.

:SPEaker:MODE <string>
:SPEaker:MODE?

These commands set/query the automatic level control (ALC) function for the instrument's internal speaker.

Syntax

```
AFAN:SPE:MODE 'On'
              'Off'
```

```
AFAN:SPE:MODE?
```

Screen/field equivalent

AFAN:SPE:MODE controls the **Speaker ALC** field on the AF ANALYZER screen.

:SPEaker:VOLume <string>
:SPEaker:VOLume?

These commands set/query the speaker volume, which is controlled by the Volume knob when 'Pot' is selected.

Syntax

```
AFAN:SPE:VOL 'Pot'
             'Off'
```

```
AFAN:SPE:VOL?
```

Screen/field equivalent

AFAN:SPE:VOL controls the **Speaker Vol** field on the AF ANALYZER screen.

AFG1|AFGENERATOR1 subsystem

:AM <real number>
:AM?

This command sets AM modulation depth when the AFG1:DEST ‘AM’ is used first.

This command utilizes the “Real Number Setting Syntax” on page 299.

Syntax

```
AFG1:AM <real number>

AFG1:AM? !returns the value of the amplitude modulation
```

Screen/field equivalent

AFG1:AM controls the **AFGen1 To** field (lower subfield) on the RF GENERATOR screen.

:DESTination <string>
:DESTination?

AFG1:DEST sets/queries the destination of AF generator 1’s signal.

Syntax

```
AFG1:DEST ‘AM’

          ‘FM’

         ‘Audio Out’

AFG1:DEST?
```

Screen/field equivalent

AFG1:DEST controls the **AFGen1 To** field (upper subfield) on the RF GENERATOR screen.

:FM <real number>
:FM?

This command sets FM modulation deviation when the AFG1:DEST 'FM' command is used.

This command utilizes the "Real Number Setting Syntax" on page 299.

Syntax

```
AFG1:FM <real number>
```

```
AFG1:FM?
```

Screen/field equivalent

AFG1:FM controls the **AFGen1 To** field (lower subfield) on the RF GENERATOR screen.

:FREQuency <real number>
:FREQuency?

This command set the frequency of audio frequency generator 1.

This command utilizes the "Real Number Setting Syntax" on page 299, not including the :STATe command.

Syntax

```
AFG1:FREQ <real number>
```

```
AFG1:FREQ?
```

Screen/field equivalent

AFG1:FREQ controls the **AFGen1 Freq** field on the RF GENERATOR screen.

:OUTPut <real number>
:OUTPut?

This command sets the amplitude of the audio signal (volts rms) at the AUDIO OUT connector if the AFG1:DEST is ‘Audio Out’.

This command utilizes the “Real Number Setting Syntax” on page 299

Syntax

```
AFG1:OUTP <real number>
```

```
AFG1:OUTP?
```

Screen/field equivalent

AFG1:OUTP controls the **AFGen1 To** field (lower subfield) on the RF GENERATOR screen.

AFG2|ENCoder subsystem

:AM <real number>
:AM?

This command sets AM modulation depth if the command AFG2:DEST 'AM' is used first.

This command utilizes the "Real Number Setting Syntax" on page 299.

Syntax

```
AFG2:AM <real number>
```

```
AFG2:AM? !returns the value of the amplitude modulation
```

Screen/field equivalent

AFG2:AM controls the **AFGen2 To** field (lower subfield) on the RF GENERATOR screen when the upper subfield is set to **AM**.

:BURSt <integer>
:BURSt?

These commands set/query the number of times the message data is output. To use this function, the AFG2:SEND:MODE command must specify 'Burst' first.

This command uses only the :INCR command of the "Integer Number Setting Syntax" on page 206.

Syntax

```
AFG2:BURS <integer>
```

```
AFG2:BURS?
```

Screen/field equivalent

AFG2:BURS controls the **Bursts** field on the SIGNALING ENCODER screen when the **Mode** field is set to **DTMF**, **AMPS-TACS**, or **NAMP-NTAC**.

:DESTination <string>
:DESTination?

:DEST sets/queries the destination of the AF generator 2's signal.

Syntax

```
AFG2:DEST 'AM'
          'FM'
          'Audio Out'
AFG2:DEST?
```

Screen/field equivalent

AFG2:DEST controls the **AFGen2 To** field (upper subfield) on the RF GENERATOR screen.

:FILTer <string>
:FILTer?

To improve performance, one of four premodulation filters is *automatically* selected for each encoder mode. The automatically selected filter can be changed only by using GPIB commands.

We recommend that you leave this setting at its automatically selected setting.

If it is necessary to override the automatic settings, the AFG2:FILT:MODE 'ON' command must be executed first (filter mode OFF is the power up default state.) The following error will occur if the user attempts to select an alternate filter without first setting the filter mode to ON: **`Entry not accepted.`** The syntax to change or query the premodulation filter is shown in the example below.

Syntax

```
AFG2:FILT ‘None’
          ‘20 kHzLPF’
          ‘250 HzLPF’
          ‘150 HzLPF’
AFG2:FILT?
```

Example

```
AFG2:FILT:MODE 'ON' !turn filter selection mode on

AFG2:FILT:MODE? !query the current mode setting

AFG2:FILT 'NONE|20kHz LPF|250Hz LPF|150Hz LPF'
  !select one to change the setting

AFG2:FILT? !query the new filter setting
```

Screen/field equivalent

AFG2:FILT has no screen/field equivalent.

:FILTer:MODE <string>
:FILTer:MODE?

These commands set/query the premodulation filter's control.

We recommend that you leave this setting at its default setting (filter mode OFF is the power up default state.) See the :FILTer command on page 69 for more information about the premodulation filters.

Syntax

```
AFG2:FILT:MODE 'ON'
               'OFF'
AFG2:FILT:MODE?
```

Screen/field equivalent

AFG2:FILT:MODE has no screen/field equivalent.

:FM <real number>
:FM?

This command sets FM modulation deviation if the AFG2:DEST is 'FM'.

This command utilizes the "Real Number Setting Syntax" on page 299.

Syntax

```
AFG2:FM <real number>
AFG2:FM?
```

Screen/field equivalent

AFG2:FM controls the **AFGen2 To** field (lower subfield) on the RF GENERATOR screen when the upper subfield is set to **FM**.

:FREQuency <real number>
:FREQuency?

This command set/queries the output frequency of AF generator 2.

This command utilizes the “Real Number Setting Syntax” on page 299, but does not use the :STATe command.

Syntax

```
AFG2:FREQ <real number>
```

```
AFG2:FREQ?
```

Screen/field equivalent

AFG2:FREQ controls the **AFGen2 Freq** field on the RF GENERATOR screen.

:MODE <string>
:MODE?

This command sets the type of signaling encoder.

Syntax

```
AFG2:MODE 'Func Gen'
          'DTMF'
          'AMPS-TACS'
          'NAMP-NTAC'
```

```
AFG2:MODE?
```

Screen/field equivalent

AFG2:MODE controls the **Mode** field on the SIGNALING ENCODER screen.

:OUTPut <real number>
:OUTPut?

This command sets the amplitude of the audio signal (volts rms) at the AUDIO OUT connector if the AFG2:DEST is 'Audio Out'.

This command utilizes the "Real Number Setting Syntax" on page 299.

Syntax

`AFG2:OUTP <real number>`

`AFG2:OUTP?`

Screen/field equivalent

AFG2:OUT controls the **AFGen2 To** field (lower subfield) on the RF GENERATOR screen when the upper subfield is set to **Audio Out**.

:PEMPhasis <string>
:PEMPhasis?

This command sets pre-emphasis filters for the DTMF encoder.

Syntax

```
AFG2:PEMP 'On'
          'Off'
```

`AFG2:PEMP?`

Screen/field equivalent

AFG2:PEMP controls the **Pre-Emp** field on the SIGNALING ENCODER screen when the **Mode** field is set to **DTMF**.

:POLarity <string>
:POLarity?

This command causes the digitally modulated signals to be sent with a normal or inverted response to the digital data. When Inverted, a digital 1 produces a frequency shift in an FM carrier opposite to normal operation.

Syntax

```
AFG2:POL  'Norm'
          'Invert'
AFG2:POL?
```

Screen/field equivalent

AFG2:POL controls the **Polarity** field on the SIGNALING ENCODER screen when the **Mode** field is set to **AMPS-TACS** or **NAMP-NTAC**.

:SEND:MODE <string>
:SEND:MODE?

These commands set/query the mode used when a message is sent.

- 'Single' outputs the entire message once.
- 'Burst' outputs the message the number of times specified by the AFG2:BURS command.
- 'Cont' outputs the message continuously until the AFG2:STOP command is sent.
- 'Step' outputs a single step in an encoder sequence each time the AFG2:SEND command is sent. After the entire sequence is output, the encoder returns to the first character in the sequence.

Syntax

```
AFG2:SEND:MODE 'Single'
               'Burst'
               'Cont'
               'Step'
AFG2:SEND:MODE?
```

Screen/field equivalent

AFG2:SEND:MODE controls then **Send Mode** field on the SIGNALING ENCODER screen when the **Mode** field is set to **AMPS-TACS**, **NAMP-NTAC**, or **DTMF**.

:SEND

This command sends the encoder data stream.

Syntax

`AFG2:SEND`

Screen/field equivalent

AFG2:SEND controls the **Send** field on the SIGNALING ENCODER screen when the **Mode** field is set to **AMPS-TACS**, **NAMP-NTAC**, or **DTMF**.

:STOP

This command stops the data stream that is being output when AFG2:SEND:MODE is 'Cont' or 'Burst'.

Syntax

`AFG2:STOP`

Screen/field equivalent

AFG2:STOP controls the **Stop** field on the SIGNALING ENCODER screen when the **Mode** field is set to **AMPS-TACS**, **NAMP-NTAC**, or **DTMF**.

:AMPS|TACS:BUSY <string>
:AMPS|TACS:BUSY?

These commands set/query the busy/idle status information included in the signaling sequence.

- 'Idle' sets the busy/idle bits of the forward control channel information to indicate an idle state.
- 'Busy' sets the busy/idle bits of the forward control channel information to indicate an busy state.
- 'WS Delay' (word sync delay) prevents a busy/idle change until the word sync information has been received and a defined number of delay bits has been counted. The delay is set with the AFG2:AMPS:BUSY:DEL command.
- '1stBitDly' (first bit delay) causes the busy/idle bit to be set after a bit has been received and a defined number of delay bits has been counted. The delay is set with the AFG2:AMPS:BUSY:DEL command.

This command requires that the AFG2:AMPS:CHAN command specifies 'Cntl'.

Syntax

```
AFG2:AMPS:BUSY 'Idle'
               'Busy'
               'WS Delay
               '1stBitDly'
AFG2:AMPS:BUSY?
```

Screen/field equivalent

AFG2:AMPS:BUSY controls the **Busy/Idle** field on the SIGNALING ENCODER screen when the **Mode** field is set to **AMPS-TACS** and the **Channel** field is set to **Cntl**.

:AMPS|TACS:BUSY:DELay <integer>

These commands set/query the number of bits that are counted before a busy/idle bit changes from the idle state to the busy state. This function is used in conjunction with the WS Delay and 1stBitDly settings of the AFG2:AMPS|TACS:BUSY command. This command also requires that the AFG2:AMPS:CHAN command is specifies 'Cntl'.

This command utilizes only the :INCR command of the "Integer Number Setting Syntax" on page 206.

Syntax

```
AFG2:AMPS:BUSY:DEL <real number>
```

Screen/field equivalent

AFG2:AMPS:BUSY:DEL controls the **B/I Delay** field on the SIGNALING ENCODER screen when the **Mode** field is set to **AMPS-TACS and the Channel field is set to Cntl**.

:AMPS|TACS:CHANnel <string>
:AMPS|TACS:CHANnel?

These commands set/query the channel type. 'Cntl' selects the forward control channel (FOCC). 'Voice' selects the forward voice channel (FVC).

Syntax

```
AFG2:AMPS:CHAN 'Cntl'
               'Voice'
AFG2:AMPS:CHAN?
```

Screen/field equivalent

AFG2:AMPS:CHAN controls the **Channel** field on the SIGNALING ENCODER screen when the **Mode** field is set to **AMPS-TACS**.

:AMPS|TACS:DATA:AM <real number>
:AMPS|TACS:DATA:AM?

These commands set/query the data level when the AFG2:DEST 'AM' command is used first. The data level units are %.

This command utilizes the "Real Number Setting Syntax" on page 299.

Syntax

AFG2:AMPS:DATA:AM

AFG2:AMPS:DATA:AM?

Screen/field equivalent

AFG2:AMPS:DATA:AM controls the **Data Level** field when **AFGen2 To** field is set to **AM** on the SIGNALING ENCODER screen when the **Mode** field is set to **AMPS-TACS**.

:AMPS|TACS:DATA:FM <real number>
:AMPS|TACS:DATA:FM?

These commands set/query the data level when the AFG2:DEST 'FM' command is used. The data level units are kHz.

This command utilizes the "Real Number Setting Syntax" on page 299.

Syntax

AFG2:AMPS:DATA:FM

AFG2:AMPS:DATA:FM?

Screen/field equivalent

AFG2:AMPS:DATA:FM controls the **Data Level** field when **AFGen2 To** field is set to **FM** on the SIGNALING ENCODER screen when the **Mode** field is set to **AMPS-TACS**.

:AMPS|TACS:DATA:LEVel <real number>
:AMPS|TACS:DATA:LEVel?

These commands set/query the data level when the AFG2:DEST 'Audio Out' command is used first. The data level units are mV.

This command utilizes the "Real Number Setting Syntax" on page 299.

Syntax

AFG2:AMPS:DATA:LEV

AFG2:AMPS:DATA:LEV?

Screen/field equivalent

AFG2:AMPS:DATA:LEV controls the **Data Level** field when **AFGen2 To** field is set to **Audio Out** on the SIGNALING ENCODER screen when the **Mode** field is set to **AMPS-TACS**.

:AMPS|TACS:DATA:RATE <real number>

These commands set/query the data rate of the encoded message.

This command utilizes the "Real Number Setting Syntax" on page 299 but does not use the :STATe command.

Syntax

AFG2:AMPS:DATA:RATE

Screen/field equivalent

AFG2:AMPS:DATA:RATE controls the **Data Rate** field on the SIGNALING ENCODER screen when the **Mode** field is set to **AMPS-TACS**.

:AMPS|TACS:FILLer:DATA1 <string>
:AMPS|TACS:FILLer:DATA2 <string>
:AMPS|TACS:FILLer:DATA1?
:AMPS|TACS:FILLer:DATA2?

These commands set/query FOCC filler data. Each filler contains 7 hexadecimal characters representing the 2 type bits and 26 information bits of the control filler/message word. The control filler is sent continuously when the :AMPS|TACS:FILL:SEND command is used or after a control message has been sent using :AMPS|TACS:SEND.

Both filler fields must be full (seven digits) for the forward control channel information to be structured correctly. Do not leave any blank spaces.

To use this command, AFG2:AMPS:CHAN must be set to 'Cntl'.

Syntax

```
AFG2:AMPS:FILL:DATA1 <string>

AFG2:AMPS:FILL:DATA2 <string>

AFG2:AMPS:FILL:DATA1?

AFG2:AMPS:FILL:DATA2?
```

Screen/field equivalent

AFG2:AMPS:FILL:DATA1 and DATA 2 control the **Filler** fields for Stream A and Stream B on the SIGNALING ENCODER screen when the **Mode** field is set to **AMPS-TACS** and the **Channel** field is set to **Cntl**.

:AMPS|TACS:FILLer:SEND

This command sends the filler information that is entered with the AFG2:FILL:DATA1 and AFG2:FILL:DATA2 commands.

To use this command, AFG2:AMPS:CHAN must be set to 'Cntl'.

Syntax

```
AFG2:AMPS:FILL:SEND
```

Screen/field equivalent

AFG2:AMPS:FILL:SEND controls the **Send Filler** field on the SIGNALING ENCODER screen when the **Mode** field is set to **AMPS-TACS** and the **Channel** field is set to **Cntl**.

:AMPS|TACS:FILLer:STOP

This command stops the output of filler data.

To use this command, AFG2:AMPS:CHAN must be set to ‘Cntl’.

Syntax

```
AFG2:AMPS:FILL:STOP
```

Screen/field equivalent

AFG2:AMPS:FILL:STOP controls the **Stop Filler** field on the SIGNALING ENCODER screen when the **Mode** field is set to **AMPS-TACS** and the **Channel** field is set to **Cntl**.

:AMPS|TACS:FVCMessage <string>
:AMPS|TACS:FVCMessage?

These commands set/query the 7 hexadecimal characters representing the 2 type bits and 26 information bits in the forward voice channel (FVC) message word. All seven characters must be present (with no blank spaces) for the message to be valid. The SAT is turned off while the FVC message stream is sent.

This command is used with the AFG2:AMPS:CHAN ‘Voice’ command.

Syntax

```
AFG2:AMPS:FVCM <string>
```

```
AFG2:AMPS:FVCM?
```

Screen/field equivalent

AFG2:AMPS:FVCM controls the **Message** field on the SIGNALING ENCODER screen when the **Mode** field is set to **AMPS-TACS** and the **Channel** field is set to **Voice**.

:AMPS|TACS:MESSage:DATA1 <string>
:AMPS|TACS:MESSage:DATA2 <string>
:AMPS|TACS:MESSage:DATA1?
:AMPS|TACS:MESSage:DATA2?

These commands set/query FOCC Stream A and Stream B message data. Like the filler data, the message information can only be input in full (seven digit) lines. Also, message streams A and B must have the same number of lines in them.

To use this command, AFG2:AMPS:CHAN must be set to ‘Cntl’.

Syntax

`AFG2:AMPS:MESS:DATA1 <string>`

`AFG2:AMPS:MESS:DATA2 <string>`

`AFG2:AMPS:MESS:DATA1?`

`AFG2:AMPS:MESS:DATA2?`

Screen/field equivalent

AFG2:AMPS:MESS controls the **Message** fields for FOCC Stream A and Stream B on the SIGNALING ENCODER screen when the **Mode** field is set to **AMPS-TACS**. These fields are displayed only when the **Channel** field is set to **Cntl**.

:AMPS|TACS:SAT:AM <real number>
:AMPS|TACS:SAT:AM?

These commands set/query the SAT level when the AFG2:DEST ‘AM’ and AFG2:AMPS:CHAN ‘Voice’ commands are used. The SAT level units are %.

This command utilizes the “Real Number Setting Syntax” on page 299.

Syntax

`AFG2:AMPS:SAT:AM`

`AFG2:AMPS:SAT:AM?`

Screen/field equivalent

AFG2:AMPS:SAT:AM controls the **SAT Level** field when **AFGen2 To** field is set to **AM** on the SIGNALING ENCODER screen when the **Mode** field is set to **AMPS-TACS** and the **Channel** field is set to **Voice**.

:AMPS|TACS:SAT:FM <real number>
:AMPS|TACS:SAT:FM?

These commands set/query the SAT level when the AFG2:DEST 'FM' and AFG2:AMPS:CHAN 'Voice' commands are used. The SAT level's units are kHz.

This command utilizes the "Real Number Setting Syntax" on page 299.

Syntax

AFG2:AMPS:SAT:FM

AFG2:AMPS:SAT:FM?

Screen/field equivalent

AFG2:AMPS:SAT:FM controls the **SAT Level** field when **AFGen2 To** field is set to **FM** on the SIGNALING ENCODER screen when the **Mode** field is set to **AMPS-TACS and the Channel field is set to Voice**.

:AMPS|TACS:SAT:LEVel <real number>
:AMPS|TACS:SAT:LEVel?

These commands set/query the SAT level when the AFG2:DEST 'Audio Out' and AFG2:AMPS:CHAN 'Voice' commands are used. The SAT level units are mV.

This command utilizes the "Real Number Setting Syntax" on page 299.

Syntax

AFG2:AMPS:SAT:LEV

AFG2:AMPS:SAT:LEV?

Screen/field equivalent

AFG2:AMPS:SAT:LEV controls the **SAT Level** field when **AFGen2 To** field is set to **Audio Out** on the SIGNALING ENCODER screen when the **Mode** field is set to **AMPS-TACS** and the **Channel** field is set to **Voice**.

:AMPS|TACS:SAT:FREQuency <real number>

These commands set/query the supervisory audio tone's frequency. This signal is sent continuously whenever AFG2:AMPS:CHAN 'Voice' is used, but is interrupted when a FVC message is sent.

This command utilizes the "Real Number Setting Syntax" on page 299 but does not use the :STATe command.

Syntax

```
AFG2:AMPS:SAT:FREQ
```

Screen/field equivalent

AFG2:AMPS:SAT:FREQ controls the **SAT Freq** field on the SIGNALING ENCODER screen when the **Mode** field is set to **AMPS-TACS** and the **Channel** field is set to **Voice**.

:AMPS|TACS:STANdard <string>
:AMPS|TACS:STANdard?

These commands set/query the radio standard for the encoder.

Syntax

```
AFG2:AMPS:STAN 'AMPS'
               'TACS'
               'JTACS'
AFG2:AMPS:STAN?
```

Screen/field equivalent

AFG2:AMPS:STAN controls the **Standard** field on the SIGNALING ENCODER screen when the **Mode** field is set to **AMPS-TACS**.

:DTMF:FREQuency:COLumn <multiple real number> :DTMF:FREQuency:COLumn?

These commands set/query the frequencies for the vertical columns in the symbol frequencies table of the DTMF encoder.

Syntax

```
AFG2:DTMF:FREQ:COL  <integer value>,<real number>
```

```
AFG2:DTMF:FREQ:COL? <integer value>
```

Screen/field equivalent

AFG2:DTMF:FREQ:COL controls vertical columns in the **`Symbol Frequencies (Hz):`** table on the SIGNALING ENCODER screen when the **Mode** field is set to **DTMF**.

:DTMF:FREQuency:ROW <multiple real number> :DTMF:FREQuency:ROW?

These commands set/query the frequencies for the horizontal rows in the symbol frequencies table of the DTMF encoder.

Syntax

```
AFG2:DTMF:FREQ:ROW  <integer value>,<real number>
```

```
AFG2:DTMF:FREQ:ROW? <integer value>
```

Screen/field equivalent

AFG2:DTMF:FREQ:ROW controls horizontal rows in the **`Symbol Frequencies (Hz):`** table on the SIGNALING ENCODER screen when the **Mode** field is set to **DTMF**.

:DTMF:OFFTime <real number> :DTMF:OFFTime?

These commands set/query the length of time each DTMF tone is off during the sequence.

Syntax

```
AFG2:DTMF:OFFT <real number>
```

```
AFG2:DTMF:OFFT?
```

Screen/field equivalent

AFG2:DTMF:OFFT controls the **`Off Time`** field on the SIGNALING ENCODER screen when the **Mode** field is set to **DTMF**.

:DTMF:ONTime <real number>
:DTMF:ONTime?

These commands set/query the length of time each DTMF tone is on during the sequence.

This command utilizes the “Real Number Setting Syntax” on page 299, but does not use the :STATe command.

Syntax

```
AFG2:DTMF:ONT <real number>
AFG2:DTMF:ONT?
```

Screen/field equivalent

AFG2:DTMF:ONT controls the **On Time** field on the SIGNALING ENCODER screen when the **Mode** field is set to **DTMF**.

:DTMF:SEQuence <string>
:DTMF:SEQuence?

These commands set/query the sequence of tones output by the signaling encoder.

Syntax

```
AFG2:DTMF:SEQ <string>
AFG2:DTMF:SEQ?
```

Screen/field equivalent

AFG2:DTMF:SEQ controls the **Sequence** field on the SIGNALING ENCODER screen when the **Mode** field is set to **DTMF**.

:DTMF:STANdard <string>
:DTMF:STANdard?

These commands set/query the standard applied to the encoded data. The standard affects the types of frames that can be sent, the range of valid channel numbers, the encoding of the frame data, and the interpretation of received frames.

Syntax

```
AFG2:DTMF:STAN 'Bell'
```

```
AFG2:DTMF:STAN?
```

Screen/field equivalent

AFG2:DTMF:STAN controls the **Standard** field on the SIGNALING ENCODER screen when the **Mode** field is set to **DTMF**.

:DTMF:TWISt <real number>
:DTMF:TWISt?

These commands set/query the ratio of amplitudes (in dB) between the high frequency and low frequency tone in each DTMF pair. A positive twist value indicates a higher amplitude for the high frequency tone. A negative value indicates a higher amplitude for the low frequency tone.

Twist and pre-emphasis affect the relative levels of the high and low tones within each symbol (tone pair). See the “Twist and Pre-emphasis” in the *Reference Guide* for details about the interactions of twist and pre-emphasis.

This command utilizes the “Real Number Setting Syntax” on page 299, but does not use the :INCR or :STATe commands.

Syntax

```
AFG2:DTMF:TWIS <real number>
```

```
AFG2:DTMF:TWIS?
```

Screen/field equivalent

AFG2:DTMF:TWIS controls the **Twist** field on the SIGNALING ENCODER screen when the **Mode** field is set to **DTMF**.

:FGENerator:SUNits <string>
:FGENerator:SUNits?

These commands set/query whether the signal’s output is in units of rms or peak. The AFG2:DEST ‘Audio Out’ command must be used with this command.

Syntax

```
AFG2:FGEN:SUN 'RMS'
              'Peak'
AFG2:FGEN:SUN?
```

Screen/field equivalent

AFG2:FGEN:WAV controls the **Sine Units** field on the SIGNALING ENCODER screen when the **Mode** field is set to **Func Gen** and the **AFGen2 To** field is set to **Audio Out**.

:FGENerator:WAVeform <string>
:FGENerator:WAVeform?

These commands set/query the type of waveform generated by the function generator.

Syntax

```
AFG2:FGEN:WAV 'Sine'
              'Square'
              'Triangle'
              'Ramp(+)' !Positive-going ramp
              'Ramp(-)' !Negative-going ramp
              'DC(+)'
              'DC(-)'
              'Uni Noise' !Universal noise
              'Gau Noise' !Gaussian noise
AFG2:FGEN:WAV?
```

Screen/field equivalent

AFG2:FGEN:WAV controls the **Waveform** field on the SIGNALING ENCODER screen when the **Mode** field is set to **Func Gen**.

:NAMPs|NTACs:BUSY <string>
:NAMPs|NTACs:BUSY?

These commands set/query the busy/idle status information included in the signaling sequence.

- 'Idle' sets the busy/idle bits of the forward control channel information to indicate an idle state.
- 'Busy' sets the busy/idle bits of the forward control channel information to indicate an busy state.
- 'WS Delay' (word sync delay) prevents a busy/idle change until the word sync information has been received and a defined number of delay bits has been counted. The delay is set with the AFG2:NAMPS:BUSY:DEL command.
- '1stBitDly' (first bit delay) causes the busy/idle bit to be set after a bit has been received and a defined number of delay bits has been counted. The delay is set with the AFG2:NAMPS:BUSY:DEL command.

This command requires that the AFG2:NAMPS:CHAN command specifies 'Cntl'.

Syntax

```
AFG2:NAMP:BUSY 'Idle'
               'Busy'
               'WS Delay
               '1stBitDly'
AFG2:NAMP:BUSY?
```

Screen/field equivalent

AFG2:NAMP:BUSY controls the **Busy/Idle** on the SIGNALING ENCODER screen when the **Mode** field is set to **NAMP-NTAC** and the **Channel** field is set to **Cntl**.

:NAMPs|NTACs:BUSY:DELay <integer>

This command sets the number of bits that are counted before a busy/idle bit changes form the idle state to the busy state. This function is used in conjunction with the WS Delay and 1stBitDly settings of the :NAMPs|NTACs:BUSY command.

This command utilizes only the :INCR command of the "Integer Number Setting Syntax" on page 206.

Syntax

```
AFG2:NAMP:BUSY:DEL <real number>
```

Screen/field equivalent

AFG2:NAMP:BUSY:DEL controls the **B/I Delay** field on the SIGNALING ENCODER screen when the **Mode** field is set to **NAMP-NTAC** and the **Channel** field is set to **Cntl**.

:NAMPs|NTACs:CHANnel <string>
:NAMPs|NTACs:CHANnel?

These commands set/query the channel type. 'Cntl' selects the forward control channel (FOCC). 'Voice' selects the forward voice channel (FVC).

Syntax

```
AFG2:NAMP:CHAN 'Cntl'
               'Voice'
AFG2:NAMP:CHAN?
```

Screen/field equivalent

AFG2:NAMP:CHAN controls the **Channel** field on the SIGNALING ENCODER screen when the **Mode** field is set to **NAMP-NTAC**.

:NAMPs|NTACs:DSAT:MESS <string>
:NAMPs|NTACs:DSAT:MESS?

These commands set/query the 24-bit digital supervisory audio tone (DSAT) sequence. The seven standard sequences are: 2556CB, 255B2B, 256A9B, 25AD4D, 26AB2B, 26B2AD, and 2969AB. (These codes are the inverse of the seven DST codes.)

DSAT is output continuously when AFG2:NAMP:DSAT:SEND is sent. It is only stopped when AFG2:NAMP:DSAT:STOP is sent, or when the DST message stream is sent.

Syntax

```
AFG2:NAMP:DSAT:MESS <string>
```

```
AFG2:NAMP:DSAT:MESS?
```

Screen/field equivalent

AFG2:NAMP:DSAT:MESS controls the FVC **DSAT** field on the SIGNALING ENCODER screen when the **Mode** field is set to **NAMP-NTAC**, and the **Channel** field is set to **Voice**.

:NAMPs|NTACs:DSAT:SEND <string>
:NAMPs|NTACs:DSAT:SEND?

This command set/query sends the 24-bit digital supervisory audio tone (DSAT) sequence. DSAT is output continuously when AFG2:NAMP:DSAT:SEND is sent. It is only stopped when AFG2:NAMP:DSAT:STOP is sent, or when a message or DST is sent. If a message or DST is sent, the DSAT data is output *after* the message is output.

Syntax

```
AFG2:NAMP:DSAT:SEND
```

```
AFG2:NAMP:DSAT:SEND?
```

Screen/field equivalent

AFG2:NAMP:DSAT:SEND controls the FVC **Send DSAT** field on the SIGNALING ENCODER screen when the **Mode** field is set to **NAMP-NTAC**, and the **Channel** field is set to **Voice**.

:NAMPs|NTACs:DSAT:STOP

This command stops the DSAT if it is being sent. See ":NAMPs|NTACs:DSAT:SEND <string> :NAMPs|NTACs:DSAT:SEND?" on page 90.

Syntax

```
AFG2:NAMP:DSAT:STOP
```

Screen/Field Equivalent

AFG2:NAMP:DSAT:STOP controls the **Stop DSAT** field on the SIGNALING ENCODER screen when the **Mode** field is set to **NAMP-NTAC**, and the **Channel** field is set to **Voice**.

:NAMPs|NTACs[:FOCC]:AM <real number>
:NAMPs|NTACs[:FOCC]:AM?

This command sets/queries the data level when the AFG2:DEST 'AM' command is used. The data level units are %.

This command utilizes the "Real Number Setting Syntax" on page 299.

Syntax

```
AFG2:NAMP:FOCC:AM
```

```
AFG2:NAMP:FOCC:AM?
```

Screen/field equivalent

AFG2:NAMP[:FOCC]:AM controls the **Data Level** field when **AFGen2 To** field is set to **AM** on the SIGNALING ENCODER screen when the **Mode** field is set to **NAMP-NTAC**, and the **Channel** field is set to **Cntl**.

:NAMPs|NTACs[:FOCC]:FM <real number>
:NAMPs|NTACs[:FOCC]:FM?

This command sets/queries the data level when the AFG2:DEST 'FM' command is used. The data level units are kHz.

This command utilizes the "Real Number Setting Syntax" on page 299.

Syntax

`AFG2:NAMP:FOCC:FM`

`AFG2:NAMP:FOCC:FM?`

Screen/field equivalent

AFG2:NAMP[:FOCC]:FM controls the **Data Level** field when **AFGen2 To** field is set to **FM** on the SIGNALING ENCODER screen when the **Mode** field is set to **NAMP-NTAC**, and the **Channel** field is set to **Cntl**.

:NAMPs|NTACs[:FOCC]:LEVel <real number>
:NAMPs|NTACs[:FOCC]:LEVel?

These commands set/query the data level when the AFG2:DEST 'Audio Out' command is used. The data level units are mV.

This command utilizes the "Real Number Setting Syntax" on page 299.

Syntax

`AFG2:NAMP:FOCC:LEV`

`AFG2:NAMP:FOCC:LEV?`

Screen/field equivalent

AFG2:NAMP[:FOCC]:LEV controls the **Data Level** field when **AFGen2 To** field is set to **Audio Out** on the SIGNALING ENCODER screen when the **Mode** field is set to **NAMP-NTAC**, and the **Channel** field is set to **Cntl**.

:NAMPs|NTACs[:FOCC]:RATE <real number>
:NAMPs|NTACs[:FOCC]:RATE?

These commands set/query the data rate of the encoded message.

This command utilizes the “Real Number Setting Syntax” on page 299 but does not use the :STATe command.

Syntax

```
AFG2:NAMP:FOCC:RATE
AFG2:NAMP:FOCC:RATE?
```

Screen/field equivalent

AFG2:NAMP[:FOCC]:RATE controls the **Data Rate** field on the SIGNALING ENCODER screen when the **Mode** field is set to **NAMP-NTAC**, and the **Channel** field is set to **Cntl**.

:NAMPs|NTACs[:FOCC]:FILLer:DATA1 <string>
:NAMPs|NTACs[:FOCC]:FILLer:DATA2 <string>
:NAMPs|NTACs[:FOCC]:FILLer:DATA1?
:NAMPs|NTACs[:FOCC]:FILLer:DATA2?

These commands set/query FOCC filler data. Each filler contains 7 hexadecimal characters representing the 2 type bits and 26 information bits of the control filler/message word. The control filler is sent continuously when the :NAMPs|NTACs[:FOCC]:FILL:SEND command is used or after a control message has been sent using :NAMPs|NTACs:SEND.

Both filler fields must be full (seven digits) for the forward control channel information to be structured correctly. Do not leave any blank spaces.

To use this command, AFG2:NAMP:CHAN must be set to ‘Cntl’.

Syntax

```
AFG2:NAMP[:FOCC]:FILL:DATA1 <string>
AFG2:NAMP[:FOCC]:FILL:DATA2 <string>
AFG2:NAMP[:FOCC]:FILL:DATA1?
AFG2:NAMP[:FOCC]:FILL:DATA2?
```

Screen/field equivalent

AFG2:NAMP[:FOCC]:FILL:DATA1 and DATA 2 control the **Filler** fields for Stream A and Stream B on the SIGNALING ENCODER screen when the **Mode** field is set to **NAMP-NTAC**, and the **Channel** field is set to **Cntl**.

:NAMPs|NTACs[:FOCC]:FILLer:SEND

This command sends the filler information that is entered with the AFG2:FILL:DATA1 and AFG2:FILL:DATA2 commands.

To use this command, AFG2:NAMP:CHAN must be set to 'Cntl'.

Syntax

```
AFG2:NAMP[:FOCC]:FILL:SEND
```

Screen/field equivalent

AFG2:NAMP[:FOCC]:FILL:SEND controls the **Send Filler** field on the SIGNALING ENCODER screen when the **Mode** field is set to **NAMP-NTAC**, and the **Channel** field is set to **Cntl**.

:NAMPs|NTACs[:FOCC]:FILLer:STOP

This command stops the output of filler data.

To use this command, AFG2:NAMP:CHAN must be set to 'Cntl'.

Syntax

```
AFG2:NAMP[:FOCC]:FILL:STOP
```

Screen/field equivalent

AFG2:NAMP[:FOCC]:FILL:STOP controls the **Stop Filler** field on the SIGNALING ENCODER screen when the **Mode** field is set to **NAMP-NTAC**, and the **Channel** field is set to **Cntl**.

:NAMPS|NTACS[:FOCC]:MESSage:DATA1 <string>
:NAMPS|NTACS[:FOCC]:MESSage:DATA2 <string>
:NAMPS|NTACS[:FOCC]:MESSage:DATA1?
:NAMPS|NTACS[:FOCC]:MESSage:DATA2?

These commands set/query FOCC Stream A and Stream B message data. Like the filler data, the message information can only be input in full (seven digit) lines. Also, message streams A and B must have the same number of lines in them.

To use this command, AFG2:NAMP:CHAN must be set to 'Cntl'.

Syntax

```
AFG2:NAMP[:FOCC]:MESS:DATA1 <string>
AFG2:NAMP[:FOCC]:MESS:DATA2 <string>
AFG2:NAMP[:FOCC]:MESS:DATA1?
AFG2:NAMP[:FOCC]:MESS:DATA2?
```

Screen/field equivalent

AFG2:NAMP:MESS controls the **Message** fields for FOCC Stream A and Stream B on the SIGNALING ENCODER screen when the **Mode** field is set to **NAMP-NTAC**. These fields are displayed only when the **Channel** field is set to **Cntl**.

:NAMPs|NTACs:FVC:MESS <string>
:NAMPs|NTACs:FVC:MESS?

These commands set/query the seven hexadecimal characters (28 bits) of the FVC message. These 7 characters are combined with 12 parity bits calculated by the encoder to output a 40-character data stream. This data is output when the AFG2:NAMP:FVC:SEND 'Message' command is sent.

The entire field must contain data. No blank spaces are allowed. The DSAT is turned off while the FVC message stream is sent.

Syntax

```
AFG2:NAMP:FVC:MESS <string>
AFG2:NAMP:FVC:MESS?
```

Screen/field equivalent

AFG2:NAMP:FVC:MESS controls the FVC **Message** field on the SIGNALING ENCODER screen when the **Mode** field is set to **NAMP-NTAC**, and the **Channel** field is set to **Voice**.

:NAMPs|NTACs:FVC:RATE <real number>
:NAMPs|NTACs:FVC:RATE?

These commands set/query the data rate of the encoded message.

This command utilizes the “Real Number Setting Syntax” on page 299 but does not use the :STATe command.

Syntax

```
AFG2:NAMP:FVC:RATE <real number>
```

```
AFG2:NAMP:FVC:RATE?
```

Screen/field equivalent

AFG2:NAMP:FVC:RATE controls the **Data Rate** field on the SIGNALING ENCODER screen when the **Mode** field is set to **NAMP-NTAC**, and the **Channel** field is set to **Voice**.

:NAMPs|NTACs:FVC:AM <real number>
:NAMPs|NTACs:FVC:AM?

This command sets/queries the data level when the AFG2:DEST ‘AM’ command is used. The data level units are %.

This command utilizes the “Real Number Setting Syntax” on page 299.

Syntax

```
AFG2:NAMP:FVC:AM
```

```
AFG2:NAMP:FVC:AM?
```

Screen/field equivalent

AFG2:NAMP:FVC:AM controls the **Data Level** field when **AFGen2 To** field is set to **AM** on the SIGNALING ENCODER screen when the **Mode** field is set to **NAMP-NTAC**, and the **Channel** field is set to **Voice**.

:NAMPs|NTACs:FVC:FM <real number>
:NAMPs|NTACs:FVC:FM?

This command sets/queries the data level when the AFG2:DEST ‘FM’ command is used. The data level units are kHz.

This command utilizes the “Real Number Setting Syntax” on page 299.

Syntax

AFG2:NAMP:FVC:FM

AFG2:NAMP:FVC:FM?

Screen/field equivalent

AFG2:NAMP:FVC:FM controls the **Data Level** field when **AFGen2 To** field is set to **FM** on the SIGNALING ENCODER screen when the **Mode** field is set to **NAMP-NTAC**, and the **Channel** field is set to **Voice**.

:NAMPs|NTACs:FVC:LEVel <real number>
:NAMPs|NTACs:FVC:LEVel?

These commands set/query the data level when the AFG2:DEST ‘Audio Out’ command is used. The data level units are mV.

This command utilizes the “Real Number Setting Syntax” on page 299.

Syntax

AFG2:NAMP:FVC:LEV

AFG2:NAMP:FVC:LEV?

Screen/field equivalent

AFG2:NAMP:FVC:LEV controls the **Data Level** field when **AFGen2 To** field is set to **Audio Out** on the SIGNALING ENCODER screen when the **Mode** field is set to **NAMP-NTAC**, and the **Channel** field is set to **Voice**.

:NAMPs|NTACs:SEND
:NAMPs|NTACs:SEND?

This command sets/queries the type of data sent when the AFG2:SEND command is used.

- Selecting 'Message' sends the contents of the forward voice message (AFG2:NAMP:FVC:MESS <string>).
- Selecting 'DST' causes the digital signaling tone sequence to be output. The DST sequence that is sent is the inverse of the sequence entered in the DSAT message (AFG2:DSAT:MESS <string>).

Syntax

```
AFG2:NAMP:FVC:SEND 'Message'
                   'DST'
AFG2:NAMP:FVC:SEND?
```

Screen/Field Equivalent

AFG2:NAMP:FVC:SEND controls the FVC **Message/DST** field on the SIGNALING ENCODER screen when the **Mode** field is set to **NAMP-NTAC** and the **Channel** field is set to **Voice**.

:NAMPS|NTACS:STANdard <string>
:NAMPS|NTACS:STANdard?

These commands set/query the radio standard for the encoder.

Syntax

```
AFG2:NAMP:STAN 'NAMPS'
               'NTACS'
AFG2:NAMP:STAN?
```

Screen/field equivalent

AFG2:NAMP:STAN controls the **Standard** field on the SIGNALING ENCODER screen when the **Mode** field is set to **NAMP-NTAC**.

CANalyzer subsystem

The CANalyzer subsystem controls functions unique to the CDMA ANALYZER screen.

:ACP:POWer:CALibrate

This command initiates calibration of the adjacent channel power measurement for the current RF analyzer frequency at the selected frequency offset and filter bandwidth.

Syntax

```
CAN:ACP:POW:CAL
```

Example

```
CAN:ACP:POW:CAL   !calibrates ACP measurement
```

Screen/field equivalent

CAN:ACP:POW CAL controls the **ACP Cal** field on the CDMA ANALYZER screen.

:ACP:POWer:FILTer <real number>
:ACP:POWer:FILTer?

This command selects the filter bandwidth over which the adjacent channel power measurement is made in the adjacent channels. Valid values are 10 kHz to 1.23 MHz with 500 Hz resolution.

Syntax

```
CAN:ACP:POW:FILT <real number>
```

```
CAN:ACP:POW:FILT?
```

Example

```
CAN:ACP:POW:FILT 10 kHz  !sets the filter BW to 10 kHz
CAN:ACP:POW:FILT?        !returns the filter BW setting
```

Screen/field equivalent

CAN:ACP:POW:FILT controls the **ACP Fltr BW** field on the CDMA ANALYZER screen.

:ACP:POWer:OFFSet <real number>
:ACP:POWer:OFFSet?

This command sets the frequency offset used when making adjacent channel power measurements. The setting designates the frequency offset from the center frequency at which the measurement is made. Valid values are 100 kHz to 3 MHz.

Syntax

```
CAN:ACP:POW:OFFS <real number>

CAN:ACP:POW:OFFS?
```

Example

```
CAN:ACP:POW:OFFS 100 kHz  !sets the freq. offset to 100 kHz

CAM:ACP:POW:OFFS?         !returns freq. offset setting
```

Screen/field equivalent

CAN:ACP:POW:OFFS controls the **ACP Offset** field on the CDMA ANALYZER screen.

:ARM

This command arms the measurements based on the type of measurement (single or continuous), qualifying events, and triggering events.

To put the CDMA analyzer in single triggering mode, use the TRIG:MODE:RETR SING command.

For continuous triggering, use TRIG:MODE:RETR REP.

Syntax

```
CAN:ARM              !arms the CDMA analyzer measurements
```

Example

```
TRIG:MODE:RETR SING  !sets the trigger mode to Single

CAN:ARM              !arms the measurement
```

Screen/field equivalent

CAN:ARM controls the **Arm Meas** subfield of the **Analyzer** field.

:AUTO:GAIN?

This command returns the gain setting. The value and mode of the gain are set by the commands :PATH:GAIN and :PATH:GAIN:MODE. This query is valid only while measuring rho, EVM or channel power.

Syntax

```
CAN:AUTO:GAIN?
```

Screen/field equivalent

CAN:AUTO:GAIN? queries the **Gain** field of the CDMA ANALYZER screen. This field is displayed when a rho, EVM, or channel power measurement is selected.

:AUTO:POWer:GAIN?

This command returns the gain setting. The value and mode of the gain are set by the commands :POW:GAIN and :POW:GAIN:MODE. This query is valid only while measuring average power.

Syntax

```
CAN:AUTO:POW:GAIN?
```

Screen/field equivalent

CAN:AUTO:POW:GAIN? queries the **Pwr Gain** field of the CDMA ANALYZER screen when measuring average power.

:CHANnel:POWer:CALibrate

This command calibrates the channel power measurement. The Test Set requires a few moments to complete this calibration. To determine when the calibration is finished, poll the status register.

Syntax

```
CAN:CHAN:POW:CAL
```

Example

```
CAN:CHAN:POW:CAL       !calibrates channel power
```

Screen/field equivalent

CAN:CHAN:POW:CAL controls the **Chn Pwr Cal** field of the CDMA ANALYZER screen while measuring channel power.

:CHANnel:POWer:FILTer
:CHANnel:POWer:FILTer?

These commands set/query the filter for the channel power measurement.

- '1.23M' measures the absolute channel power level of the RF signal in a 1.23 MHz bandwidth centered around the RF channel or tune frequency setting. This measurement must be calibrated using the CAN:CHAN:CPOW:CAL command each time the frequency is changed.
- '30kHz' measures the adjacent channel power (that is the power in the sidebands around the chosen CDMA channel).

Syntax

```
CAN:CHAN:POW:FILT '1.23M'
                  '30kHz'
```

```
CAN:CHAN:POW:FILT?
```

Screen/field equivalent

CAN:CHAN:POW:FILT controls the **Ch Pwr Filt** field of the CDMA ANALYZER screen while measuring channel power.

:DARM

This command works with the :ARM command to control the measurements.

Syntax

```
CAN:DARM
```

Screen/field equivalent

CAN:DARM controls the **Disarm** subfield of the **Analyzer** field on the CDMA ANALYZER screen.

:DIRection <string>
:DIRection?

These commands set/query the direction of the CDMA analyzer. This command is valid only when frequency tuning mode is selected (CONF:RFD 'Freq').

:DIR is not used while measuring average power.

Syntax

```
CAN:DIR 'Fwd'
        'Rev'
CAN:DIR?
```

Screen/field equivalent

CAN:DIR controls the **Anl Dir** field of the CDMA ANALYZER screen.

:EVENt:QUALifier <string>
:EVENt:QUALifier?

These commands set/query the qualifying event for the trigger. The qualifying event is the event that must occur before a trigger is accepted. The trigger event is set by the :EVEN:TRIG command.

Syntax

```
CAN:EVEN:QUAL 'None'
              '27 ms'
              '20 ms'
              '80 ms'
              '2 s'
              'Ampl Lo'
              'Ampl Mid'
              'Ampl Hi'
              'External'
CAN:EVEN:QUAL?
```

Screen/field equivalent

CAN:EVEN:QUAL sets the **Qual Event** field on the CDMA ANALYZER screen.

:EVENt:TRIGger <string>
:EVENt:TRIGger?

These commands set/query the trigger setting of the CDMA ANALYZER screen.

Syntax

```
CAN:EVEN:TRIG ‘27 ms’
              ‘20 ms’
              ‘80 ms’
              ‘2 s’
              ‘Delay’
              ‘Immed’
CAN:EVEN:TRIG?
```

Example

```
CAN:EVEN:TRIG ‘Delay’
```

```
!sets the trigger to run after the delay has been set by the
CAN:EVEN:TRIG:DEL command.
```

```
CAN:EVEN:TRIG ‘2 s’ !sets the trigger to run after 2 seconds
```

Screen/field equivalent

CAN:EVEN:TRIG sets the **Trig Event** field of the CDMA ANALYZER screen.

:EVENt:TRIGger:DELay <real number>
:EVENt:TRIGger:DELay?

These commands set/query the delay value of the trigger when the :EVEN:TRIG ‘Delay’ command is used. This command utilizes the “Real Number Setting Syntax” on page 299, but does not use the :DUNits, :UNITs, or :STATe commands.

Syntax

```
CAN:EVEN:TRIG:DEL <real number> !values from 20 µs to 10 s
CAN:EVEN:TRIG:DEL?              !returns the value set
```

Screen/field equivalent

CAN:EVEN:TRIG:DEL controls the **Trig Event** field on the CDMA ANALYZER screen when the **Trig Event** field is set to **Delay**.

:MODE <string>
:MODE?

These commands set/query the measurement displayed in the upper left corner of the display.

Syntax

```
CAN:MODE 'Avg Pwr'
         'ACP'
         'Rho'
         'EVM'
         'Chan Pwr'
```

```
CAN:MODE?
```

Screen/field equivalent

CAN:MODE selects the measurement to be displayed in the upper-left corner of the screen.

:PATH:GAIN <string>
:PATH:GAIN?

These commands set/query the gain of the CDMA analyzer. This command will only be enabled when autoranging is turned off (CAN:PATH:MODE 'Hold').

This command may conflict with the code domain analyzer's settings CDAN:PATH:GAIN and CDAN:PATH:MODE. For example, if autoranging is turned off ('Hold') in the CDMA analyzer and turned on in the Code Domain Analyzer ('Auto') the 'Hold' setting will always override the 'Auto' setting. When autoranging is turned off, setting either analyzer's gain will automatically change the other's to the same setting.

Use the CAN:POW:GAIN command when making an average power measurement.

Syntax

```
CAN:PATH:GAIN ‘0 dB’
              ‘6 dB’
              ‘12 dB’
              ‘18 dB’
              ‘24 dB’
              ‘30 dB’
              ‘36 dB’
CAN:PATH:GAIN?
```

Screen/field equivalent

CAN:PATH:GAIN sets the lower subfield of the **Gain** field of the CDMA ANALYZER screen. This subfield is only selectable when the upper subfield is set to **Hold**.

:PATH:GAIN:MODE <string>
:PATH:GAIN:MODE?

These commands set/query the mode of the **Gain** field, allowing you to choose between an autoranging gain (‘Auto’) or a fixed gain (‘Hold’).

This command may conflict with the code domain analyzer’s settings CDAN:PATH:GAIN and CDAN:PATH:MODE. For example, if autoranging is turned off (‘Hold’) in the CDMA analyzer and turned on in the Code Domain Analyzer (‘Auto’), the ‘Hold’ setting will always override the ‘Auto’ setting. When autoranging is turned off, setting either analyzer’s path gain will automatically change the other’s to the same setting.

For average power measurements, use the CAN:POW:GAIN:MODE command.

Syntax

```
CAN:PATH:GAIN:MODE ‘Auto’

                   ‘Hold’

CAN:PATH:GAIN:MODE?
```

Screen/field equivalent

CAN:PATH:GAIN:MODE sets the **Auto/Hold** subfield of the **Gain** field of the CDMA ANALYZER or CODE DOM screen.

:PNINcrement <real number>
:PNINcrement?

These commands set/query the PN increment. If you know the PN increment, enter it with this command to speed the PN offset search. If you do not know the increment, enter a 1.

This command utilizes the :INCR command of the “Real Number Setting Syntax” on page 299.

Syntax

```
CAN:PNIN <real number> !values from 1 to 256

CAN:PNIN?              !returns the value of the PN increment
```

Screen/field equivalent

CAN:PNIN:INCR controls the **PN Incrment** field on the CDMA ANALYZER. This field is displayed only when the **Find PN** field is set to **Auto**.

:PNMode <string>
:PNMode?

These commands set/query the PN offset mode.

- 'Auto' is used to calculate the system's PN offset if it is unknown. When 'Auto' is selected, the CAN:PNIN command can be used to enter a PN increment and speed the PN offset calculation.
- 'Manual' is used to enter a known PN offset. When 'Manual' is selected, the PN offset is entered using the CAN:PNOF command.

Syntax

```
CAN:PNM 'Auto'
        'Manual'
CAN:PNM? !returns the PN Offset mode
```

Screen/field equivalent

CAN:PNM controls the **Find PN** field on the CDMA ANALYZER screen.

:PNOFfset <real number>
:PNOFfset?

These commands set/query the PN offset of the system.

This command utilizes the :INCR command of the "Real Number Setting Syntax" on page 299.

Syntax

```
CAN:PNOF <real number> !values from 0.0 to 511.984375
CAN:PNOF?              !returns the value of the PN Offset
```

Screen/field equivalent

CAN:PNOF controls the **PN Offset** field on the CDMA ANALYZER screen. This field is displayed only when the **Find PN** field is set to **Manual**.

:POWer:GAIN <string>
:POWer:GAIN?

These commands set/query the gain of the CDMA analyzer. These commands are valid only when an average power (Avg Pwr) measurement is selected. For channel power, EVM, or rho measurements, use the CAN:PATH:GAIN command.

Syntax

```
CAN:POW:GAIN ‘0 dB’
             ‘6 dB’
             ‘12 dB’
             ‘24 dB’
             ‘30 dB’
             ‘36 dB’
             ‘42 dB’
             ‘48 dB’
             ‘54 dB’
             ‘60 dB’
             ‘66 dB’
             ‘72 dB’
CAN:POW:GAIN?
```

Screen/field equivalent

CAN:POW:GAIN sets the **Pwr Gain** field of the CDMA ANALYZER screen when **Avg Pwr** is displayed.

:POWer:GAIN:MODE <string>
:POWer:GAIN:MODE?

These commands set/query the mode of the **Pwr Gain** field, allowing you to choose between automatic gain (Auto) or fixed gain (Hold).This command is valid only when average power is selected. For channel power, EVM and rho measurements, use the CAN:PATH:GAIN:MODE command.

Syntax

```
CAN:POW:GAIN:MODE 'Auto'
                  'Hold'
```

```
CAN:POW:GAIN:MODE?
```

Screen/field equivalent

CAN:POW:GAIN:MODE sets the **Auto/Hold** subfield of the **Pwr Gain** field of the CDMA ANALYZER screen, when **Avg Pwr** is displayed.

:POWer:SAMPle:TIME <real number>
:POWer:SAMPle:TIME?

These commands set/query the power interval. This interval is the amount of time that average power or channel power is measured.This command utilizes the “Real Number Setting Syntax” on page 299, but does not use the :STATe command.

Syntax

```
CAN:POW:SAMP:TIME <real number>
```

```
!values from 0.00025 to .02666 s
```

```
CAN:POW:SAMP:TIME?
```

Screen/field equivalent

CAN:POW:SAMP:TIME sets the **Pwr Intvl** field of the CDMA ANALYZER screen.

:POWer:ZERO

This command zeroes the power meter for an average power measurement.

Syntax

```
CAN:POW:ZERO
```

Screen/field equivalent

CAN:POW:ZERO controls the **Pwr Zero** field on the CDMA ANALYZER screen. This field is only available when the average power measurement is selected.

:POWer:ZERO:MODE <string>
:POWer:ZERO:MODE?

These commands set/query whether the power meter is automatically zeroed or if the zero function must be manually activated. This command is used for average power measurements.

Syntax

```
CAN:POW:ZERO:MODE ‘Auto’
                  ‘Manual’

CAN:POW:ZERO:MODE?
```

Screen/field equivalent

CAN:POW:ZERO:MODE controls the **Auto Zero** field on the CDMA ANALYZER screen. This field is only available when the average power measurement is selected.

:SAMPle:TIME <real number>
:SAMPle:TIME?

These commands set/query the amount of time that rho or EVM is measured. This command utilizes the “Real Number Setting Syntax” on page 299, but does not use the :STATe command.

Syntax

```
CAN:SAMP:TIME <real number>
!values from 0.00025 to 0.02 seconds, for Forward Analyzer
Direction (CAN:DIR ‘Fwd’)

!values from 0.0025 to 0.01 seconds for Reverse Channel
Direction (CAN:DIR ‘Rev’)

CAN:SAMP:TIME?
```

Screen/field equivalent

CAN:SAMP:TIME sets the **Meas Intvl** field of the CDMA ANALYZER screen when a rho or EVM measurement is selected.

:SPECial <string>
:SPECial?

These commands set/query the phase of the I and Q signals that are analyzed by the Test Set.

Syntax

```
CAN:SPEC ‘Normal’ !set for IS-95 standard rotation

         ‘Inverted’

CAN:SPEC?
```

Screen/field equivalent

CAN:SPEC controls the setting of the **Anl Special** field of the CDMA ANALYZER screen.

:TRIGger:STATe <string>
:TRIGger:STATe?

These commands set/query the state of the trigger.

CAN:TRIG:STAT can be overridden with the TRIG:MODE:RETR REP and TRIG:MODE:RETR SING trigger commands. When the trigger commands are used, the state of the field on the display is not updated. (For instance, the screen may show **Single** selected when TRIG:MODE:RETR REP is used.)

Syntax

```
CAN:TRIG:STAT ‘Single’
                 ‘Cont’
```

```
CAN:TRIG:STAT?
```

Screen/field equivalent

CAN:TRIG:STAT controls **Single/Cont** subfield of the **Analyzer** field on the CDMA ANALYZER screen.

CBUFfer subsystem

CBUF controls the CDMA data buffer. This system allows you to send CDMA data through the CDMA generator. You can send all zeroes, external data via the DATA IN connector, random data, or data supplied via GPIB.

:DATA <48 or 72 character hex string>
:DATA?

These commands set/query the actual data string sent in the CDMA data buffer. The command CGEN:DATA:SOUR 'Data Buff' in the "CGENerator subsystem" on page 146 selects the data buffer as the data source.

Syntax

```
CBUF:DATA <hex string> !48 or 72 character hex string
```

```
CBUF:DATA?
```

Screen/field equivalent

CBUF:DATA is controlled by the **Data Source** field of the CDMA GENERATOR screen, but :DATA has no direct screen equivalent.

:FRAMe:COUNt <integer> <real number>
:FRAMe:COUNt?

These commands set/query the number of frames to be transmitted. It is applicable no matter what the source of data is (data buffer, zeroes, external, or random). This command utilizes the "Multiple Real Number Setting Syntax" on page 282, but does not use the :DUNits and :UNITs commands.

Syntax

```
CBUF:FRAM:COUN  <integer>,<real number>
```

```
CBUF:FRAM:COUN? <integer> !returns the count corresponding to
'integer'
```

Screen/field equivalent

CBUF:FRAM:COUN controls the **# of Frames** field of the CDMA GENERATOR screen. The **# of Frame** field is displayed when the **Data Source** is set to **Data Buff**.

:FRAMe:STARt <integer>,<real number>
:FRAMe:STARt?

These commands set/query the first frame of data to be sent. This command utilizes the “Multiple Real Number Setting Syntax” on page 282, but does not use the :DUNits and :UNITs commands.

Syntax

`CBUF:FRAM:STAR <integer>,<real number>`

`CBUF:FRAM:STAR?`

Screen/field equivalent

CBUF:FRAM:STAR controls the **`Start Frame`** field of the CDMA GENERATOR screen.

:FRAMe:LOAD <integer>,<real number>
:FRAMe:LOAD?

These commands load/query the data into the GPIB buffer. This command utilizes the “Multiple Real Number Setting Syntax” on page 282, but does not use the :DUNits and :UNITs commands.

Syntax

`CBUF:FRAM:LOAD <integer>,<real number>`

`CBUF:FRAM:LOAD?`

Screen/field equivalent

CBUF:FRAM:LOAD has no equivalent field.

:MODE <string>
:MODE?

These commands set/query the mode of the data buffer.

Syntax

```
CBUF:MODE ‘Single’
          ‘Cont’
```

`CBUF:MODE?`

Screen/field equivalent

CBUF:MODE controls the **`Single/Cont`** subfield of the **`Data Source`** field on the CDMA GENERATOR screen.The **`Data Source`** field must be set to **`Data Buff`** to display these choices.

:STATe <string>
:STATe?

These commands set/query the mode of the data buffer.

Syntax

```
CBUF:STAT 'Idle'
          'Send'
```

```
CBUF:STAT?
```

Screen/field equivalent

CBUF:STAT controls **`Idle/Send`** subfield of the **`Data Source`** field on the CDMA GENERATOR screen. The **`Data Source`** field must be set to **`Data Buff`** to display these choices.

CCOMmon subsystem

:PATH <string>
:PATH?

These commands set/query RF path of the CDMA generator.

Syntax

```
CCOM:PATH 'Bypass'
          'IQ'
CCOM:PATH?
```

Screen/field equivalent

CCOM:PATH controls the **CW RF Path** field of the CDMA GENERATOR screen.

CDANalyzer subsystem

CDAN controls the code domain analyzer.

:CONTrol <string>
:CONTrol?

These commands set/query the control menu displayed on the code domain analyzer, when the CDMA standard is set to “IS-95 Only”.

Syntax

```
CDAN:CONT ‘Main’
          ‘Marker’
          ‘Trigger’
          ‘Aux’
          ‘Gain’
          ‘PN Setup’
          ‘FP Setup’
          ‘CD Setup’
CDAN:CONT?
```

Screen/field equivalent

CDAN:CONT controls the menu `Controls` field on the `Main` menu of the CODE DOM screen,when the CDMA standard is set to “IS-95 Only”.

:CPOWer:CALibrate

This command initiates the channel power calibration. When this command is received, an internally generated calibration signal is measured using the average power technique. Channel power is also measured and a correction factor is generated. This correction factor is applied to subsequent channel power measurements. Calibration should be performed whenever a new set of measurements is made and whenever the frequency of the measured signal is changed.

Syntax

```
CDAN:CPOW:CAL
```

Screen/field equivalent

CDAN:CPOW:CAL controls **Chn Pwr Cal** measurement field on the **CD Setup** menu of the CODE DOM screen, when the CDMA standard is set to “IS-95 Only”. The field displayed on the **CD Setup** menu when the **Measurement** field on the **Main** menu is set to **Power** or **Fast Power**, and the **CD pwr unit** field on the **CD Setup** menu is set to **Abs**.

:EVENt:QUALifier <string>
:EVENt:QUALifier?

These commands set/query the qualifying event for the trigger. The qualifying event is the event that must occur before a trigger is accepted. The trigger event is set by the :EVEN:TRIG command.

Syntax

```
CDAN:EVEN:QUAL ‘None’
               ‘27 ms’
               ‘20 ms’
               ‘80 ms’
               ‘2 s’
               ‘Ampl Lo’
               ‘Ampl Mid’
               ‘Ampl Hi
               ‘External’
```

Screen/field equivalent

CDAN:EVEN:QUAL controls the **Qual Event** field of the CODE DOM screen. This field is displayed on the **Trigger** menu, when the CDMA standard is set to “IS-95 Only”.

:EVENt:TRIGger <string>
:EVENt:TRIGger?

These commands set/query the trigger setting of the CODE DOM screen.

Syntax

```
CDAN:EVEN:TRIG ‘27 ms’
               ‘20 ms’
               ‘80 ms’
               ‘2 s’
               ‘Delay’
               ‘Immed’
CDAN:EVEN:TRIG?
```

Screen/field equivalent

CDAN:EVEN:TRIG sets the **Trig Event** field of the CODE DOM screen, when the CDMA standard is set to “IS-95 Only”. This field is displayed on the **Trigger** menu.

:EVENt:TRIGger:DELay <real number>
:EVENt:TRIGger:DELay?

These commands set/query the delay value of the trigger when the :EVEN:TRIG ‘Delay’ command is sent. This command utilizes the “Real Number Setting Syntax” on page 299, but does not use the :DUNits, :UNITs, or :STATe commands.

Syntax

```
CDAN:EVEN:TRIG:DEL <real number> !values from 20 µs to 10 s
CDAN:EVEN:TRIG:DEL?              !returns the value set
```

Screen/field equivalent

CDAN:EVEN:TRIG:DEL controls the **Trig Event** field on the **Trigger** menu of the CODE DOM screen when **Trig Event** is set to **Delay**, when the CDMA standard is set to “IS-95 Only”.

:FPOWer:NAVG <integer>
:FPOWer:NAVG?

These commands set/query the number of averages made by the fast power measurement.

Syntax

`CDAN:FPOW:NAVG <integer>`

`CDAN:FPOW:NAVG?`

Screen/field equivalent

CDAN:FPOW:NAVG controls the **`Num Avgs`** field on the **`FP Setup`** menu of the CODE DOM screen, when the CDMA standard is set to “IS-95 Only”.

:FPOWer:TOFFset <real number>
:FPOWer:TOFFset?

These commands set/query the time offset for the fast power measurement. :FPOW:TOFF can be either entered with this command, or it can be transferred via the :FPOW:TOFF:TRAN command.

This number can be entered in microseconds only.

Syntax

`CDAN:FPOW:TOFF <real number> !0 to 26667`

`CDAN:FPOW:TOFF?`

Screen/field equivalent

CDAN:FPOW:TOFF controls the **`Time Offset`** field on the **`FP Setup`** menu of the CODE DOM screen, when the CDMA standard is set to “IS-95 Only”.

:FPOWer:TOFFset:TRANsfer

This command transfers the measured time offset from the **`Tm Ofs`** measurement field to the **`Time Offset`** field.

Syntax

`CDAN:FPOW:TOFF:TRAN`

Screen/field equivalent

CDAN:FPOW:TOFF:TRAN controls the **`Ofs Trnsfer`** field on the **`FP Setup`** menu of the CODE DOM screen, when the CDMA standard is set to “IS-95 Only”.

:GAIN <string>
:GAIN?

These commands set/query the gain of the code domain analyzer. This command will only be enabled when autoranging is turned off (CDAN:GAIN:MODE ‘Hold’).

This command may conflict with the CDMA analyzer’s settings CAN:PATH:GAIN and CAN:PATH:MODE. For example, if autoranging is turned off (‘Hold’) in the CDMA analyzer and turned on in the Code Domain Analyzer (‘Auto’), the ‘Hold’ setting will always override the ‘Auto’ setting. When autoranging is turned off, setting either analyzer’s gain will automatically change the other’s to the same setting.

Use the CAN:POW:GAIN command when making an average power measurement.

Syntax

```
CDAN:GAIN ‘0 dB’
          ‘6 dB’
          ‘12 dB’
          ‘18 dB’
          ‘24 dB’
          ‘30 dB’
          ‘36 dB’
CDAN:GAIN?
```

Screen/field equivalent

CDAN:GAIN sets the lower subfield of the **Gain** field of the CODE DOM screen, when the CDMA standard is set to “IS-95 Only”. This subfield is only selectable when the upper subfield is set to **Hold**.

:GAIN:MODE <string>
:GAIN:MODE?

These commands set/query the mode of the **Gain** field, allowing you to choose between an autoranging gain (‘Auto’) or a fixed gain (‘Hold’).

This command may conflict with the CDMA analyzer’s settings CAN:PATH:GAIN and CAN:PATH:MODE. For example, if autoranging is turned off (‘Hold’) in the CDMA analyzer and turned on in the Code Domain Analyzer (‘Auto’), the ‘Hold’ setting will always override the ‘Auto’ setting. When autoranging is turned off, setting either analyzer’s path gain will automatically change the other’s to the same setting.

For average power measurements, use the CAN:POW:GAIN:MODE command.

Syntax

```
CDAN:GAIN:MODE ‘Auto’
               ‘Hold’
CDAN:GAIN:MODE?
```

Screen/field equivalent

CDAN:GAIN:MODE sets the **Auto/Hold** subfield of the **Gain** field of the CODE DOM screen, when the CDMA standard is set to “IS-95 Only”.

:GAIN:VALue?

This command queries the gain of the code domain analyzer. This command will only be enabled when autoranging is turned on (CDAN:GAIN:MODE ‘Auto’).

Syntax

```
CDAN:GAIN:VAL? !returns 0 dB,6 dB,12 dB,18 dB,24 dB, 30 db,
36 dB
```

Screen/field equivalent

When the CDMA standard is set to “IS-95 Only”, the CDAN:GAIN:VAL? reads the lower subfield of the **Gain** field of the CODE DOM screen when the upper subfield is set to **Auto**,

:MARKer:POSition <real number>
:MARKer:POSition?

These commands set/query the position of the marker.

Syntax

```
CDAN:MARK:POS <real number> !values from 0 to 63
```

```
CDAN:MARK:POS?
```

Screen/field equivalent

CDAN:MARK:POS controls the **Walsh Chan** field on the **Marker** menu of the CODE DOM screen, when the CDMA standard is set to “IS-95 Only”.

:MEASure <string>
:MEASure?

These commands set/query the type of measurement performed in the CODE DOM screen.

Syntax

```
CDAN:MEAS 'Power'
          'Fast Pwr'
          'Timing'
          'Phase'
```

```
CDAN:MEAS?
```

Screen/field equivalent

CDAN:MEAS controls the **Measurement** field of the **Main** menu on the CODE DOM screen, when the CDMA standard is set to “IS-95 Only”.

:MODE <string>
:MODE?

These commands set/query the measurement state of the code domain analyzer.

CDAN:MODE can be overridden with the TRIG:MODE:RETR REP and TRIG:MODE:RETR SING trigger commands. When the trigger commands are used, the state of the field on the display is not updated. (For instance, the screen may show **Single** selected when TRIG:MODE:RETR REP is used.)

Syntax

```
CDAN:MODE 'Single'
          'Cont'
CDAN:MODE?
```

Screen/field equivalent

CDAN:MODE controls the **Single/Cont** subfield of the **Measurement** field on the **Main** menu of the CODE DOM screen, when the CDMA standard is set to “IS-95 Only”.

:PATH:GAIN <real number>
:PATH:GAIN?

These commands set/query the gain into the code domain analyzer. This command fine tunes the gain setting. This value is only selectable through GPIB.

See also, CAN:PATH:GAIN on page 106.

Syntax

```
CDAN:PATH:GAIN <real number> !values from 0 to 36 dB in 0.1
dB steps
CDAN:PATH:GAIN?
```

Screen/field equivalent

CDAN:PATH:GAIN has no equivalent field. This applies when the CDMA standard is set to “IS-95 Only”.

:PNINcrement <real number>
:PNINcrement?

These commands set/query the PN increment. If you know the PN incrment, enter it with this command to speed the PN offset search. If you do not know the increment, enter a 1.

This command utilizes the :INCR command of the “Real Number Setting Syntax” on page 299.

Syntax

```
CDAN:PNIN <real number>!values from 1 to 256
```

```
CDAN:PNIN?             !returns the value of the PN increment
```

Screen/field equivalent

CDAN:PNIN controls the **PN Incrment** field on the CODE DOM screen when the CDMA standard is set to “IS-95 Only”. This field is displayed only when the **Find PN** field on the **PN Setup** menu is set to **Auto**.

:PNMode <string>
:PNMode?

These commands set/query the PN offset mode.

- ‘Auto’ is used to calculate the system’s PN offset if it is unknown. When ‘Auto’ is selected, the CDAN:PNIN command can be used to enter a PN increment and speed the PN offset calculation.
- ‘Manual’ is used to enter a known PN offset. When ‘Manual’ is selected, the PN offset is entered using the CDAN:PNOF command.

Syntax

```
CDAN:PNM ‘Auto’
```

```
         ‘Manual’
```

```
CDAN:PNM? !returns the PN Offset mode
```

Screen/field equivalent

CDAN:PNM controls the **Find PN** field on the **PN Setup** menu of the CODE DOM screen, when the CDMA standard is set to “IS-95 Only”.

:PNOFfset <real number>
:PNOFfset?

These commands set/query the PN offset of the system.

This command utilizes the :INCR command of the “Real Number Setting Syntax” on page 299.

Syntax

```
CDAN:PNOF <real number> !values from 0.0 to 511.984375
CDAN:PNOF?              !returns the value of the PN Offset
```

Screen/field equivalent

CDAN:PNOF controls the **PN Offset** field on the CODE DOM screen when the CDMA standard is set to “IS-95 Only”. This field is displayed only when the **Find PN** field on the **PN Setup** menu is set to **Manual**.

:POWer:REFerence <string>
:POWer:REFerence?

These commands set/query the power reference for the code domain analyzer.

Syntax

```
CDAN:POW:REF ‘0 dB ref’
CDAN:POW:REF?
```

Screen/field equivalent

CDAN:POW:REF controls the upper subfield of the **Pwr Scale** field on the CODE DOM screen when the CDMA standard is set to “IS-95 Only”. This field is displayed on the **Marker** menu.

:PUNit <string>
:PUNit?

These commands set/query whether power measurements are absolute power measurements or relative power measurements.

- 'Abs' - Absolute code domain power displays the power in each of the 64 Walsh channels, relative to the total power inside a 1.23 MHz bandwidth centered at the tune frequency. The 64 Walsh channels (0 through 63) are represented by a vertical bar on the analyzer's display.
- 'Rel' - Relative code domain power displays the power in each of the 64 Walsh channels, relative to the pilot's power. (Pilot power is approximately two-thirds of the total power.) The 64 Walsh codes (0 through 63) are represented by a vertical bar on the analyzer's display.

Syntax

```
CDAN:PUN 'Abs'
         'Rel'
CDAN:PUN?
```

Screen/field equivalent

CDAN:PUN controls the **CD pwr unit** field on the CODE DOM screen when the CDMA standard is set to "IS-95 Only".

:SAMPle:TIME <real number>
:SAMPle:TIME?

These commands set/query the time interval for the code domain measurements.

Syntax

```
CDAN:SAMP:TIME <real number> !values 0.00025 to 0.00125 s
CDAN:SAMP:TIME?
```

Screen/field equivalent

CDAN:SAMP:TIME controls the **Meas Intvl** field on the **Aux** menu of the CODE DOM screen when the CDMA standard is set to "IS-95 Only".

:SCALe:PHASe <string>
:SCALe:PHASe?

These commands set/query the scale that is used when measuring code domain phase when using the code domain analyzer.

Syntax

```
CDAN:SCAL:PHAS ‘1 mRad’
               ‘2 mRad’
               ‘5 mRad’
               ‘10 mRad’
               ‘20 mRad’
               ‘50 mRad’
CDAN:SCAL:PHAS?
```

Screen/field equivalent

CDAN:SCAL:PHAS controls the **Phase/div** field on the **Phase** measurement menu of the CODE DOM screen when the CDMA standard is set to “IS-95 Only”.

:SCALe:POWer <string>
:SCALe:POWer?

These commands set/query the scale that is used when measuring code domain power when using the code domain analyzer.

Syntax

```
CDAN:SCAL:POW ‘1 dB/div’
              ‘2 dB/div’
              ‘5 dB/div’
CDAN:SCAL:POW?
```

Screen/field equivalent

CDAN:SCAL:POW controls lower subfield of the **Pwr Scale** field on the **Marker** menu of the CODE DOM screen when the CDMA standard is set to “IS-95 Only”. This field is displayed only when a power or fast power measurement is selected.

:SCALe:TIME <string>
:SCALe:TIME?

These commands set/query the time per division portion of the scale that is used when measuring code domain timing.

Syntax

```
CDAN:SCAL:TIME '1 ns'
               '2 ns'
               '5 ns'
               '10 ns'
               '20 ns'
               '50 ns'
CDAN:SCAL:TIME?
```

Screen/field equivalent

CDAN:SCAL:TIME controls the **Time/div** field on the Marker menu of the CODE DOM screen when the CDMA standard is set to "IS-95 Only". This field is displayed only when a timing measurement is selected

:THRShld <real number>
:THRShld?

These commands set/query the minimum display threshold for code domain timing and phase measurements. Walsh channels that have power levels below the threshold are not displayed in the timing and phase displays. Querying these measurements for Walsh channels that are below the threshold level using GPIB will return a default value of 9e99.

Syntax

```
CDAN:THRS <real number> !values minus 30 to 0.0 dB
CDAN:THRS?
```

Screen/field equivalent

CDAN:THRS controls the **Threshold** field on the **Aux** menu of the CODE DOM screen when the CDMA standard is set to "IS-95 Only".

:IS2000:CONTrols <string>
:IS2000:CONTrols?

These commands set/query the controls menu displayed on the Code Domain analyzer screen when the CDMA standard is set to “IS-2000”.

Syntax

```
CDAN:IS2000:CONT ‘Main’
                 ‘Marker’
                 ‘Trigger’
                 ‘Aux’
                 ‘Gain’
                 ‘Reference’
                 ‘PN Setup’
                 ‘FP Setup’
CDAN:IS2000:CONT?
```

Screen/field equivalent

CDAN:IS2000:CONT controls the menu **Controls** field of the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:IS2000:GAIN:MODE <string> :IS2000:GAIN:MODE?

For IS-2000 only. These commands set/query the mode of the `Gain` field, allowing you to choose between an autoranging gain ('Auto') or a fixed gain ('Hold').

This command may conflict with the CDMA analyzer's settings CAN:PATH:GAIN and CAN:PATH:MODE. For example, if autoranging is turned off ('Hold') in the CDMA analyzer and turned on in the Code Domain Analyzer ('Auto'), the 'Hold' setting will always override the 'Auto' setting. When autoranging is turned off, setting either analyzer's path gain will automatically change the other's to the same setting.

For average power measurements, use the CAN:POW:GAIN:MODE command.

Syntax

```
CDAN:IS2000:GAIN:MODE 'Auto'
                      'Hold'
```

```
CDAN:IS2000:GAIN:MODE?
```

Screen/field equivalent

CDAN:IS2000:GAIN:MODE sets the **Auto/Hold** subfield of the **Gain** image of the CODE DOMAIN screen when the CDMA standard is set to "IS-2000".

:IS2000:GAIN:PATH <real number> :IS2000:GAIN:PATH?

For IS-2000 only. These commands query/set returns the gain information from the Code Domain analyzer. The command allows you to fine tune the gain setting.

Syntax

```
CDAN:IS2000:GAIN:PATH <real number> !values from 0 to 36 dB
in 0.1 dB steps
```

```
CDAN:IS2000:GAIN:PATH?
```

Screen/field equivalent

CDAN:IS2000:GAIN:PATH has no corresponding field. This applies when the CDMA standard is set to "IS-2000".

:IS2000:GAIN[:SETTing] <string>
:IS2000:GAIN[:SETTing]?

For IS-2000 only. These commands set/query the gain of the Code Domain analyzer. This command will only be enabled when autoranging is turned off (CDAN:IS2000:GAIN:MODE 'Hold').

This command may conflict with the CDMA analyzer's settings CAN:PATH:GAIN and CAN:PATH:MODE. For example, if autoranging is turned off ('Hold') in the CDMA analyzer and turned on in the Code Domain Analyzer ('Auto'), the 'Hold' setting will always override the 'Auto' setting. When autoranging is turned off, setting either analyzer's gain will automatically change the other's to the same setting.

Use the CAN:POW:GAIN command when making an average power measurement.

Syntax

```
CDAN:IS2000:GAIN[:SETT] '0 dB'
                        '6 dB'
                        '12 dB'
                        '18 dB'
                        '24 dB'
                        '30 dB'
                        '36 dB'
CDAN:IS2000:GAIN[:SETT]?
```

Screen/field equivalent

CDAN:IS2000:GAIN[:SETT] sets the lower subfield of the **Gain** image of the CODE DOMAIN screen. This subfield can only be set when the upper subfield is set to **Hold** when the CDMA standard is set to "IS-2000".

:IS2000:GAIN:VALue?

IS-2000 only. This query returns the gain value, as a string, that is shown in the gain field of the code domain screen. This command will only be enabled when autoranging is turned on (CDAN:IS2000:GAIN:MODE 'Auto').

Syntax

```
CDAN:IS2000:GAIN:VAL? !returns 0 dB, 6 dB, 12 dB, 18 dB,
24 dB, 30 db, 36 dB
```

Screen/field equivalent

CDAN:IS2000:GAIN:VAL? reads the lower subfield of the **Gain** image of the CODE DOMAIN screen when the CDMA standard is set to "IS-2000" and the upper field is set to **Auto**.

:IS2000:MARKer:MODE <string>
:IS2000:MARKer:MODE?

IS-2000 only. These commands set/query the string that matches the field contents of the field that selects the way channel width information is presented: In terms of Channel size or Walsh order.

Syntax

```
CDAN:IS2000:MARK:MODE <string>
```

```
CDAN:IS2000:MARK:MODE?
```

Screen/field equivalent

CDAN:IS2000:MARK:MODE? reads the selection field **Chan Size/Walsh Ord/Sprd Fact/Rate RC-3/Rate RC-4/Rate RC-5** in the measurement portion of the CODE DOMAIN screen when the CDMA standard is set to "IS-2000".

:IS2000:MARKer:POSition <integer>
:IS2000:MARKer:POSition?

IS-2000 only. These commands set/query the integer that corresponds to the current position of the marker in the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

Syntax

```
CDAN:IS2000:MARK:POS <integer> !values from 0 to 127
```

```
CDAN:IS2000:MARK:POS?
```

Screen/field equivalent

CDAN:IS2000:MARK:POS controls the **Marker Pos** field of the Marker image of the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:IS2000:MARKer:REFerence <string>
:IS2000:MARKer:REFerence?

IS-2000 only. These commands set/query the power reference, as a string, in terms of dB, for the code domain analyzer.

Syntax

```
CDAN:IS2000:MARK:REF <string>
```

```
CDAN:IS2000:MARK:REF?
```

Screen/field equivalent

CDAN:IS2000:MARK:REF controls the **Pwr Ref** field on the **Marker** image of the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:IS2000:MARKer:SCALe <string>
:IS2000:MARKer:SCALe?

IS-2000 only. These commands set/query the scale that is used when measuring code domain power in dB/div units in the code domain analyzer.

Syntax

```
CDAN:IS2000:MARK:SCAL ‘1 dB/div’
                      ‘2 dB/div’
                      ‘5 dB/div’
```

```
CDAN:IS2000:MARK:SCAL?
```

Screen/field equivalent

CDAN:IS2000:MARK:SCAL controls the **`Pwr Scale`** field on the **`Marker`** image of the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:IS2000:MEASurement:INTerval <real number>
:IS2000:MEASurement:INTerval?

IS-2000 only. These commands set/query the real number for the time interval of the code domain measurements performed in the IS-2000 CODE DOMAIN screen.

Syntax

```
CDAN:IS2000:MEAS:INT <real number>
!values 1.5 to 8.0 ms
```

```
CDAN:IS2000:MEAS:INT?
```

Screen/field equivalent

CDAN:IS2000:MEAS:INT controls the **`Meas Int`** field of the **`Aux`** image of the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:IS2000:MEASurement:MODE <string>
:IS2000:MEASurement:MODE?

IS-2000 only. These commands set/query the measurement state for the code domain analyzer. This mode can be overridden with the TRIG:MODE:RETR REP and TRIG:MODE:RETR SING trigger commands. When the trigger commands are used, the state of the field on the display are not updated. For example, the screen may show **Single** selected when TRIG:MODE:RETR REP is used.

Syntax

```
CDAN:IS2000:MEAS:MODE ‘Single’
                      ‘Cont’
CDAN:IS2000:MEAS:MODE?
```

Screen/field equivalent

CDAN:IS2000:MEAS:MODE controls the **Single/Cont** subfield of the **Measurement** field of the **Main** image of the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:IS2000:MEASurement:ORDer <string>
:IS2000:MEASurement:ORDer?

IS-2000 only. These commands set/query the channel order of measurement currently shown on the CODE DOMAIN screen. The channel order can follow the Hadamard ordering in which all 128 channels are ordered consecutively from 0 to 127, or they can follow the Bit Reverse ordering.

Syntax

```
CDAN:IS2000:MEAS:ORD ‘Bit Reverse’
                     ‘Hadamard’
CDAN:IS2000:MEAS:ORD?
```

Screen/field equivalent

CDAN:IS2000:MEAS:ORD controls the **Meas Order** field of the **Aux** image on the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:IS2000:MEASurement[:TYPE] <string>
:IS2000:MEASurement[:TYPE]?

IS-2000 only. These commands set/query the type of measurement performed in the CODE DOMAIN screen.

Syntax

```
CDAN:IS2000:MEAS[:TYPE] 'Power'
                        'Fast Pwr'
                        'Power&Noise'
                        'Complex Pwr'
                        'FstPwr Sync'
CDAN:IS2000:MEAS[:TYPE]?
```

Screen/field equivalent

CDAN:IS2000:MEAS[:TYPE] sets the **Measurement** field of the **Main** image on the CODE DOMAIN screen when the CDMA standard is set to "IS-2000".

:IS2000:PNUMber:INCRement <integer>
:IS2000:PNUMber:INCRement?
:IS2000:PNumber:INCRement <integer>
:IS2000:PNumber:INCRement?

IS-2000 only. These commands set/query the PN increment. If you know the PN increment, enter it with this command to speed the PN offset search. If you do not know the increment, enter a 1.

This command utilizes the :INCR command of the "Real Number Setting Syntax" on page 299.

Syntax

```
CDAN:IS2000:PNUM:INCR <integer> !values from 1 to 256
CDAN:IS2000:PNUM:INCR? !returns the value of the PN increment
CDAN:IS2000:PN:INCR <integer> !values from 1 to 256
CDAN:IS2000:PN:INCR? !returns the value of the PN increment
```

Screen/field equivalent

CDAN:IS2000:PNUM:INCR and CDAN:IS2000:PN:INCR control the **PN Incrment** field on the CODE DOMAIN screen when the CDMA standard is set to "IS-2000". This field is displayed only when the **Find PN** field on the **PN Setup** image is set to **Auto**.

:IS2000:PNUMber:MODE <string>
:IS2000:PNUMber:MODE?
:IS2000:PNumber:MODE <string>
:IS2000:PNumber:MODE?

IS-2000 only. These commands set/query the PN setup.

- ‘Auto’ is used to calculate the system’s PN offset if it is unknown. When ‘Auto’ is selected, the CDAN:IS2000:PNUM:INCR command can be used to enter a PN increment and speed the PN offset calculation.
- ‘Manual’ is used to enter a known PN offset. When ‘Manual’ is selected, the PN offset is entered using the CDAN:IS2000:PN:OFFS command.

Syntax

```
CDAN:IS2000:PNUM:MODE ‘Auto’

                      ‘Manual’

CDAN:IS2000:PNUM:MODE? !returns the PN Offset mode

CDAN:IS2000:PN:MODE   ‘Auto’

                      ‘Manual’

CDAN:IS2000:PN:MODE? !returns the PN Offset mode
```

Screen/field equivalent

CDAN:IS2000:PNUM:MODE and CDAN:IS2000:PN:MODE control the **Find PN** field on the **PN Setup** image of the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:IS2000:PNUMber:OFFSet <integer>
:IS2000:PNUMber:OFFSet?
:IS2000:PNumber:OFFset <integer>
:IS2000:PNumber:OFFset?

IS-2000 only. These commands set/query the contents of the PN offset field in the Code Domain analyzer.

This command utilizes the :INCR command of the “Real Number Setting Syntax” on page 299.

Syntax

```
CDAN:IS2000:PNUM:OFFS <integer> !values from 0 to 512
```

```
CDAN:IS2000:PNUM:OFFS? !returns the value of the PN Offset
```

```
CDAN:IS2000:PN:OFFS <integer> !values from 0 to 512
```

```
CDAN:IS2000:PN:OFFS? !returns the value of the PN Offset
```

Screen/field equivalent

CDAN:IS2000:PNUM:OFFS and CDAN:IS2000:PN:OFFS control the **PN Offset** field on the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”. This field is displayed only when the **Find PN** field on the **PN Setup** image is set to **Manual**.

:IS2000:POWer:CHANnel[:CALibrate]

IS-2000 only. This command initiates the channel power calibration. When this command is received, an internally generated calibration signal is measured using the average power technique. Channel power is also measured and a correction factor is generated. This correction factor is applied to subsequent channel power measurements. Calibrations should be performed whenever a new set of measurements is made and whenever the frequency of the measured signal is changed.

Syntax

```
CDAN:IS2000:POW:CHAN[:CAL]
```

Screen/field equivalent

CDAN:IS2000:POW:CHAN[:CAL] controls the **Chn Pwr Cal** measurement field on the **Reference** image of the CODE DOMAIN screen when the CDMA standard is set to “IS-2000” and the **CD pwr unit** field is set to **Abs**.

:IS2000:POWer:FAST:NAVG <integer>
:IS2000:POWer:FAST:NAVG?

IS-2000 only. These commands set/query the number of averages made during fast power measurements.

Syntax

```
CDAN:IS2000:POW:FAST:NAVG <integer>
```

```
CDAN:IS2000:POW:FAST:NAVG?
```

Screen/field equivalent

CDAN:IS2000:POW:FAST:NAVG controls the **Num Avgs** field of the **FP Setup** menu on the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:IS2000:POWer:UNIT <string>
:IS2000:POWer:UNIT?

IS-2000 only. These commands set/query whether power measurements are absolute power measurements or relative power measurements.

- ‘Abs’ - Absolute code domain power displays the power in each of the 128 Walsh channels, relative to the total power inside a 1.23 MHz bandwidth centered at the tune frequency.
- ‘Rel’ - Relative code domain power displays the power in each of the 128 Walsh channels, relative to the power of the Pilot signal. (Pilot power is approximately two-thirds of the total power.)

Syntax

```
CDAN:IS2000:POW:UNIT ‘Abs’
                     ‘Rel’
```

```
CDAN:IS2000:POW:UNIT?
```

Screen/field equivalent

CDAN:IS2000:POW:UNIT controls the **CD pwr unit** field of the **Reference** image on the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:IS2000:THReshold <real number>
:IS2000:THReshold?

IS-2000 Only. These commands set/query the minimum display threshold for code domain measurements. Walsh channels that have power levels below the threshold are not displayed as active channels.

Syntax

```
CDAN:IS2000:THR <real number> !values minus 80 to 0.0 dB
```

```
CDAN:IS2000:THR? !returns the Threshold value
```

Screen/field equivalent

CDAN:THRS controls the **Threshold** field on the **Aux** menu of the CODE DOM screen when the CDMA standard is set to “IS-2000”.

:IS2000:TRIGger:ARM

IS-2000 only. This command arms code domain measurements. This command does not affect continuous measurement and will always be overridden by GPIB triggering commands. To effectively put the code domain analyzer in single triggering mode, use the TRIG:MODE:RETR SING command. For continuous triggering, use TRIG:MODE:RETR REP. See "TRIGger subsystem" on page 346 for a more complete discussion of GPIB triggering.

Syntax

```
CDAN:IS2000:TRIG:ARM !arms the measurement
```

Screen/field equivalent

CDAN:IS2000:TRIG:ARM controls the **Arm Meas** subfield of the **Analyzer** field on the **Main** menu of the CODE DOMAIN screen when the CDMA standard is set to "IS-2000".

:IS2000:TRIGger:DARM

IS-2000 only. This command disarms the code domain measurements. This command does not affect continuous measurement and will always be overridden by GPIB triggering commands. To effectively put the code domain analyzer in single triggering mode, use the TRIG:MODE:RETR SING command. For continuous triggering, use TRIG:MODE:RETR REP. See "TRIGger subsystem" on page 346 for a more complete discussion of GPIB triggering.

Syntax

```
CDAN:IS2000:TRIG:DARM !disarms measurements that have been
previously armed
```

Screen/field equivalent

CDAN:IS2000:TRIG:DARM controls the **Disarm** subfield of the **Analyzer** field on the **Main** menu of the CODE DOMAIN screen when the CDMA standard is set to "IS-2000".

:IS2000:TRIGger:DELay <real number> :IS2000:TRIGger:DELay?

IS-2000 only. This command/query sets/returns the real number that matches the **Trig Delay** field in the code domain measurements. The contents are measured in microseconds.

Syntax

```
CDAN:IS2000:TRIG:DEL <real number> !values from 20µs to 10 s
```

```
CDAN:IS2000:TRIG:DEL?
```

Screen/field equivalent

CDAN:IS2000:TRIG:DEL controls the **Trig Delay** subfield of the **Trigger** image when the **Trig Event** is set to **Delay** on the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:IS2000:TRIGger[:EVENt] <string> :IS2000:TRIGger[:EVENt]?

IS-2000 only. This command returns the string that matches the **Trig Event** field in the code domain measurements.

Syntax

```
CDAN:IS2000:TRIG[:EVEN] ‘27 ms’
                        ‘20 ms’
                        ‘80 ms’
                        ‘2 s’
                        ‘Delay’
                        ‘Immed’
```

```
CDAN:IS2000:TRIG[:EVEN]?
```

Screen/field equivalent

CDAN:IS2000:TRIG[:EVEN] controls the **Trig Event** field of the **Trigger** image of the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:IS2000:TRIGger:QUALifier <string>
:IS2000:TRIGger:QUALifier?

IS-2000 only. This command returns the string that matches the **Qual Event** field in the code domain measurements.

Syntax

```
CDAN:IS2000:TRIG:QUAL 'None'
                      '27 ms'
                      '20 ms'
                      '80 ms'
                      '2 s'
                      'Ampl Lo'
                      'Ampl Mid'
                      'Ampl Hi'
                      'External'
CDAN:IS2000:TRIG:QUAL?
```

Screen/field equivalent

CDAN:IS2000:TRIG:QUAL controls the **Qual Event** field of the **Trigger** image of the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

CGENerator subsystem

:CONTrol <string>
:CONTrol?

These commands set/query the CDMA generator's mode. It defines the type of data being sent.

Syntax

```
CGEN:CONT 'Data'
          'Eb/No'
          'Noise'
CGEN:CONT?
```

Screen/field equivalent

CGEN:CONT controls the **Gen Mode** field of the CDMA GENERATOR screen.

:DATA:SOURce <string>
:DATA:SOURce?

These commands set/query the type or source of the data being sent.

Syntax

```
CGEN:DATA:SOUR 'Zeroes'    !Data is all zeroes
               'Ext'       !Data comes from the DATA IN port
               'Random'    !Generates random data
               'Data Buff' !Gets data from the data buffer
CGEN:DATA:SOUR?
```

Screen/field equivalent

CGEN:DATA:SOUR controls the **Data Source** field of the CDMA GENERATOR screen.

:DATA:RATE <string>
:DATA:RATE?

:DATA:RATE sets the data transfer rate for data from the :DATA:SOUR command.

Syntax

```
CGEN:DATA:RATE ‘14.4 Kbps’
               ‘9.6 Kbps’
CGEN:DATA:RATE?
```

Screen/field equivalent

CGEN:DATA:RATE controls the **Data Rate** field of the CDMA GENERATOR screen.

:DIRection <string>
:DIRection?

:DIR sets/queries the direction of the CDMA generator. Fwd produces QPSK modulation to imitate a base station. Rev produces OQPSK modulation to imitate a mobile station.

Syntax

```
CGEN:DIR ‘Fwd’
         ‘Rev’
CGEN:DIR?
```

Screen/field equivalent

CGEN:DIR controls the **Gen Dir** field of the CDMA GENERATOR screen.

:EBNO:LEVel <real number>
:EBNO:LEVel?

These commands set/query the level of the generator when it is in Eb/No mode. This command utilizes the “Real Number Setting Syntax” on page 299, but does not use the :STATe command.

Syntax

```
CGEN:EBNO:LEV <real number> !values from –5 to +25 dB
```

```
CGEN:EBNO:LEV?
```

Screen/field equivalent

:EBNO:LEV controls the generator’s level when the **Gen Mode** field on the CDMA GENERATOR screen is set to **Eb/No**.

:EQFilter <string>
:EQFilter?

These commands set/query the setting of the equalization filter used to create forward channel signals. This command is used when you want to override the default setting (EQ In). The filter is bypassed for reverse link signals and cannot be overridden. Therefore, this command is valid only when the CGEN:DIR ‘Fwd’ command is used.

Syntax

```
CGEN:EQF ‘EQ In’ !switches the Equalization filter in
         ‘Out’   !bypasses the Equalization filter
```

```
CGEN:EQF?
```

Screen/field equivalent

CGEN:EQF controls the **EQ In/Out** subfield of the **Gen Dir** field on the CDMA GENERATOR screen. This field is displayed only when **Fwd** is selected in the **Fwd/Rev** subfield.

:EVENsec <string>
:EVENsec?

These commands set/query the even-second input's setting. When enabled, signals applied to the EVEN SECOND SYNC IN port synchronize the Test Set's timing circuits.

Syntax

```
CGEN:EVEN 'Enable'
          'Not'
CGEN:EVEN?
```

Screen/field equivalent

CGEN:EVEN controls the **Even Sec In** field of the CDMA GENERATOR screen.

:SPECial <string>
:SPECial?

These commands set/query the rotation of IQ modulated signals. Normal creates and analyzes IQ signals with standard rotation. Inverted creates and analyzes IQ signals with reverse-rotation. (Reverse rotation is opposite to the direction specified in the IS-95 standards.)

Syntax

```
CGEN:SPEC 'Normal'
          'Invert'
CGEN:SPEC?
```

Screen/field equivalent

CGEN:SPEC controls the **Gen Special** field of the CDMA GENERATOR screen. This field is also displayed on the CDMA ANALYZER screen

CONFigure subsystem

The CONFigure subsystem contains commands that control several different screens: I/O CONFIGURE, INSTRUMENT CONFIGURE, and PRINTER CONFIGURE.

:BADDress <integer>
:BADDress?

These commands set/query the GPIB address for the Test Set. This command utilizes the “Integer Number Setting Syntax” on page 206.

Syntax

```
CONF:BADD <integer>  !valid from 0 to 30
```

```
CONF:BADD?
```

Screen/field equivalent

CONF:BADD controls the **HP-IB Adrs** field of the I/O CONFIGURE screen.

:BEEPer <string>
:BEEPer?

These commands set/query the volume of the Test Set’s beeper.

Syntax

```
CONF:BEEP ‘Off’
          ‘Quiet’
          ‘Loud’
```

```
CONF:BEEP?
```

Screen/field equivalent

CONF:BEEP controls the **Beeper** field of the INSTRUMENT CONFIGURE screen.

:BMODe <string>
:BMODe?

These commands set/query the GPIB control mode.

Syntax

```
CONF:BMOD 'Control'
          'Talk&Lstn'
CONF:BMOD?
```

Screen/field equivalent

CONF:BMOD controls the **Mode** field of the I/O CONFIGURE screen.

:CDMA:MODE <string>
:CDMA:MODE?

These commands set/query the standard selected in the **CDMA Std** field in the INSTRUMENT CONFIGURE screen. CDMA:MODE returns either IS-95 Only or IS-2000 depending on the current state of the field.

Syntax

```
CONF:CDMA:MODE 'IS-95 Only'
               'IS-2000'
CONF:CDMA:MODE?
```

Screen/field equivalent

CDMA:MODE controls the **CDMA Std** field of the INSTRUMENT CONFIGURE screen.

:DISPlay:MESSages
:DISPlay:MESSages?

These commands set/query the reporting of messages during normal operation. A 'Yes' setting means that all messages are displayed as they occur.

Syntax

```
CONF:DISP:MESS 'Yes'
               'No'
CONF:DISP:MESS?
```

Screen/field equivalent

CONF:DISP:MESS controls the **Display User Messages** field of the INSTRUMENT CONFIGURE screen.

:DATE <integer>
:DATE?

These commands set/query the date set within the Test Set. This command utilizes the "Integer Number Setting Syntax" on page 206.

Syntax

```
CONF:DATE <integer> !Use MMDDYY format
CONF:DATE?
```

Screen/field equivalent

CONF:DATE controls the **Date** field of the INSTRUMENT CONFIGURE screen.

:KNOB <string>
:KNOB?

This command is the equivalent of the pressing the cursor-control knob.

Syntax

```
CONF:KNOB 'On'
          'Off'
CONF:KNOB?
```

Screen/field equivalent

CONF:KNOB has no field associated with this command.

:NOTChmode <string>
:NOTChmode?

These commands set/query the coupling between the AF Generator 1 and a notch filter. The frequency and gain of the notch filter is set by the AFAN:NOTC:GAIN and AFAN:NOTC:FREQ commands.

Syntax

```
CONF:NOTC ‘AFGen1’ !notch filter switched in
          ‘None’   !no notch filter
CONF:NOTC?
```

Screen/field equivalent

CONF:NOTC controls the **Notch Coup l** field of the INSTRUMENT CONFIGURE screen.

:OFLevel:MODE <string>
:OFLevel:MODE?

These commands set/query the RF level offset, and is typically used to compensate for path loss between the Test Set and the base station.

Syntax

```
CONF:OFL:MODE ‘On’
              ‘Off’
CONF:OFL:MODE?
```

Screen/field equivalent

CONF:OFL:MODE controls the **RF Level Offset** field of the INSTRUMENT CONFIGURE screen.

:OFLevel:ANTenna <real number>
:OFLevel:ANTenna?

These commands set/query the path loss from the device-under-test to the Test Set's ANT IN port. This correction is applied when the CONF:OFL:MODE 'On' command is used.

This command utilizes the "Real Number Setting Syntax" on page 299, but does not use the :STATe command.

Syntax

```
CONF:OFL:ANT <real number> !values: –100.0 to 100.0
```

```
CONF:OFL:ANT?
```

Screen/field equivalent

CONF:OFL:ANT controls the **Antenna In** field of the INSTRUMENT CONFIGURE screen. This value in this field is used when the **RF Level Offset** field is set to **On**.

:OFLevel:DUPLex <real number>
:OFLevel:DUPLex?

These commands set/query the path loss from the DUPLEX OUT connector to the device-under-test. This correction is applied when the CONF:OFL:MODE 'On' command is used.

This command utilizes the "Real Number Setting Syntax" on page 299, but does not use the :STATe command.

Syntax

```
CONF:OFL:DUPL <real number> !values: –100.0 to 100.0
```

```
CONF:OFL:DUPL?
```

Screen/field equivalent

CONF:OFL:DUPL controls the **Duplex Out** field on the INSTRUMENT CONFIGURE screen. This value in this field is used when the **RF Level Offset** field is set to **On**.

:OFLevel:RFINout <real number>
:OFLevel:RFINout?

These commands set/query the path loss from the RF IN/OUT connector to the device-under-test. This correction is applied when the CONF:OFL:MODE 'On' command is used.

This command utilizes the "Real Number Setting Syntax" on page 299, but does not use the :STATe command.

Syntax

```
CONF:OFL:RFIN <real number> !values: minus 100.0 to 100.0
```

```
CONF:OFL:RFIN?
```

Screen/field equivalent

CONF:OFL:RFIN controls the **`RF In/Out`** field of the INSTRUMENT CONFIGURE screen. This value in this field is used when the **`RF Level Offset`** field is set to **`On`**.

:OFRequency <real number>
:OFRequency?

These commands set/query the frequency offset between the Test Set's generator and analyzer. This command is used only in frequency tuning mode (CONF:RFD 'Freq') and RF offset must be turned on (CONF:OMODE 'On').

This command utilizes the "Real Number Setting Syntax" on page 299, but does not use the :STATe command.

Syntax

```
CONF:OFR <real number>
```

```
CONF:OFR?
```

Screen/field equivalent

CONF:OFR controls the **`(Gen)-(Anl)`** field of the INSTRUMENT CONFIGURE screen.

:OMODe <string>
:OMODe?

These commands set/query the state of the RF offset defined in the CONF:OFR command.

Syntax

```
CONF:OMOD 'On'
          'Off'
```

```
CONF:OMOD?
```

Screen/field equivalent

CONF:OMOD controls the **RF Offset** field of the INSTRUMENT CONFIGURE screen.

:OPERation:AUTO
:OPERation:HOLD

These commands control the autoranging routine in the Test Set. :AUTO enables the routines, :HOLD disables them.

Syntax

```
CONF:OPER:AUTO !enables and autoranging
```

```
CONF:OPER:HOLD !disables and autoranging
```

Screen/field equivalent

CONF:OPER:AUTO and :OPER:HOLD control the **Range Hold** field of the INSTRUMENT CONFIGURE screen.

:PCMCia:CARD:STATus?

This command queries whether or not a PC card is inserted in the Test Set's front-panel card slot (No Card, or Inserted).

Syntax

```
CONF:PCMC:CARD:STAT?
```

Screen/Field Equivalent

CONF:PCMC:CARD:STAT? queries the **Card Status** field on the I/O CONFIGURE screen.

:PCMCia:CARD:TYPE?

This command queries the type of PC card inserted in the Test Set's front-panel card slot (such as, RAM or ROM).

Syntax

`CONF:PCMC:CARD:TYPE?`

Screen/Field Equivalent

CONF:PCMC:CARD:TYPE? queries the **`Card Status`** field on the I/O CONFIGURE screen.

:PCMCia:CARD:SIZE?

This command queries the size of the PC card inserted in the Test Set's front-panel card slot (such as, 1M Bytes).

Syntax

`CONF:PCMC:CARD:SIZE?`

Screen/Field Equivalent

CONF:PCMC:CARD:SIZE? queries the **`Card Status`** field on the I/O CONFIGURE screen.

:PRINt:ADDRess <integer>
:PRINt:ADDRess?

These commands set/query the printer address used when CONF:PRIN:DEST is 'HP-IB'.

This command utilizes the "Integer Number Setting Syntax" on page 206.

Syntax

```
CONF:PRIN:ADDR <integer> !values 0 to 30
```

```
CONF:PRIN:ADDR?
```

Screen/field equivalent

CONF:PRIN:ADDR controls the **`Printer Adrs`** field of the PRINTER CONFIGURE screen. This field is displayed only when the **`Printer Port`** field is set to **`HP-IB`**.

:PRINt:LINes|LINE <integer>
:PRINt:LINes|LINE?

:PRIN:LIN sets/queries the number of lines to be printed per page. This command utilizes the “Integer Number Setting Syntax” on page 206.

Syntax

```
CONF:PRIN:LIN <integer> !values: 5 to 120
```

```
CONF:PRIN:LIN?
```

Screen/field equivalent

CONF:PRIN:LIN controls the **Lines/Page** field of the PRINTER CONFIGURE screen.

:PRINt:DESTination|PORTs <string>
:PRINt:DESTination?|PORTs?

These commands set/query the port setting for the printer. The :PRIN:DEST command is equivalent to the :PRIN:PORT command.

Syntax

```
CONF:PRIN:DEST ‘Serial 9’

               ‘Parallel 15’

               ‘HP-IB’
```

```
CONF:PRIN:DEST?
```

Screen/field equivalent

CONF:PRIN:DEST controls the **Printer Port** field of the PRINTER CONFIGURE screen.

:PRINt:FFSTart <string>
:PRINt:FFSTart?

These commands set/query a form feed (blank page) at the start of printing.

Syntax

```
CONF:PRIN:FFST 'Yes'
               'No'
CONF:PRIN:FFST?
```

Screen/field equivalent

CONF:PRIN:FFST controls the **FF at Start** field of the PRINTER CONFIGURE screen.

:PRINt:FFENd <string>
:PRINt:FFENd?

These commands set/query a form feed (blank page) at the end of printing.

Syntax

```
CONF:PRIN:FFEN 'Yes'
               'No'
CONF:PRIN:FFEN?
```

Screen/field equivalent

CONF:PRIN:FFEN controls the **FF at End** field of the PRINTER CONFIGURE screen.

:PRINt:TITLe <string>
:PRINt:TITLe?

These commands set/query the title of the print output.

Available character set:

ABCDEFGHIJKLMNOPQRSTUVWXYZ

abcdefghijklmnopqrstuvwxyz

_0123456789 !@#$%^&*()-+=<>?[]{}\ |';:",./

Syntax

```
CONF:PRIN:TITL '<string>' !up to 50 characters
```

```
CONF:PRIN:TITL?
```

Screen/field equivalent

CONF:PRIN:TITL controls the **Print Title** field of the PRINTER CONFIGURE screen.

:PRINt:PRINter|HPModel|HPMO <string>
:PRINt:PRINter|HPModel|HPMO?

These commands set/query the type of printer chosen for printing.

Syntax

```
CONF:PRIN:PRIN 'ThinkJet'
               'QuietJet'
               'PaintJet'
               'DeskJet'
               'LaserJet'
               'Epson FX-80'
               'Epson LX-850'
```

```
CONF:PRIN:PRIN?
```

Screen/field equivalent

CONF:PRIN:PRIN controls the **Model** field of the PRINTER CONFIGURE screen.

:REFerence:INPut:EXTernal <string>
:REFerence:INPut:EXTernal?

These commands set/query the external reference frequency. The external reference is selected using the :REFerence:INPut:SELect command.

Syntax

```
CONF:REF:INP:EXT ‘1 MHz’
                 ‘2 MHz’
                 ‘5 MHz’
                 ‘10 MHz’
                 ‘15 MHz’
                 ‘1X Chip’
                 ‘2X Chip’
                 ‘4X Chip’
                 ‘8X Chip’
                 ‘16X Chip’
CONF:REF:INP:EXT?
```

Screen/field equivalent

CONF:REF:INP:EXT controls the **Ext Ref In** field of the INSTRUMENT CONFIGURE screen.

:REFerence:INPut:SELect <string>
:REFerence:INPut:SELect?

These commands set/query the reference input selection. ‘Internal’ and ‘External’ define an internal or external reference. ‘Auto’ will switch between external and internal inputs, based on the signal’s presence. However, you must still set the frequency of the external reference input (CONF:REF:INP:EXT) even though this is set to ‘Auto’. It does not automatically select the frequency.

Syntax

```
CONF:REF:INP:SEL ‘Auto’
                 ‘Internal’
                 ‘External’

CONF:REF:INP:SEL?
```

Screen/field equivalent

CONF:REF:INP:SEL controls the **Ref Select** field of the INSTRUMENT CONFIGURE screen.

:RFCStandard <string>
:RFCStandard?

These commands set/query the RF channel standard. This command is used in conjunction with the CONF:RFD 'Chan' command.

Syntax

```
CONF:RFCS 'N AMER PCS'
          'KOR PCS 0'
          'KOR PCS 1'
          'MS AMPS'
          'LS AMPS'
          'MSL NAMPS'
          'MSM NAMPS'
          'MSU NAMPS'
          'LSL NAMPS'
          'LSM NAMPS'
          'LSU NAMPS'
          'MS TACS'
          'LS TACS'
          'MS ETACS'
          'LS ETACS'
          'MS NTACS'
          'LS NTACS'
          'MS JTACS'
          'LS JTACS'
          'USER-DEF'
CONF:RFCS?
```

Screen/field equivalent

CONF:RFCS controls the **RF Chan Std** field of the INSTRUMENT CONFIGURE screen. This field is displayed only when the **RF Display** field is set to **Chan**.

:RFDisplay <string>
:RFDisplay?

These commands set/query the RF display mode. See the *Reference Guide* for more information about frequency and channel tuning.

Syntax

```
CONF:RFD 'Freq' !sets RF display to frequency  tuning mode
         'Chan' !sets RF display to channel tuning mode
CONF:RFD?
```

Screen/field equivalent

CONF:RFD controls the **RF Display** field of the INSTRUMENT CONFIGURE screen.

:RFIMped <string>
:RFIMped?

These commands set/query the way that RF generator's voltages are expressed (across a 50 ohm load or open circuit). The RF generator's amplitude units must be V, mV, uV, or dBuV for this command to have an effect.

Syntax

```
CONF:RFIM '50 ohm'
          'emf'
CONF:RFIM?
```

Screen/field equivalent

CONF:RFIM controls the **RF Gen Volts** field of the INSTRUMENT CONFIGURE screen.

:SPOR9|SPORT9|SB9|SP9:BAUD <string>
:SPOR9|SPORT9|SB9|SP9:BAUD?

These commands set/query the baud rate of the SERIAL 9 port.

Syntax

```
CONF:SPOR9:BAUD ‘150’
                ‘300’
                ‘600‘
                ‘1200‘
                ‘2400‘
                ‘4800‘
                ‘9600‘
                ‘19200‘
```

```
CONF:SPOR9:BAUD?
```

Screen/field equivalent

CONF:SPOR9:BAUD controls the **Serial Baud** field of the I/O CONFIGURE screen.

:SPOR9|SPORT9|SB9|SP9:PARity <string>
:SPOR9|SPORT9|SB9|SP9:PARity?

These commands set/query the parity of the SERIAL 9 port.

Syntax

```
CONF:SPOR9:PAR‘None’
              ‘Odd’
              ‘Even’
              ‘Always 1’
              ‘Always 0’
```

```
CONF:SPOR9:PAR?
```

Screen/field equivalent

CONF:SPOR9:PAR controls the **Parity** field of the I/O CONFIGURE screen.

:SPOR9|SPORT9|SB9|SP9:DATA <string>
:SPOR9|SPORT9|SB9|SP9:DATA?

These commands set/query the number of data bits per data word sent over the SERIAL 9 port.

Syntax

```
CONF:SPOR9:DATA ‘7 bits’
                ‘8 bits’
CONF:SPOR9:DATA?
```

Screen/field equivalent

CONF:SPOR9:DATA controls the **Data Length** field of the I/O CONFIGURE screen.

:SPOR9|SPORT9|SB9|SP9:STOP <string>
:SPOR9|SPORT9|SB9|SP9:STOP?

These commands set/query the number of stop bits used for serial communication over the SERIAL 9 port.

Syntax

```
CONF:SPOR9:STOP ‘1 bit’
                ‘2 bits’
CONF:SPOR9:STOP?
```

Screen/field equivalent

CONF:SPOR9:STOP controls the **Stop Length** field of the I/O CONFIGURE screen.

:SPOR9|SPORT9|SB9|SP9:FCONtrol|FLOW <string> :SPOR9|SPORT9|SB9|SP9:FCONtrol|FLOW?

These commands set/query the flow control to set the pace of serial communications for the SERIAL 9 port.

Syntax

```
CONF:SPOR9:FCON 'Xon/Xoff'
                'None'
CONF:SPOR9:FCON?
```

Screen/field equivalent

CONF:SPOR9:FCON controls the **Flow Control** field of the I/O CONFIGURE screen.

:SPOR9|SPORT9|SB9|SP9:IBECho <string> :SPOR9|SPORT9|SB9|SP9:IBECho?

These commands set/query the screen and error message echoing from IBASIC.

Syntax

```
CONF:SPOR9:IBEC 'On'
                'Off'
CONF:SPOR9:IBEC?
```

Screen/field equivalent

CONF:SPOR9:IBEC controls the **IBASIC Echo** field of the I/O CONFIGURE screen.

:SPOR9|SPORT9|SB9|SP9:IECHo <string> :SPOR9|SPORT9|SB9|SP9:IECHo?

These commands set/query the character and screen echoing (instrument echo) when using an external ASCII RS-232 terminal or computer to enter or edit the IBASIC program.

Syntax

```
CONF:SPOR9:IECH 'On'
                'Off'
```

```
CONF:SPOR9:IECH?
```

Screen/field equivalent

CONF:SPOR9:IECH controls the **Inst Echo** field of the I/O CONFIGURE screen.

:SPOR9|SPORT9|SB9|SP9:MODem:MODE <string> :SPOR9|SPORT9|SB9|SP9:MODem:MODE?

These commands set/query the modem mode.

Syntax

```
CONF:SPOR9:MOD:MODE 'Disable'
                    'Ignore'
                    'Answer'
                     'Dial Back'
```

```
CONF:SPOR9:MOD:MODE? <returns quoted string>
```

Screen/field equivalent

CONF:SPOR9:MOD:MODE controls the **Modem Mode** field of the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 9**.

:SPOR9|SPORT9|SB9|SP9:MODem:CALL:ORIGinate

This command causes the modem to place a call using the dialing string entered with the CONF:SPOR9:MOD:CONN:NUMB command.

Syntax

```
CONF:SPOR9:MOD:CALL:ORIG
```

Screen/field equivalent

CONF:SPOR9:MOD:CALL:ORIG controls the **Orignate** subfield of the **Call** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 9**.

:SPOR9|SPORT9|SB9|SP9:MODem:CALL:DISConnect

This command causes the modem to disconnect from the call in progress. It also cancels any pending call origination retries (CONF:SPOR9:MOD:CONN:RETRy). This field is inactive when CONF:SPOR9:MOD:MODE 'Disable' command is used.

Syntax

```
CONF:SPOR9:MOD:CALL:DISC
```

Screen/field equivalent

CONF:SPOR9:MOD:CALL:DISC controls the **Disconnect** subfield of the **Call** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 9**.

:SPOR9|SPORT9|SB9|SP9:MODem:CALL:STATus?

This command queries the status of the modem.

Syntax

```
CONF:SPOR9:MOD:CALL:STAT?
```

Screen/field equivalent

CONF:SPOR9:MOD:CALL:STAT? queries the **Status** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 9**.

:SPOR9|SPORT9|SB9|SP9:MODem:CONNect:NUMBer
:SPOR9|SPORT9|SB9|SP9:MODem:CONNect:NUMBer?

This command queries the status of the modem.

Syntax

```
CONF:SPOR9:MOD:CONN:NUMB <string up to 40 characters>
CONF:SPOR9:MOD:CONN:NUMB?
```

Screen/field equivalent

CONF:SPOR9:MOD:CONN:NUMB controls the **Number to Call** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 9**.

:SPOR9|SPORT9|SB9|SP9:MODem:CONNect:TIMeout :SPOR9|SPORT9|SB9|SP9:MODem:CONNect:TIMeout?

This command sets/queries the number of seconds to wait before aborting a connection attempt. This applies to both answer and originate activities.

Syntax

```
CONF:SPOR9:MOD:CONN:TIM <integer>
CONF:SPOR9:MOD:CONN:TIM?
```

Screen/field equivalent

CONF:SPOR9:MOD:CONN:TIM controls the **Connection Time-out** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 9**.

:SPOR9|SPORT9|SB9|SP9:MODem:CONNect:HDELay :SPOR9|SPORT9|SB9|SP9:MODem:CONNect:HDELay?

This command sets/queries the number of seconds to wait before attempting an origination. This applies to the delay prior to attempting a dialback as well as the delay prior to retrying an origination as part of the retry sequence.

Syntax

```
CONF:SPOR9:MOD:CONN:HDEL <integer>
CONF:SPOR9:MOD:CONN:HDEL?
```

Screen/field equivalent

CONF:SPOR9:MOD:CONN:HDEL controls the **Hold-off Delay** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 9**.

:SPOR9|SPORT9|SB9|SP9:MODem:CONNect:RETRy
:SPOR9|SPORT9|SB9|SP9:MODem:CONNect:RETRy?

This command sets/queries the number of calls that will be tried before an origination attempt is terminated. The total number of tries will be the number entered in this field, plus one for the original attempt.

Syntax

```
CONF:SPOR9:MOD:CONN:RETR <integer>
CONF:SPOR9:MOD:CONN:RETR?
```

Screen/field equivalent

CONF:SPOR9:MOD:CONN:RETR controls the **Retries** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 9**.

:SPOR9|SPORT9|SB9|SP9:MODem:CONFigure:UPDate

This command is used to send the modem configuration strings entered in the CONF:SPOR9:MOD:CONF:STR1, STR2, and STR3 commands.

Syntax

```
CONF:SPOR9:MOD:CONF:UPD
```

Screen/field equivalent

CONF:SPOR9:MOD:CONF:UPD controls the **Modem Configuration** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 9**.

:SPOR9|SPORT9|SB9|SP9:MODem:CONFigure:STRing1
:SPOR9|SPORT9|SB9|SP9:MODem:CONFigure:STRing1?
:SPOR9|SPORT9|SB9|SP9:MODem:CONFigure:STRing2
:SPOR9|SPORT9|SB9|SP9:MODem:CONFigure:STRing2?
:SPOR9|SPORT9|SB9|SP9:MODem:CONFigure:STRing3
:SPOR9|SPORT9|SB9|SP9:MODem:CONFigure:STRing3?

These commands are used to enter the modem configuration strings to be sent when the CONF:SPOR9:MOD:CONF:UPD command is executed. Each string has a maximum of 40 characters.

STR 1 is the initial configuration string sent to the modem when the CONF:SPOR9:MOD:CONF:UPD command is executed. The second line is the second string sent, and the third line is the third string sent. The second and third lines can be left blank.

Syntax

```
CONF:SPOR9:MOD:CONF:STR1 <string>
CONF:SPOR9:MOD:CONF:STR1?
CONF:SPOR9:MOD:CONF:STR2 <string>
CONF:SPOR9:MOD:CONF:STR2?
CONF:SPOR9:MOD:CONF:STR3 <string>
CONF:SPOR9:MOD:CONF:STR3?
```

Screen/field equivalent

CONF:SPOR9:MOD:CONF:STR1 controls the first line of the **Modem Initialization/Configuration** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 9**.

:SPOR9|SPORT9|SB9|SP9:MODem:CONFigure:ECHaracter
:SPOR9|SPORT9|SB9|SP9:MODem:CONFigure:ECHaracter?

This command sets/queries a one-character, non-printable escape character that you use to define your own escape command sequence.

Syntax

```
CONF:SPOR9:MOD:CONF:ECH <character>
CONF:SPOR9:MOD:CONF:ECH?
```

Screen/field equivalent

CONF:SPOR9:MOD:CONF:ECH controls the **Command Escape Character** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 9**.

:SPOR9|SPORT9|SB9|SP9:MODem:CONFigure:ECEQivalent?

This command reports the decimal equivalent of the escape character entered with the CONF:SPOR9:MOD:CONF:ECH.

Syntax

```
CONF:SPOR9:MOD:CONF:ECEQ?
```

Screen/field equivalent

CONF:SPOR9:MOD:CONF:ECEQ? queries the **`Decimal Equivalent`** field on the MODEM CONFIGURE screen when the **`Serial Port`** field is set to **`Port 9`**.

:SPOR9|SPORT9|SB9|SP9:MODem:SECurity:STATe
:SPOR9|SPORT9|SB9|SP9:MODem:SECurity:STATe?

This command controls the usage of a password security challenge.

- ‘Off’ - no password challenge on connection
- ‘On’ - issues a password challenge on connection. The caller must enter a password. The password must match the string entered in the CONF:SPOR9:MOD:SEC:PASS command.

Syntax

```
CONF:SPOR9:MOD:SEC:STAT ‘On’
                        ‘Off’
CONF:SPOR9:MOD:CONF:STAT?
```

Screen/field equivalent

CONF:SPOR9:MOD:SEC:STAT controls the **`Incoming Call Security`** field on the MODEM CONFIGURE screen when the **`Serial Port`** field is set to **`Port 9`**.

:SPOR9|SPORT9|SB9|SP9:MODem:SECurity:PASSword :SPOR9|SPORT9|SB9|SP9:MODem:SECurity:PASSword?

This command sets/queries the password required by a security challenge when the CONF:SPOR9:MOD:SEC:STAT 'On' command is used.

Syntax

`CONF:SPOR9:MOD:SEC:PASS <string>`

`CONF:SPOR9:MOD:SEC:PASS?`

Screen/field equivalent

CONF:SPOR9:MOD:SEC:PASS controls the **Pssword** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 9**.

:SPOR9|SPORT9|SB9|SP9:SIN|SINP <string> :SPOR9|SPORT9|SB9|SP9:SIN|SINP?

These commands set/query the destination of data characters received by the Test Set via the SERIAL 9 port.

Syntax

```
CONF:SPOR9:SIN 'Inst'
               'IBASIC'
```

`CONF:SPOR9:SIN?`

Screen/field equivalent

CONF:SPOR9:SIN controls the **Serial_9 In** field of the I/O CONFIGURE screen.

:SPOR9|SPORT9|SB9|SP9:STATus:LINE?

This command queries the line status register.

Syntax

`CONF:SPOR9:STAT:LINE?`

Screen/field equivalent

No screen/field equivalent.

:SPOR9|SPORT9|SB9|SP9:STATus:MODem?

This command queries the modem status register.

Syntax

```
CONF:SPOR9:STAT:MOD?
```

Screen/field equivalent

No screen/field equivalent.

:SPOR10|SPORT10|SB10|SP10:BAUD <string>
:SPOR10|SPORT10|SB10|SP10:BAUD?

These commands set/query the baud rate of the SERIAL 10 port.

Syntax

```
CONF:SPOR10:BAUD  '150'
                  '300'
                  '600'
                  '1200'
                  '2400'
                  '4800'
                  '9600'
                  '19200'

CONF:SPOR10:BAUD?
```

Screen/field equivalent

CONF:SPOR10:BAUD controls the **Serial Baud** field of the I/O CONFIGURE screen.

:SPOR10|SPORT10|SB10|SP10:PARity <string>
:SPOR10|SPORT10|SB10|SP10:PARity?

These commands set/query the parity of the SERIAL 10 port.

Syntax

```
CONF:SPOR10:PAR   'None'
                  'Odd'
                  'Even'
                  'Always 1'
                  'Always 0'

CONF:SPOR10:PAR?
```

Screen/field equivalent

CONF:SPOR10:PAR controls the **Parity** field of the I/O CONFIGURE screen.

:SPOR10|SPORT10|SB10|SP10:DATA <string>
:SPOR10|SPORT10|SB10|SP10:DATA?

These commands set/query the number of data bits per data word sent over the SERIAL 10 port.

Syntax

```
CONF:SPOR10:DATA ‘7 bits’
                 ‘8 bits’
CONF:SPOR10:DATA?
```

Screen/field equivalent

CONF:SPOR10:DATA controls the **`Data Length`** field of the I/O CONFIGURE screen.

:SPOR10|SPORT10|SB10|SP10:STOP <string>
:SPOR10|SPORT10|SB10|SP10:STOP?

These commands set/query the number of stop bits used for serial communication over the SERIAL 10 port.

Syntax

```
CONF:SPOR10:STOP ‘1 bit’
                 ‘2 bits’
CONF:SPOR10:STOP?
```

Screen/field equivalent

CONF:SPOR10:STOP controls the **`Stop Length`** field of the I/O CONFIGURE screen.

:SPOR10|SPORT10|SB10|SP10:FCONtrol|FLOW <string>
:SPOR10|SPORT10|SB10|SP10:FCONtrol|FLOW?

These commands set/query the flow control to set the pace of serial communications for the SERIAL 10 port.

Syntax

```
CONF:SPOR10:FCON 'Xon/Xoff'
                 'None'
CONF:SPOR10:FCON?
```

Screen/field equivalent

CONF:SPOR10:FCON controls the **Flow Control** field of the I/O CONFIGURE screen.

:SPOR10|SPORT10|SB10|SP10:STATus:LINE?

This command queries the line status register.

Syntax

```
CONF:SPOR10:STAT:LINE?
```

Screen/field equivalent

No screen/field equivalent.

:SPOR10|SPORT10|SB10|SP10:STATus:MODem?

This command queries the modem status register.

Syntax

```
CONF:SPOR10:STAT:MOD?
```

Screen/field equivalent

No screen/field equivalent.

:SPOR10|SPORT10|SB10|SP10:MODem:MODE <string> :SPOR10|SPORT10|SB10|SP10:MODem:MODE?

These commands set/query the modem mode.

Syntax

```
CONF:SPOR10:MOD:MODE 'Disable'
                     'Ignore'
                     'Answer'
                     'Dial Back'
```

```
CONF:SPOR10:MOD:MODE?   !returns quoted string
```

Screen/field equivalent

CONF:SPOR10:MOD:MODE controls the **Modem Mode** field of the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 10**.

:SPOR10|SPORT10|SB10|SP10:MODem:CALL:ORIGinate

This command causes the modem to place a call using the dialing string entered with the CONF:SPOR10:MOD:CONN:NUMB command.

Syntax

```
CONF:SPOR10:MOD:CALL:ORIG
```

Screen/field equivalent

CONF:SPOR10:MOD:CALL:ORIG controls the **Orignate** subfield of the **Call** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 10**.

:SPOR10|SPORT10|SB10|SP10:MODem:CALL:DISConnect

This command causes the modem to disconnect from the call in progress. It also cancels any pending call origination retries (CONF:SPOR10:MOD:CONN:RETRy). This field is inactive when CONF:SPOR10:MOD:MODE ‘Disable’ command is used.

Syntax

```
CONF:SPOR10:MOD:CALL:DISC
```

Screen/field equivalent

CONF:SPOR10:MOD:CALL:DISC controls the **Disconnect** subfield of the **Call** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 10**.

:SPOR10|SPORT10|SB10|SP10:MODem:CALL:STATus?

This command queries the status of the modem.

Syntax

```
CONF:SPOR10:MOD:CALL:STAT?
```

Screen/field equivalent

CONF:SPOR10:MOD:CALL:STAT? queries the **Status** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 10**.

:SPOR10|SPORT10|SB10|SP10:MODem:CONNect:NUMBer
:SPOR10|SPORT10|SB10|SP10:MODem:CONNect:NUMBer?

This command queries the status of the modem.

Syntax

```
CONF:SPOR10:MOD:CONN:NUMB <string up to 40 characters>
CONF:SPOR10:MOD:CONN:NUMB?
```

Screen/field equivalent

CONF:SPOR10:MOD:CONN:NUMB controls the **Number to Call** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 10**.

:SPOR10|SPORT10|SB10|SP10:MODem:CONNect:TIMeout
:SPOR10|SPORT10|SB10|SP10:MODem:CONNect:TIMeout?

This command sets/queries the number of seconds to wait before aborting a connection attempt. This applies to both answer and originate activities.

Syntax

```
CONF:SPOR10:MOD:CONN:TIM <integer>
CONF:SPOR10:MOD:CONN:TIM?
```

Screen/field equivalent

CONF:SPOR10:MOD:CONN:TIM controls the **Connection Time-out** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 10**.

:SPOR10|SPORT10|SB10|SP10:MODem:CONNect:HDELay :SPOR10|SPORT10|SB10|SP10:MODem:CONNect:HDELay?

This command sets/queries the number of seconds to wait before attempting an origination. This applies to the delay prior to attempting a dialback as well as the delay prior to retrying an origination as part of the retry sequence.

Syntax

```
CONF:SPOR10:MOD:CONN:HDEL <integer>
CONF:SPOR10:MOD:CONN:HDEL?
```

Screen/field equivalent

CONF:SPOR10:MOD:CONN:HDEL controls the **Hold-off Delay** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 10**.

:SPOR10|SPORT10|SB10|SP10:MODem:CONNect:RETRy :SPOR10|SPORT10|SB10|SP10:MODem:CONNect:RETRy?

This command sets/queries the number of calls that will be tried before an origination attempt is terminated. The total number of tries will be the number entered in this field, plus one for the original attempt.

Syntax

```
CONF:SPOR10:MOD:CONN:RETR <integer>
CONF:SPOR10:MOD:CONN:RETR?
```

Screen/field equivalent

CONF:SPOR10:MOD:CONN:RETR controls the **Retries** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 10**.

:SPOR10|SPORT10|SB10|SP10:MODem:CONFigure:UPDate

This command is used to send the modem configuration strings entered in the CONF:SPOR10:MOD:CONF:STR1, STR2, and STR3 commands.

Syntax

```
CONF:SPOR10:MOD:CONF:UPD
```

Screen/field equivalent

CONF:SPOR10:MOD:CONF:UPD controls the **Modem Configuration** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 10**.

:SPOR10|SPORT10|SB10|SP10:MODem:CONFigure:STRing1
:SPOR10|SPORT10|SB10|SP10:MODem:CONFigure:STRing1?
:SPOR10|SPORT10|SB10|SP10:MODem:CONFigure:STRing2
:SPOR10|SPORT10|SB10|SP10:MODem:CONFigure:STRing2?
:SPOR10|SPORT10|SB10|SP10:MODem:CONFigure:STRing3
:SPOR10|SPORT10|SB10|SP10:MODem:CONFigure:STRing3?

These commands are used to enter the modem configuration strings to be sent when the CONF:SPOR10:MOD:CONF:UPD command is executed. Each string has a maximum of 40 characters.

STR 1 is the initial configuration string sent to the modem when the CONF:SPOR10:MOD:CONF:UPD command is executed. The second line is the second string sent, and the third line is the third string sent. The second and third lines can be left blank

Syntax

```
CONF:SPOR10:MOD:CONF:STR1 <string>
CONF:SPOR10:MOD:CONF:STR1?
CONF:SPOR10:MOD:CONF:STR2 <string>
CONF:SPOR10:MOD:CONF:STR2?
CONF:SPOR10:MOD:CONF:STR3 <string>
CONF:SPOR10:MOD:CONF:STR3?
```

Screen/field equivalent

CONF:SPOR10:MOD:CONF:STR1 controls the first line of the **Modem Initialization/Configuration** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 10**.

:SPOR10|SPORT10|SB10|SP10:MODem:CONFigure:ECHaracter
:SPOR10|SPORT10|SB10|SP10:MODem:CONFigure:ECHaracter?

This command sets/queries a one-character, non-printable escape character that you use to define your own escape command sequence.

Syntax

```
CONF:SPOR10:MOD:CONF:ECH <character>
CONF:SPOR10:MOD:CONF:ECH?
```

Screen/field equivalent

CONF:SPOR10:MOD:CONF:ECH controls the **Command Escape Character** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 10**.

:SPOR10|SPORT10|SB10|SP10:MODem:CONFigure:ECEQivalent?

This command reports the decimal equivalent of the escape character entered with the CONF:SPOR10:MOD:CONF:ECH.

Syntax

```
CONF:SPOR10:MOD:CONF:ECEQ?
```

Screen/field equivalent

CONF:SPOR10:MOD:CONF:ECEQ? queries the **Decimal Equivalent** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 10**.

:SPOR10|SPORT10|SB10|SP10:MODem:SECurity:STATe
:SPOR10|SPORT10|SB10|SP10:MODem:SECurity:STATe?

This command controls the usage of a password security challenge.

- 'Off' - no password challenge on connection
- 'On' - issues a password challenge on connection. The caller must enter a password. The password must match the string entered in the CONF:SPOR10:MOD:SEC:PASS command.

Syntax

```
CONF:SPOR10:MOD:SEC:STAT 'On'
                         'Off'

CONF:SPOR10:MOD:CONF:STAT?
```

Screen/field equivalent

CONF:SPOR10:MOD:SEC:STAT controls the **Incoming Call Security** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 10**.

:SPOR10|SPORT10|SB10|SP10:MODem:SECurity:PASSword :SPOR10|SPORT10|SB10|SP10:MODem:SECurity:PASSword?

This command sets/queries the password required by a security challenge when the CONF:SPOR10:MOD:SEC:STAT ‘On’ command is used.

Syntax

`CONF:SPOR10:MOD:SEC:PASS <string>`

`CONF:SPOR10:MOD:SEC:PASS?`

Screen/field equivalent

CONF:SPOR10:MOD:SEC:PASS controls the **Pssword** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 10**.

:SPOR11|SPORT11|SB11|SP11:BAUD <string> :SPOR11|SPORT11|SB11|SP11:BAUD?

These commands set/query the baud rate of the SERIAL 11 port.

Syntax

```
CONF:SPOR11:BAUD   ‘150’
                   ‘300’
                   ‘600’
                   ‘1200’
                   ‘2400’
                   ‘4800’
                   ‘9600’
                   ‘19200’
```

`CONF:SPOR11:BAUD?`

Screen/field equivalent

CONF:SPOR11:BAUD controls the **Serial Baud** field of the I/O CONFIGURE screen.

:SPOR11|SPORT11|SB11|SP11:PARity <string>
:SPOR11|SPORT11|SB11|SP11:PARity?

These commands set/query the parity of the SERIAL 11 port.

Syntax

```
CONF:SPOR11:PAR        'None'
                       'Odd'
                       'Even'
                       'Always 1'
                       'Always 0'
```

```
CONF:SPOR11:PAR?
```

Screen/field equivalent

CONF:SPOR11:PAR controls the **Parity** field of the I/O CONFIGURE screen.

:SPOR11|SPORT11|SB11|SP11:DATA <string>
:SPOR11|SPORT11|SB11|SP11:DATA?

These commands set/query the number of data bits per data word sent over the SERIAL 11 port.

Syntax

```
CONF:SPOR11:DATA '7 bits'

                 '8 bits'
```

```
CONF:SPOR11:DATA?
```

Screen/field equivalent

CONF:SPOR11:DATA controls the **Data Length** field of the I/O CONFIGURE screen.

:SPOR11|SPORT11|SB11|SP11:STOP <string>
:SPOR11|SPORT11|SB11|SP11:STOP?

These commands set/query the number of stop bits used for serial communication over the SERIAL 11 port.

Syntax

```
CONF:SPOR11:STOP ‘1 bit’
                 ‘2 bits’
```

```
CONF:SPOR11:STOP?
```

Screen/field equivalent

CONF:SPOR11:STOP controls the **Stop Length** field of the I/O CONFIGURE screen.

:SPOR11|SPORT11|SB11|SP11:FCONtrol|FLOW <string>
:SPOR11|SPORT11|SB11|SP11:FCONtrol|FLOW?

These commands set/query the flow control to set the pace of serial communications for the SERIAL 11 port.

Syntax

```
CONF:SPOR11:FCON ‘Xon/Xoff’
                 ‘None’
```

```
CONF:SPOR11:FCON?
```

Screen/field equivalent

CONF:SPOR11:FCON controls the **Flow Control** field of the I/O CONFIGURE screen.

:SPOR11|SPORT11|SB11|SP11:STATus:LINE?

This command queries the line status register.

Syntax

```
CONF:SPOR11:STAT:LINE?
```

Screen/field equivalent

No screen/field equivalent.

:SPOR11|SPORT11|SB11|SP11:STATus:MODem?

This command queries the modem status register.

Syntax

```
CONF:SPOR11:STAT:MOD?
```

Screen/field equivalent

No screen/field equivalent.

:SPOR11|SPORT11|SB11|SP11:MODem:MODE <string>
:SPOR11|SPORT11|SB11|SP11:MODem:MODE?

These commands set/query the modem mode.

Syntax

```
CONF:SPOR11:MOD:MODE 'Disable'
                     'Ignore'
                     'Answer'
                     'Dial Back'
```

```
CONF:SPOR11:MOD:MODE? <returns quoted string>
```

Screen/field equivalent

CONF:SPOR11:MOD:MODE controls the **Modem Mode** field of the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 11**.

:SPOR11|SPORT11|SB11|SP11:MODem:CALL:ORIGinate

This command causes the modem to place a call using the dialing string entered with the CONF:SPOR11:MOD:CONN:NUMB command.

Syntax

```
CONF:SPOR11:MOD:CALL:ORIG
```

Screen/field equivalent

CONF:SPOR11:MOD:CALL:ORIG controls the **Orignate** subfield of the **Call** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 11**.

:SPOR11|SPORT11|SB11|SP11:MODem:CALL:DISConnect

This command causes the modem to disconnect from the call in progress. It also cancels any pending call origination retries (CONF:SPOR11:MOD:CONN:RETRy). This field is inactive when CONF:SPOR11:MOD:MODE 'Disable' command is used.

Syntax

```
CONF:SPOR11:MOD:CALL:DISC
```

Screen/field equivalent

CONF:SPOR11:MOD:CALL:DISC controls the **Disconnect** subfield of the **Call** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 11**.

:SPOR11|SPORT11|SB11|SP11:MODem:CALL:STATus?

This command queries the status of the modem.

Syntax

```
CONF:SPOR11:MOD:CALL:STAT?
```

Screen/field equivalent

CONF:SPOR11:MOD:CALL:STAT? queries the **Status** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 11**.

:SPOR11|SPORT11|SB11|SP11:MODem:CONNect:NUMBer
:SPOR11|SPORT11|SB11|SP11:MODem:CONNect:NUMBer?

This command queries the status of the modem.

Syntax

```
CONF:SPOR11:MOD:CONN:NUMB <string up to 40 characters>
CONF:SPOR11:MOD:CONN:NUMB?
```

Screen/field equivalent

CONF:SPOR11:MOD:CONN:NUMB controls the **Number to Call** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 11**.

:SPOR11|SPORT11|SB11|SP11:MODem:CONNect:TIMeout :SPOR11|SPORT11|SB11|SP11:MODem:CONNect:TIMeout?

This command sets/queries the number of seconds to wait before aborting a connection attempt. This applies to both answer and originate activities.

Syntax

```
CONF:SPOR11:MOD:CONN:TIM <integer>
CONF:SPOR11:MOD:CONN:TIM?
```

Screen/field equivalent

CONF:SPOR11:MOD:CONN:TIM controls the **Connection Time-out** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 11**.

:SPOR11|SPORT11|SB11|SP11:MODem:CONNect:HDELay :SPOR11|SPORT11|SB11|SP11:MODem:CONNect:HDELay?

This command sets/queries the number of seconds to wait before attempting an origination. This applies to the delay prior to attempting a dialback as well as the delay prior to retrying an origination as part of the retry sequence.

Syntax

```
CONF:SPOR11:MOD:CONN:HDEL <integer>
CONF:SPOR11:MOD:CONN:HDEL?
```

Screen/field equivalent

CONF:SPOR11:MOD:CONN:HDEL controls the **Hold-off Delay** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 11**.

:SPOR11|SPORT11|SB11|SP11:MODem:CONNect:RETRy
:SPOR11|SPORT11|SB11|SP11:MODem:CONNect:RETRy?

This command sets/queries the number of calls that will be tried before an origination attempt is terminated. The total number of tries will be the number entered in this field, plus one for the original attempt.

Syntax

```
CONF:SPOR11:MOD:CONN:RETR <integer>
CONF:SPOR11:MOD:CONN:RETR?
```

Screen/field equivalent

CONF:SPOR11:MOD:CONN:RETR controls the **Retries** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 11**.

:SPOR11|SPORT11|SB11|SP11:MODem:CONFigure:UPDate

This command is used to send the modem configuration strings entered in the CONF:SPOR11:MOD:CONF:STR1, STR2, and STR3 commands.

Syntax

```
CONF:SPOR11:MOD:CONF:UPD
```

Screen/field equivalent

CONF:SPOR11:MOD:CONF:UPD controls the **Modem Configuration** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 11**.

:SPOR11|SPORT11|SB11|SP11:MODem:CONFigure:STRing1
:SPOR11|SPORT11|SB11|SP11:MODem:CONFigure:STRing1?
:SPOR11|SPORT11|SB11|SP11:MODem:CONFigure:STRing2
:SPOR11|SPORT11|SB11|SP11:MODem:CONFigure:STRing2?
:SPOR11|SPORT11|SB11|SP11:MODem:CONFigure:STRing3
:SPOR11|SPORT11|SB11|SP11:MODem:CONFigure:STRing3?

These commands are used to enter the modem configuration strings to be sent when the CONF:SPOR11:MOD:CONF:UPD command is executed. Each string has a maximum of 40 characters.

STR 1 is the initial configuration string sent to the modem when the CONF:SPOR11:MOD:CONF:UPD command is executed. The second line is the second string sent, and the third line is the third string sent. The second and third lines can be left blank.

Syntax

```
CONF:SPOR11:MOD:CONF:STR1 <string>
CONF:SPOR11:MOD:CONF:STR1?
CONF:SPOR11:MOD:CONF:STR2 <string>
CONF:SPOR11:MOD:CONF:STR2?
CONF:SPOR11:MOD:CONF:STR3 <string>
CONF:SPOR11:MOD:CONF:STR3?
```

Screen/field equivalent

CONF:SPOR11:MOD:CONF:STR1 controls the first line of the **Modem Initialization/Configuration** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 11**.

:SPOR11|SPORT11|SB11|SP11:MODem:CONFigure:ECHaracter
:SPOR11|SPORT11|SB11|SP11:MODem:CONFigure:ECHaracter?

This command sets/queries a one-character, non-printable escape character that you use to define your own escape command sequence.

Syntax

```
CONF:SPOR11:MOD:CONF:ECH <character>
CONF:SPOR11:MOD:CONF:ECH?
```

Screen/field equivalent

CONF:SPOR11:MOD:CONF:ECH controls the **Command Escape Character** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 11**.

:SPOR11|SPORT11|SB11|SP11:MODem:CONFigure:ECEQivalent?

This command reports the decimal equivalent of the escape character entered with the CONF:SPOR11:MOD:CONF:ECH.

Syntax

```
CONF:SPOR11:MOD:CONF:ECEQ?
```

Screen/field equivalent

CONF:SPOR11:MOD:CONF:ECEQ? queries the **`Decimal Equivalent`** field on the MODEM CONFIGURE screen when the **`Serial Port`** field is set to **`Port 11`**.

:SPOR11|SPORT11|SB11|SP11:MODem:SECurity:STATe
:SPOR11|SPORT11|SB11|SP11:MODem:SECurity:STATe?

This command controls the usage of a password security challenge.

- 'Off' - no password challenge on connection
- 'On' - issues a password challenge on connection. The caller must enter a password. The password must match the string entered in the CONF:SPOR11:MOD:SEC:PASS command.

Syntax

```
CONF:SPOR11:MOD:SEC:STAT 'On'
                         'Off'
CONF:SPOR11:MOD:CONF:STAT?
```

Screen/field equivalent

CONF:SPOR11:MOD:SEC:STAT controls the **`Incoming Call Security`** field on the MODEM CONFIGURE screen when the **`Serial Port`** field is set to **`Port 11`**.

:SPOR11|SPORT11|SB11|SP11:MODem:SECurity:PASSword
:SPOR11|SPORT11|SB11|SP11:MODem:SECurity:PASSword?

This command sets/queries the password required by a security challenge when the CONF:SPOR11:MOD:SEC:STAT 'On' command is used.

Syntax

```
CONF:SPOR11:MOD:SEC:PASS <string>
```

```
CONF:SPOR11:MOD:SEC:PASS?
```

Screen/field equivalent

CONF:SPOR11:MOD:SEC:PASS controls the **Pssword** field on the MODEM CONFIGURE screen when the **Serial Port** field is set to **Port 11**.

:SPSelect <string>
:SPSelect?

These commands set/query the selected serial port for configuration purposes. It defines which port's configuration settings are displayed on the I/O CONFIGURE screen.

Syntax

```
CONF:SPS 'Serial 9'
         'Serial 10'
         'Serial 11'
```

```
CONF:SPS?
```

Screen/field equivalent

CONF:SPS controls the **Serial Port** field of the I/O CONFIGURE screen.

:SRLocation <string>
:SRLocation?

These commands set/query the save and recall locations.

Syntax

```
CONF:SRL 'INTERNAL'
         'CARD'
         'RAM'
```

```
CONF:SRL?
```

Screen/field equivalent

CONF:SRL controls the **Save/Recall** field of the I/O CONFIGURE screen.

:TIME <real number>
:TIME?

These commands set/query the Test Set's time-of-day clock (hh.mm). The clock uses the 24-hour format. For example 1:30 pm is 13.30.

This command utilizes the "Real Number Setting Syntax" on page 299, but does not use the :STAT, :DUN, :INCR, or :UNITs command.

Syntax

```
CONF:TIME <real number> !hh.mm where hh is hours, mm is
minutes
```

```
CONF:TIME?
```

Screen/field equivalent

CONF:TIME controls the **Time** field of the INSTRUMENT CONFIGURE screen.

DECoder subsystem

:ARM:MODE <string>
:ARM:MODE?

These commands set/query the measurement arming mode. This command specifies how long you want the analyzer to decode incoming signals.

- 'Single' tells the analyzer to display the information received during one gate time. Measurements are triggered using the DGAN:TRIG:ARM and retriggered using the same command. To disarm the measurement, use the DEC:STOP command.
- 'Cont' is used to automatically re-arm the analyzer and display the measurements continuously until the DEC:ARM:MODE 'Single' command is sent. Each measurement is overwritten by subsequent measurements.

Syntax

```
DEC:ARM:MODE ‘Single’
             ‘Cont’
```

```
DEC:ARM:MODE?
```

Screen/field equivalent

DEC:ARM:MODE controls the **Single/Cont** field on the SIGNALING DECODER screens.

:LEVel:AM <real number>
:LEVel:AM?

These commands set/query the expected data signal level (after de-emphasis, if used). For more information about the effects of de-emphasis, see the “De-emphasis and Input Level” description in the *Reference Guide*.

The higher the level of signal expected by the analyzer, the higher the trigger level is set. The input level should be set high enough to prevent false triggering, but low enough to allow triggering for valid signals. *This may require you to set the input level well below the expected level.*

This command requires one of the following settings for the AF analyzer’s input (AFAN:INP), ‘AM Mod’ or ‘AM Demod’.

This command utilizes the “Real Number Setting Syntax” on page 299, but does not use the :STATe command.

Syntax

```
DEC:LEV:AM <real number>
```

```
DEC:LEV:AM?
```

Screen/field equivalent

DEC:LEV:AM controls the **`Input Level`** field on the SIGNALING DECODER screen when the **`AF Anl In`** field is set to **`AM Mod`** or **`AM Demod`**.

:LEVel:FM <real number>
:LEVel:FM?

These commands set/query the expected data signal level (after de-emphasis, if used). For more information about the effects of de-emphasis, see the “De-emphasis and Input Level” in the *Reference Guide*.

The higher the level of signal expected by the analyzer, the higher the trigger level is set.The input level should be set high enough to prevent false triggering, but low enough to allow triggering for valid signals. *This may require you to set the input level well below the expected level*.

This command requires one of the following settings for the AF analyzer’s input (AFAN:INP), ‘FM Mod’ or ‘FM Demod’.

This command utilizes the “Real Number Setting Syntax” on page 299, but does not use the :STATe command.

Syntax

```
DEC:LEV:FM <real number>
```

```
DEC:LEV:FM?
```

Screen/field equivalent

DEC:LEV:FM controls the **Input Level** field on the SIGNALING DECODER screen when the **AF Anl In** field is set to **FM Mod** or **FM Demod**.

:LEVel:VOLTs <real number>
:LEVel:VOLTs?

These commands set/query the expected data signal level (after de-emphasis, if used). For more information about the effects of de-emphasis, see the “De-emphasis and Input Level” in the *Reference Guide*.

The higher the level of signal expected by the analyzer, the higher the trigger level is set. The input level should be set high enough to prevent false triggering, but low enough to allow triggering for valid signals. *This may require you to set the input level well below the expected level.*

This command requires one of the following settings for the AF analyzer’s input (AFAN:INP), ‘Audio In’, ‘Audio Out’, ‘Ext Mod’ or ‘SSB Demod’.

This command utilizes the “Real Number Setting Syntax” on page 299, but does not use the :STATe command.

Syntax

```
DEC:LEV:VOLT <real number>

DEC:LEV:VOLT?
```

Screen/field equivalent

DEC:LEV:VOLT controls the **Input Level** field on the SIGNALING DECODER screen when the **AF Anl In** field is set to **Audio In**, **Audio Out**, **Ext Mod**, or **SSB Demod**.

:MODE <string>
:MODE?

These commands set/query the mode of the signaling decoder.

Syntax

```
DEC:MODE ‘Func Gen’
         ‘DTMF’
         ‘AMPS-TACS’
         ‘NAMP-NTAC’

DEC:MODE?
```

Screen/field equivalent

DEC:MODE controls the **Mode** field on the SIGNALING DECODER screen.

:POLarity <string>
:POLarity?

These commands match/query the polarity of the encoded signal being analyzed. This function is helpful for restoring the proper data polarity when the transmitter, repeater, or receiver in you communications system has an odd number of inversions. These inversions cause the received data to be inverted when decoded.

- When DEC:POL 'Norm' is used, a logical high (1) is displayed when a positive peak in the received signal is detected. A negative peak displays a logical low (0).
- When DEC:POL 'Invert' is used, a logical low (0) is displayed when a positive peak in the received signal is detected. A negative peak displays a logical high (1).

Inverting amplifiers used in transmitters, receivers, and repeaters can cause an inversion of the modulating digital data. If the decoded signal does not display the expected results, change the polarity to see if the signal is being inverted before it is decoded.

Syntax

```
DEC:POL 'Norm'
        'Invert'
DEC:POL?
```

Screen/field equivalent

DEC:POL controls the **Polarity** field on the SIGNALING DECODER screen when the **Mode** field is set to **AMPS-TACS** or **NAMP-NTAC**.

:STOP

This command is used to disarm the decoder when you are making single measurements (DEC:ARM:MODE 'Single'). It is not used with continuous measurements.

Syntax

```
DEC:STOP
```

Screen/field equivalent

DEC:STOP controls the **Stop Meas** field on the SIGNALING DECODER screens.

:AMPS|TACS:GATE <real number>
:AMPS|TACS:GATE?

This command specifies how long the decoder analyzes a signal after it has been triggered. Up to 6.55 seconds of gate time can be specified. The minimum gate time must be long enough to allow the preamble and all necessary data bits to be captured.

If the gate time is too long, the decoder's buffer becomes full. A message is displayed instructing you to decrease the gate time.

This command utilizes the "Real Number Setting Syntax" on page 299, but does not use the :STATe command.

Syntax

```
DEC:AMPS:GATE <real number>

DEC:AMPS:GATE?
```

Screen/field equivalent

DEC:AMPS:GATE controls the **Gate Time** field on the SIGNALING DECODER screen when the **Mode** field is set to **AMPS-TACS**.

:AMPS|TACS:MESSage <string>
:AMPS|TACS:MESSage?

These commands set/query which of the message streams (entered in the encoder's message fields) will be decoded.

Syntax

```
DEC:AMPS:MESS  'FOCC A&B'
               'FOCC A'
               'FOCC B'
               'RECC'
               'FVC'
               'RVC'

DEC:AMPS:MESS?
```

Screen/field equivalent

DEC:AMPS:MESS has no equivalent screen control field.

:AMPS|TACS:STANdard <string>
:AMPS|TACS:STANdard?

These commands set/query the expected frame structure and channel range of the decoder's incoming signal. Trying to run a test with the wrong standard selected will result in incorrectly decoded data, or will result in a displayed error message.

Syntax

```
DEC:AMPS:STAN  'AMPS'
               'TACS'
               'JTACS'
DEC:AMPS:STAN?
```

Screen/field equivalent

DEC:AMPS:STAN controls the **Standard** field on the SIGNALING DECODER screen when the **Mode** field is set to **AMPS-TACS**.

:AMPS|TACS:TRIGger:PATTern <string>
:AMPS|TACS:TRIGger:PATTern?

These commands set/query the bit pattern to filter displayed information. The decoder only displays the received data when this binary pattern is encountered immediately after triggering. This is helpful when you only want to display messages containing very specific information.

The trigger pattern is entered as a sequence of ones, zeros, and dots. A dot will cause the decoder to trigger for either a one or a zero in that bit position in the received data stream.

Syntax

```
DEC:AMPS:TRIG:PATT <string>
DEC:AMPS:TRIG:PATT?
```

Screen/field equivalent

DEC:AMPS:TRIG:PATT controls the **Trigger Pattern (bin)** field on the SIGNALING DECODER screen when the **Mode** field is set to **AMPS-TACS**.

:DTMF:GATE <real number>
:DTMF:GATE?

This command specifies how long the decoder analyzes a signal after it has been triggered. Up to 6.55 seconds of gate time can be specified.

If the gate time is too long, the decoder's buffer becomes full. A message is displayed instructing you to decrease the gate time.

This command utilizes the "Real Number Setting Syntax" on page 299, but does not use the :STATe command.

Syntax

`DEC:DTMF:GATE <real number>`

`DEC:DTMF:GATE?`

Screen/field equivalent

DEC:DTMF:GATE controls the **Gate Time** field on the SIGNALING DECODER screen when the **Mode** field is set to **DTMF**.

:FGEN:GATE <real number>

This command specifies how long the decoder analyzes a signal after it has been triggered. Up to 6.55 seconds of gate time can be specified.

If the gate time is too long, the decoder's buffer becomes full. A message is displayed instructing you to decrease the gate time.

This command utilizes the "Real Number Setting Syntax" on page 299, but does not use the :STATe command.

Syntax

`DEC:FGEN:GATE <real number>`

Screen/field equivalent

DEC:FGEN:GATE controls the **Gate Time** field on the SIGNALING DECODER screen when the **Mode** field is set to **Func Gen**.

:NAMPs|NTACs:CHANnel <string>
:NAMPs|NTACs:CHANnel?

These commands set/query the type of data to decode.

- ‘Cntl’ selects reverse control channel (RECC) data.
- ‘Voice’ selects reverse voice channel (RVC) data.

Syntax

```
DEC:NAMP:CHAN ‘Cntl’
              ‘Voice’
```

```
DEC:NAMP:CHAN?
```

Screen/field equivalent

DEC:NAMP:CHAN controls the **Channel** field on the SIGNALING DECODER screen when the **Mode** field is set to **AMPS-TACS** or **NAMP-NTAC**.

:NAMPs|NTACs:GATE <real number>
:NAMPs|NTACs:GATE?

This command specifies how long the decoder analyzes a signal after it has been triggered. Up to 6.55 seconds of gate time can be specified. The minimum gate time must be long enough to allow the preamble and all necessary data bits to be captured.

If the gate time is too long, the decoder’s buffer becomes full. A message is displayed instructing you to decrease the gate time.

This function is not used with the NAMPS-NTACS RVC decoder.

This command utilizes the “Real Number Setting Syntax” on page 299, but does not use the :STATe command.

Syntax

```
DEC:NAMP:GATE <real number>
```

```
DEC:NAMP:GATE?
```

Screen/field equivalent

DEC:NAMP:GATE controls the **Gate Time** field on the SIGNALING DECODER screen when the **Mode** field is set to **NAMP-NTAC**.

:NAMPs|NTACs:DTMF:GATE <real number>
:NAMPs|NTACs:DTMF:GATE?

These commands set/query how long the decoder analyzes a signal after it has been triggered. Up to 6.55 seconds of gate time can be specified. The minimum gate time must be long enough to allow the preamble and all necessary data bits to be captured.

If the gate time is too long, the decoder's buffer becomes full. A message is displayed instructing you to decrease the gate time.

This command utilizes the "Real Number Setting Syntax" on page 299, but does not use the :STATe command.

Syntax

```
DEC:NAMP:DTMF:GATE <real number>
```

```
DEC:NAMP:DTMF:GATE?
```

Screen/field equivalent

DEC:NAMP:DTMF:GATE controls the Gate Time field on the SIGNALING DECODER screen when the **Mode** field is set to **NAMP-NTAC**, the **Channel** field is set to **Voice**, and the **Measure** field is set to **DTMF**.

:NAMPs|NTACs:RVC <string>
:NAMPs|NTACs:RVC?

These commands set/query the type of decoded data to display. This command is used in conjunction with the DEC:NAMP:CHAN 'Voice' command.

Syntax

```
DEC:NAMP:RVC 'DSAT'
             'Data'
             'DTMF'
```

```
DEC:NAMP:RVC?
```

Screen/field equivalent

DEC:NAMP:RVC controls the **Measure** field on the SIGNALING DECODER screen when the **Mode** field is set to **NAMP-NTAC** and the **Channel** field is set to **Voice**.

:NAMPs|NTACs:STANdard <string>
:NAMPs|NTACs:STANdard?

These commands set/query the expected frame structure and channel range of the decoder's incoming signal. Trying to run a test with the wrong standard selected will result in incorrectly decoded data, or will result in a displayed error message.

Syntax

```
DEC:NAMP:STAN 'NAMP'
              'NTAC'
DEC:NAMP:STAN?
```

Screen/field equivalent

DEC:NAMP:STAN controls the **Standard** field on the SIGNALING DECODER screen when the **Mode** field is set to **NAMP-NTAC**.

:NAMPs|NTACs:TRIGger:PATTern <string>
:NAMPs|NTACs:TRIGger:PATTern?

These commands set/query the bit pattern to filter displayed information. The decoder only displays the received data when this binary pattern is encountered immediately after triggering. This is helpful when you only want to display messages containing very specific information.

The trigger pattern is entered as a sequence of ones, zeros, and dots. A dot will cause the decoder to trigger for either a one or a zero in that bit position in the received data stream.

This function is not available for decoding NAMPS-NTACS RVC information.

Syntax

```
DEC:NAMP:TRIG:PATT <string>
DEC:NAMP:TRIG:PATT?
```

Screen/field equivalent

DEC:NAMP:TRIG:PATT controls the **Trigger Pattern (bin**) field on the SIGNALING DECODER screen when the **Mode** field is set to **NAMP-NTAC**, and the **Channel** field is set to **Cntl**.

DISPlay subsystem

The DISPlay subsystem controls the display of screens. A screen should be displayed before a measurement from that screen is made.

DISPlay
DISPlay?

DISP sets/queries which screen is displayed. You use the DISP REM command to lock the Test Set's display.

Syntax

```
DISP AFANalyzer   !AF ANALYZER screen
DISP CANanalyzer  !CDMA ANALYZER screen
DISP CDANalyzer   !CODE DOM screen (code domain analyzer)
DISP CONFigure    !INSTRUMENT CONFIGURE screen
DISP DECoder      !SIGNALING DECODER screen
DISP ENCoder      !SIGNALING ENCODER screen
DISP HELP         !HELP screen
DISP IOConfigure  !I/O CONFIGURE screen
DISP IQPlot       !IQ PLOT screen
DISP MESSages     !MESSAGES screen
DISP OSCilloscope !SCOPE screen
DISP PCONfigure   !PRINTER CONFIGURE screen
DISP RFANalyzer   !RF ANALYZER screen
DISP RFGen        !RF GENERATOR screen
DISP SANalyzer    !SPEC ANL screen
DISP SERVice      !SERVICE screen
DISP TCONfigure   !TESTS (External  Devices) screen
DISP REMote       !locks the display
DISP?             !returns the screen name being displayed
```

Integer Number Setting Syntax

This syntax is for setting values of commands which require integer values. It is to be used with commands which call for the Integer Number Setting Syntax.

An example of a command that requires the Integer Setting Syntax is the RFANalyzer:RFCHannel command (see “RFANalyzer subsystem” on page 303).

Syntax

```
:Previous Syntax <integer_value> !decimal value

:Previous Syntax #B<Binary_integer_value> !maximum 32 bits

:Previous Syntax #O<Octal_integer_value>

:Previous Syntax #H<Hexadecimal_integer_value>

:Previous Syntax:INCRement UP !Increments the present value

:Previous Syntax:INCRement DOWN !Decrements the present value

:Previous Syntax? !Query Returns the present value
```

Example 1-1

Examples

```
RFAN:RFCH 47

RFAN:RFCH #B101111 !sets channel to 47 binary

RFAN:RFCH #O57 !sets channel to 47 octal

RFAN:RFCH #H2F !sets channel to 47 hexadecimal

RFAN:RFCH:INCR UP !increments by 1

RFAN:RFCH:INCR DOWN !decrements by 1
```

I/Q Plot Subsystem

CONTrols <string>
:CONTrols?

These commands set/query the string that matches the current field contents.

Syntax

```
IQPL:CONT 'Main'
          'Trigger'
IQPL:CONT?
```

Screen/field equivalent

IQPL:CONT? reads current contents of **Controls** field on the IQ PLOT screen. Only the images Main and Trigger are available.

[:DISPlay]:SCALe <string>
[:DISPlay]:SCALe?

These commands set/query the string that matches the current field contents.

Syntax

```
IQPL[:DISP]:SCAL '0.50/div'
                 '1.0/div'
                 '2.0/div'
                 '4.0/div'
IQPL[:DISP]:SCAL?
```

Screen/field equivalent

IQPL[:DISP]:SCAL? sets or reads the current value of the **Scale** field on the IQ PLOT screen. This field sets the scale of the plot.

:MEASurement:MODE <string>
:MEASurement:MODE?

These commands set/query the current measurement mode for the I/Q plot screen.

Syntax

```
IQPL:MEAS:MODE 'Single'
               'Cont'
```

```
IQPL:MEAS:MODE?
```

Screen/field equivalent

IQPL:MEAS:MODE reads the **Measurement** field of the **Main** image on the IQ PLOT screen.

:MEASurement:INTerval <real number>
:MEASurement:INTerval?

These commands set/query the current field contents of the IQ plot screen field, **Meas Int**. The units of time are measured in milliseconds.

Syntax

```
IQPL:MEAS:INT <real number> ! values from 1.5 to 8.0 ms
```

```
IQPL:MEAS:INT? !returns the time interval.
```

Screen/field equivalent

IQPL:MEAS:INT sets the **Meas Int** field on the IQ PLOT screen. The query returns the current setting.

:TRIGger:ARM

This command arms the IQ Plot measurement. This command does not affect continuous measurement. To put the IQ Plot measurement in single triggering mode, use the TRIG:MODE:RETR SING command. For continuous triggering, use TRIG:MODE:RETR REP. See “TRIGger subsystem” on page 346 for a more complete discussion of GPIB triggering.

Syntax

```
IQPL:TRIG:ARM !arms the IQ Plot measurements.
```

Screen/field equivalent

IQPL:TRIG:ARM controls the **Arm Meas** field of the **Analyzer** field on the **Main** image of the IQ PLOT screen.

:TRIGger:DARM

This command disarms the IQ Plot measurement when it has been put into single triggering mode using the TRIG:MODE:RETR SING. See “TRIGger subsystem” on page 346 for a more complete discussion of GPIB triggering.

Syntax

```
IQPL:TRIG:DARM !disarms the IQ Plot measurements.
```

Screen/field equivalent

IQPL:TRIG:DARM controls the **Disarm** selection of the **Analyzer** field of the **Main** image of the IQ PLOT screen.

:TRIGger:DELay <real number>
:TRIGger:DELay?

These commands set/query the current field contents of the **Trig Delay** field on the IQ Plot screen.

Syntax

```
IQPL:TRIG:DEL <real number from 20µs to 10s>
```

```
IQPL:TRIG:DEL?
```

Screen/field equivalent

IQPL:TRIG:DEL sets the **Trig Delay** field of the **Trigger** image when the **Trig Event** field is set to **Delay** on the IQ PLOT screen. The query returns the current value.

:TRIGger[:EVENt] <string>
:TRIGger[:EVENt]?

These commands set/query the trigger interval in the IQ plot screen.

Syntax

```
IQPL:TRIG[:EVEN] ‘27 ms’
                 ‘20 ms’
                 ‘80 ms’
                 ‘2 s’
                 ‘Delay’
                 ‘Immed’
IQPL:TRIG[:EVEN]?
```

Screen/field equivalent

IQPL:TRIG[:EVEN] sets the **Trig Event** field of the **Trigger** image on the IQ PLOT screen.

:TRIGger:QUALifier <string>
:TRIGger:QUALifier?

These commands set/query the qualifying event for the trigger in the IQ plot screen. The qualifying event is the event that must occur before a trigger is accepted. The trigger event is set by the IQPL:TRIG:EVEN command.

Syntax

```
IQPL:TRIG:QUAL ‘None’
               ‘27 ms’
               ‘20 ms’
               ‘80 ms’
               ‘2 s’
               ‘Ampl Lo’
               ‘Ampl Mid’
               ‘Ampl Hi’
               ‘External’
IQPL:TRIG:QUAL?
```

Screen/field equivalent

IQPL:TRIG:QUAL sets the **Qual Event** field of the **Trigger** image of the IQ PLOT screen. The query returns the current setting.

MEASure subsystem

The MEAS subsystem has a set of unique commands. These are the measurement command <meas cmnd> set. They control features of the Test Set such as setting measurement limits, units and the meters. See “Number Measurement Syntax” on page 283 for more details about these commands.

Most commands have both a <meas cmnd> parameter and a query command.

- The command using <meas cmnd> allows you to set certain parameters of the measurement such as limits, averages, and units.
- The query command is the command that reads the measurement and returns a value.

:RESet

This command resets all measurements in progress.

Syntax

```
MEAS:RESET
```

Screen/field equivalent

MEAS:RESET does not have an equivalent control field on the Test Set.

:AFRequency:ACLevel <meas cmnd>
:AFRequency:ACLevel?

These commands set/query the AC level measurement. It measures the AC level of the audio source (SSB Demod, Audio In, Ext Mod, or Audio Out) as selected by the AFAN:INP command on page 59.

Syntax

```
MEAS:AFR:ACL <meas cmd>
    !See “Number Measurement Syntax” on page 283.
```

```
MEAS:AFR:ACL? !returns real value
```

Screen/field equivalent

MEAS:AFR:ACL? reads the **AC Level** measurement field on the AF ANALYZER screen when the **AF Anl In** field is set to **Audio In**, **Audio Out**, **Ext Mod**, or **SSB Demod**. This measurement is also displayed on the RF ANALYZER and RF GENERATOR screens.

:AFRequency:AM <meas cmnd>
:AFRequency:AM?

These commands set/query the AM depth measurement. To use this measurement you must select either the AM Mod or AM Demod audio source (AFAN:INP).

Syntax

```
MEAS:AFR:AM <meas cmd>
             !See “Number Measurement Syntax” on page 283.
```

```
MEAS:AFR:AM? !returns real value
```

Example

```
MEAS:AFR:AM:METer ON !displays the measurement in the meter
```

Screen/field equivalent

MEAS:AFR:AM? reads the **AM Depth** measurement field on the AF ANALYZER screen when the **AF Anl In** field is set to **AM Mod**, or **AM Demod**. This measurement is also displayed on the RF ANALYZER and RF GENERATOR screens.

:AFRequency:DCAM <meas cmnd>
:AFRequency:DCAM?

These commands set/query the DC AM measurement. To use this measurement, you must have the DC level measurement selected (see MEAS:AFR:SEL on page 216), and you must be using the AM Demod or AM Mod audio source (see AFAN:INP on page 59).

Syntax

```
MEAS:AFR:DCAM <meas cmd>
               !See “Number Measurement Syntax” on page 283.
```

```
MEAS:AFR:DCAM? !returns a real value
```

Example

```
MEAS:AFR:DCAM:AVERage 4 !averages DCAM over 4 measurements
```

```
MEAS:AFR:DCAM?          !returns the measured value
```

Screen/field equivalent

MEAS:AFR:DCAM? reads the **DC Level** (%) measurement field on the AF ANALYZER screen when the **AF Anl In** field is set to **AM Mod**, or **AM Demod**. This measurement is also displayed on the RF GENERATOR and RF ANALYZER screens.

:AFRequency:DCFM <meas cmnd>
:AFRequency:DCFM?

These commands set/query the DC FM measurement. To use this measurement, you must have the DC level measurement selected (see MEAS:AFR:SEL on page 216), and you must be using the FM Demod or FM Mod audio source (see AFAN:INP on page 59).

Syntax

```
MEAS:AFR:DCFM <meas cmd>
               !See “Number Measurement Syntax” on page 283.
```

```
MEAS:AFR:DCFM? !returns a real value
```

Example

```
MEAS:AFR:DCFM:AVERage 4 !averages DCFM over 4 measurements
```

```
MEAS:AFR:DCFM?          !returns the measured value
```

Screen/field equivalent

MEAS:AFR:DCFM? reads the **DC Level** (kHz) measurement field on the AF ANALYZER screen when the **AF Anl In** field is set to **FM Mod**, or **FM Demod**. This measurement is also displayed on the RF GENERATOR and RF ANALYZER screens.

:AFRequency:DCVolts <meas cmnd>
:AFRequency:DCVolts?

These commands set/query the DC voltmeter. To use this measurement, you must have the DC level measurement selected (see MEAS:AFR:SEL on page 216), and have selected one of the following audio sources: SSB Demod, Audio In, Ext Mod, or Audio Out (see AFAN:INP on page 59).

Syntax

```
MEAS:AFR:DCV <meas cmd>
              !See "Number Measurement Syntax" on page 283.
```

```
MEAS:AFR:DCV? !returns a real value
```

Example

```
MEAS:AFR:DCV mV !sets the measurement unit to mV
```

```
MEAS:AFR:DCV?   !returns the real value in millivolts
```

Screen/field equivalent

MEAS:AFR:DCV? reads the **DC Level** (V) measurement field on the AF ANALYZER screen when the **AF Anl In** field is set to **Audio In**, **Audio Out**, **Ext Mod**, or **SSB Demod**. This measurement is also displayed on the RF GENERATOR and RF ANALYZER screens.

:AFRequency:DISTortion <meas cmnd>
:AFRequency:DISTortion?

These commands set/query the distortion measurement. This measurement is selected by using the MEAS:AFR:SEL 'Distn' command (see page 216), then you can read the measurement results using the :AFR:DIST query command.

Syntax

```
MEAS:AFR:DIST <meas cmd>
               !See "Number Measurement Syntax" on page 283.
```

```
MEAS:AFR:DIST? !returns a real value
```

Example

```
MEAS:AFR:SEL 'DISTN' ! selects the distortion measurement
```

```
MEAS:AFR:DIST?       !returns the measured value
```

Screen/field equivalent

MEAS:AFR:DIST? reads the **Distn** measurement field on the AF ANALYZER screen. This measurement is also displayed on the RF GENERATOR and RF ANALYZER screens.

:AFRequency:FM <meas cmnd>
:AFRequency:FM?

These commands set/query the FM deviation measurement. This measurement is active when FM Mod or FM Demod is selected by using the AFAN:INP command (see page 59) and SNR is not selected by the MEAS:AFR:SEL command (see page 216).

Syntax

```
MEAS:AFR:FM <meas cmd>
             !See “Number Measurement Syntax” on page 283.
```

```
MEAS:AFR:FM? !returns real value
```

Example

```
MEAS:AFR:FM:AVERage:RESet !resets the number of averages
MEAS:AFR:FM?              !returns the measured value
```

Screen/field equivalent

MEAS:AFR:FM? reads the **FM Deviation** measurement field on the AF ANALYZER screen when the **AF Anl In** field is set to **FM Mod**, or **FM Demod**. This measurement is also displayed on the RF GENERATOR and RF ANALYZER screens.

:AFRequency:FREQuency <meas cmnd>
:AFRequency:FREQuency?

These commands set/query the audio frequency measurement. This measurement is active when AF Freq is selected by using the MEAS:AFR:SEL ‘AF Freq’ command (see page 216).

Syntax

```
MEAS:AFR:FREQ <meas cmd>
               !See “Number Measurement Syntax” on page 283.
```

```
MEAS:AFR:FREQ? !returns real value
```

Example

```
MEAS:AFR:SEL ‘AF Freq’ !selects the measurement
MEAS:AFR:FREQ?         !returns the measurement’s value
```

Screen/field equivalent

MEAS:AFR:FREQ? reads the **AF Freq** measurement field on the AF ANALYZER screen. This measurement is also displayed on the RF GENERATOR and RF ANALYZER screens.

:AFRequency:SELect <meas cmnd>
:AFRequency:SELect?

These commands set/query which audio frequency measurement is displayed on the AF ANALYZER screen.These measurements are also displayed on the RF GENERATOR and RF ANALYZER screens.

Syntax

```
MEAS:AFR:SEL 'SINAD'
             'Distn'
             'SNR'
             'AF Freq'
             'DC Level'
MEAS:AFR:SEL?          !returns the selected measurement
```

Example

```
MEAS:AFR:SEL 'AF Freq' !selects the AF Frequency measurement
```

Screen/field equivalent

MEAS:AFR:SEL selects the audio frequency measurement that will be displayed on the AF ANALYZER screen. These measurements are also displayed on the RF GENERATOR and RF ANALYZER screens.

:AFRequency:SINAD <meas cmnd>
:AFRequency:SINAD?

These commands set/query the SINAD measurement. SINAD must first be selected using the MEAS:AFR:SEL 'SINAD' command (see :AFR:SEL on page 216).

Syntax

```
MEAS:AFR:SINAD <meas cmd> !controls the SINAD command
MEAS:AFR:SINAD?           !returns the measured value
```

Example

```
MEAS:AFR:SINAD            !selects the measurement
```

Screen/field equivalent

MEAS:AFR:SINAD? reads the **SINAD** measurement field on the AF ANALYZER screen. This measurement is also displayed on the RF GENERATOR and RF ANALYZER screens.

:AFRequency:SNR <meas cmnd>
:AFRequency:SNR?

These commands set/query the SNR measurement. SNR must first be selected using the MEAS:AFR:SEL 'SNR' command (see page 216).

Syntax

```
MEAS:AFR:SNR <meas cmd> !controls the SNR command
MEAS:AFR:SNR?           !returns the measurement's value
```

Example

```
MEAS:AFR:SNR            !displays the measurement
```

Screen/field equivalent

MEAS:AFR:SNR? reads to the **SNR** measurement field on the AF ANALYZER screen. This measurement is also displayed on the RF GENERATOR and RF ANALYZER screens.

:CANalyzer:ADC:APOWeradc:LEVel <meas cmnd>
:CANalyzer:ADC:APOWeradc:LEVel?

These commands set/query the ADC for the average power measurement. The ADC is a measure of how close the actual input signal is to the maximum input level.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:CAN:ADC:APOW:LEV <meas cmd>
                !See "Number Measurement Syntax" on page 283.
MEAS:CAN:ADC:APOW:LEV?
```

Example

```
MEAS:CAN:ADC:APOW:LEV? !displays the measured value
```

Screen/field equivalent

MEAS:CAN:ADC:APOW:LEV? reads the **ADC FS** measurement field on the CDMA ANALYZER screen when an average power measurement is selected. This measurement is also displayed on the CDMA GENERATOR screen.

:CANalyzer:ADC:EVMadc:LEVel <meas cmnd> :CANalyzer:ADC:EVMadc:LEVel?

These commands set/query the ADC for the EVM measurement. The ADC is a measure of how close the actual input signal is to the maximum input level.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:CAN:ADC:EVM:LEV <meas cmd>
          !See “Number Measurement Syntax” on page 283.
```

```
MEAS:CAN:ADC:EVM:LEV?
```

Example

```
MEAS:CAN:ADC:EVM:LEV? !displays the measurement
```

Screen/field equivalent

MEAS:CAN:ADC:EVM:LEV? reads the **ADC FS** measurement field on the CDMA ANALYZER screen when an EVM measurement is selected.

:CANalyzer:ADC:RHOadc:LEVel <meas cmnd> :CANalyzer:ADC:RHOadc:LEVel?

These commands set/query the ADC for the rho measurement. The ADC is a measure of how close the actual input signal is to the maximum input level.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:CAN:ADC:RHO:LEV <meas cmd>
   !See “Number Measurement Syntax” on page 283.
```

```
MEAS:CAN:ADC:RHO:LEV?
```

Example

```
MEAS:CAN:ADC:RHO:LEV? !displays the measurement
```

Screen/field equivalent

MEAS:CAN:ADC:RHO:LEV? reads the **ADC FS** measurement field on the CDMA ANALYZER screen when a rho measurement is selected. This measurement is also displayed on the CDMA GENERATOR screen.

:CANalyzer:ADC:TPOWeradc:LEVel <meas cmnd> :CANalyzer:ADC:TPOWeradc:LEVel?

These commands set/query the ADC for the channel power measurement. The ADC is a measure of how close the actual input signal is to the maximum input level.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:CAN:ADC:TPOW:LEV <meas cmd>
   !See “Number Measurement Syntax” on page 283.
```

```
MEAS:CAN:ADC:TPOW:LEV?
```

Example

```
MEAS:CAN:ADC:TPOW:LEV? !displays the measurement
```

Screen/field equivalent

MEAS:CAN:ADC:TPOW:LEV? reads the **ADC FS** measurement field on the CDMA ANALYZER screen. This measurement is also displayed on the CDMA GENERATOR screen.

:CANalyzer:CARrier:FEEDthrough <meas cmnd> :CANalyzer:CARrier:FEEDthrough?

These commands set/query the carrier feedthrough measurement.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:CAN:CAR:FEED <meas cmd>
   !See “Number Measurement Syntax” on page 283.
```

```
MEAS:CAN:CAR:FEED? !returns the level
```

Example

```
MEAS:CAN:CAR:FEED?
```

Screen/field equivalent

MEAS:CAN:CAR:FEED? reads the **Carrier Feedthru** measurement field on the CDMA ANALYZER screen. This measurement is also displayed on the CDMA GENERATOR screen.

:CANalyzer:ERRor:FREQuency <meas cmnd> :CANalyzer:ERRor:FREQuency?

These commands set/query the frequency error measurement.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:CAN:ERR:FREQ <meas cmd>
   !See "Number Measurement Syntax" on page 283.
```

```
MEAS:CAN:ERR:FREQ?
```

Example

```
MEAS:CAN:ERR:FREQ?
```

Screen/field equivalent

MEAS:CAN:ERR:FREQ? reads the **Frequency Error** measurement field on the CDMA ANALYZER screen. This measurement is also displayed on the CDMA GENERATOR screen.

:CANalyzer:ERRor:MAGNitude <meas cmnd> :CANalyzer:ERRor:MAGNitude?

These commands set/query the magnitude error measurement.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:CAN:ERR:MAGN <meas cmd>
   !See "Number Measurement Syntax" on page 283.
```

```
MEAS:CAN:ERR:MAGN?
```

Example

```
MEAS:CAN:ERR:MAGN?
```

Screen/field equivalent

MEAS:CAN:ERR:MAGN? reads the **Magnitude Error** measurement field on the CDMA ANALYZER screen. This measurement is also displayed on the CDMA GENERATOR screen.

:CANalyzer:ERRor:PHASe <meas cmnd>
:CANalyzer:ERRor:PHASe?

These commands set/query the phase error measurement.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:CAN:ERR:PHAS <meas cmd>
   !See “Number Measurement Syntax” on page 283.
```

```
MEAS:CAN:ERR:PHAS?
```

Example

```
MEAS:CAN:ERR:PHAS?
```

Screen/field equivalent

MEAS:CAN:ERR:PHAS? reads the **Phase Error** measurement field on the CDMA ANALYZER screen. This measurement is also displayed on the CDMA GENERATOR screen.

:CANalyzer:EVM <meas cmnd>
:CANalyzer:EVM?

These commands set/query the error vector magnitude (EVM) measurement.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:CAN:EVM <meas cmd>
   !See “Number Measurement Syntax” on page 283.
```

```
MEAS:CAN:EVM?
```

Example

```
MEAS:CAN:EVM? !returns EVM in %
```

Screen/field equivalent

MEAS:CAN:EVM? reads the **EVM** measurement field on the CDMA ANALYZER screen. This measurement is also displayed on the CDMA GENERATOR screen.

:CANalyzer:PNOFfset?

This command queries the PN offset measurement.

Syntax

```
MEAS:CAN:PNOF? !returns the measurement
```

Screen/field equivalent

MEAS:CAN:PNOF? reads the **PN Offset** measurement field on the CDMA ANALYZER screen. This measurement is also displayed on the CDMA GENERATOR screen.

:CANalyzer:POWer:ACP:LRATio <meas cmnd>
:CANalyzer:POWer:ACP:LRATio?

These commands set/query lower ratio measurement of the adjacent channel power measurement. This ratio is the ratio of the total power in the specified bandwidth at the specified offset below the center frequency, to the power at the center frequency.

Syntax

```
MEAS:CAN:POW:ACP:LRAT <meas cmd>
   !See “Number Measurement Syntax” on page 283.
```

```
MEAS:CAN:POW:ACP:LRAT?
```

Screen/field equivalent

MEAS:CAN:POW:ACP:LRAT? reads the **Lower ACP Ratio** measurement field on the CDMA ANALYZER screen when an ACP measurement is selected. This measurement is also displayed on the CDMA GENERATOR screen.

:CANalyzer:POWer:ACP:URATio <meas cmnd>
:CANalyzer:POWer:ACP:URATio?

These commands set/query upper ratio measurement of the adjacent channel power measurement. This ratio is the ratio of the total power in the specified bandwidth at the specified offset above the center frequency, to the power at the center frequency.

Syntax

```
MEAS:CAN:POW:ACP:URAT <meas cmd>
   !See “Number Measurement Syntax” on page 283.
```

```
MEAS:CAN:POW:ACP:URAT?
```

Screen/field equivalent

MEAS:CAN:POW:ACP:URAT? reads the **Upper ACP Ratio** measurement field on the CDMA ANALYZER screen when an ACP measurement is selected. This measurement is also displayed on the CDMA GENERATOR screen.

:CANalyzer:POWer:ACP:CENTer <meas cmnd>
:CANalyzer:POWer:ACP:CENTer?

These commands set/query center channel measurement of the adjacent channel power measurement.

Syntax

```
MEAS:CAN:POW:ACP:CENT <meas cmd>
   !See “Number Measurement Syntax” on page 283.
```

```
MEAS:CAN:POW:ACP:CENT?
```

Screen/field equivalent

MEAS:CAN:POW:ACP:CENT? reads the **Center Channel** measurement field on the CDMA ANALYZER screen when an ACP measurement is selected. This measurement is also displayed on the CDMA GENERATOR screen.

:CANalyzer:POWer:AVG <meas cmnd> :CANalyzer:POWer:AVG?

These commands set/query the average power measurement.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:CAN:POW:AVG <meas cmd>
   !See "Number Measurement Syntax" on page 283.
```

```
MEAS:CAN:POW:AVG?
```

Example

```
MEAS:CAN:POW:AVG? !returns the measurement
```

Screen/field equivalent

MEAS:CAN:POW:AVG? reads the **Avg Pwr** measurement field on the CDMA ANALYZER screen. This measurement is also displayed on the CDMA GENERATOR screen.

:CANalyzer:POWer:CHANnel <meas cmnd> :CANalyzer:POWer:CHANnel?

These commands set/query the channel power measurement.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:CAN:POW:CHAN <meas cmd>
   !See "Number Measurement Syntax" on page 283.
```

```
MEAS:CAN:POW:CHAN?
```

Example

```
MEAS:CAN:POW:CHAN? !displays the measurement
```

Screen/field equivalent

MEAS:CAN:POW:CHAN? reads the **Chan Pwr** measurement field on the CDMA ANALYZER screen. This measurement is also displayed on the CDMA GENERATOR screen.

:CANalyzer:RHO <meas cmnd>
:CANalyzer:RHO?

These commands set/query the rho measurement.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:CAN:RHO <meas cmd>
   !See “Number Measurement Syntax” on page 283.
```

```
MEAS:CAN:RHO?
```

Example

```
MEAS:CAN:RHO?
```

Screen/field equivalent

MEAS:CAN:RHO? reads the **Rho** measurement field on the CDMA ANALYZER screen. This measurement is also displayed on the CDMA GENERATOR screen.

:CANalyzer:TIME:OFFSet <meas cmnd>
:CANalyzer:TIME:OFFSet?

These commands set/query the time offset measurement.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:CAN:TIME:OFFS <meas cmd>
   !See “Number Measurement Syntax” on page 283.
```

```
MEAS:CAN:TIME:OFFS?
```

Example

```
MEAS:CAN:TIME:OFFS?
```

Screen/field equivalent

MEAS:CAN:TIME:OFFS? reads the **Time Offset** measurement field on the CDMA ANALYZER screen. This measurement is also displayed on the CDMA GENERATOR screen.

:CDANalyzer:ADC <meas cmnd>
:CDANalyzer:ADC?

IS-95 Only mode. These commands set/query the ADC measurement in the code domain analyzer.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:CDAN:ADC <meas cmd>
   !See “Number Measurement Syntax” on page 283.
```

```
MEAS:CDAN:ADC?
```

Example

```
MEAS:CDAN:ADC?
```

Screen/field equivalent

MEAS:CDAN:ADC? reads the **ADCfs** measurement field on the **Gain** menu of the CODE DOM screen when the CDMA standard is set to “IS-95 Only”.

:CDANalyzer:CARRier:FEEDthrough <meas cmnd>
:CDANalyzer:CARRier:FEEDthrough?

IS-95 Only mode. These commands set/query the carrier feedthrough measurement on the code domain analyzer.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:CDAN:CARR:FEED <meas cmd>
   !See “Number Measurement Syntax” on page 283.
```

```
MEAS:CDAN:CARR:FEED?
```

Example

```
MEAS:CDAN:CARR:FEED?
```

Screen/field equivalent

MEAS:CDAN:CARR:FEED? reads the **Car FT** measurement field on the CODE DOM screen when the CDMA standard is set to “IS-95 Only”.

:CDANalyzer:CPOWer <meas cmnd>
:CDANanlyzer:CPOWer?

IS-95 Only mode. These command set/query the channel power measurement.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:CDAN:CPOW <meas cmd>
   !See "Number Measurement Syntax" on page 283.
```

```
MEAS:CDAN:CPOW?
```

Screen/field equivalent

MEAS:CDAN:CPOW? reads the **ChPwr** measurement field on the **CD Setup** menu of the CODE DOM screen when the CDMA standard is set to "IS-95 Only".

:CDANalyzer:ERRor:FREQuency <meas cmnd>
:CDANalyzer:ERRor:FREQuency?

IS-95 Only mode. These commands set/query the frequency error measurement on the code domain analyzer.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:CDAN:ERR:FREQ <meas cmd>
   !See "Number Measurement Syntax" on page 283.
```

```
MEAS:CDAN:ERR:FREQ?
```

Example

```
MEAS:CDAN:ERR:FREQ?
```

Screen/field equivalent

MEAS:CDAN:ERR:FREQ? reads the **Freq Err** measurement field on the CODE DOM screen when the CDMA standard is set to "IS-95 Only".

:CDANalyzer:ERHo?

IS-95 Only mode. This command queries the estimated rho measurement. Estimated rho is an approximation of rho that is calculated without taking the system out of service.

Syntax

```
MEAS:CDAN:ERH?
```

Screen/field equivalent

MEAS:CDAN:ERH? queries the **Est Rho** field CODE DOM screen when the CDMA standard is set to “IS-95 Only”.

:CDANalyzer:MARKer:APOWer <meas cmnd>
:CDANalyzer:MARKer:APOWer?

IS-95 Only mode. These commands set/query the absolute power measurement.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:CDAN:MARK:APOW <meas cmd>
   !See “Number Measurement Syntax” on page 283.
```

```
MEAS:CDAN:MARK:APOW?
```

Example

```
MEAS:CDAN:MARK:APOW?
```

Screen/field equivalent

MEAS:CDAN:MARK:APOW? reads the **Lvl** field on the **Marker** menu of the CODE DOM screen when power (or fast power) measurement is selected and the **Ch pwr unit** field on the **CD Setup** menu is set to **Abs**. This applies when the CDMA standard is set to “IS-95 Only”.

:CDANalyzer:MARKer:LEVel <meas cmnd>
:CDANalyzer:MARKer:LEVel?

IS-95 Only mode. These commands set/query the level at the marker on the code domain analyzer's trace during power or fast power measurements (see :CDAN:MEAS on page 124). This measurement is made relative to the value at Walsh Code 0.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:CDAN:MARK:LEV <meas cmd>
   !See “Number Measurement Syntax” on page 283.
```

```
MEAS:CDAN:MARK:LEV?
```

Example

```
MEAS:CDAN:MARK:LEV?
```

Screen/field equivalent

MEAS:CDAN:MARK:LEV? reads the **Lvl** field on the **Marker** menu of the CODE DOM screen when a power or fast power measurement is selected, and the **Ch pwr unit** field on the **CD Setup** menu is set to **Rel**. This applies when the CDMA standard is set to “IS-95 Only”.

:CDANalyzer:MARKer:PHASe <meas cmnd> :CDANalyzer:MARKer:PHASe?

IS-95 Only mode. These commands set/query the phase at the marker on the code domain analyzer's trace during phase measurements (see :CDAN:MEAS on page 124).This measurement is made relative to the value at Walsh Code 0.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:CDAN:MARK:PHAS <meas cmd>
   !See “Number Measurement Syntax” on page 283.
```

```
MEAS:CDAN:MARK:PHAS?
```

Example

```
MEAS:CDAN:MARK:PHAS?
```

Screen/field equivalent

MEAS:CDAN:MARK:PHAS? reads the **Phse** field on the **Marker** menu of the CODE DOM screen when a phase measurement is selected. This applies when the CDMA standard is set to “IS-95 Only”.

:CDANalyzer:MARKer:TIME <meas cmnd> :CDANalyzer:MARKer:TIME?

IS-95 Only mode. These commands set/query the time at the marker on the code domain analyze's trace during a timing measurement (see CDAN:MEAS on page 124). This measurement is made relative to the value at Walsh Code 0.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:CDAN:MARK:TIME <meas cmd>
   !See "Number Measurement Syntax" on page 283.
```

```
MEAS:CDAN:MARK:TIME?
```

Example

```
MEAS:CDAN:MARK:TIME?
```

Screen/field equivalent

MEAS:CDAN:MARK:TIME? reads the **Time** field on the **Marker** menu of the CODE DOM screen when a timing measurement is selected. This applies when the CDMA standard is set to "IS-95 Only".

:CDANalyzer:PNOFfset?

IS-95 Only mode. This command queries the PN offset measurement.

Syntax

```
MEAS:CDAN:PNOF?
```

Example

```
MEAS:CDAN:PNOF?
```

Screen/field equivalent

MEAS:CDAN:PNOF? queries the **PN Ofs** measurement field on the CODE DOM screen whent he CDMA standard is set to "IS-95 Only", and the **CD pwr unit** is set to **Abs** on the CD Setup image of the CODE DOMAIN screen.

:CDANalyzer:TIME:OFFSet <meas cmnd>
:CDANalyzer:TIME:OFFSet?

IS-95 Only mode. These commands set/query the time offset measurement of the code domain analyzer.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:CDAN:TIME:OFFS <meas cmd>
   !See “Number Measurement Syntax” on page 283.
```

```
MEAS:CDAN:TIME:OFFS?
```

Example

```
MEAS:CDAN:TIME:OFFS? !displays the measurement
```

Screen/field equivalent

MEAS:CDAN:TIME:OFFS? reads the **Time Ofs** measurement field on the CODE DOM screen when the CDMA standard is set to “IS-95 Only”.

:CDANalyzer:TRACe:POWer?

IS-95 Only mode. This command queries the power in each of the 64 Walsh channels, relative to the pilot’s power. (Pilot power is approximately two-thirds of the total power.) The measurement returns 64 values (in dB), one for each point.

Syntax

```
MEAS:CDAN:TRAC:POW?
```

Screen/field equivalent

MEAS:CDAN:TRAC:POW? does not correspond to any field on the CODE DOM screen. This applies when the CDMA standard is set to “IS-95 Only”.

:CDANalyzer:TRACe:TOFFset?

IS-95 Only mode. This command queries the timing in the 64 trace points of the code domain analyzer. The measurement returns 64 values (in seconds), one for each point.

Syntax

```
MEAS:CDAN:TRAC:TOFF?
```

Screen/field equivalent

MEAS:CDAN:TRAC:TOFF? does not correspond to any field on the CODE DOM screen. This applies when the CDMA standard is set to “IS-95 Only”.

:CDANalyzer:TRACe:PERRor?

IS-95 Only mode. This command queries the phase in the 64 trace points in the code domain analyzer. The measurement returns 64 values (in radians), one for each point.

Syntax

```
MEAS:CDAN:TRAC:PERR?
```

Screen/field equivalent

MEAS:CDAN:TRAC:PERR? does not correspond to any field on the CODE DOM screen. This applies when the CDMA standard is set to “IS-95 Only”.

:CDANalyzer:TRACe:TPOWer?

IS-95 Only mode. This command queries the absolute (true) power in each of the 64 Walsh channels, relative to the total power inside a 1.23 MHz bandwidth centered at the tune frequency. The measurement returns 64 values (in dB), one for each point.

Syntax

```
MEAS:CDAN:TRAC:TPOW?
```

Screen/field equivalent

MEAS:CDAN:TRAC:TPOW? does not correspond to any field on the CODE DOM screen. This applies when the CDMA standard is set to “IS-95 Only”.

:CDANalyzer:IS2000:ADC <meas cmds> :CDANalyzer:IS2000:ADC?

IS-2000 only. These commands set/query the ADC measurement in the Code Domain analyzer.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:CDAN:IS2000:ADC <meas cmds>
   !See "Number Measurement Syntax" on page 283.
```

```
MEAS:CDAN:IS2000:ADC?
```

Screen/field equivalent

MEAS:CDAN:IS2000:ADC? reads the **ADCfs** measurement field on the **Gain** menu of the CODE DOMAIN screen when the CDMA standard is set to "IS-2000".

:CDANalyzer:IS2000:CARRier[:FEEDthrough]?

IS-2000 only. This query returns a floating point number representing the carrier feedthrough currently displayed in the Code Domain analyzer of the Test Set.

Syntax

```
MEAS:CDAN:IS2000:CARR[:FEED]?
```

Screen/field equivalent

MEAS:CDAN:IS2000:CARR[:FEED]? reads the **Carrier FT** measurement field on the CODE DOMAIN screen when the CDMA standard is set to "IS-2000".

:CDANalyzer:IS2000:CHANnel[:POWer]?

IS-2000 only. This query returns the channel power value (when active) with the units dBm.

Syntax

```
MEAS:CDAN:IS2000:CHAN[:POW]?
```

Screen/field equivalent

MEAS:CDAN:IS2000:CHAN[:POW]? reads the **Chan Power** measurement field from the **Reference** menu when the **CD pwr unit** is set to **Abs** on the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:CDANalyzer:IS2000:FREQuency[:ERRor]?

IS-2000 only. This query returns frequency error for the main RF.

Syntax

```
MEAS:CDAN:IS2000:FREQ[:ERR]?
```

Screen/field equivalent

MEAS:CDAN:IS2000:FREQ[:ERR]? reads the **Freq Err** measurement field on the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:CDANalyzer:IS2000:MARKer:CHANnel:NUMBer?

IS-2000 only. This query returns the Walsh Channel number for the current marker position.

Syntax

```
MEAS:CDAN:IS2000:MARK:CHAN:NUMB?
```

Screen/field equivalent

MEAS:CDAN:IS2000:MARK:CHAN:NUMB? reads the **Chan Num** field on the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:CDANalyzer:IS2000:MARKer:CHANnel:RATE:RC3?

IS-2000 only. This query returns the RC-3 data rate value for the channel selected by the Marker’s current position. The return value is an integer.

Syntax

```
MEAS:CDAN:IS2000:MARK:CHAN:RATE:RC3?
```

Screen/field equivalent

MEAS:CDAN:IS2000:MARK:CHAN:RATE:RC3? reads the **RATE RC-3** field of the CODE DOMAIN screen when the CDMA standard is set to “IS-2000” and **Sprd Fact** is selected.

:CDANalyzer:IS2000:MARKer:CHANnel:RATE:RC4?

IS-2000 only. This query returns the RC-4 data rate value for the channel selected by the Marker’s current position. The return value is an integer.

Syntax

```
MEAS:CDAN:IS2000:MARK:CHAN:RATE:RC4?
```

Screen/field equivalent

MEAS:CDAN:IS2000:MARK:CHAN:RATE:RC4? reads the **RATE RC-4** field of the CODE DOMAIN screen when the CDMA standard is set to “IS-2000” and **Sprd Fact** is selected.

:CDANalyzer:IS2000:MARKer:CHANnel:RATE:RC5?

IS-2000 only. This query returns the RC-5 data rate value for the channel selected by the Marker's current position. The return value is an integer.

Syntax

```
MEAS:CDAN:IS2000:MARK:CHAN:RATE:RC5?
```

Screen/field equivalent

MEAS:CDAN:IS2000:MARK:CHAN:RATE:RC5? reads the **RATE RC-5** field of the CODE DOMAIN screen when the CDMA standard is set to "IS-2000" and **Sprd Fact** is selected.

:CDANalyzer:IS2000:MARKer:CHANnel:SPRead[:RATE]?

IS-2000 only. This query returns the spread factor (1, 2, 4, 8, 16, 32, 64, 128) of the channel selected by the Marker's current position. The return value is an integer.

Syntax

```
MEAS:CDAN:IS2000:MARK:CHAN:SPR[:RATE]?
```

Screen/field equivalent

MEAS:CDAN:IS2000:MARK:CHAN:SPR:RATE? reads the **SPRD FACT** field of the CODE DOMAIN screen when the CDMA standard is set to "IS-2000".

:CDANalyzer:IS2000:MARKer:CHANnel[:WALSh]:ORDer?

IS-2000 only. This query returns the Walsh order (1, 2, 3, 4, 5, 6, 7) of the channel selected by the marker's current position.

Syntax

```
MEAS:CDAN:IS2000:MARK:CHAN:WALS:ORD?
```

Screen/field equivalent

MEAS:CDAN:IS2000:MARK:CHAN:WALS:ORD? reads the **Walsh Ord** field of the CODE DOMAIN screen when the CDMA standard is set to "IS-2000".

:CDANalyzer:IS2000:MARKer:CHANnel[:WALSh]:NUMBer?

IS-2000 only. This query returns the parenthetical Walsh channel number for the the channel selected by the marker's current position. The return value is an integer.

Syntax

`MEAS:CDAN:IS2000:MARK:CHAN:WALS:ORD?`

Screen/field equivalent MEAS:CDAN:IS2000:MARK:CHAN:WALS:ORD? reads the **`Walsh Ord`** field of the CODE DOMAIN screen when the CDMA standard is set to "IS-2000".

:CDANalyzer:IS2000:MARKer:CHANnel:WIDTh?

IS-2000 only. This query returns the total number of channels that make up the currently selected supplemental channel. The return value is an integer.

Syntax

`MEAS:CDAN:IS2000:MARK:CHAN:WIDT?`

Screen/field equivalent

MEAS:CDAN:IS2000:MARK:CHAN:WIDT? reads the **`Chan Size`** field of the CODE DOMAIN screen when the CDMA standard is set to "IS-2000" and **`Chan Size`** is selected.

:CDANalyzer:IS2000:MARKer:COMPlex:I[:LEVel]?

IS-2000 only. This query returns the Marker Level for the I channel (Top bar), when the Complex Power Measurement is active. The return is a floating point number.

Syntax

`MEAS:CDAN:IS2000:MARK:COMP:I[:LEV]?`

Screen/field equivalent

MEAS:CDAN:IS2000:MARK:COMP:I[LEV]? reads the **I Pwr Lvl** field on the **Main** menu of the CODE DOMAIN screen when the CDMA standard is set to “IS-2000” and the **Measurement** field is set to **Complex Pwr**.

:CDANalyzer:IS2000:MARKer:COMPlex:Q[:LEVel]?

IS-2000 only. This query returns the Marker Level for the Q channel (bottom bar) when the Complex Power Measurement is active. The return is a floating point number.

Syntax

`MEAS:CDAN:IS2000:MARK:COMP:Q[:LEV]?`

Screen/field equivalent

MEAS:CDAN:IS2000:MARK:COMP:Q[:LEV]? reads the **Q Pwr Lvl** field on the **Main** menu of the CODE DOMAIN screen when the CDMA standard is set to “IS-2000” and measurement is **Complex Pwr**.

:CDANalyzer:IS2000:MARKer:LEVel:ABSolute?

IS-2000 only. This query returns the Marker Level, in dBm, when the Channel power mode is active. The return is a floating point number formatted as shown on the screen.

Syntax

`MEAS:CDAN:IS2000:MARK:LEV:ABS?`

Screen/field equivalent

MEAS:CDAN:IS2000:MARK:LEV:ABS? reads the **Marker Lvl** field of the CODE DOMAIN screen when the CDMA standard is set to “IS-2000” and **CD pwr unit** is set to **Abs**.

:CDANalyzer:IS2000:MARKer:NOISe?

IS-2000 only. This query returns the Marker Level for the Noise, when the Power & Noise measurement is active. The return will be a floating point number.

Syntax

```
MEAS:CDAN:IS2000:MARK:NOIS?
```

Screen/field equivalent

MEAS:CDAN:IS2000:MARK:NOIS? reads the **Noise Lvl** field in the RH column of the **Marker** menu on the CODE DOMAIN screen when the CDMA standard is set to “IS-2000” and measurement is **Power & Noise**.

:CDANalyzer:IS2000:MARKer[:POWer]?

IS-2000 only. This query returns the Marker Level, in dB, when the Channel Power Mode is inactive. The return will be a floating point number.

Syntax

```
MEAS:CDAN:IS2000:MARK[:POW]?
```

Screen/field equivalent

MEAS:CDAN:IS2000:MARK[POW]? reads the **Marker Lvl** field of the CODE DOMAIN screen when the CDMA standard is set to “IS-2000” and the **CD pwr unit** field on the **Reference** menu is set to **Rel**.

:CDANalyzer:IS2000:PNumber:OFFSet?
:CDANalyzer:IS2000:PNUMber:OFFSet?

IS-2000 only. This query returns the measured PN offset of the Pilot signal as an integer value.

Syntax

```
MEAS:CDAN:IS2000:PN:OFFS?
```

```
MEAS:CDAN:IS2000:PNUM:OFFS?
```

Screen/field equivalent

MEAS:CDAN:IS2000:PN:OFFS? and MEAS:CDAN:IS2000:PNUM:OFFS? queries the **PN Ofs** measurement field on the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:CDANalyzer:IS2000:RHO[:ESTimated]?

IS-2000 only. This query returns the Estimated Rho when present (not available in FAST Power Measurement). The returned value is a floating point number. Estimated rho is an approximation of rho that is calculated when there are more signals than a pilot alone.

Syntax

```
MEAS:CDAN:IS2000:RHO[:EST]?
```

Screen/field equivalent

MEAS:CDAN:IS2000:RHO:EST? reads the **Est Rho** field on the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:CDANalyzer:IS2000:TIME:OFFSet?

IS-2000 only. This query returns the time offset value of the current Code Domain measurement as a floating point number.

Syntax

```
MEAS:CDAN:IS2000:TIME:OFFS?
```

Screen/field equivalent

MEAS:CDAN:IS2000:TIME:OFFS? reads the **Time Ofs** measurement field on the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:CDANalyzer:IS2000:TRACe:ABSolute:POWer[:BASic][:VALue]?

IS-2000 only. This query returns an array of 128 values representing the true (absolute) power of the Walsh channel on which the Marker is currently positioned.

NOTE The value returned represents the absolute power of the *Walsh* channel *not* the supplemental channel. The power of the supplemental channel must be read directly from the **Marker Lvl** value on the CODE DOMAIN screen, or with the MEAS:CDAN:IS2000:TRAC:ABS:POW[:BAS]:ALL? query.

Syntax

MEAS:CDAN:IS2000:TRAC:ABS:POW[:BAS][:VAL]?

Screen/field equivalent

MEAS:CDAN:IS2000:TRAC:ABS:POW[:BAS][:VAL]? returns values that match the values displayed for Power, Fast Power, and Power & Noise measurements when **CD pwr unit** is set to **Abs** from the **Reference** image on the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:CDANalyzer:IS2000:TRACe:ABSolute:POWer[:BASic]:ACTive?

IS-2000 only. This query returns the active channel information for the Code Domain trace when making a Power, Fast Power, or Fast Power Synchronize measurement. The returned entity consists of an integer representing the number of active channels followed by a four-value record for each channel. The four values for each record are:

- Channel number
- Spread factor for this channel
- Power for this channel
- A fourth (ignore it) value

Syntax

MEAS:CDAN:IS2000:TRAC:ABS:POW[:BAS]:ACT?

Screen/field equivalent

MEAS:CDAN:IS2000:TRAC:ABS:POW[:BAS]:ACT? has no equivalent field on the CODE DOMAIN screen. The information can only be returned when the CDMA standard is set to “IS-2000”, the measurement selected is **Power**, **Fast Power** or **FstPwr Sync**, and **CD pwr unit** is set to **Abs** on the Reference image of the CODE DOMAIN screen.

:CDANalyzer:IS2000:TRACe:ABSolute:POWer[:BASic]:ALL?

IS-2000 only. This query returns the information necessary to recreate the Code Domain trace when making a Power, Fast Power, or Fast Power Synchronize measurement. The returned entity consists of 128 four-value records for each bar in the trace. The four values for each record are:

- Channel number. If the selected location is part of a supplemental channel, all the Walsh channels that comprise the supplemental channel will be returned.
- Power for this channel. If this is a supplemental channel, the total power for the supplemental channel will be returned.
- A third (ignore it) value
- A flag indicating that the next bar should be connected to this bar as part of a wider supplemental channel.

Syntax

```
MEAS:CDAN:IS2000:TRAC:ABS:POW[:BAS]:ALL?
```

Screen/field equivalent

MEAS:CDAN:IS2000:TRAC:ABS:POW[:BAS]:ALL? has no equivalent field on the CODE DOMAIN screen. The information can only be returned when the CDMA standard is set to “IS-2000”, the measurement selected is **Power**, **Fast Power** or **FstPwr Sync**, and **CD pwr unit** is set to **Abs** on the Reference image of the CODE DOMAIN screen.

:CDANalyzer:IS2000:TRACe:ABSolute:POWer:COMPlex:I:ACTive?
:CDANalyzer:IS2000:TRACe:ABSolute:POWer:COMPlex:COMBined:ACTive?
:CDANalyzer:IS2000:TRACe:ABSolute:POWer:COMPlex:QACTive?
:CDANalyzer:IS2000:TRACe:ABSolute:POWer:COMPlex:IS2000:ACTive?

IS-2000 only. These queries return the active channel information for the Code Domain trace when making a Complex Power measurement. The return values consist of an integer representing the number of active channels followed by a four value record for each channel. The four values for each record are channel number, spread factor for this channel, I value for this channel and the Q value for this channel.

Syntax

```
MEAS:CDAN:IS2000:TRAC:ABS:POW:COMP:I:ACT?

MEAS:CDAN:IS2000:TRAC:ABS:POW:COMP:COMB:ACT?

MEAS:CDAN:IS2000:TRAC:ABS:POW:COMP:Q:ACT?

MEAS:CDAN:IS2000:TRAC:ABS:POW:COMP:IS2000:ACT?
```

Screen/field equivalent

There are no fields on the CODE DOMAIN screen equivalent to the return value of these queries. These values are only accessible when the CDMA standard is set to “IS-2000”, the measurement selected is **Complex Power**, and **CD pwr unit** is set to **Abs** on the Reference image of the CODE DOMAIN screen.

:CDANalyzer:IS2000:TRACe:ABSolute:POWer:COMPlex:I:ALL?
:CDANalyzer:IS2000:TRACe:ABSolute:POWer:COMPlex:COMBined:ALL?
:CDANalyzer:IS2000:TRACe:ABSolute:POWer:COMPlex:Q:ALL?
:CDANalyzer:IS2000:TRACe:ABSolute:POWer:COMPlex:IS2000:ALL?

IS-2000 only. These queries return the information necessary to recreate the Code Domain trace when making a Complex Power measurement. The returned entity consists of 128 four-value records for each bar in the trace. The four values for each record are channel number, I value for this channel, Q value for this channel and a flag indicating that the next bar should be connected to this bar as part of a wider supplemental channel.

Syntax

```
MEAS:CDAN:IS2000:TRAC:ABS:POW:COMP:I:ALL?

MEAS:CDAN:IS2000:TRAC:ABS:POW:COMP:COMB:ALL?

MEAS:CDAN:IS2000:TRAC:ABS:POW:COMP:Q:ALL?

MEAS:CDAN:IS2000:TRAC:ABS:POW:COMP:IS2000:ALL?
```

Screen/field equivalent

There are no fields on the CODE DOMAIN screen equivalent to the return values for these queries. These values are only accessible when the CDMA standard is set to “IS-2000”, the measurement selected is **`Complex Power`**, and **`CD pwr unit`** is set to **`Abs`** on the Reference image of the CODE DOMAIN screen.

:CDANalyzer:IS2000:TRACe:ABSolute:POWer:COMPlex:I[:VALue]? :CDANalyzer:IS2000:TRACe:ABSolute:POWer:COMPlex:Q[:VALue]? :CDANalyzer:IS2000:TRACe:ABSolute:POWer:COMPlex:COMBined[:VALue]? :CDANalyzer:IS2000:TRACe:ABSolute:POWer:COMPlex:IS2000[:VALue]?

IS-2000 only. These queries return an array of 128 values that represent Spreader I Input Power and Spreader Q Input Power. This represents the power of both IS-95 and IS-2000 channels.

NOTE The values returned represent the absolute power of individual *Walsh* channels *not* the supplemental channels of which they may be a part. The power of supplemental channels must be read directly from **`I Pwr Level`** and **`Q Pwr Level`** fields on the CODE DOMAIN screen when Complex Power measurement has been selected, or using the queries: `MEAS:CDAN:IS2000:TRAC:ABS:POW:COMP:Q:ALL?` or `MEAS:CDAN:IS2000:TRAC:ABS:POW:COMP:IS2000:ALL?`

Syntax

`MEAS:CDAN:IS2000:TRAC:ABS:POW:COMP:I[:VAL]?`

`MEAS:CDAN:IS2000:TRAC:ABS:POW:COMP:COMB[:VAL]?`

`MEAS:CDAN:IS2000:TRAC:ABS:POW:COMP:Q[:VAL]?`

`MEAS:CDAN:IS2000:TRAC:ABS:POW:COMP:IS2000[:VAL]?`

Screen/field equivalent

MEAS:CDAN:IS2000:TRAC:ABS:POW:COMP:I[:VAL]? MEAS:CDAN:IS2000:TRAC:ABS:POW:COMP:COMB[:VAL]? returns information (top set of bars) displayed for the Complex Power measurement when **`CD pwr unit`** is set to **`Abs`** on the **`Reference`** image of the CODE DOMAIN screen when the CDMA standard is set to "IS-2000". MEAS:CDAN:IS2000:TRAC:ABS:POW:COMP:Q[:VAL]? MEAS:CDAN:IS2000:TRAC:ABS:POW:COMP:IS2000[:VAL]? returns the information displayed in the bottom trace of the Complex Power measurement when the **`CD pwr unit`** is set to **`Abs`** on the **`Reference`** image of the CODE DOMAIN screen when the CDMA standard is set to "IS-2000".

:CDANalyzer:IS2000:TRACe:ABSolute:POWer:NOISe:ACTive?

IS-2000 only. This query returns active channel information for the Code Domain trace when making a Power and Noise measurement. The return entity consists of an integer representing the number of active channels, followed by a four value record for each channel. The four values for each record are channel number, spread factor for this channel, Power, and Noise for this channel.

Syntax

```
MEAS:CDAN:IS2000:TRAC:ABS:POW:NOIS:ACT?
```

Screen/field equivalent

There are no fields on the CODE DOMAIN screen equivalent to the return values for these queries. These values are only accessible when the CDMA standard is set to “IS-2000”, the measurement selected is **Power and Noise**, and **CD pwr unit** is set to **Abs** on the Reference image of the CODE DOMAIN screen.

:CDANalyzer:IS2000:TRACe:ABSolute:POWer:NOISe:ALL?

IS-2000 only. This query returns the information necessary to recreate the Code Domain trace when making a Power and Noise measurement. The return entity consists of 128 four value records for each bar in the trace. The four values for each record are channel number, Power for this channel, Noise for this channel a flag indicating that the next bar should be connected to this bar as part of a wider supplemental channel.

Syntax

`MEAS:CDAN:IS2000:TRAC:ABS:POW:NOIS:ALL?`

Screen/field equivalent

There are no fields on the CODE DOMAIN screen equivalent to the return values for these queries. These values are only accessible when the CDMA standard is set to “IS-2000”, the measurement selected is **Power and Noise**, and **CD pwr unit** is set to **Abs** on the Reference image of the CODE DOMAIN screen.

:CDANalyzer:IS2000:TRACe:ABSolute:POWer:NOISe[:VALue]?

IS-2000 only. This query returns an array of 128 values representing each channel’s true (absolute) noise power.

NOTE The values returned represent the absolute noise power of individual *Walsh* channels *not* the noise of supplemental channels of which they may be a part. The noise of supplemental channels must be read directly from the **Noise Lvl** value on the CODE DOMAIN screen with the Power & Noise measurement activated, or using the query `MEAS:CDAN:IS2000:TRAC:ABS:POW:POW:ALL?`

Syntax

`MEAS:CDAN:IS2000:TRAC:POW:NOIS[:VAL]?`

Screen/field equivalent

MEAS:CDAN:IS2000:TRAC:ABS:POW:NOIS[:VAL]? returns the noise portion (hatched bars on the screen) of the measured power of each channel of a Power and Noise measurement, when **CD pwr unit** is set to **Abs** on the **Reference** image of the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:CDANalyzer:IS2000:TRACe:ABSolute:POWer:POWer:ACTive?

IS-2000 only. This query returns active channel information for the Code Domain trace when making a Power and Noise measurement. The return entity consists of an integer representing the number of active channels followed by a four value record for each channel. The four values for each record are channel number, spread factor for this channel, Power, and Noise for this channel ..

Syntax

```
MEAS:CDAN:IS2000:TRAC:ABS:POW:POW:ACT?
```

Screen/field equivalent

There are no fields on the CODE DOMAIN screen equivalent to the return values for these queries. These values are only accessible when the CDMA standard is set to “IS-2000”, the measurement selected is **Power and Noise**, and **CD pwr unit** is set to **Abs** on the Reference image of the CODE DOMAIN screen.

:CDANalyzer:IS2000:TRACe:ABSolute:POWer:POWer:ALL?

IS-2000 only. This query returns the information necessary to recreate the Code Domain trace when making a Power and Noise measurement. The return entity consists of 128 four value records for each bar in the trace. The four values for each record are channel number, Power for this channel, Noise for this channel, and a flag indicating that the next bar should be connected to this bar as part of a wider supplemental channel.

When the selected location is part of a supplemental channel, all the Walsh channels that comprise the supplemental channel will be returned. If it is part of a supplemental channel, the total power for the supplemental channel will be returned.

Syntax

```
MEAS:CDAN:IS2000:TRAC:ABS:POW:POW:ALL?
```

Screen/field equivalent

There are no fields on the CODE DOMAIN screen equivalent to the return values for these queries. These values are only accessible when the CDMA standard is set to “IS-2000”, the measurement selected is **Power and Noise**, and **CD pwr unit** is set to **Abs** on the Reference image of the CODE DOMAIN screen.

:CDANalyzer:IS2000:TRACe:ABSolute:POWer:POWer[:VALue]?

IS-2000 only. This query returns an array of 128 values representing the true (absolute) power for each channel’s power level when making a Power & Noise measurement.

NOTE The value returned represents the absolute power of individual *Walsh* channels *not* the supplemental channel of which they may be a part. The power of supplemental channels must be read directly from the **Marker Lvl** value on the CODE DOMAIN screen with the Power & Noise measurement selected.

Syntax

```
MEAS:CDAN:IS2000:TRAC:ABS:POW:POW[:VAL]?
```

Screen/field equivalent

MEAS:CDAN:IS2000:TRAC:ABS:POW:POW[:VAL]? returns the power portion (top bars on the screen) of the measured power of each channel of a Power and Noise measurement, when **CD pwr unit** is set to **Abs** on the **Reference** image of the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:CDANalyzer:IS2000:TRACe:POWer[:BASic]:ACTive?

IS-2000 only. This query returns the active channel information for the Code Domain trace when making a Power, Fast Power or Fast Power Synchronize measurement. The return entity consists of an integer representing the number of active channels followed by a four value record for each channel. The four values for each record are channel number, spread factor for this channel, Power for this channel and a fourth value that should be ignored.

Syntax

```
MEAS:CDAN:IS2000:TRAC:POW[:BAS]:ACT?
```

Screen/field equivalent

There is no equivalent field for this query on the CODE DOMAIN screen. The information is accessible only when a Power, Fast Power, orPower & Noise measurement is being displayed, **`CD pwr unit`** is set to **`Rel`** from the **`Reference`** image on the CODE DOMAIN screen and the CDMA standard is set to “IS-2000”.

:CDANalyzer:IS2000:TRACe:POWer[:BASic]:ALL?

IS-2000 only. This query returns the information necessary to recreate the Code Domain trace when making a Power, Fast Power or Fast Power Synchronize measurement. The return consists of 128 four value records for each bar in the trace. The four values for each record are channel number, Power for this channel, a third value that should be ignored and a flag indicating that the next bar should be connected to this bar as part of a wider supplemental channel.

If the selected location is part of a supplemental channel, all the Walsh channels that comprise the supplemental channel and total power for the supplemental channel will be returned.

Syntax

```
MEAS:CDAN:IS2000:TRAC:POW[:BAS]:ALL?
```

Screen/field equivalent

There is no equivalent field for this query on the CODE DOMAIN screen. The information is accessible only when a Power, Fast Power, orPower & Noise measurement is being displayed, **CD pwr unit** is set to **Rel** from the **Reference** image on the CODE DOMAIN screen and the CDMA standard is set to “IS-2000”.

:CDANalyzer:IS2000:TRACe:POWer[:BASic][:VALue]?

IS-2000 only. This query returns an array of 128 values representing each channel’s power relative to the specified reference power.

NOTE The values returned represent the power of individual *Walsh* channels *not* the supplemental channels of which they may be a part. The power of supplemental channels must be read directly from the **Marker Lvl** value on the CODE DOMAIN screen.

Syntax

```
MEAS:CDAN:IS2000:TRAC:POW[:BAS][:VAL]?
```

Screen/field equivalent

MEAS:CDAN:IS2000:TRAC:POW[:BAS][:VAL]? returns values that match those displayed for Power, Fast Power, and Power & Noise measurements when **CD pwr unit** is set to **Rel** from the **Reference** image on the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:CDANalyzer:IS2000:TRACe:POWer:COMPlex:I:ACTive? :CDANalyzer:IS2000:TRACe:POWer:COMPlex:COMBined:ACTive? :CDANalyzer:IS2000:TRACe:POWer:COMPlex:QACTive? :CDANalyzer:IS2000:TRACe:POWer:COMPlex:IS2000ACTive?

IS-2000 only. These queries return the active channel information for the Code Domain trace when making a Complex Power measurement. The return values consist of an integer representing the number of active channels followed by a four value record for each channel. The four values for each record are channel number, spread factor for this channel, I value for this channel and the Q value for this channel.

Syntax

```
MEAS:CDAN:IS2000:TRAC:POW:COMP:I:ACT?
```

```
MEAS:CDAN:IS2000:TRAC:POW:COMP:COMB:ACT?
```

```
MEAS:CDAN:IS2000:TRAC:POW:COMP:Q:ACT?
```

```
MEAS:CDAN:IS2000:TRAC:POW:COMP:IS2000:ACT?
```

Screen/field equivalent

There are no fields on the CODE DOMAIN screen equivalent to the return value of these queries. These values are only accessible when the CDMA standard is set to “IS-2000”, the measurement selected is **Complex Power** and the **CD pwr unit** is set to **Rel** on the Reference image of the CODE DOMAIN screen.

:CDANalyzer:IS2000:TRACe:POWer:COMPlex:I:ALL?
:CDANalyzer:IS2000:TRACe:POWer:COMPlex:COMBined:ALL?
:CDANalyzer:IS2000:TRACe:POWer:COMPlex:Q:ALL?
:CDANalyzer:IS2000:TRACe:POWer:COMPlex:IS2000:ALL?

IS-2000 only. These queries return the information necessary to recreate the Code Domain trace when making a Complex Power measurement. The returned entity consists of 128 four-value records for each bar in the trace. The four values for each record are channel number, I value for this channel, Q value for this channel and a flag indicating that the next bar should be connected to this bar as part of a wider supplemental channel.

If the selected location is part of a supplemental channel, all the Walsh channels that comprise the supplemental channel will be returned.

Syntax

```
MEAS:CDAN:IS2000:TRAC:POW:COMP:I:ALL?

MEAS:CDAN:IS2000:TRAC:POW:COMP:COMB:ALL?

MEAS:CDAN:IS2000:TRAC:POW:COMP:Q:ALL?

MEAS:CDAN:IS2000:TRAC:POW:COMP:IS2000:ALL?
```

Screen/field equivalent

There are no fields on the CODE DOMAIN screen equivalent to the return values for these queries. These values are only accessible when the CDMA standard is set to “IS-2000”, the measurement selected is **`Complex Power`**, and **`CD pwr unit`** is set to **`Rel`** on the Reference image of the CODE DOMAIN screen.

:CDANalyzer:IS2000:TRACe:POWer:COMPlex:I[:VALue]? :CDANalyzer:IS2000:TRACe:POWer:COMPlex:COMBined[:VALue]?

IS-2000 only. This query returns an array of 128 values that represents the Spreader I Input Power of both IS-95 and IS-2000 channels relative to the selected reference power value.

NOTE The values returned represent the absolute power of individual *Walsh* channels *not* the supplemental channels of which they may be a part. The power of supplemental channels must be read directly from **`I Pwr Level`** fields on the CODE DOMAIN screen when Complex Power measurement has been selected.

Syntax

```
MEAS:CDAN:IS2000:TRAC:POW:COMP:I[:VAL]?
```

```
MEAS:CDAN:IS2000:TRAC:POW:COMP:COMB[:VAL]?
```

Screen/field equivalent

MEAS:CDAN:IS2000:TRAC:POW:COMP:I[:VAL]? and MEAS:CDAN:IS2000:TRAC:POW:COMP:COMB[:VAL]? returns information (top set of bars) displayed for the Complex Power measurement when **`CD pwr unit`** is set to **`Rel`** on the **`Reference`** menu on the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:CDANalyzer:IS2000:TRACe:POWer:COMPlex:Q[:VALue]? :CDANalyzer:IS2000:TRACe:POWer:COMPlex:IS2000?

IS-2000 only. These commands query and return an array of 128 values that represents Spreader Input Q Power relative to the selected reference channel power.

NOTE The values returned represent the absolute power of individual *Walsh* channels *not* the supplemental channels of which they may be a part. The power of supplemental channels must be read directly from the **Q Pwr Level** field on the CODE DOMAIN screen when Complex Power measurement has been selected.

Syntax

```
MEAS:CDAN:IS2000:TRAC:POW:COMP:Q[:VAL]?

MEAS:CDAN:IS2000:TRAC:POW:COMP:IS2000[:VAL]?
```

Screen/field equivalent

MEAS:CDAN:IS2000:TRAC:POW:COMP:Q[:VAL]? and MEAS:CDAN:IS2000:TRAC:POW:COMP:IS2000[:VAL]? displays information (bottom set of bars) for the Complex Power measurement when the **CD pwr unit** is set to **Rel** on the **Reference** menu on the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:CDANalyzer:IS2000:TRACe:POWer:NOISe:ACTive?

IS-2000 only. This query returns the active channel information for theCode Domain trace when making a Power and Noise measurement. The return value consists of an integer representing the number of active channels followed by a four value record for each channel. The four values for each record are channel number, spread factor for this channel, Power for this channel and Noise for this channel.

Syntax

```
MEAS:CDAN:IS2000:TRAC:POW:NOIS:ACT?
```

Screen/field equivalent

There are no fields on the CODE DOMAIN screen equivalent to the return value for this query. The return information is only accessible when the CDMA standard is set to “IS-2000”, the measurement selected is **Power and Noise**, and **CD pwr unit** is set to **Rel** on the Reference image of the CODE DOMAIN screen.

:CDANalyzer:IS2000:TRACe:POWer:NOISe:ALL?

IS-2000 only. This query returns the information necessary to recreate the Code Domain trace when making a Power and Noise measurement. The return consists of 128 four value records for each bar in the trace. The four values for each record are channel number, Power for this channel, Noise for this channel a flag indicating that the next bar should be connected to this bar as part of a wider supplemental channel.

If the selected location is part of a supplemental channel, all the Walsh channels that comprise the supplemental channel and the total power and noise value for the supplemental channel will be returned.

Syntax

```
MEAS:CDAN:IS2000:TRAC:POW:NOIS:ALL?
```

Screen/field equivalent

There are no fields on the CODE DOMAIN screen equivalent to the return value for this query. The return information is only accessible when the CDMA standard is set to “IS-2000”, the measurement selected is **Power and Noise**, and **CD pwr unit** is set to **Rel** on the Reference image of the CODE DOMAIN screen.

:CDANalyzer:IS2000:TRACe:POWer:NOISe[:VALue]?

IS-2000 only. This query returns an array of 128 values that represents the noise values relative to the selected reference channel power.

NOTE The values returned represent the relative noise power of individual *Walsh* channels *not* the supplemental channels of which they may be a part. The noise levels of supplemental channels must be read directly from the **Noise Lvl** value on the Code Domain Analyzer screen when the Power & Noise measurement has been selected.

Syntax

```
MEAS:CDAN:IS2000:TRAC:POW:NOIS[:VAL]?
```

Screen/field equivalent

MEAS:CDAN:IS2000:TRAC:POW:NOIS[:VAL]? displays information (hashed part of each bar) for the power and noise measurement when the **CD pwr unit** is set to **Rel** on the **Reference** menu of the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:CDANalyzer:IS2000:TRACe:POWer:POWer:ACTive?

IS-2000 only. This query returns the active channel information for theCode Domain trace when making a Power and Noise measurement. The return value consists of an integer representing the number of active channels followed by a four value record for each channel. The four values for each record are channel number, spread factor for this channel, Power for this channel and Noise for this channel.

Syntax

```
MEAS:CDAN:IS2000:TRAC:POW:POW:ACT?
```

Screen/field equivalent

There are no fields on the CODE DOMAIN screen equivalent to the return value for this query. The return information is only accessible when the CDMA standard is set to “IS-2000”, the measurement selected is **Power and Noise**, and **CD pwr unit** is set to **Rel** on the Reference image of the CODE DOMAIN screen.

:CDANalyzer:IS2000:TRACe:POWer:POWer:ALL?

IS-2000 only. This query returns the information necessary to recreate the Code Domain trace when making a Power and Noise measurement. The return consists of 128 four value records for each bar in the trace. The four values for each record are channel number, Power for this channel, Noise for this channel a flag indicating that the next bar should be connected to this bar as part of a wider supplemental channel.

If the selected location is part of a supplemental channel, all the Walsh channels that comprise the supplemental channel will be returned total power and noise value for the supplemental channel will be returned.

Syntax

```
MEAS:CDAN:IS2000:TRAC:POW:POW:ALL?
```

Screen/field equivalent

There are no fields on the CODE DOMAIN screen equivalent to the return value for this query. The return information is only accessible when the CDMA standard is set to “IS-2000”, the measurement selected is **Power and Noise**, and **CD pwr unit** is set to **Rel** on the Reference image of the CODE DOMAIN screen.

:CDANalyzer:IS2000:TRACe:POWer:POWer[:VALue]?

IS-2000 only. This query returns an array of 128 values that represent the channel power relative to the selected reference channel power in a Power & Noise measurement.

NOTE The values returned represent the relative power of individual *Walsh* channels *not* the supplemental channels of which they may be a part. The power of supplemental channels in a Power & Noise measurement must be read directly from the **Marker Lvl** value on the Code Domain Analyzer screen.

Syntax

```
MEAS:CDAN:IS2000:TRAC:POW:POW[:VAL]?
```

Screen/field equivalent

MEAS:CDAN:IS2000:TRAC:POW:POW[:VAL]? displays information (top value of each bar) for the power and noise measurement when the **CD pwr unit** is set to **Rel** on the **Reference** menu of the CODE DOMAIN screen when the CDMA standard is set to “IS-2000”.

:DEC:AMPS|TACS:NBITs?

These commands set/query the number of bits measured by the signaling decoder in AMPS-TACS mode.

Syntax

```
MEAS:DEC:AMPS:NBIT?
```

Example

```
MEAS:DEC:AMPS:NBIT? !returns an integer value reporting the
number of bits measured by the signaling unit.
For example, if the Signaling Decoder displays a value of 928
in the Num of Bits field of the SIGNAL DECODER screen, the
value 928 will be returned by the query.
```

Screen/field equivalent

MEAS:DEC:AMPS:NBIT? reads the **Num of Bits** measurement field on the SIGNALING DECODER screen when the **Mode** field is set to **AMPS-TACS**.

:DEC:AMPS|TACS:CDATa?

This command queries the decoded data for the control channel.

Syntax

```
MEAS:DEC:AMPS:CDAT?
```

Example

```
MEAS:DEC:AMPS:CDAT? !returns a quoted string reporting the
decoded data obtained from the control channel measured by
the signaling unit.
For example, the Signaling Decoder reads the control channel
and returns the data as shown:

09A15386CDA286604938B128063FD5F8
030078ECDBED872DABF0D308A1718FDB
685461FC0C2130410982E2DAE08C0300
54D0D9B450C08231AFD909BED8C840C0

The information received is the same as that displayed in the
Data (hex) field of the SIGNALING DECODER screen.
```

Screen/field equivalent

MEAS:DEC:AMPS:CDAT? reads the **Data (hex)** measurement field on the SIGNALING DECODER screen when the **Mode** field is set to **AMPS-TACS**, and the **Channel** field is set to **Cntl**.

:DEC:AMPS|TACS:DATA?

This command queries the decoded data for the voice channel.

Syntax

```
MEAS:DEC:AMPS:DATA?
```

Example

```
MEAS:DEC:AMPS:DATA? !returns a quoted string reporting the
decoded data obtained from the voice channel measured by the
signaling unit.
For example, the Signaling Decoder reads the voice channel
and returns the data as depicted below:


09A15386CDA286604938B128063FD5F8
030078ECDBED872DABF0D308A1718FDB
685461FC0C2130410982E2DAE08C0300
54D0D9B450C08231AFD909BED8C840C0
```

The information received is the same as that displayed in the **Data (hex)** field of the SIGNALING DECODER screen.

Screen/field equivalent

MEAS:DEC:AMPS:DATA? reads the **Data (hex)** measurement field on the SIGNALING DECODER screen when the **Mode** field is set to **AMPS-TACS**, and the **Channel** field is set to **Voice**.

:DEC:DTMF:LOW:FREQuency:ABSolute <meas cmnd>
:DEC:DTMF:LOW:FREQuency:ABSolute?

These command set/query the frequency of the low tone in the DTMF pair. The MEAS:DEC:DTMF:LOW:FREQ:DISP ‘Freq’ command must be used to display the absolute frequency of the low tone.

Syntax

```
MEAS:DEC:DTMF:LOW:FREQ:ABS
    !See “Multiple Real Number Setting Syntax” on page  282

MEAS:DEC:DTMF:LOW:FREQ:ABS? !returns up to 20 real values
```

Screen/field equivalent

MEAS:DEC:DTMF:LOW:FREQ:ABS? reads the **Lo Tone** column on the SIGNALING DECODER screen. The **Mode** field must be set to **DTMF** and the upper subfield of the **Lo Tone** field must be set to **Freq**.

:DEC:DTMF:LOW:FREQuency:ERRor <meas cmnd> :DEC:DTMF:LOW:FREQuency:ERRor?

These commands set/query the frequency error of the low tone in the DTMF pair. The MEAS:DEC:DTMF:LOW:FREQ:DISP 'Freq Err' command must be used to display the frequency error of the low tone.

Syntax

```
MEAS:DEC:DTMF:LOW:FREQ:ERR
    !See “Multiple Real Number Setting Syntax” on page  282
```

```
MEAS:DEC:DTMF:LOW:FREQ:ERR? !returns up to 20 real values
```

Screen/field equivalent

MEAS:DEC:DTMF:LOW:FREQ:ERR? reads the **Lo Tone** column on the SIGNALING DECODER screen. The **Mode** field must be set to **DTMF** and the upper subfield of the **Lo Tone** field must be set to **Frq Err**.

:DEC:DTMF:LOW:FREQuency:DISPlay <string> :DEC:DTMF:LOW:FREQuency:DISPlay?

These command set/query the display mode of the low tone in the DTMF pair.

Syntax

```
MEAS:DEC:DTMF:LOW:FREQ:DISP ‘Freq’

                            ‘Frq Err’
```

```
MEAS:DEC:DTMF:LOW:FREQ:ERR?
```

Screen/field equivalent

MEAS:DEC:DTMF:LOW:FREQ:DISP controls the upper subfield of the **Lo Tone** field on the SIGNALING DECODER screen.

:DEC:DTMF:HIGH:FREQuency:ABSolute <meas cmnd> :DEC:DTMF:HIGH:FREQuency:ABSolute?

These command set/query the frequency of the high tone in the DTMF pair. The MEAS:DEC:DTMF:HIGH:FREQ:DISP ‘Freq’ command must be used to display the absolute frequency of the high tone.

Syntax

```
MEAS:DEC:DTMF:HIGH:FREQ:ABS
    !See “Multiple Real Number Setting Syntax” on page  282
```

```
MEAS:DEC:DTMF:HIGH:FREQ:ABS? !returns up to 20 real values
```

Screen/field equivalent

MEAS:DEC:DTMF:HIGH:FREQ:ABS? reads the **Hi Tone** column on the SIGNALING DECODER screen. The **Mode** field must be set to **DTMF** and the upper subfield of the **Hi Tone** field must be set to **Freq**.

:DEC:DTMF:HIGH:FREQuency:ERRor <meas cmnd> :DEC:DTMF:HIGH:FREQuency:ERRor?

These command set/query the frequency error of the high tone in the DTMF pair. The MEAS:DEC:DTMF:HIGH:FREQ:DISP ‘Frq Err’ command must be used to display the frequency error of the high tone.

Syntax

```
MEAS:DEC:DTMF:HIGH:FREQ:ERR
    !See “Multiple Real Number Setting Syntax” on page  282
```

```
MEAS:DEC:DTMF:HIGH:FREQ:ERR? !returns up to 20 real values
```

Screen/field equivalent

MEAS:DEC:DTMF:HIGH:FREQ:ERR? reads the **Hi Tone** column on the SIGNALING DECODER screen. The **Mode** field must be set to **DTMF** and the upper subfield of the **Hi Tone** field must be set to **Frq Err**.

:DEC:DTMF:HIGH:FREQuency:DISPlay <string>
:DEC:DTMF:HIGH:FREQuency:DISPlay?

These command set/query the display mode of the high tone in the DTMF pair.

Syntax

```
MEAS:DEC:DTMF:HIGH:FREQ:DISP 'Freq'
                             'Frq Err'
MEAS:DEC:DTMF:HIGH:FREQ:ERR?
```

Screen/field equivalent

MEAS:DEC:DTMF:HIGH:FREQ:DISP controls the upper subfield of the **Hi Tone** field on the SIGNALING DECODER screen.

:DEC:DTMF:TIME:ON <meas cmnd>
:DEC:DTMF:TIME:ON?

These command set/query the timing of the DTMF frequencies.

Syntax

```
MEAS:DEC:DTMF:TIME:ON
    !See "Multiple Real Number Setting Syntax" on page  282
MEAS:DEC:DTMF:TIME:ON? !returns up to 20 real values
```

Screen/field equivalent

MEAS:DEC:DTMF:TIME:ON? reads the **On Time** column on the SIGNALING DECODER screen when the **Mode** field is set to **DTMF**.

:DEC:DTMF:TIME:OFF <meas cmnd>
:DEC:DTMF:TIME:OFF?

These command set/query the timing of the DTMF frequencies.

Syntax

```
MEAS:DEC:DTMF:TIME:OFF
    !See "Multiple Real Number Setting Syntax" on page  282
MEAS:DEC:DTMF:TIME:OFF? !returns up to 20 real values
```

Screen/field equivalent

MEAS:DEC:DTMF:TIME:OFF? reads the **Off Time** column on the SIGNALING DECODER screen when the **Mode** field is set to **DTMF**.

:DEC:DTMF:SYMBol?

These command set/query the symbol number assigned by the encoder for each of the DTMF tones. As each tone is analyzed, the symbol that represents each tone is returned as a quoted string.

Syntax

```
MEAS:DEC:DTMF:SYMB? !returns a quoted string
```

Screen/field equivalent

MEAS:DEC:DTMF:SYMB? reads the **Sym** column on the SIGNALING DECODER screen when the **Mode** field is set to **DTMF**.

:DEC:FGENerator:FREQuency <meas cmnd>
:DEC:FGENerator:FREQuency?

These commands set/query the frequency of the signal generated by the function generator.

Syntax

```
MEAS:DEC:FGEN:FREQ <meas cmnd>
```

```
MEAS:DEC:FGEN:FREQ? !returns and integer value
```

Screen/field equivalent

MEAS:DEC:FGEN:FREQ? reads the **Frequency** measurement field on the SIGNALING DECODER screen when the **Mode** field is set to **Func Gen**.

:DEC:NAMPs|NTACs:NBITs <meas cmnd>
:DEC:NAMPs|NTACs:NBITs?

These commands set/query the number of bits measured by the signaling decoder in NAMP-NTAC mode.

Syntax

```
MEAS:DEC:NAMP:NBIT <meas cmnd>
```

```
MEAS:DEC:NAMP:NBIT? !returns and integer value
```

Screen/field equivalent

MEAS:DEC:NAMP:NBIT? reads the **Num of Bits** measurement field on the SIGNALING DECODER screen when the **Mode** field is set to **NAMP-NTAC**.

:DEC:NAMPs|NTACs:RECC:DATA?

This command reads the decoded RECC data, serially, as it received.

Syntax

```
MEAS:DEC:NAMP:RECC:DATA? !returns a quoted string
```

Screen/field equivalent

MEAS:DEC:NAMP:CDAT? reads the **RECC Data (hex)** measurement field on the SIGNALING DECODER screen when the **Mode** field is set to **NAMP-NTAC** , the **Measure** field is set to **Data** and the **Channel** field is set to **Cntl**.

:DEC:NAMPs|NTACs:RVC:DATA?

This command reads the decoded RVC data, serially, as it is received.

Syntax

```
MEAS:DEC:NAMP:RVC:DATA? !returns a quoted string
```

Screen/field equivalent

MEAS:DEC:NAMP:RVC:DATA? reads the **RVC Data (hex)** measurement field on the SIGNALING DECODER screen when the **Mode** field is set to **NAMP-NTAC**, the **Measure** field is set to **Data** and the **Channel** field is set to **Voice**.

:DEC:NAMPs|NTACs:DSAT:DATA?

This command reads the decoded DSAT/DST data, serially, as it is received.

Syntax

```
MEAS:DEC:NAMP:DSAT:DATA? !returns a quoted string
```

Screen/field equivalent

MEAS:DEC:NAMP:DSAT:DATA? reads the **DSAT/DST (hex)** measurement field on the SIGNALING DECODER screen when the **Mode** field is set to **NAMP-NTAC**, the **Measure** field is set to **DSAT** and the **Channel** field is set to **Voice**.

:DEC:NAMP:DTMF:LOW:FREQuency:ABSolute <meas cmnd> :DEC:NAMP:DTMF:LOW:FREQuency:ABSolute?

These commands set/query the frequency of the low tone in the DTMF pair. The MEAS:DEC:NAMP:DTMF:LOW:DISP ‘Freq’ command must be used to display the absolute frequency of the low tone.

Syntax

```
MEAS:DEC:NAMP:DTMF:LOW:FREQ:ABS
    !See “Multiple Real Number Setting Syntax” on page  282
```

```
MEAS:DEC:NAMAP:DTMF:LOW:FREQ:ABS? !returns up to 19 real
values
```

Screen/field equivalent

MEAS:DEC:NAMP:DTMF:LOW:FREQ:ABS? reads the **Lo Tone** column on the SIGNALING DECODER screen when the **Mode** field is set to **NAMP-NTAC**, the **Measure** field is set to **DTMF**, and the upper subfield of the **Lo Tone** field is set to **Freq**, and the **Channel** field is set to **Voice**.

:DEC:NAMP:DTMF:LOW:FREQuency:ERRor <meas cmnd> :DEC:NAMP:DTMF:LOW:FREQuency:ERRor?

These commands set/query the frequency error of the low tone in the DTMF pair. The MEAS:DEC:NAMP:DTMF:LOW:DISP ‘Frq Err’ command must be used to display the frequency error of the low tone.

Syntax

```
MEAS:DEC:NAMP:DTMF:LOW:FREQ:ERR
    !See “Multiple Real Number Setting Syntax” on page  282
```

```
MEAS:DEC:NAMP:DTMF:LOW:FREQ:ERR? !returns up to 19 real
values
```

Screen/field equivalent

MEAS:DEC:NAMP:DTMF:LOW:FREQ:ERR? reads the **Lo Tone** column on the SIGNALING DECODER screen when **Mode** field is set to **NAMP-NTAC**, the **Measure** field is set to **DTMF**, and the upper subfield of the **Lo Tone** field is set to **Frq Err**, and the **Channel** field is set to **Voice**.

:DEC:NAMP:DTMF:LOW:DISPlay <string>
:DEC:NAMP:DTMF:LOW:DISPlay?

These commands set/query the display mode of the low tone in the DTMF pair.

Syntax

```
MEAS:DEC:NAMP:DTMF:LOW:DISP ‘Freq’
                            ‘Frq Err’
```

```
MEAS:DEC:NAMP:DTMF:LOW:ERR?
```

Screen/field equivalent

MEAS:DEC:NAMP:DTMF:LOW:DISP controls the upper subfield of the **Lo Tone** field on the SIGNALING DECODER screen when the **Mode** field is set **NAMP-NTAC** and the **Measure** field is set to **DTMF**, and the **Channel** field is set to **Voice**.

:DEC:NAMP:DTMF:HIGH:FREQuency:ABSolute <meas cmnd>
:DEC:NAMP:DTMF:HIGH:FREQuency:ABSolute?

These commands set/query the frequency of the high tone in the DTMF pair. The MEAS:DEC:NAMP:DTMF:HIGH:DISP ‘Freq’ command must be used to display the absolute frequency of the high tone.

Syntax

```
MEAS:DEC:NAMP:DTMF:HIGH:FREQ:ABS
    !See “Multiple Real Number Setting Syntax” on page  282
```

```
MEAS:DEC:NAMP:DTMF:HIGH:FREQ:ABS? !returns up to 19 real
values
```

Screen/field equivalent

MEAS:DEC:NAMP:DTMF:HIGH:FREQ:ABS? reads the **Hi Tone** column on the SIGNALING DECODER screen when the **Mode** field is set **NAMP-NTAC**, the **Measure** field is set to **DTMF**, and the upper subfield of the **Hi Tone** field is set to **Freq**, and the **Channel** field is set to **Voice**.

:DEC:NAMP:DTMF:HIGH:FREQuency:ERRor <meas cmnd> :DEC:NAMP:DTMF:HIGH:FREQuency:ERRor?

These commands set/query the frequency error of the high tone in the DTMF pair. The MEAS:DEC:NAMP:DTMF:HIGH:DISP ‘Frq Err’ command must be used to display the frequency error of the high tone.

Syntax

```
MEAS:DEC:NAMP:DTMF:HIGH:FREQ:ERR
    !See “Multiple Real Number Setting Syntax” on page  282
```

```
MEAS:DEC:NAMP:DTMF:HIGH:FREQ:ERR? !returns up to 19 real
values
```

Screen/field equivalent

MEAS:DEC:NAMP:DTMF:HIGH:FREQ:ERR? reads the **Hi Tone** column on the SIGNALING DECODER screen when the **Mode** field is set **NAMP-NTAC**, the **Measure** field is set to **DTMF**, and the upper subfield of the **Hi Tone** field is set to **Frq Err**, and the **Channel** field is set to **Voice**.

:DEC:NAMP:DTMF:HIGH:DISPlay <string> :DEC:NAMP:DTMF:HIGH:DISPlay?

These commands set/query the display mode of the high tone in the DTMF pair.

Syntax

```
MEAS:DEC:NAMP:DTMF:HIGH:DISP ‘Freq’

                             ‘Frq Err’
```

```
MEAS:DEC:NAMP:DTMF:HIGH:DISP:ERR?
```

Screen/field equivalent

MEAS:DEC:NAMP:DTMF:HIGH:DISP controls the upper subfield of the **Hi Tone** field on the SIGNALING DECODER screen when the **Mode** field is set **NAMP-NTAC** and the **Measure** field is set to **DTMF**, and the **Channel** field is set to **Voice**.

:DEC:NAMP:DTMF:TIME:ON <meas cmnd>
:DEC:NAMP:DTMF:TIME:ON?

These commands set/query the timing of the DTMF frequencies.

Syntax

```
MEAS:DEC:NAMP:DTMF:TIME:ON
    !See “Multiple Real Number Setting Syntax” on page  282
```

```
MEAS:DEC:NAMP:DTMF:TIME:ON? !returns up to 19 real values
```

Screen/field equivalent

MEAS:DEC:NAMP:DTMF:TIME:ON? reads the **On Time** column on the SIGNALING DECODER screen when the **Mode** field is set **NAMP-NTAC** and the **Measure** field is set to **DTMF**, and the **Channel** field is set to **Voice**.

:DEC:NAMP:DTMF:TIME:OFF <meas cmnd>
:DEC:NAMP:DTMF:TIME:OFF?

These commands set/query the timing of the DTMF frequencies.

Syntax

```
MEAS:DEC:NAMP:DTMF:TIME:OFF
    !See “Multiple Real Number Setting Syntax” on page  282
```

```
MEAS:DEC:NAMP:DTMF:TIME:OFF? !returns up to 19 real values
```

Screen/field equivalent

MEAS:DEC:NAMP:DTMF:TIME:OFF? reads the **Off Time** column on the SIGNALING DECODER screen when the **Mode** field is set **NAMP-NTAC** and the **Measure** field is set to **DTMF**, and the **Channel** field is set to **Voice**.

:DEC:NAMP:DTMF:SYMBol?

This command queries the symbol number assigned by the encoder for each of the DTMF tones. As each tone is analyzed, the symbol that represents each tone is returned as a quoted string.

Syntax

```
MEAS:DEC:NAMP:DTMF:SYMB? !returns a quoted string
```

Screen/field equivalent

MEAS:DEC:NAMP:DTMF:SYMB? reads the **Sym** column on the SIGNALING DECODER screen when the **Mode** field is set **NAMP-NTAC** and the **Measure** field is set to **DTMF**, and the **Channel** field is set to **Voice**.

:IQPLot[:DISPlay]:I?

This query returns an array of 384 values representing the I (horizontal) values for each decision point. The values are scaled to match the display (1 = average power of the RF Carrier).

Syntax

```
MEAS:IQPL[:DISP]:I?
```

Screen/field equivalent

MEAS:IQPL[:DISP]:I? does not correspond to any field in the IQPLOT screen but represents the horizontal values for the decision points on the plot.

:IQPLot[:DISPlay]:Q?

This command queries and returns an array of 384 values representing the Q (vertical) values for each decision point. The values are scaled to match the display (1 = average power of the RF Carrier).

Syntax

```
MEAS:IQPL[:DISP]:Q?
```

Screen/field equivalent

MEAS:IQPL[:DISP]:Q? does not correspond with a field in the IQPLOT screen but represents the vertical decision points shown on the plot.

:OSCilloscope:MARKer:LEVel:AM <meas cmnd>
:OSCilloscope:MARKer:LEVel:AM?

These commands set/query the AM depth measurement at the oscilloscope's marker position. For this measurement to be valid, you must have AM Mod or AM Demod chosen as the audio input (see AFAN:INP on page 59).

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:OSC:MARK:LEV:AM <meas cmd>
   !See "Number Measurement Syntax" on page 283.
```

```
MEAS:OSC:MARK:LEV:AM?
```

Example

```
MEAS:OSC:MARK:LEV:AM?
```

Screen/field equivalent

MEAS:OSC:MARK:LEV:AM? reads the **Lvl** measurement field on the SCOPE screen. The **AF Anl In** field on the AF ANALYZER screen must be set to **AM Mod** or **AM Demod** to measure AM depth in this field.

:OSCilloscope:MARKer:LEVel:FM <meas cmnd> :OSCilloscope:MARKer:LEVel:FM?

These commands set/query the FM deviation measurement at the oscilloscope's marker position. For this measurement to be valid, you must have FM Mod or FM Demod chosen as the audio input (see AFAN:INP on page 59).

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:OSC:MARK:LEV:FM <meas cmd>
   !See “Number Measurement Syntax” on page 283.
```

```
MEAS:OSC:MARK:LEV:FM?
```

Example

```
MEAS:OSC:MARK:LEV:FM?
```

Screen/field equivalent

MEAS:OSC:MARK:LEV:FM? reads the **`Lvl`** measurement field on the SCOPE screen. The **`AF Anl In`** field on the AF ANALYZER screen must be set to **`FM Mod`** or **`FM Demod`** to measure FM deviation in this field.

:OSCilloscope:MARKer:LEVel:VOLTs <meas cmnd> :OSCilloscope:MARKer:LEVel:VOLTs?

These commands set/query the voltage measurement at the oscilloscope's marker position. For this measurement to be valid, you must have Audio In, Audio Out, Ext Mod, or SSB Demod chosen as the audio input (see AFAN:INP on page 59).

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:OSC:MARK:LEV:VOLT <meas cmd>
   !See "Number Measurement Syntax" on page 283.
```

```
MEAS:OSC:MARK:LEV:VOLT?
```

Example

```
MEAS:OSC:MARK:LEV:VOLT?
```

Screen/field equivalent

MEAS:OSC:MARK:LEV:VOLT? reads the **Lvl** measurement field on the SCOPE screen. The **AF Anl In** field on the AF ANALYZER screen must be set to **Audio In**, **Audio Out**, or **Ext Mod**, **SSB Demod** to measure voltage in this field.

:OSCilloscope:MARKer:TIME <meas cmnd> :OSCilloscope:MARKer:TIME?

These commands set/query the time elapsed from the trigger event to the marker location.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:OSC:MARK:TIME <meas cmd>
   !See "Number Measurement Syntax" on page 283.
```

```
MEAS:OSC:MARK:TIME? !returns a real number
```

Example

```
MEAS:OSC:MARK:TIME? !displays the measurement
```

Screen/field equivalent

MEAS:OSC:MARK:TIME? reads the **Time** field on the **Marker** menu of the SCOPE screen.

:OSCilloscope:TRACe?

This command returns an array of 417 real values, corresponding to points on the oscilloscope's display. 0 corresponds to the first value (left side of trace display) and 416 is the last value (right side of the trace display).

Syntax

```
MEAS:OSC:TRAC?
```

Screen/field equivalent

MEAS:OSC:TRAC has no corresponding field on the SCOPE screen.

:RFRequency:SELect <string>
:RFRequency:SELect?

These commands set/query the RF measurements for the RF analyzer.

Syntax

```
MEAS:RFR:SEL <meas cmd>
   !See “Number Measurement Syntax” on page 283.
```

```
MEAS:RFR:SEL?
```

Example

```
MEAS:RFR:SEL ‘Frequency’

             ‘Freq Error’
```

```
MEAS:RFR:SEL?
```

Screen/field equivalent

MEAS:RFR:SEL selects which measurement, **Frequency** or **Freq Error** is displayed the RF ANALYZER screen. These measurements are also displayed on the RF GENERATOR and AF ANALYZER screens.

:RFRequency:FREQuency:ABSolute <meas cmnd> :RFRequency:FREQuency:ABSolute?

These commands set/query the RF frequency measurement when the :RFR:SEL 'Frequency' command is used.

Syntax

```
:RFR:FREQ:ABS <meas syntax>
   !See "Number Measurement Syntax" on page 283.
```

```
:RFR:FREQ:ABS?
```

Screen/field equivalent

MEAS:RFR:FREQ:ABS? reads the **Frequency** measurement field on the RF ANALYZER screen. This measurement is also displayed on the RF GENERATOR and AF ANALYZER screens.

:RFRequency:FREQuency:ERRor <meas cmnd> :RFRequency:FREQuency:ERRor?

These commands set/query the RF frequency error measurement when the :RFR:SEL 'Freq Err' command is used.

Syntax

```
:RFR:FREQ:ERR <meas syntax>
   !See "Number Measurement Syntax" on page 283.
```

```
:RFR:FREQ:ERR?
```

Screen/field equivalent

MEAS:RFR:FREQ:ERR? reads the **Freq Error** measurement field on the RF ANALYZER screen. This measurement is also displayed on the RF GENERATOR and AF ANALYZER screens.

:RFRequency:POWer <meas cmnd>
:RFRequency:POWer?

These commands set/query the transmitter power measurement. The measurement is either peak or sampled, as determined by the RFAN:PME:DET command on page 305.

Syntax

```
MEAS:RFR:POW <meas cmd>
   !See “Number Measurement Syntax” on page 283.
```

```
MEAS:RFR:POW? !returns real value
```

Example

```
MEAS:RFR:POW? !returns the value
```

Screen/field equivalent

MEAS:RFR:POW? reads the **TX Power** measurement field on the RF ANALYZER screen. This measurement is also displayed on the RF GENERATOR and AF ANALYZER screens.

:SANalyzer:MARKer:DELTa:FREQuency <meas cmnd> :SANalyzer:MARKer:DELTa:FREQuency?

These commands set/query the delta marker frequency measurement. This measurement is the frequency of the delta marker minus the frequency of the normal marker. If the delta marker is to the right of the normal marker, the delta frequency is positive. If the delta marker is to the left of the normal marker, the delta frequency is negative.

The units for this measurement are GHz, MHz, kHz, and Hz.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:SAN:MARK:DELT:FREQ <meas cmd>
    !See “Number Measurement Syntax” on page 283.
```

```
MEAS:SAN:MARK:DELT:FREQ? !returns real value
```

Example

```
SAN:MARK:PEAK
```

```
MEAS:SAN:MARK:DELT:FREQ? !returns the value
```

Screen/field equivalent

MEAS:SAN:MARK:DELT:FREQ? reads the **Delta Mrkr**, **Freq** measurement field on the SPEC ANL screen when **Norm/Delta** field is set to **Delta** on the **Marker** controls menu.

:SANalyzer:MARKer:DELTa:LEVel <meas cmnd> :SANalyzer:MARKer:DELTa:LEVel?

These commands set/query the delta marker level measurement. This measurement is the level of the normal marker minus the frequency of the delta marker in dBm. If the delta marker is higher than normal marker, the delta level is positive. If the delta marker is lower than the normal marker, the delta level is negative.

The units for this measurement are dB. (There is a percent unit available; however, since the spectrum analyzer level is always displayed on a logarithmic scale, linear units are inappropriate.)

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:SAN:MARK:DELT:LEV <meas cmd>
   !See “Number Measurement Syntax” on page 283.
```

```
MEAS:SAN:MARK:DELT:LEV? !returns real value
```

Example

```
MEAS:SAN:MARK:DELT:LEV? !returns the value
```

Screen/field equivalent

MEAS:SAN:MARK:DELT:LEV? reads the **Delta Mrkr**, **Lvl** measurement field on the SPEC ANL screen when **Norm/Delta** field is set to **Delta** on the **Marker** controls menu.

:SANalyzer:MARKer[:NORMal]:FREQuency <meas cmnd> :SANalyzer:MARKer[:NORMal]:FREQuency?

These commands set/query the frequency at the marker on the spectrum analyzer's trace.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:SAN:MARK:NORM:FREQ <meas cmd>
    !See "Number Measurement Syntax" on page 283.
```

```
MEAS:SAN:MARK:NORM:FREQ? !returns real value
```

Example

```
MEAS:SAN:MARK:NORM:FREQ? !returns the value
```

Screen/field equivalent

MEAS:SAN:MARK[:NORM]:FREQ? reads the **Freq** measurement field on the SPEC ANL screen.

:SANalyzer:MARKer[:NORMal]:LEVel <meas cmnd> :SANalyzer:MARKer[:NORMal]:LEVel?

These commands set/query the RF level at the marker on the spectrum analyzer's trace.

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:SAN:MARK:NORM:LEV <meas cmd>
   !See "Number Measurement Syntax" on page 283.
```

```
MEAS:SAN:MARK:NORM:LEV? !returns real value
```

Example

```
MEAS:SAN:MARK:NORM:LEV? !returns the value
```

Screen/field equivalent

MEAS:SAN:MARK[:NORM]:LEV? reads the **Lvl** measurement field on the SPEC ANL.

:SANalyzer:TRACe?

This command returns an array of 417 real values, corresponding to points on the spectrum analyzer's display. 0 corresponds to the first value (left side of trace display) and 416 is the last value (right side of the trace display).

This measurement utilizes the Number Measurement Syntax, but does not use the :METer command.

Syntax

```
MEAS:SAN:TRAC?
```

Example

```
MEAS:SAN:TRAC? !returns the array
```

Screen/field equivalent

MEAS:SAN:TRAC has no corresponding field on the SPEC ANL screen.

Multiple Real Number Setting Syntax

This section defines the syntax to be used with commands that require the Real Number Setting Syntax, but allow multiple numbers to be set in one command.

This format is typically used for entering values that are grouped in rows or columns.

The format is the same as for the Real Number Setting Syntax, except that each real number is preceded by an integer that identifies the relative position in the list of numbers.

Syntax

```
:Previous Syntax <integer_value>,<real_value>[display  unit_of_measure]
    !integer_value is the position, real_value is the actual value

:Previous Syntax? <integer_value> !returns the value of the position

:Previous Syntax:DUNits <integer_value>,<display unit_of_measure>

    !sets the units

:Previous Syntax:DUNits? <integer_value> !returns the display units

:Previous Syntax:UNits <integer_value>,<GPIB unit_of_measure>

:Previous Syntax:UNits? <integer_value> !Displays the GPIB units

:Previous Syntax:INCRement <integer_value>,<incr_value>[display
unit_of_measure]

     !increments the present value

:Previous Syntax:INCRement <integer_value>,UP|DOWN

:Previous Syntax:INCRement? <integer_value> !returns the incr. value

:Previous Syntax:MODe <integer_value>,LINear|LOGarithm

     !sets mode of the command

:Previous Syntax:MODe? <integer_value> !returns mode (LIN or LOG)

:Previous Syntax:MULTiply <integer_value>!multiplies current setting

:Previous Syntax:DIVide <integer_value>!divides current setting by 10
```

Number Measurement Syntax

This syntax is used with measurement commands. It applies to both real and integer values.

This syntax is typically used with subsystems like the MEASure subsystem/

Syntax

```
:Previous Syntax:AUNits <GPIB units> !sets the GPIB units

:Previous Syntax:AUNits !returns the GPIB units

:Previous Syntax:AVERage[:VALue] <real_value>
     !sets the number of averages

:Previous Syntax:AVERage? !returns the number of averages

:Previous Syntax:AVERage:RESet !resets the number of averages to 1

:Previous Syntax:AVERage:STATe 1|ON

:Previous Syntax:AVERage:STATe 0|OFF

:Previous Syntax:AVERage:STATe? !returns 1 or 0

:Previous Syntax:DUNits <display unit_of_measure>
    !sets the disp. units

:Previous Syntax:DUNits? !returns the display units

:Previous Syntax:HLIMit[:VALue] <real_value>[<units>]
     !sets the value of the High Limit for a measurement display

:Previous Syntax:HLIMit? !returns the High Limit setting

:Previous Syntax:HLIMit:DUNits <units> !display units

:Previous Syntax:HLIMit:DUNits? !returns the display units

:Previous Syntax:HLIMit:EXCeeded?
     !returns 1 or 0 to indicate if the High Limit was exceeded

:Previous Syntax:HLIMit:RESet !resets the limit

:Previous Syntax:HLIMit:STATe 1|ON !sets state of the limit

:Previous Syntax:HLIMit:STATe 0|OFF !sets state of the limit

:Previous Syntax:HLIMit:STATe? !returns 1 or 0

:Previous Syntax:LLIMit[:VALue] <real_value>[<units>]
     !sets the value of the Low Limit for a measurement display

:Previous Syntax:LLIMit? !returns the Low Limit setting

:Previous Syntax:LLIMit:DUNits <units> !display units

:Previous Syntax:LLIMit:DUNits? !returns the display units

:Previous Syntax:LLIMit:EXCeeded?
    !returns 1 or 0 to indicate if the Low Limit was exceeded

:Previous Syntax:LLIMit:RESet !resets the limit
```

```
:Previous Syntax:LLIMit:STATe 1|ON !sets state of the limit

:Previous Syntax:LLIMit:STATe 0|OFF !sets state of the limit

:Previous Syntax:LLIMit:STATe? !returns 1 or 0

:Previous Syntax:METer[:STATe] 1|ON

:Previous Syntax:METer[:STATe] 0|OFF

:Previous Syntax:METer[:STATe]? !returns 1 or 0

:Previous Syntax:METer:HEND|LEND <real value><units>

:Previous Syntax:METer:HEND|LEND? !returns real value

:Previous Syntax:METer:HEND|LEND:DUNits <units>

:Previous Syntax:METer:HEND|LEND:DUNits?

:Previous Syntax:METer:INTerval <integer value>

:Previous Syntax:METer:INTerval? !returns integer value

:Previous Syntax:REFerence[:VALue] <real_value>[<units>]
     !sets the value of the reference for a measurement display

:Previous Syntax:REFerence? !returns the reference setting

:Previous Syntax:REFerence:DUNits <units> !display units

:Previous Syntax:REFerence:DUNits? !returns the display units

:Previous Syntax:REFerence:STATe 1|ON !sets state of the reference

:Previous Syntax:REFerence:STATe 0|OFF !sets state of the reference

:Previous Syntax:REFerence:STATe? !returns 1 or 0

:Previous Syntax:STATe 1|ON

:Previous Syntax:STATe 0|OFF

:Previous Syntax:STATe? ! returns 1 or 0

:Previous Syntax:UNits <GPIB unit_of_measure>
   !sets the GPIB units

:Previous Syntax:UNits? !returns the GPIB units
```

Example 1-2 **Examples**

```
RFAN:FREQ 850.35MHz !sets the frequency to 850.35 MHz

RFAN:FREQ? !returns the frequency

RFAN:FREQ:DUNits GHz !changes the units to GigaHertz

RFAN:FREQ:INCR 3.5MHz !increments frequency by 3.5 MHz

RFAN:FREQ:INCR? !returns the increment value

RFAN:FREQ:MULT !multiplies the current frequency by 10

RFAN:FREQ:MULT !multiplies the current frequency by 10

   !Note that :STAT is not valid for RFAN:FREQ
```

OSCilloscope subsystem

:CONTrol
:CONTrol?

These commands set/query the oscilloscope's control menus.

Syntax

```
OSC:CONT 'Main'
         'Trigger'
         'Marker'
OSC:CONT?
```

Example

```
OSC:CONT 'Trigger' !displays the Trigger menu of the
oscilloscope
```

Screen/field equivalent

OSC:CONT controls the **Controls** field of the SCOPE screen.

:MARKer:NPEak

This command moves the marker to the minimum value of the average level of the display.

This command has no query.

Syntax

```
OSC:MARK:NPE !moves the marker to the minimum
```

Screen/field equivalent

OSC:MARK:NPE controls the **Marker To Peak-** field on the **Marker** menu of the SCOPE screen.

:MARKer:PPEak

This command moves the marker to the maximum value of the average level of the display.

This command has no query.

Syntax

```
OSC:MARK:PPE !moves the marker to the maximum
```

Screen/field equivalent

OSC:MARK:PPE controls the **Marker To Peak+** field on the **Marker** menu of the SCOPE screen.

:MARKer:POSition <real number>
:MARKer:POSition?

These commands set/query the marker the number specified of scale divisions from the left side of the screen.

This measurement utilizes the Real Number Setting Syntax, but does not use the :STATe command

Syntax

```
OSC:MARK:POS <real number> !values 0 to 10.00
```

```
OSC:MARK:POS? !returns the present position value
```

Example

```
OSC:MARK:POS 4.5 !positions the marker 4.5 divisions from the
left
```

Screen/field equivalent

OSC:MARK:POS controls the **Position** field on the **Marker** menu of the SCOPE screen.

:SCALe:TIME <string>
:SCALe:TIME?

These commands set/query the horizontal sweep time per division.

Syntax

```
OSC:SCAL:TIME ‘200 ms’
              ‘100 ms’
              ‘50 ms’
              ‘20 ms’
              ‘10 ms’
              ‘5 ms’
              ‘2 ms’
              ‘1 ms’
              ‘500 us’
              ‘200 us’
              ‘100 us’
              ‘50 us’
              ‘20 us’
              ‘10 us’
              ‘5 us’
              ‘2 us’
              ‘1 us’
OSC:SCAL:TIME? !returns present value
```

Example

```
OSC:SCAL:TIME ‘2 ms’ !sets scale to 2 ms
```

Screen/field equivalent

OSC:SCL:TIME controls the **Time/div** field on the **Main** menu of the SCOPE screen.

:SCALe:VERTical:AM <string>
:SCALe:VERTical:AM?

These commands set/query the vertical axis amplitude per division when AM Mod or AM Demod is selected as the audio source (see AFAN:INP on page 59).

Syntax

```
OSC:SCAL:VERT:AM  '50%'
                  '20%'
                  '10%'
                  '5%'
                  '2%'
                  '1%'
                  '0.5%'
                  '0.2%'
                  '0.1%'
                  '0.05%'
OSC:SCAL:VERT:AM?
```

Example

```
OSC:SCAL:VERT:AM '20%'!sets the vert scale
```

Screen/field equivalent

OSC:SCAL:VERT:AM controls the **Vert/div** field on the **Main** menu of the SCOPE screen when the **AF Anl In** field on the AF ANALYZER screen is set to **AM Mod** or **AM Demod**.

:SCALe:VERTical:FM <string>
:SCALe:VERTical:FM?

These commands set/query the vertical axis amplitude per division when FM Mod or FM Demod is selected as the audio source (see AFAN:INP on page 59).

Syntax

```
OSC:SCAL:VERT:FM  ‘50 kHz’
                  ‘20 kHz’
                  ‘10 kHz’
                  ‘5 kHz’
                  ‘2 kHz’
                  ‘1 kHz’
                  ‘500 Hz’
                  ‘200 Hz’
                  ‘100 Hz’
                  ‘50 Hz’
                  ‘20 Hz’
                  ‘10 Hz’
OSC:SCAL:VERT:FM?
```

Example

```
OSC:SCAL:VERT:FM ‘20 kHz’
```

Screen/field equivalent

OSC:SCAL:VERT:FM controls the **Vert/div** field on the **Main** menu of the SCOPE screen when the **AF Anl In** field on the AF ANALYZER screen is set to **FM Mod** or **FM Demod**.

:SCALe:VERTical:OFFSet <real number>
:SCALe:VERTical:OFFSet?

These commands set/query the vertical scale (DC) offset of the vertical axis of the oscilloscope display. This moves the signal up to four divisions up or down with respect to the oscilloscope's fixed center line.

This command utilizes the "Real Number Setting Syntax" on page 299, but does not use the :STATe command.

Syntax

```
OSC:SCAL:VERT:OFFS <real number>
```

```
OSC:SCAL:VERT:OFFS?
```

Example

```
OSC:SCAL:VERT:OFFS 2.5 !moves the signal 2.5 divisions
```

Screen/field equivalent

OSC:SCAL:VERT:OFFS controls the **Vert Offset** field on the **Main** menu of the SCOPE screen.

:SCALe:VERTical:VOLTs <string>
:SCALe:VERTical:VOLTs?

These commands set/query the vertical scale of the oscilloscope display. This command is valid when the AFAN:INP command specifies one of the following sources: Audio Out, Audio In, Ext Mod, or SSB Demod.

Syntax

```
OSC:SCAL:VERT:VOLT ‘20 V’
                   ‘10 V’
                   ‘5 V’
                   ‘2 V’
                   ‘1 V’
                   ‘500 mv’
                   ‘200 mv’
                   ‘100 mv’
                   ‘50 mv’
                   ‘20 mv’
                   ‘10 mv’
                   ‘5 mv’
                   ‘2 mv’
                   ‘1 mv’
                   ‘500 uv’
                   ‘200 uv’
                   ‘100 uv’
                   ‘50 uv’
                   ‘20 uv’
OSC:SCAL:VERT:VOLT?
```

Example

```
OSC:SCAL:VERT:VOLT ‘5 V’!sets scale to 5V per division
```

Screen/field equivalent

OSC:SCAL:VERT:VOLT controls the **Vert/div** field on the **Main** menu of the SCOPE screen when the **AF Anl In** field on the AF ANALYZER screen is set to **Audio In**, **Audio Out**, **Ext Mod**, or **SSB Demod**.

:TRIGger:LEVel <real number>
:TRIGger:LEVel?

These commands set/query the level of the oscilloscope's trigger.

This command utilizes the "Real Number Setting Syntax" on page 299, but does not use the :STAT, :DUN, :UNIT, :INCR:MODE, :INCR:DUN, commands.

Syntax

```
OSC:TRIG:LEV <real> !values
```

```
OSC:TRIG:LEV? !returns the level
```

Example

```
OSC:TRIG:LEV 0.4 !sets the level to 0.4 V
```

Screen/field equivalent

OSC:TRIG:LEV controls the upper subfield of the **Level(div)** field on the **Trigger** menu of the SCOPE screen.

:TRIGger:MODE <string>
:TRIGger:MODE?

These commands set/query the retriggering mode of the trigger for the oscilloscope. If 'Cont' is chosen, then the oscilloscope is triggering continuously and is ready for another measurement after one has finished. If 'Single' is chosen then the oscilloscope requires a trigger command before making another measurement.

OSC:RESet is the trigger command for the oscilloscope.

Syntax

```
OSC:TRIG:MODE 'Cont'
              'Single'
```

```
OSC:TRIG:MODE?
```

Example

```
OSC:TRIG:MODE 'Single' !sets mode to single trigger
```

Screen/field equivalent

OSC:TRIG:MODE controls the **Cont/Single** field on the **Trigger** menu of the SCOPE screen.

:TRIGger:DELay <real number>
:TRIGger:DELay?

These commands set/query the trigger delay. Positive values delay the trigger, negative values apply a pre-trigger function to each measurement.

This command utilizes the “Real Number Setting Syntax” on page 299, but does not use the :STAT, :DUN, :UNIT, :INCR:MODE, :INCR:DUN, commands.

The valid range of the delay depends on the Time/div setting. See OSC:SCAL:TIME to set the Time/div.

Syntax

```
OSC:TRIG:DEL <real> !values depend on Time/div
```

```
OSC:TRIG:DEL?
```

Example

```
OSC:TRIG:DEL 0.2 !sets to 0.2 units
```

Screen/field equivalent

OSC:TRIG:DEL controls the **Trig-Delay** field on the **Trigger** menu of the SCOPE screen.

:TRIGger:PRETrigger <real number>
:TRIGger:PRETrigger?

These commands set/query a pretrigger for each measurement.

This command utilizes the “Real Number Setting Syntax” on page 299, but does not use the :STAT, :DUN, :UNIT, :INCR:MODE, :INCR:DUN, commands.

Syntax

```
OSC:TRIG:PRET <real>
```

```
OSC:TRIG:PRET?
```

Screen/field equivalent

OSC:TRIG:PRET has no equivalent field on the SCOPE screen.

:TRIGger:RESet

This command triggers an oscilloscope measurement.

Syntax

```
OSC:TRIG:RES !triggers the oscilloscope
```

Screen/field equivalent

OSC:TRIG:RESet controls the **Reset** field on the **Trigger** menu of the SCOPE screen.

:TRIGger:SENSe <string>
:TRIGger:SENSe?

These commands set/query the desired edge of the trigger. ‘Pos’ triggers the measurement on the positive-going edge of the input signal. ‘Neg’ triggers on the negative-going edge.

Syntax

```
OSC:TRIG:SENS ‘Pos’
              ‘Neg’
OSC:TRIG:SENS?
```

Screen/field equivalent

OSC:TRIG:SENS controls the **Pos/Neg** field on the **Trigger** menu of the SCOPE screen.

:TRIGger:SOURce <string>
:TRIGger:SOURce?

These commands set/query the source of the trigger.

Syntax

```
OSC:TRIG:SOUR ‘Internal’
              ‘Ext(TTL)’
OSC:TRIG:SOUR?
```

Screen/field equivalent

OSC:TRIG:SOUR controls the **Internal** or the **Ext (TTL)** field on the **Trigger** menu of the SCOPE screen.

:TRIGger:TYPE <string>
:TRIGger:TYPE?

These commands set/query how the trigger level is set. ‘Auto’ triggers a measurement if a triggering signal is not detected within approximately 50 ms of the last trigger. ‘Norm’ requires a specific triggering signal before triggering.

Syntax

```
OSC:TRIG:TYPE ‘Auto’
              ‘Norm’
OSC:TRIG:TYPE?
```

Screen/field equivalent

OSC:TRIG:TYPE controls the **Auto/Norm** field on the **Trigger** menu of the SCOPE screen.

PROGram subsystem

The Program subsystem provides a set of commands which allow an external controller to generate and control an IBASIC program within the Test Set.

These commands have no equivalent fields or screens.

[:SELected]:DEFine <program data>
[:SELected]:DEFine?

PROG:SEL:DEF downloads an IBASIC program into the Test Set. The query form returns the program. The program must be transferred as IEEE 488.2 Arbitrary Block Program Data. Refer to the IEEE standard 488.2-1987 for detailed information on this data type.

[:SEL] is an optional portion of this command.

<program> is the actual program content

Syntax

```
PROG:SEL:DEF <#0><program><NL><END>
```

```
PROG:DEF <#0><program><NL><END>
```

[:SELected]:DELete
[:SELected]:DELete:ALL

These commands delete the IBASIC program currently loaded in the Test Set.

Syntax

```
PROG:SEL:DEL
```

```
PROG:DEL !equivalent command
```

```
PROG:DEL:ALL !equivalent command
```

[:SELected]:EXECute

This command executes (from an IBASIC controller) an IBASIC command in the Test Set's built-in IBASIC controller.

Syntax

```
PROG:SEL:EXEC
```

```
PROG:EXEC !equivalent command
```

[:SELected]:STATe <variable>
[:SELected]:STATe?

These commands set/query (from an external IBASIC controller) the execution state of the IBASIC program currently loaded in the Test Set.

Syntax

```
PROG:SEL:STAT
```

```
PROG:SEL:STAT?
```

```
PROG:STAT !equivalent command
```

[:SELected]:NUMBer <variable>(,<nvalues>)
[:SELected]:NUMBer?

These commands set/query the value of numeric variables or arrays in the IBASIC program currently loaded in the Test Set.

Syntax

```
PROG:SEL:NUMB <variable>,<nvalues>
```

```
PROG:SEL:NUMB?
```

```
PROG:NUMB <variable>,<nvalues> !equivalent command
```

[:SELected]:STRing <variable>(,<nvalues>)
[:SELected]:STRing?

These commands set/query the value of string variables or arrays in the IBASIC program currently loaded in the Test Set

Syntax

```
PROG:SEL:STR <variable>,<nvalues>
```

```
PROG:SEL:STR?
```

```
PROG:STR <variable>,<nvalues> !equivalent command
```

[:SELected]:WAIT
[:SELected]:WAIT?

Syntax

```
PROG:SEL:WAIT
```

```
PROG:SEL:WAIT? !returns an integer value
```

RAM Usage Information

The number of bytes reported to the remote interface is different than that reported on the screen when using the IB_UTILS program. This is because to calculate kilobytes, the total is divided by 1024 before it is displayed on the screen.

SPEC:RAMDISKALLOC?

SPEC:RAMDISKALLOC? returns the total RAM disk space that has been used to store programs or test setups in the Test Set.

Screen/Field Equivalent

SPEC:RAMDISKALLOC? reads **RAM Disk Allocations:**, found in the Test Set's (ROM) IB_UTILS, RAM USAGE program.

SPEC:RAMFORIBASIC?

SPEC:TOTALUSERRAM? returns the approximate amount of RAM available in the Test Set for IBASIC programs.

Screen/Field Equivalent

SPEC:TOTALUSERRAM? reads the **Approximate RAM Available for IBasic:** field that can be found in the Test Set's (ROM) IB_UTILS, RAM USAGE program.

SPEC:SAVEREGALLOC?

SPEC:SAVEREGALLOC? returns the total RAM space that has been used for save registers in the Test Set.

Screen/Field Equivalent

SPEC:SAVEREGALLOC? reads the **Save Register Allocations:** field that can be found in the Test Set's (ROM) IB_UTILS, RAM USAGE program.

SPEC:TOTALUSERRAM?

SPEC:TOTALUSERRAM? returns the total RAM installed in the Test Set.

Screen/Field Equivalent

SPEC:TOTALUSERRAM? reads the **Total RAM Installed:** field that can be found in the Test Set's (ROM) IB_UTILS, RAM USAGE program.

Real Number Setting Syntax

This syntax is for setting real values in commands. It is to be used with commands that require the Real Number Setting Syntax.

An example of a command that requires the Real Number Setting Syntax is the RFANalyzer:FREQuency command. (See “RFANalyzer subsystem” on page 303.)

Syntax

```
:Previous Syntax <real_value>[display unit_of_measure]

:Previous Syntax? !returns the value

:Previous Syntax:DUNits <display unit_of_measure> !sets the units

:Previous Syntax:DUNits? !returns the display units

:Previous Syntax:UNits <GPIB unit_of_measure>

:Previous Syntax:UNits? !Displays the GPIB units

:Previous Syntax:INCRement <incr_value>[display unit_of_measure]

     !increments the present value

:Previous Syntax:INCRement? !returns the increment value

:Previous Syntax:INCRement UP|DOWN !increments up or down

:Previous Syntax:STATe 1|ON

:Previous Syntax:STATe 0|OFF

:Previous Syntax:STATe? ! returns 1 or 0

:Previous Syntax:MODe LINear|LOGarithm
    !sets mode of the command

:Previous Syntax:MODe? !returns mode (LIN or LOG)

:Previous Syntax:MULTiply !multiplies current setting by 10

:Previous Syntax:DIVide !divides current setting by 10
```

Example 1-3

Examples

```
RFAN:FREQ 850.35MHz !sets the frequency to 850.35 MHz

RFAN:FREQ? !returns the frequency

RFAN:FREQ:DUNits GHz !changes the units to GigaHertz

RFAN:FREQ:INCR 3.5MHz !increments frequency by 3.5 MHz

RFAN:FREQ:INCR? !returns the increment value

RFAN:FREQ:MULT !multiplies the current frequency by 10

RFAN:FREQ:MULT !multiplies the current frequency by 10

   !Note that :STAT is not valid for RFAN:FREQ
```

[REGister] subsystem

Register Subsystem contains the save/recall commands used in the Save/Recall registers.

:CLEar <integer or string>

This command clears the register defined by the integer value or string argument.

Syntax

```
:CLE '<string>'         !clears the register named 'string'
:CLE '<integer value>'  !clears the numbered register
REG:CLE '<string>'      !equivalent command
```

Screen/field equivalent

This command corresponds to deleting a save/recall register using the front panel keys. See the *Reference Guide* for more information about using the Save and Recall keys.

:CLEar:ALL

This command clears all registers.

Syntax

```
:CLE:ALL
REG:CLE:ALL !equivalent command
```

Screen/field equivalent

This command corresponds to the *Clr All* command in the save/recall menu (accessed with the front-panel keys.)

:RECall <integer or string>

This command recalls the register defined by the integer value or string argument

Syntax

```
:REC '<string>'         !recalls the register named 'string'
:REC '<integer value>'  !recalls the numbered register
REG:REC '<string>'      !equivalent command
```

Screen/field equivalent

This command corresponds to recalling a save/recall register using the front panel keys. See the *Reference Guide* for more information about using the Save and Recall keys.

:RECall:LIST?

This command lists the save/recall registers that have been named.

Syntax

```
REG:REC:LIST?
:REC:LIST? !equivalent command
```

Screen/field equivalent

:REC:LIST? has no equivalent field.

:SAVE <integer or string>

This command saves the register defined by the integer value or string argument.

Syntax

```
:SAVE '<string>'         !recalls the register named 'string'
:SAVE '<integer value>'  !recalls the numbered register
REG:SAVE '<string>'      !equivalent command
```

Screen/field equivalent

This command corresponds to saving a save/recall register using the front panel keys. See the *Reference Guide* for more information about using the Save and Recall keys.

:SAVE:LIST?

:SAVE:LIST? lists the save/recall registers that have been named.

Syntax

```
REG:SAVE:LIST?
:SAVE:LIST? !equivalent command
```

Screen/field equivalent

:SAVE:LIST? has no equivalent field.

RFANalyzer subsystem

:ATTenuator <string>
:ATTenuator?

These commands set/query the amount of input attenuation in the path of the selected input port. CONF:ATT:MODE ‘Auto’ overrides this command.

Syntax

```
RFAN:ATT ‘0 dB’
         ‘5 dB’
         ‘10 dB’
         ‘15 dB’
         ‘20 dB’
         ‘25 dB’
         ‘30 dB’
         ‘35 dB’
RFAN:ATT?
```

Screen/field equivalent

RFAN:ATT controls to the lower subfield of the **Input Atten** field on the RF ANALYZER screen.

:ATTenuator:MODE <string>
:ATTenuator:MODE?

These commands set/query the RF autoranging mode.

CONF:ATT:MODE ‘Hold’ overrides this command.

Syntax

```
RFAN:ATT:MODE ‘Auto’
              ‘Hold’
RFAN:ATT:MODE?
```

Screen/field equivalent

RFAN:ATT:MODE corresponds to the **Auto/Hold** subfield of the **Input Atten** field on the RF ANALYZER screen

:FREQuency <real number>
:FREQuency?

These commands set/query the tune frequency for the RF analyzer. This command requires that the CONF:RFD 'Freq' command is used.

This command utilizes the "Real Number Setting Syntax" on page 299, but does not use the :STATe command.

Syntax

```
RFAN:FREQ <real>
```

```
RFAN:FREQ?
```

Screen/field equivalent

RFAN:FREQ corresponds to the **Tune Freq** field on the RF ANALYZER screen.

[:FREQuency]:GTIMe <real number>
[:FREQuency]:GTIMe?

These commands set/query the gate time for the RF Frequency counter.

This command utilizes the :DUNits and UNITs commands of the "Real Number Setting Syntax" on page 299.

Syntax

```
RFAN:FREQ:GTIM <real>
```

```
RFAN:FREQ:GTIM?
```

Screen/field equivalent

RFAN:FREQ:GTIM controls the **RF Cnt Gate** field on the RF ANALYZER screen.

:IFBW <string>
:IFBW?

These commands set/query the IF filter bandwidth.

Syntax

```
RFAN:IFBW '15 kHz'
          '230 kHz'
RFAN:IFBW?
```

Screen/field equivalent

RFAN:IFBW controls the **IF Filter** field on the RF ANALYZER screen.

:INPut <string>
:INPut?

These commands set/query the RF input port.

Note: Some measurements can only be made on one port.

Syntax

```
RFAN:INP 'RF In'
         'Ant'
RFAN:INP?
```

Screen/field equivalent

RFAN:INP controls the RF **Input Port** field on the RF ANALYZER. This field is also displayed on the SPEC ANL, CODE DOM, and CDMA ANALYZER screens.

:PMEasurement:DETector <string>
:PMEasurement:DETector?

These commands set/query the analog TX power measurement method.

Syntax

```
RFAN:PME:DET 'Peak'
             'Sample'
RFAN:PME:DET?
```

Screen/field equivalent

RFAN:PME:DET controls the **TX Pwr Meas** field on the RF ANALYZER screen.

:PMEasurement:ZERO

This command zeroes the TX power measurement.

Syntax

RFAN:PME:ZERO

Screen/field equivalent

RFAN:PME:ZERO controls the **TX Pwr Zero** field on the RF ANALYZER screen.

:PMEasurement:ZERO:MODE
:PMEasurement:ZERO:MODE?

This command sets/queries the zeroing mode of the TX power measurement. 'Auto' periodically zeroes power automatically during operation. 'Manual' requires you to use the :PME:ZERO command to zero power.

Syntax

```
RFAN:PME:ZERO:MODE 'Auto'
                   'Manual'
RFAN:PME;ZERO:MODE?
```

Screen/field equivalent

RFAN:PME:ZERO:MODE controls the **Auto Zero** field on the RF ANALYZER screen.

:SENSitivity <string>
:SENSitivity?

:SENS sets/queries the RF input sensitivity.

Syntax

```
RFAN:SENS 'Normal'
          'High'
RFAN:SENS?
```

Screen/field equivalent

RFAN:SENS controls the **Sensitivity** field on the RF ANALYZER screen. This field is also displayed on the SPEC ANL screen's **Auxiliary** menu.

:SQUelch <string>
:SQUelch?

:SQU sets/queries the squelch control setting.

Syntax

```
RFAN:SQU 'Pot'
         'Open'
         'Fixed'
RFAN:SQU?
```

Screen/field equivalent

RFAN:SQU controls the **Squelch** field on the RF ANALYZER screen.

RFGenerator subsystem

The RF generator subsystem controls the functions of the RF GENERATOR screen.

:AMPLitude <real number>

This command sets/queries the amplitude of the RF generator.

This field also controls the RF generator viewed in the spectrum analyzer.

This command utilizes the “Real Number Setting Syntax” on page 299.

Syntax

```
RFG:AMPL <real>
```

```
RFG:AMPL?
```

Screen/field equivalent

RFG:AMPL controls the **Amplitude** field on the RF GENERATOR screen. This field is also displayed on the spectrum analyzer’s **RF Gen** menu.

:ATTenuator <string>
:ATTenuator?

These commands set/query the RF generator’s attenuator hold function. Attenuator hold prevents the fixed RF output attenuators from switching in and out, eliminating the loss of the output signal as the level is changed.

Syntax

```
RFG:ATT ‘On’
        ‘Off’
```

```
RFG:ATT?
```

Screen/field equivalent

RFG:ATT controls the **Atten Hold** field on the RF GENERATOR screen.

:CHANnel <string>
:CHANnel?

These commands set/query the RF channel number. Channel tuning must be enabled (CONF:RFD 'Chan'). You must also choose the correct channel standard (CONF:RFCS <string>).

Syntax

```
RFG:CHAN <integer>
```

```
RFG:CHAN?
```

Screen/Field Equivalent

RFG:CHAN controls the upper subfield of the **RF Channel** field on the RF GENERATOR screen when the **RF Display** field on the INSTRUMENT CONFIGURE screen is set to **Chan**.

:FM:COUPling <string>
:FM:COUPling?

These commands set/query the coupling between the MODULATION IN port and the RF generator's FM modulator.

Syntax

```
RFG:FM:COUP 'AC'
            'DC'
```

```
RFG:FM:COUP?
```

Screen/field equivalent

RFG:FM:COUP controls the **FM Coupling** field on the RF GENERATOR screen.

:FM:DCZero

This command zeroes any dc bias that exists when the RFG:FM:COUP 'DC' command is used and FM is turned on using the AFG1:DEST 'FM' and AFG1:FM:STAT ON commands (AFG2 could be used instead of AFG1).

Syntax

```
RFG:FM:DCZ
```

Screen/field equivalent

RFG:FM:DCZ controls the **DC FM Zero** field on the RF GENERATOR screen.

:FREQuency <real number>
:FREQuency?

These commands set/query the frequency of the RF generator. The Test Set must first be in frequency tuning mode. (See CONF:RFD ‘Freq’ on page 164).

This command utilizes the “Real Number Setting Syntax” on page 299, but does not use the :STATe command.

Syntax

```
RFG:FREQ <real number>
```

```
RFG:FREQ?
```

Screen/field equivalent

RFG:FREQ controls the **RF Gen Freq** field on the RF GENERATOR screen, when in frequency tuning mode. This field is also displayed on the spectrum analyzer’s **RF Gen** menu.

:MODulation:AOUT <string>
:MODulation:AOUT?

These commands set/query the coupling between the demodulated audio and the AUDIO OUT port.

Syntax

```
RFG:MOD:AOUT ‘AC’
             ‘DC’
```

```
RFG:MOD:AOUT?
```

Screen/field equivalent

RFG:MOD:AOUT controls the **Audio Out** field on the RF GENERATOR screen.

:MODulation:EXTernal:AM <real number>
:MODulation:EXTernal:AM?

These commands set/query the AM sensitivity of the RF generator when AM is applied through the modulation input port. The modulation input must be set to AM.

This command utilizes the “Real Number Setting Syntax” on page 299.

Syntax

```
:MOD:EXT:AM <real number>
```

```
:MOD:EXT:AM?
```

Screen/field equivalent

RFG:MOD:EXT:AM controls the lower subfield of the **Mod In To** field on the RF GENERATOR screen when **AM (/Vpk)** has been selected in the upper subfield.

:MODulation:EXTernal:DESTination <string>
:MODulation:EXTernal:DESTination?

These commands set/query the type of modulation applied to the RF generator.

This command works with :MOD:EXT:AM and :MOD:EXT:FM to set the level of modulation used.

Syntax

```
:MOD:EXT:DEST ‘AM (/Vpk)’
              ‘FM (/Vpk)’
```

```
:MOD:EXT:DEST?
```

Screen/field equivalent

RFG:MOD:DEST:EXT controls the upper subfield of **Mod In To** field on the RF GENERATOR screen.

:MODulation:EXTernal:FM <real number>
:MODulation:EXTernal:FM?

These commands set/query the FM deviation of the RF generator when FM is applied through the modulation input port. The modulation input must be set to FM.

This command utilizes the “Real Number Setting Syntax” on page 299.

Syntax

`:MOD:EXT:FM <real number>`

`:MOD:EXT:FM?`

Screen/field equivalent

RFG:MOD:EXT:FM controls the lower subfield of the **Mod In To** field on the RF GENERATOR screen when **FM (/Vpk)** is selected in the upper subfield.

:OUTPut <string>
:OUTPut?

These commands set/query the RF output port.

Syntax

```
RFG:OUTP ‘RF Out’
         ‘Dupl’
```

`RFG:OUTP?`

Screen/field equivalent

RFG:OUTP controls the **Output Port** field on the RF GENERATOR screen. This field is also displayed on the spectrum analyzer’s **RF Gen** menu when the spectrum analyzer is in fixed mode.

SANalyzer subsystem

:ATTenuator <string>
:ATTenuator?

These commands set/query the attenuator setting for the input port.

Syntax

```
SAN:ATT '0 dB'
        '5 dB'
        '10 dB'
        '15 dB'
        '20 dB'
        '25 dB'
        '30 dB'
        '35 dB'
SAN:ATT?
```

Screen/field equivalent

SAN:ATT controls the lower subfield of the **Input Atten** field on the SPEC ANL screen's **Auxilliary** menu.

:ATTenuator:MODE <string>
:ATTenuator:MODE?

These commands set/query the mode of the attenuator.

Syntax

```
SAN:ATT:MODE 'Auto'
             'Hold'
SAN:ATT:MODE?
```

Screen/field equivalent

SAN:ATT:MODE controls the **Auto/Hold** subfield of the **Input Atten** field on the SPEC ANL screen's **Auxilliary** menu.

:CFRequency <real number>
:CFRequency?

These commands set/query the center frequency of the spectrum analyzer’s display.

This command utilizes the “Real Number Setting Syntax” on page 299, but does not use the :STATe command.

Syntax

```
SAN:CFR <real number>
```

```
SAN:CFR?
```

Screen/field equivalent

SAN:CFR controls the **Center Freq** field on the SPEC ANL screen’s **Main** menu.

:CONTrol <string>
:CONTrol?

These commands set/query the **Controls** menu for the spectrum analyzer. You can choose controls for the main, RF generator, marker, trigger, mask, or auxilliary functions.

Syntax

```
SAN:CONT  ’Main’
          ’RF Gen’
          ’Marker’
          ’Auxiliary’
          ’Mask’
SAN:CONT?
```

Screen/field equivalent

SAN:CONT controls the **Controls** field on the SPEC ANL screen.

:DISPlay:SCALe <string>
:DISPlay:SCALe?

These commands set/query the vertical scale of the spectrum analyzer display.

Syntax

```
SAN:DISP:SCAL ‘1 dB/div’
              ‘2 dB/div’
              ‘10 dB/div’
SAN:DISP:SCAL?
```

Screen/field equivalent

SAN:DISP:SCAL controls the lower subfield of the **Sensitivity** field on the SPEC ANL screen’s **Auxilliary** menu.

:INPut <string>
:INPut?

These commands set/query the input to the spectrum analyzer.

Syntax

```
SAN:INP ‘RF In’
        ‘Ant’
SAN:INP?
```

Screen/field equivalent

SAN:INP controls the **RF In/Ant** field on **Main** menu of the SPEC ANL screen.

:MARKer:DELTa:CFRequency

This command sets the delta marker at the center frequency of the spectrum analyzer’s measurement trace.

Syntax

```
SAN:MARK:DELT:CFR
```

Screen/field equivalent

SAN:MARK:DELT:CFR controls the **Marker To, Center Freq** field on the **Marker** menu of the SPEC ANL screen when the **Norm/Delta** field is set to **Delta**.

:MARKer:DELTa:NPEak

This command sets the delta marker at the next peak of the spectrum analyzer display.

Syntax

```
SAN:MARK:DELT:NPE
```

Screen/field equivalent

SAN:MARK:DELT:NPE controls the **Marker To, Next Peak** field on the **Marker** menu of the SPEC ANL screen when the **Norm/Delta** field is set to **Delta**.

:MARKer:DELTa:NPLevel <real number>
:MARKer:DELTa:NPLevel?

These commands set/query the level of the next peak signal at the delta marker.

This command utilizes the “Real Number Setting Syntax” on page 299, but does not use the :STATe command.

Syntax

```
SAN:MARK:DELT:NPL <real number>
```

```
SAN:MARK:DELT:NPL?
```

Screen/field equivalent

SAN:MARK:DELT:NPL controls the **Level** field on the SPEC ANL screen when the **Norm/Delta** field is set to **Delta**.

:MARKer:DELTa:PEAK

This command moves the delta marker to the highest peak of the signals on the spectrum analyzer display trace.

Syntax

```
SAN:MARK:DELT:PEAK
```

Screen/field equivalent

SAN:MARK:DELT:PEAK controls the **Marker To**, **Peak** field on the **Marker** menu of the SPEC ANL screen when the **Norm/Delta** field is set to **Delta**.

:MARKer:DELTa:POSition <real number>
:MARKer:DELTa:POSition?

These commands set/query the position of the delta marker on the spectrum analyzer.

This command utilizes the “Real Number Setting Syntax” on page 299, but does not use the :STATe command.

Syntax

`SAN:MARK:DELT:POS <real number>`

`SAN:MARK:DELT:POS?`

Screen/field equivalent

SAN:MARK:DELT:POS controls the **Position** field on the **Marker** menu of the SPEC ANL screen when the **Norm/Delta** field is set to **Delta**.

:MARKer:DELTa:RLEVel

:MARK:DELT:RLEV moves the signal at the delta marker to the reference level position of the spectrum analyzer.

Syntax

`SAN:MARK:DELT:RLEV`

Screen/field equivalent

SAN:MARK:DELT:RLEV controls the **Marker To**, **Ref Level** field on the **Marker** menu of the SPEC ANL screen when the **Norm/Delta** field is set to **Delta**.

:MARKer:MODE <string>
:MARKer:MODE?

These commands set/query the whether the marker is in normal mode or delta mode.

In normal mode the spectrum analyzer measures the frequency and level at the marker's position. In delta mode the spectrum analyzer displays a second marker and measures the difference (frequency and level) from the "normal" marker position. The marker is positioned using the SAN:MARK:DELT commands on page 315 through page 317, and the results are read with the MEAS:SAN:MARK:DELT commands on page page 278.

Syntax

```
SAN:MARK:MODE 'Norm'
              'Delta'
SAN:MARK:MODE?
```

Screen/field equivalent

SAN:MARK:MODE controls the **Norm/Delta** field on the **Marker** menu of the SPEC ANL screen.

:MARKer[:NORMal]:CFRequency

This command moves the marker to the center frequency of the spectrum analyzer's measurement trace.

Syntax

```
SAN:MARK:NORM:CFR
```

Screen/field equivalent

SAN:MARK:NORM:CFR controls the **Marker To, Center Freq** field on the **Marker** menu of the SPEC ANL screen when **Norm/Delta** field is set to **Norm** on the **Marker** controls menu.

:MARKer[:NORMal]:NPEak

This command moves the marker to the next peak of the spectrum analyzer's measurement trace.

Syntax

```
SAN:MARK:NORM:NPE
```

Screen/field equivalent

SAN:MARK:NORM:NPE controls the **Marker To, Next Peak** field on the **Marker** menu of the SPEC ANL screen when **Norm/Delta** field is set to **Norm** on the **Marker** controls menu.

:MARKer[:NORMal]:NPLevel <real number>
:MARKer[:NORMal]:NPLevel?

These commands set/query the level of the next peak signal.

This command utilizes the "Real Number Setting Syntax" on page 299, but does not use the :STATe command.

Syntax

```
SAN:MARK:NORM:NPL <real number>
```

```
SAN:MARK:NORM:NPL?
```

Screen/field equivalent

SAN:MARK:NORM:NPL controls the **Level** field on the SPEC ANL screen when **Norm/Delta** field is set to **Norm** on the **Marker** controls menu.

:MARKer[:NORMal]:PEAK

This command moves the marker to the highest peak of the signals on the spectrum analyzer display trace.

Syntax

```
SAN:MARK:NORM:PEAK
```

Screen/field equivalent

SAN:MARK:NORM:PEAK controls the **Marker To**, **Peak** field on the **Marker** menu of the SPEC ANL screen when **Norm/Delta** field is set to **Norm** on the **Marker** controls menu.

:MARKer[:NORMal]:POSition <real number>
:MARKer[:NORMal]:POSition?

These commands set/query the position of the marker on the spectrum analyzer.

This command utilizes the "Real Number Setting Syntax" on page 299, but does not use the :STATe command.

Syntax

```
SAN:MARK:NORM:POS <real number>
```

```
SAN:MARK:NORM:POS?
```

Screen/field equivalent

SAN:MARK:NORM:POS controls the **Position** field on the **Marker** menu of the SPEC ANL screen when **Norm/Delta** field is set to **Norm** on the **Marker** controls menu.

:MARKer:REFmode
:MARKer:REFmode?

These commands set/query the spectrum analyzer's reference marker mode when using the delta markers.

When the **Ref Mrkr** field is set to **Hold**, the reference marker is frozen at its current position (frequency and level) regardless of changes in the signal level or center frequency.

When you switch from **Hold** to **Norm**, the reference marker will stay at its current horizontal setting (frequency), but will track the level of the incoming signal.

Syntax

```
SAN:MARK:REF 'Norm'
             'Hold'
```

```
SAN:MARK:REF?
```

Screen/field equivalent

SAN:MARK:REF controls the **Ref Mrkr** field on the **Marker** menu of the SPEC ANL.

:MASK:BEEP
:MASK:BEEP?

This command turns the failure indicator beeper off or on.

Syntax

```
SAN:MASK:BEEP ‘On’
              ‘Off’
SAN:MASK:BEEP?
```

Screen/field equivalent

SAN:MASK:BEEP controls the **Mask Beep** field on the **Mask** menu of the SPEC ANL screen.

:MASK:DISPlay
:MASK:DISPlay?

This command sets/queries which masks will be displayed: upper, lower, both, or none (Off).

Syntax

```
SAN:MASK:DISP ‘UpperOnly’
              ‘LowerOnly’
              ‘Both’
               ‘Off’

SAN:MASK:DISP?
```

Screen/field equivalent

SAN:MASK:DISP controls the **Display** field on the **Mask** menu of the SPEC ANL screen.

:MASK:FIXed:LOWer:POINts:NUMBer
:MASK:FIXed:LOWer:POINts:NUMBer?

This command sets/queries the number of points in the lower spectrum analyzer mask. The maximum number is 15.

Syntax

```
SAN:MASK:FIX:LOW:POIN:NUMB <integer 1-15>
SAN:MASK:FIX:LOW:POIN:NUMB?
```

Screen/field equivalent

SAN:MASK:FIX:LOW:POIN:NUMB controls the **#Pts** field on the **Mask** menu of the SPEC ANL screen when the **Edit Mask** field is set to **Lower**, and the **Mask Type** field is set to **Fix**.

:MASK:FIXed:LOWer:POINts:EDIT

This command selects/queries the point number to edit on the lower spectrum analyzer mask. The maximum number is 15.

Syntax

```
SAN:MASK:FIX:LOW:POIN:EDIT <integer 1-15>
SAN:MASK:FIX:LOW:POIN:EDIT?
```

Screen/field equivalent

SAN:MASK:FIX:LOW:POIN:EDIT controls the **EditPt** field on the **Mask** menu of the SPEC ANL screen when the **Edit Mask** field is set to **Lower**, and the **Mask Type** field is set to **Fix**.

:MASK:FIXed:LOWer:POINts:LEVEL1(through LEVEL15)
:MASK:FIXed:LOWer:POINts:LEVEL1? (through LEVEL15)

These commands set/query the level of the defined points on the lower spectrum analyzer mask.

Syntax

To define the levels in a four-point mask:

```
SAN:MASK:FIX:LOW:POIN:LEVEL1 <real number>
SAN:MASK:FIX:LOW:POIN:LEVEL2 <real number>
SAN MASK:FIX:LOW:POIN:LEVEL3 <real number>
SAN:MASK:FIX:LOW:POIN:LEVEL4 <real number>
```

```
SAN:MASK:FIX:LOW:POIN:LEVEL1?
```

Screen/field equivalent

SAN:MASK:FIX:LOW:POIN:LEVEL1 controls the **Level** field on the **Mask** menu of the SPEC ANL screen when the **EditPt** field is set to **1**, the **Edit Mask** field is set to **Lower**, and the **Mask Type** field is set to **Fix**.

:MASK:FIXed:LOWer:POINts:FREQuency1 (through FREQ15) :MASK:FIXed:LOWer:POINts:FREQuency1? (through FREQ15)

These commands set/query the frequency (Hz) of the defined points on the lower spectrum analyzer mask.

The units for the mask are GHz, MHz, kHz, and Hz.

Syntax

To define the frequencies in a four-point mask:

```
SAN:MASK:FIX:LOW:POIN:FREQ1 <real number>
SAN:MASK:FIX:LOW:POIN:FREQ2 <real number>
SAN MASK:FIX:LOW:POIN:FREQ3 <real number>
SAN:MASK:FIX:LOW:POIN:FREQ4 <real number>
```

```
SAN:MASK:FIX:LOW:POIN:FREQ1?
```

Screen/field equivalent

SAN:MASK:FIX:LOW:POIN:FREQ1 controls the **Freq** field on the **Mask** menu of the SPEC ANL when the **EditPt** field is set to **1**, the **Edit Mask** field is set to **Lower**, and the **Mask Type** field is set to **Fix**.

:MASK:FIXed:UPPer:POINts:NUMBer :MASK:FIXed:UPPer:POINts:NUMBer?

This command sets/queries the number of points in the upper spectrum analyzer mask. The maximum number is 15.

Syntax

```
SAN:MASK:FIX:UPP:POIN:NUMB <integer 1-15>
SAN:MASK:FIX:UPP:POIN:NUMB?
```

Screen/field equivalent

SAN:MASK:FIX:UPP:POIN:NUMB controls the **#Pts** field on the **Mask** menu of the SPEC ANL screen when the **Edit Mask** field is set to **Upper**, and the **Mask Type** field is set to **Fix**.

:MASK:FIXed:UPPer:POINts:EDIT
:MASK:FIXed:UPPer:POINts:EDIT?

This command selects/queries the point number to edit on the upper spectrum analyzer mask. The maximum number is 15.

Syntax

```
SAN:MASK:FIX:UPP:POIN:EDIT <integer 1-15>
SAN:MASK:FIX:UPP:POIN:EDIT?
```

Screen/field equivalent

SAN:MASK:FIX:UPP:POIN:EDIT controls the **EditPt** field on the **Mask** menu of the SPEC ANL screen when the **Edit Mask** field is set to **Upper**, and the **Mask Type** field is set to **Fix**.

:MASK:FIXed:UPPer:POINts:LEVEL1 (through LEVEL15)
:MASK:FIXed:UPPer:POINts:LEVEL1? (through LEVEL15)

These commands set/query the level of the defined points on the upper spectrum analyzer mask.

Syntax

To define the levels in a four-point mask:

```
SAN:MASK:FIX:UPP:POIN:LEVEL1 <real number>
SAN:MASK:FIX:UPP:POIN:LEVEL2 <real number>
SAN MASK:FIX:UPP:POIN:LEVEL3 <real number>
SAN:MASK:FIX:UPP:POIN:LEVEL4 <real number>
```

```
SAN:MASK:FIX:UPP:POIN:LEVEL1?
```

Screen/field equivalent

SAN:MASK:FIX:UPP:POIN:LEVEL1 controls the **Level** field on the **Mask** menu of the SPEC ANL screen when the **EditPt** field is set to **1**, the **Edit Mask** field is set to **Upper**, and the **Mask Type** field is set to **Fix**.

:MASK:FIXed:UPPer:POINts:FREQuency1 (through FREQ15) :MASK:FIXed:UPPer:POINts:FREQuency1? (through FREQ15)

These commands set/query the frequency (Hz) of the defined points on the upper spectrum analyzer mask.

The units for the mask are GHz, MHz, kHz, and Hz.

Syntax

To define the frequencies in a four-point mask:

```
SAN:MASK:FIX:UPP:POIN:FREQ1 <real number>
SAN:MASK:FIX:UPP:POIN:FREQ2 <real number>
SAN MASK:FIX:UPP:POIN:FREQ3 <real number>
SAN:MASK:FIX:UPP:POIN:FREQ4 <real number>
```

```
SAN:MASK:FIX:UPP:POIN:FREQ1?
```

Screen/field equivalent

SAN:MASK:FIX:UPP:POIN:FREQ1 controls the **Freq** field on the **Mask** menu of the SPEC ANL when the **EditPt** field is set to **1**, the **Edit Mask** field is set to **Upper**, and the **Mask Type** field is set to **Fix**.

:MASK:RELative:LOWer:POINts:NUMBer :MASK:RELative:LOWer:POINts:NUMBer?

This command sets/queries the number of points in the lower spectrum analyzer mask. The maximum number is 15.

Syntax

```
SAN:MASK:REL:LOW:POIN:NUMB <integer 1-15>
SAN:MASK:REL:LOW:POIN:NUMB?
```

Screen/field equivalent

SAN:MASK:REL:LOW:POIN:NUMB controls the **#Pts** field on the **Mask** menu of the SPEC ANL screen when the **Edit Mask** field is set to **Lower**, and the **Mask Type** field is set to **Rel**.

:MASK:RELative:LOWer:POINts:EDIT :MASK:RELative:LOWer:POINts:EDIT?

This command selects/queries the point number to edit on the lower spectrum analyzer mask. The maximum number is 15.

Syntax

```
SAN:MASK:REL:LOW:POIN:EDIT <integer 1-15>
SAN:MASK:REL:LOW:POIN:EDIT?
```

Screen/field equivalent

SAN:MASK:REL:LOW:POIN:EDIT controls the **EditPt** field on the **Mask** menu of the SPEC ANL screen when the **Edit Mask** field is set to **Lower**, and the **Mask Type** field is set to **Rel**.

:MASK:RELative:LOWer:POINts:LEVEL1 (through LEVEL15) :MASK:RELative:LOWer:POINts:LEVEL1? (through LEVEL15)

These commands set/query the level of the defined points on the lower spectrum analyzer mask (relative to the top line of the display (**Ref Level**)).

Syntax

To define the levels in a four-point mask:

```
SAN:MASK:REL:LOW:POIN:LEVEL1 <real number>
SAN:MASK:REL:LOW:POIN:LEVEL2 <real number>
SAN MASK:REL:LOW:POIN:LEVEL3 <real number>
SAN:MASK:REL:LOW:POIN:LEVEL4 <real number>
```

```
SAN:MASK:REL:LOW:POIN:LEVEL1?
```

Screen/field equivalent

SAN:MASK:REL:LOW:POIN:LEVEL1 controls the **Level Ofs** field on the **Mask** menu of the SPEC ANL screen when the **EditPt** field is set to **1**, the **Edit Mask** field is set to **Lower**, and the **Mask Type** field is set to **Rel**.

:MASK:RELative:LOWer:POINts:FREQuency1 (through FREQ15) :MASK:RELative:LOWer:POINts:FREQuency1? (through FREQ15)

These commands set/query the frequency (Hz) of the defined points on the lower spectrum analyzer mask (relative to the center line of the display).

The units for the mask are GHz, MHz, kHz, and Hz.

Syntax

To define the frequencies in a four-point mask:

```
SAN:MASK:REL:LOW:POIN:FREQ1 <real number>
SAN:MASK:REL:LOW:POIN:FREQ2 <real number>
SAN MASK:REL:LOW:POIN:FREQ3 <real number>
SAN:MASK:REL:LOW:POIN:FREQ4 <real number>
```

```
SAN:MASK:REL:LOW:POIN:FREQ1?
```

Screen/field equivalent

SAN:MASK:REL:LOW:POIN:FREQ1 controls the **Freq Ofs** field on the **Mask** menu of the SPEC ANL when the **EditPt** field is set to **1**, the **Edit Mask** field is set to **Lower**, and the **Mask Type** field is set to **Rel**.

:MASK:RELative:UPPer:POINts:NUMBer :MASK:RELative:UPPer:POINts:NUMBer?

This command sets/queries the number of points in the upper spectrum analyzer mask. The maximum number is 15.

Syntax

```
SAN:MASK:REL:UPP:POIN:NUMB <integer 1-15>
SAN:MASK:REL:UPP:POIN:NUMB?
```

Screen/field equivalent

SAN:MASK:REL:UPP:POIN:NUMB controls the **#Pts** field on the **Mask** menu of the SPEC ANL screen when the **Edit Mask** field is set to **Upper**, and the **Mask Type** field is set to **Rel**.

:MASK:RELative:UPPer:POINts:EDIT

This command selects/queries the point number to edit on the upper spectrum analyzer mask. The maximum number is 15.

Syntax

```
SAN:MASK:REL:UPP:POIN:EDIT <integer 1-15>
SAN:MASK:REL:UPP:POIN:EDIT?
```

Screen/field equivalent

SAN:MASK:REL:UPP:POIN:EDIT controls the **EditPt** field on the **Mask** menu of the SPEC ANL screen when the **Edit Mask** field is set to **Upper**, and the **Mask Type** field is set to **Rel**.

:MASK:RELative:UPPer:POINts:LEVEL1 (through LEVEL15) :MASK:RELative:UPPer:POINts:LEVEL1? (through LEVEL15)

These commands set/query the level of the defined points on the upper spectrum analyzer mask.

Syntax

To define the levels in a four-point mask:

```
SAN:MASK:REL:UPP:POIN:LEVEL1 <real number>
SAN:MASK:REL:UPP:POIN:LEVEL2 <real number>
SAN MASK:REL:UPP:POIN:LEVEL3 <real number>
SAN:MASK:REL:UPP:POIN:LEVEL4 <real number>
```

```
SAN:MASK:REL:UPP:POIN:LEVEL1?
```

Screen/field equivalent

SAN:MASK:REL:UPP:POIN:LEVEL1 controls the **Level Ofs** field on the **Mask** menu of the SPEC ANL screen when the **EditPt** field is set to **1**, the **Edit Mask** field is set to **Upper**, and the **Mask Type** field is set to **Rel**.

:MASK:RELative:UPPer:POINts:FREQuency1 (through FREQ15) :MASK:RELative:UPPer:POINts:FREQuency1? (through FREQ15)

These commands set/query the frequency (Hz) of the defined points on the upper spectrum analyzer mask.

The units for the mask are GHz, MHz, kHz, and Hz.

Syntax

To define the frequencies in a four-point mask:

```
SAN:MASK:REL:UPP:POIN:FREQ1 <real number>
SAN:MASK:REL:UPP:POIN:FREQ2 <real number>
SAN MASK:REL:UPP:POIN:FREQ3 <real number>
SAN:MASK:REL:UPP:POIN:FREQ4 <real number>
```

```
SAN:MASK:REL:UPP:POIN:FREQ1?
```

Screen/field equivalent

SAN:MASK:REL:UPP:POIN:FREQ1 controls the **Freq Ofs** field on the **Mask** menu of the SPEC ANL when the **EditPt** field is set to **1**, the **Edit Mask** field is set to **Upper**, and the **Mask Type** field is set to **Rel**.

:MASK:TYPE :MASK:TYPE?

This command selects/queries the type of mask, fixed or relative. ‘Fixed’ sets the mask in absolute frequency and level points. ‘Relative’ sets the mask relative to the center frequency and reference level set with the SAN:CFR and SAN:RLEV commands. If the center frequency is changed after setting the mask, the mask remains in the same position on the screen, and measurements are now relative to the new center frequency and reference level.

Syntax

```
SAN:MASK:TYPE ‘Fix’
              ‘Rel’
SAN:MASK:TYPE?
```

Screen/field equivalent

SAN:MASK:DISP controls the **Mask Type** field on the **Mask** menu of the SPEC ANL screen.

:RFGenerator <string>
:RFGenerator?

This command selects between the fixed frequency generator and the tracking generator. The query form returns the mode setting of the generator.

Syntax

```
SAN:RFG 'Track'
        'Fixed'
```

```
SAN:RFG?
```

Screen/field equivalent

SAN:RFG controls the **Track/Fixed** field on the **RF Gen** menu of the SPEC ANL screen.

:RLEVel <real number>
:RLEVel?

These commands set/query the reference level of the spectrum analyzer.

This command utilizes the "Real Number Setting Syntax" on page 299, but does not use the :STATe command.

Syntax

```
SAN:RLEV <real number>
```

```
SAN:RLEV?
```

Screen/field equivalent

SAN:RLEV controls the **Ref Level** field on **Main** menu of the SPEC ANL screen.

:SPAN <real number>
:SPAN?

These commands set/query the span of the spectrum analyzer display.

This command utilizes the “Real Number Setting Syntax” on page 299, but does not use the :STATe command.

Syntax

`SAN:SPAN <real number>`

`SAN:SPAN?`

Screen/field equivalent

SAN:SPAN controls the **Span** field on the **Main** menu SPEC ANL screen.

:TGENerator:AMPLitude <real number>
:TGENerator:AMPLitude?

These commands set/query the amplitude of the tracking generator. To select the tracking generator use the SAN:RFG ‘Track’ command.

This command utilizes the “Real Number Setting Syntax” on page 299.

Syntax

`SAN:TGEN:AMPL <real>`

`SAN:TGEN:AMPL?`

Screen/field equivalent

SAN:TGEN:AMPL controls the **Amplitude** field on the **RF Gen** menu of the SPEC ANL screen. The **Track/Fixed** field must be set to **Track**.

:TGENerator:DESTination <string>
:TGENerator:DESTination?

These commands set/query the output port for the tracking generator. To select the tracking generator use the SAN:RFG 'Track' command.

Syntax

```
SAN:TGEN:DEST 'RF Out'
              'Dupl'
```

```
SAN:TGEN:DEST?
```

Screen/field equivalent

SAN:TGEN:DEST controls the RF Out/Dupl subfield of the **Port/Sweep** field on the **RF Gen** menu of the SPEC ANL screen. The **Track/Fixed** field must be set to **Track**.

:TGENerator:OFRequency <real number>
:TGENerator:OFRequency?

These commands set/query the offset frequency of the tracking generator. To select the tracking generator use the SAN:RFG 'Track' command.

This command utilizes the "Real Number Setting Syntax" on page 299, but does not use the :STATe command.

Syntax

```
SAN:TGEN:OFR <real number>
```

```
SAN:TGEN:OFR?
```

Screen/field equivalent

SAN:TGEN:OFR controls the **Offset Freq** field on the **RF Gen** menu of the SPEC ANL screen. The **Track/Fixed** field must be set to **Track**.

:TGENerator:SWEep <string>
:TGENerator:SWEep?

These commands set/query the sweep type of the tracking generator. To select the tracking generator use the SAN:RFG ‘Track’ command. ‘Norm’ specifies a sweep from low to high frequency. ‘Invert’ specifies a sweep from high to low frequency.

Syntax

```
SAN:TGEN:SWE ‘Norm’
             ‘Invert’
SAN:TGEN:SWE?
```

Screen/field equivalent

SAN:TGEN:SWE controls the **Norm/Invert** subfield of the **Port/Sweep** field on the **RF Gen** menu of the SPEC ANL screen. The **Track/Fixed** field must be set to **Track**.

:TRACe:MHOLd <string>
:TRACe:MHOLd?

These commands set/query the type of averaging used in the spectrum analyzer's display.

Syntax

```
SAN:TRAC:MHOL ‘No Pk/Avg’
              ‘Pk Hold’
              ‘Avg 1’
              ‘Avg 2’
              ‘Avg 3’
              ‘Avg 4’
              ‘Avg 5’
              ‘Avg 10’
              ‘Avg 20’
              ‘Avg 50’
              ‘Avg 100’
              ‘Off’
SAN:TRAC:MHOL?
```

Screen/field equivalent

SAN:TRAC:MHOL controls averaging field on the **Auxilliary** menu of the SPEC ANL screen. This field is located under the menu control field.

:TRACe:NORMalize <string>
:TRACe:NORMalize?

These commands set/query the type of trace display. 'A Only' provides a continuously updated display (normal operation). 'A-B' displays the difference between the trace saved using SAN:TRAC:SAVE and the currently displayed trace.

Syntax

```
SAN:TRAC:NORM 'A Only'
              'A-B'
SAN:TRAC:NORM?
```

Screen/field equivalent

SAN:TRAC:NORM controls the **A Only/A-B** subfield of the **Normalize** field on the tracking generator of the SPEC ANL screen's **Auxilliary** menu.

:TRACe:SAVE

This command stores the trace that is currently displayed on the spectrum analyzer display.

Syntax

```
SAN:TRAC:SAVE
```

Screen/field equivalent

SAN:TRAC:SAVE controls the **Save B** subfield of the **Normalize** field on the SPEC ANL screen's **Auxilliary** menu.

STATus

The STATus subsystem reports many of the modes of the Test Set, including the states. These commands do not correspond to fields in specific screens. For detailed information about status registers, see "Status Reporting" in the Advanced Operations chapter of the Test Set's *Programmer's Guide*.

:PRESet

This command presets the Test Set.

Syntax

```
STAT:PRES
```

:CALibration:CONDition?

This command queries the state of the calibration.

This query returns an integer value.

Syntax

```
STAT:CAL:COND?
```

:CALibration:ENABle
:CALibration:ENABle?

This command enables the calibration.

This query returns an integer value.

Syntax

```
STAT:CAL:ENAB
```

```
STAT:CAL:ENAB?
```

:CALibration[:EVENt]?

This command queries the state of the event.

Syntax

```
STAT:CAL[:EVEN]?
```

:CALibration:NTRansition
:CALibration:NTRansition?

These commands set/query the state of the negative transition of the calibration.

This query returns an integer value.

Syntax

STAT:CAL:NTR

STAT:CAL:NTR?

:CALibration[:EVENt?]:PTRansition
:CALibration[:EVENt?]:PTRansition?

These commands set/query the state of the positive transition of the calibration.

This query returns an integer value.

Syntax

STAT:CAL:PTR

STAT:CAL:PTR?

:COMMunicate:CONDition?

This query returns an integer value.

Syntax

STAT:COMM:COND?

:COMMunicate:ENABle
:COMMunicate:ENABle?

This query returns an integer value.

Syntax

STAT:COMM:ENAB

STAT:COMM:ENAB?

:COMMunicate[:EVENt?]:NTRansition :COMMunicate[:EVENt?]:NTRansition?

This query returns an integer value.

Syntax

STAT:COMM:NTR

STAT:COMM:NTR?

:COMMunicate[:EVENt?]:PTRansition :COMMunicate[:EVENt?]:PTRansition?

This query returns an integer value.

Syntax

STAT:COMM:PTR

STAT:COMM:PTR?

:HARD1:CONDition?

Status reporting for hardware.

This query returns an integer value.

Syntax

STATHARD1:COND?

:HARD1:ENABle :HARD1:ENABle?

This query returns an integer value.

Syntax

STAT:HARD1:ENAB

STAT:HARD1:ENAB?

:HARD1[:EVENt?]:NTRansition :HARD1[:EVENt?]:NTRansition?

This query returns an integer value.

Syntax

STAT:HARD1:NTR

STAT:HARD1:NTR?

:HARD1[:EVENt?]:PTRansition
:HARD1[:EVENt?]:PTRansition?

This query returns an integer value.

Syntax

STAT:HARD1:PTR

STAT:HARD1:PTR?

:HARD2:CONDition
:HARD2:CONDition?

This query returns an integer value.

Syntax

STAT:HARD2:COND

STAT:HARD2:COND?

:HARD2:ENABle
:HARD2:ENABle?

This query returns an integer value.

Syntax

STAT:HARD2:ENAB

STAT:HARD2:ENAB?

:HARD2[:EVENt?]:NTRansition
:HARD2[:EVENt?]:NTRansition?

This query returns an integer value.

Syntax

STAT:HARD2:NTR

STAT:HARD2:NTR?

:HARD2[:EVENt?]:PTRansition
:HARD2[:EVENt?]:PTRansition?

This query returns an integer value.

Syntax

STAT:HARD2:PTR

STAT:HARD2:PTR?

:OPERation:CONDition?

This query returns an integer value.

Syntax

`STAT:OPER:COND?`

:OPERation:ENABle
:OPERation:ENABle?

This query returns an integer value.

Syntax

`STAT:OPER:ENAB`

`STAT:OPER:ENAB?`

:OPERation[:EVENt?]:NTRansition
:OPERation[:EVENt?]:NTRansition?

This query returns an integer value.

Syntax

`STAT:OPER:NTR`

`STAT:OPER:NTR?`

:OPERation[:EVENt?]:PTRansition
:OPERation[:EVENt?]:PTRansition?

This query returns an integer value.

Syntax

`STAT:OPER:PTR`

`STAT:OPER:PTR?`

:CALibrating:CONDition?

This query returns an integer value.

Syntax

`STAT:CAL:COND?`

:CALibrating:ENABle
:CALibrating:ENABle?

This query returns an integer value.

Syntax

STAT:CAL:ENAB

STAT:CAL:ENAB?

:CALibrating[:EVENt?]:NTRansition
:CALibrating[:EVENt?]:NTRansition?

This query returns an integer value.

Syntax

STAT:CAL:NTR

STAT:CAL:NTR?

:CALibrating[:EVENt?]:PTRansition
:CALibrating[:EVENt?]:PTRansition?

This query returns an integer value.

Syntax

STAT:CAL:PTR

STAT:CAL:PTR?

:QUEStionable:CONDition?

This query returns an integer value.

Syntax

STAT:QUES:COND?

:QUEStionable:ENABle
:QUEStionable:ENABle?

This query returns an integer value.

Syntax

STAT:QUES:ENAB

STAT:QUES:ENAB?

:QUEStionable[:EVENt?]:NTRansition
:QUEStionable[:EVENt?]:NTRansition?

This query returns an integer value.

Syntax

STAT:QUES:NTR

STAT:QUES:NTR?

:QUEStionable[:EVENt?]:PTRansition
:QUEStionable[:EVENt?]:PTRansition?

This query returns an integer value.

Syntax

STAT:QUES:PTR

STAT:QUES:PTR?

:MEASuring:CONDition?

This query returns an integer value.

Syntax

STAT:MEAS:COND?

:MEASuring:ENABle
:MEASuring:ENABle?

This query returns an integer value.

Syntax

STAT:MEAS:ENAB

STAT:MEAS:ENAB?

:MEASuring[:EVENt?]:NTRansition
:MEASuring[:EVENt?]:NTRansition?

This query returns an integer value.

Syntax

STAT:MEAS:NTR

STAT:MEAS:NTR?

:MEASuring[:EVENt?]:PTRansition
:MEASuring[:EVENt?]:PTRansition?

This query returns an integer value.

Syntax

STAT:MEAS:PTR

STAT:MEAS:PTR?

:CDMA1:CONDition?

This query returns an integer value.

Syntax

STAT:CDMA1:COND?

:CDMA1:ENABle
:CDMA1:ENABle?

This query returns an integer value.

Syntax

STAT:CDMA1:ENAB

STAT:CDMA1:ENAB?

:CDMA1[:EVENt?]:NTRansition
:CDMA1[:EVENt?]:NTRansition?

This query returns an integer value.

Syntax

STAT:CDMA1:NTR

STAT:CDMA1:NTR?

:CDMA1[:EVENt?]:PTRansition
:CDMA1[:EVENt?]:PTRansition?

This query returns an integer value.

Syntax

STAT:CDMA1:PTR

STAT:CDMA1:PTR?

:IBASic:CONDition?

This query returns an integer value.

Syntax

STAT:IBAS:COND?

:IBASic:ENABle
:IBASic:ENABle?

This query returns an integer value.

Syntax

STAT:IBAS:ENAB

STAT:IBAS:ENAB?

:IBASic[:EVENt?]:NTRansition
:IBASic[:EVENt?]:NTRansition?

This query returns an integer value.

Syntax

STAT:IBAS:NTR

STAT:IBAS:NTR?

:IBASic[:EVENt?]:PTRansition
:IBASic[:EVENt?]:PTRansition?

This query returns an integer value.

Syntax

STAT:IBAS:PTR

STAT:IBAS:PTR?

SYSTem:[ERRor?]

This command returns an integer followed by quoted string.

Syntax

```
SYST:ERR?
```

TRIGger subsystem

The Trigger subsystem contains commands for triggering measurements. There are no screen/field equivalents for the trigger subsystem commands. These commands will override any triggering control fields on individual screens.

:ABORt

This command ends a measurement cycle in progress.

Syntax

```
TRIG:ABOR
```

:IMMediate

This command triggers all selected measurements.

Syntax

```
TRIG:IMM
```

:MODE:RETRigger
:MODE:RETRigger?

These commands set/query the retriggering setting.

Syntax

```
TRIG:MODE:RETR REPetitive
TRIG:MODE:RETR SINGle
TRIG:MODE:RETR?
```

:MODE:SETTling
:MODE:SETTling?

These commands set/query the transient settling function.

Syntax

```
TRIG:MODE:MODE:SETT FAST
TRIG:MODE:MODE:SETT FULL
TRIG:MODE:MODE:SETT?
```

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