Agilent Technologies 8920B Option 800, 801
RF Communications Test Set

Condensed Programming Reference Guide

8290B Firmware Version B.06.00 and above

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Agilent Technologies 8920A RF Communications Test Set

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according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name:	**Agilent Technologies**
Manufacturer's Address:	**24001 E. Mission Avenue** **Liberty Lake, Washington 99019-9599** **USA**

declares that the product

Product Name:	RF Communications Test Set / Cell Site Test Set
Model Number:	Agilent Technologies 8920A, 8920B, and 8921A
Product Options:	This declaration covers all options of the above product.

conforms to the following Product specifications:

Safety: IEC 1010-1:1990+A1+A2/EN 61010-1:1993

EMC: CISPR 11:1990 / EN 55011:1991 Group 1, Class A
EN50082-1:1992
IEC 801-2:1991 - 4 kV CD, 8 kV AD
IEC 801-3:1984 - 3V/m
IEC 801-4:1988 - 0.5 kV Sig. Lines, 1 kV Power Lines

Supplementary Information:

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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 CD-marking accordingly.

Spokane, Washington USA Date October 17, 1996 Vince Roland/Quality Manager

Service and Support

Any adjustment, maintenance, or repair of this product must be performed by qualified personnel. Contact your customer engineer through your local Agilent Technologies Service Center. You can find a list of local service representatives on the Web at:

http://www.agilent-tech.com/services/English/index.html

If you do not have access to the Internet, one of these centers can direct you to your nearest representative:

Table 1

United States Test and Measurement Call Center (Toll free in US)	(800) 452-4844
Europe	(31 20) 547 9900
Canada	(905) 206-4725
Japan Measurement Assistance Center	(81) 426 56 7832 (81) 426 56 7840 (FAX)
Latin America	(305) 267 4288 (FAX)
Australia/New Zealand	1 800 629 485 (Australia) 0800 738 378 (New Zealand)
Asia-Pacific	(852) 2599 7777 (852) 2506 9285 (FAX)

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1

Remote/Local Modes

Remote/Local Modes

Control Annunciators

The letters and symbols at the top right corner of the display indicate these conditions:

- **R** indicates the Test Set is in remote mode. The Test Set can be put into the remote mode by an external controller or by an IBASIC program running on the built-in IBASIC controller.
- **L** indicates the Test Set has been addressed to Listen.
- **T** indicates the Test Set has been addressed to Talk.
- **S** indicates the Test Set has sent the Require Service message by setting the Service Request (SRQ) bus line true.
- **C** indicates the Test Set is currently the Active Controller on the bus.
- ***** indicates an IBASIC program+ is running.
- **?** indicates an IBASIC program is waiting for a user response.
- **-** indicates an IBASIC program is paused.

Remote Mode

In Remote mode all front panel keys are disabled (except for the LOCAL key, POWER switch, Volume control and Squelch control). The LOCAL key is only disabled by the Local Lockout bus command. When in Remote mode and addressed to Listen the Test Set responds to the Data, Remote, Local, Clear(SDC), and Trigger messages. When the Test Set is in Remote mode, the “R” annunciator will be displayed in the upper right corner of the display screen and triggering is set to the state it was last set to in Remote mode (if no previous setting the default is FULL SETTling and REPetitive RETRiggering). When the Test Set is being addressed to Listen or Talk the “L” or “T” annunciators will be displayed in the upper right corner of the display screen.

Local Mode

In Local mode the Test Set’s front panel controls are fully operational. The Test Set uses FULL SETTling and REPetitive RETRiggering in Local mode. When the Test Set is being addressed to Listen or Talk the “L” or “T” annunciators will be displayed in the upper right corner of the display screen.

Remote or Local Mode

When addressed to Talk in Remote or Local mode , the Test Set can issue the Data and Status Byte messages and responds to the Take Control message. In addition the Test Set can issue the Service Request Message (SRQ). Regardless of whether it is addressed to talk or listen, the Test Set will respond to the Clear(DCL), Local Lockout, Clear Lockout/Set Local, and Abort messages.

Local To Remote Transitions

The Test Set switches from Local to Remote mode upon receipt of the Remote message (REN bus line true and Test Set is addressed to listen). No instrument settings are changed by the transition from Local to Remote mode, but triggering is set to the state it was last set to in Remote mode (if no previous setting the default is FULL SETTling and REPetitive RETRiggering). The “R” annunciator in the upper right corner of the display is turned on.

When the Test Set makes a transition from local to remote mode all currently active measurements are flagged as invalid causing any currently available measurement results to become unavailable. If the GPIB trigger mode is RETR:REP then a new measurement cycle is started and measurement results will be available for all active measurements when valid results have been obtained. If the GPIB trigger mode is RETR:SING then a measurement cycle must be started by issuing a trigger event.

Remote To Local Transitions

The Test Set switches from Remote to Local operation (full front panel control) upon receipt of the Local message (Go To Local (GTL) bus message and Test Set is addressed to listen) or the Clear Lockout/Set Local message (REN bus line false). No instrument settings are changed by the transition from Remote to Local mode, but triggering is reset to FULL SETTling and REPetitive RETRiggering. The “R” annunciator in the upper right corner of the display is turned off.

If it is not in Local Lockout mode the Test Set switches from Remote to Local mode whenever the front-panel LOCAL key is pressed.

If the Test Set was in Local Lockout mode when the Local message was received, front-panel control is returned, but Local Lockout mode is not cleared. Unless the Test Set receives the Clear Lockout/Set Local message, the Test Set will still be in Local Lockout mode the next time it goes to the Remote mode.

Local Lockout

The Local Lockout mode disables the front-panel LOCAL key and allows return to Local mode only by commands from the System Controller (Clear Lockout/Set Local message).

When a data transmission to the Test Set is interrupted, which can happen if the LOCAL key is pressed, the data being transmitted may be lost. This can leave the Test Set in an unknown state. The Local Lockout mode prevents loss of data or system control due to someone unintentionally pressing front-panel keys.

NOTE: Return to Local mode can also be accomplished by setting the POWER switch to OFF and back to ON. However, returning to Local mode in this way has the following disadvantages:

1 It defeats the purpose of the Local Lockout mode in that the Active Controller will loose control of the Test Set,.

2 Instrument configuration is reset to the power up condition thereby loosing the instrument configuration set by the Active Controller

Clear Lockout/Set Local

The Test Set returns to Local mode (full front panel control) when it receives the Clear Lockout/Set Local message. No instrument settings are changed by the transition from Remote mode with Local Lockout to Local mode but triggering is reset to FULL SETTling and REPetitive RETRiggering.

2

GPIB[1] Command Syntax

1. GPIB was formerly called HP-IB for Hewlett-Packard instruments. Some labels on the instrument may still reflect the former HP® name.

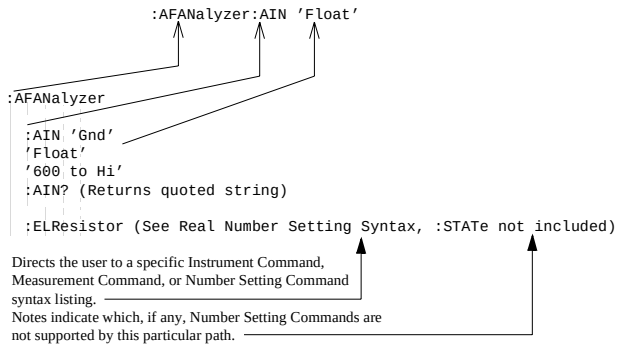
GPIB Command Syntax Listings

Command Listing Conventions

Command listings are used to define the Test Set's GPIB commands. The listing shows the commands, their hierarchical relationships, related parameters (if any), and associated notes (if any).

The Test Set's commands are based upon a hierarchical structure, also known as a tree system. In such a system, associated commands are grouped together under a common node in the hierarchy, analogous to the way leaves at a same level are connected at a common branch. This and similar branches are connected to fewer and thicker branches, until they meet at the root of the tree. The closer to the root, the higher a node is considered in the hierarchy.

The command listing is divided into columns, as indicated by light gray vertical lines. The root node is the leftmost column. Lower nodes in the hierarchy are indented one position to the right, below the root node. To obtain a particular command, the full path to it must be specified. For example: to set the low side of the audio input on the Audio Analyzer to float you would generate the following command:



Square brackets([]) are used to enclose a keyword that is optional when programming the command; that is, the Test Set will process the command to have the same effect whether the option keyword is omitted by the programmer or not.

Letter case (uppercase or lowercase) in listings is used to differentiate between the accepted short form (the uppercase characters) and the long form (the whole keyword). The Test Set accepts only the exact short and the exact long forms. Sending a keyword that is not the exact short form or the exact long form will generate an error.

In the parameter section of the listing a number of characters have special significance. Square brackets ([]) are used to enclose one or more parameters that are optional when controlling the Test Set. Braces({}), or curly brackets, are used to enclose one or more parameters that may be included zero or more times. The vertical bar (|) can be read as "or" and is used to separate alternative parameter options.

The query form of a command is generated by appending a question mark to the last keyword. However, not all commands have a query form, and some commands exist only in the query form. The listings include, where applicable, the command form and the query form of each command.

CAUTION: When changing a field's setting, a space must always precede the setting value in the command string, regardless of the field type. For example:

```
:RFG:FREQ<space>850MHZ
:EFG:ATT<SPACE>'On'
```

Improper punctuation will result in the following error:

HP-IB Error: -102 Syntax Error.

Adjacent Channel Power (ACP)

```
:ACPower

  :CBW|CBANdwidth (See "Real Number Setting Syntax" on page 159, :STATe not
                   included)
            THIS COMMAND SETS THE BANDWIDTH OF THE CARRIER AND ADJACENT
            CHANNELS TO BE MEASURED IN ADJACENT CHANNEL POWER MEASUREMENTS.
            THE CHANNEL BW FIELD IS FOUND ON THE ADJACENT CHANNEL POWER
            SCREEN.

  :COFFset (See "Real Number Setting Syntax" on page 159, :STATe not included)
            THIS COMMAND SETS THE FREQUENCY DIFFERENCE BETWEEN THE TUNE FREQ OR RF
            CHANNEL FIELD SETTINGS AND THE CENTER OF THE ADJACENT CHANNEL TO BE
            MEASURED IN ADJACENT CHANNEL POWER MEASUREMENTS. THE CH OFFSET FIELD IS
            FOUND ON THE ADJACENT CHANNEL POWER SCREEN.


  :MEASurement 'Ratio'
               'Level'
  :MEASurement? (Returns quoted string)
            THESE COMMANDS SET/QUERY THE FORMAT FOR DISPLAYING ADJACENT
            CHANNEL POWER MEASUREMENTS. THE ACP MEAS FIELD IS FOUND ON THE
            ADJACENT CHANNEL POWER SCREEN

  :RBW|RBANdwidth '300 Hz'
                  '1 kHz'
  :RBW?|RBANdwidth? (Returns quoted string)
            THESE COMMANDS SET/QUERY THE RESOLUTION BANDWIDTH FOR ADJACENT CHANNEL POWER
            MEASUREMENTS. THE RES BW FIELD IS FOUND ON THE ADJACENT CHANNEL POWER
            SCREEN.


  :RMODulation 'Unmod'
               'Mod'
  :RMODulation? (Returns quoted string)
            THESE COMMANDS SET/QUERY THE CARRIER REFERENCE SETTING, INDICATING WHETHER
            THE CARRIER BEING MEASURED DURING ADJACENT CHANNEL POWER REFERENCE
            MEASUREMENTS WILL BE UNMODULATED OR MODULATED. THE CARRIER REF FIELD IS
            FOUND ON THE ADJACENT CHANNEL POWER SCREEN.
```

AF Analyzer

```
:AFANalyzer

  :AIN'Gnd'
      'Float'
      '600 to Hi'
  :AIN? (Returns quoted string)
      THESE COMMANDS SET/QUERY THE INPUT STATE OF THE AUDIO IN (LO)
      CONNECTOR. THE AUDIO IN LO FIELD IS FOUND ON THE AF ANALYZER SCREEN.

  :CURRent
  [:ZERO]
      THIS COMMAND ZEROES THE DC CURRENT MEASUREMENT. THE DC CURRENT
      FIELD IS FOUND ON THE AF ANALYZER SCREEN.

  :DEMPhasis'750 us'
            'Off'
  :DEMPhasis? (Returns quoted string)
      THESE COMMANDS SET/QUERY THE STATE OF DE-EMPHASIS NETWORKS IN THE AUDIO
      ANALYZER AND SPEAKER CIRCUITRY. THE DE-EMPHASIS FIELD IS FOUND ON THE AF
      ANALYZER SCREEN.

    :GAIN'0 dB'
        '10 dB'
        '20 dB'
        '30 dB'
    :GAIN? (Returns quoted string)
        THESE COMMANDS SET/QUERY THE AF ANALYZER DE-EMPHASIS AMPLIFIER GAIN. THE
        DE-EMP GAIN FIELD IS FOUND ON THE AF ANALYZER SCREEN.
```

```
:AFAN
  :DETector'RMS'
           'RMS*SQRT2'
           'PK+'
           'PK-'
           'PK+-/2'
           'PK+-MAX'
           'PK+ HOLD'
           'PK- HOLD'
           'PK+-/2 Hd'
           'PK+-MX Hd'
  :DETector? (Returns quoted string)
    THESE COMMANDS SET/QUERY THE TYPE OF DETECTOR USED WHEN MEASURING AND
    DISPLAYING AF SIGNAL LEVELS. THE DETECTOR FIELD IS FOUND ON THE AF
    ANALYZER SCREEN.


    :PKLocation'Filters'
                'De-Emp'
    :PKLocation? (Returns quoted string)
      THESE COMMANDS SET/QUERY THE SIGNAL SOURCE FOR THE PEAK DETECTOR
      MEASUREMENTS. THE PK DET TO FIELD IS FOUND ON THE AF ANALYZER
      SCREEN.


    :SETTling'Fast'
             'Slow'
    :SETTling? (Returns quoted string)
      THESE COMMANDS SET/QUERY THE SETTLING TIME FOR AUDIO MEASUREMENTS.
      (USE "FAST" WHEN MEASURING SIGNALS GREATER THAN 200 HZ). THE
      SETTLING FIELD IS FOUND ON THE AF ANALYZER SCREEN.


  :ELResistor (See "Real Number Setting Syntax" on page 159, :STATe not
               included)
    THIS COMMAND SETS THE EXTERNAL LOAD RESISTANCE FOR MEASUREMENTS USING
    THE AUDIO IN CONNECTORS. THE EXT LOAD R FIELD IS FOUND ON THE AF
    ANALYZER SCREEN. VALID RANGE IS 1 OHM TO 1 MEGOHM.
```

```
:AFAN
  :FILTER1|FILT1'<20Hz HPF'
               '50HZ HPF'
               '300Hz HPF'
               'C MESSAGE'
  :FILTER1?|FILT1? (Returns quoted string)
      THESE COMMANDS SET/QUERY THE AUDIO FILTER 1 SELECTION. THE
      FILTER 1 FIELD IS FOUND ON THE AF ANALYZER SCREEN.

  :FILTER2|FILT2'300Hz LPF'
               '3kHz LPF'
               '15kHz LPF'
               '>99kHz LP'
               '6khz BPF'
  :FILTER2?|FILT2? (Returns quoted string)
      THESE COMMANDS SET/QUERY THE AUDIO FILTER 2 SELECTION. THE
      FILTER 2 FIELD IS FOUND ON THE AF ANALYZER SCREEN.

  :GTIMe (See "Real Number Setting Syntax" on page 159, :STATe not included)
      THIS COMMAND SETS THE GATE TIME (HOW LONG THE AF COUNTER SAMPLES THE INPUT
      SIGNAL) FOR THE AUDIO FREQUENCY COUNTER. THE AF CNT GATE FIELD IS FOUND
      ON THE AF ANALYZER SCREEN. VALID RANGE 10 MILLISECONDS TO 1 SECOND.

  :INPut 'FM Demod'
         'AM Demod'
         'SSB Demod'
         'Audio In'
         'Radio Int'
         'Ext Mod'
         'Mic Mod'
         'FM Mod'
         'AM Mod'
         'Audio Out'
  :INPut? (Returns quoted string)
      THESE COMMANDS SET/QUERY THE INPUT TO THE AUDIO ANALYZER. THE
      AF ANL IN FIELD IS FOUND ON THE AF ANALYZER SCREEN.

    :GAIN '0 dB'
          '20 dB'
          '40 dB'
    :GAIN? (Returns quoted string)
      THESE COMMANDS SET/QUERY THE INPUT GAIN SETTING FOR THE AUDIO ANALYZER. THE
      INPUT GAIN FIELD IS FOUND ON THE AF ANALYZER SCREEN.

  :SMPoint 'De-Emp'
           'Filters'
           'Input'
           'Notch'
  :SMPoint? (Returns quoted string)
      THESE COMMANDS SET/QUERY THE SIGNAL SOURCE FOR THE OSCILLOSCOPE. THE
      SCOPE TO FIELD IS FOUND ON THE AF ANALYZER SCREEN.
```

```
:AFAN

  :NOTCh
    :GAIN '0 dB'
          '10 dB'
          '20 dB'
          '30 dB'
          '40 dB'
    :GAIN? (Returns quoted string)
      THESE COMMANDS SET/QUERY THE GAIN OF THE AF ANALYZER'S NOTCH FILTER
      AMPLIFIER (USED FOR MAKING SINAD MEASUREMENTS). THE NOTCH GAIN FIELD
      IS FOUND ON THE AF ANALYZER SCREEN.


    :FREQuency (See "Real Number Setting Syntax" on page 159, :STATe not included)
      THIS COMMAND SETS THE CENTER FREQUENCY FOR THE VARIABLE FREQUENCY NOTCH
      FILTER. THE NOTCH FREQ FIELD IS FOUND ON THE AF ANALYZER SCREEN. VALID RANGE IS
      300 HZ TO 10 KHZ.

  :RANGing 'Auto'
           'Hold'
  :RANGing? (Returns quoted string)
      THESE COMMANDS SET/QUERY THE GAIN CONTROL MODE OF THE AF ANALYZER'S
      NOTCH FILTER AMPLIFIER (USED FOR MAKING SINAD MEASUREMENTS). THE NOTCH
      GAIN FIELD IS FOUND ON THE AF ANALYZER SCREEN.
```

```
:AFAN
  :SPEaker
    :MODE 'On'
          'Off'
    :MODE? (Returns quoted string)
          These commands set/query the gain control mode of the AF Analyzer's
          notch filter amplifier (used for making SINAD measurements). The Notch
          Gain field is found on the AF AnalyzerSCREEN.

    :VOLume 'Pot'
            'Off'
    :VOLume? (Returns quoted string)
          These commands set/query the speaker volume, which is controlled by the
          VOLUME knob when "Pot" is selected. The Speaker Vol field is found on the
          AF Analyzer SCREEN.
```

AF Generator 1

```
:AFGENERATOR1|AFG1

  :AM (See “Real Number Setting Syntax” on page 159)

  :DESTination ’AM’
               ’FM’’
               ’Audio Out’
  :DESTination? (Returns quoted string)

  :FM (See “Real Number Setting Syntax” on page 159)

  :FREQuency (See “Real Number Setting Syntax” on page 159, :STATe not
              included)

  :OUTPut (See “Real Number Setting Syntax” on page 159)
```

AF Generator 1

AFGenerator2|Encoder

```
:AFGENERATOR2|AFG2|ENCoder

  :AM (See "Real Number Setting Syntax" on page 159)

  :DESTination 'AM'
               'FM'
               'Audio Out'
  :DESTination? (Returns quoted string)

  :FM (See "Real Number Setting Syntax" on page 159)

  :FREQuency (See "Real Number Setting Syntax" on page 159, :STATe not included)

  :OUTPut (See "Real Number Setting Syntax" on page 159)

  :BURSt (See "Integer Number Setting Syntax" on page 157)

  :MODE 'AMPS-TACS'
        'Digi Page'
        'DTMF'
        'Func Gen'
        'NAMP-NTAC'
        'Tone Seq'
        'CDCSS'        (see 8920B programmer's guide for syntax)
        'NMT'          (see 8920B programmer's guide for syntax)
        'MPT 1327'     (see 8920B programmer's guide for syntax)
        'LTR'          (see 8920B programmer's guide for syntax)
        'EDACS'        (see 8920B programmer's guide for syntax)
  :MODE? (Returns quoted string)
```

```
:AFG2
  :PEMPhasis 'On'
             'Off'
  :PEMPhasis? (Returns quoted string)

  :POLarity 'Norm'
            'Invert'
  :POLarity? (Returns quoted string)

  :SEND
    :MODE 'Single'
          'Burst'
          'Cont'
          'Step'
    :MODE? (Returns quoted string)

  :STOP
```

```
:AFG2
  :AMPS|TACS

    :BUSY 'Idle'
          'Busy'
          'WS Delay'
          '1stBitDly'
    :BUSY? (Returns quoted string)

      :DELay (See "Integer Number Setting Syntax" on page 157, valid range: 0 -254)

    :CHANnel'Cntl'
            'Voice'
    :CHANnel? (Returns quoted string)

    :DUTest 'Mobile'
            'Cell'
    :DUTest? (Returns quoted string)

    :DATA
      :AM  (See "Real Number Setting Syntax" on page 159)

      :FM  (See "Real Number Setting Syntax" on page 159)

      :LEVel  (See "Real Number Setting Syntax" on page 159)

      :RATE  (See "Real Number Setting Syntax" on page 159, :STATe not included)

    :FILLer
      :DATA1 '<character_data>'
      :DATA1? (Returns quoted string)

      :DATA2 '<character_data>'
      :DATA2? (Returns quoted string)
            THESE COMMANDS SET/QUERY THE FILLER DATA. 7 CHARACTERS ARE REQUIRED. VALID
            CHARACTERS ARE: 0123456678ABCDEF.

      :SEND

      :STOP

    :FVCMessage '<character_data>'
    :FVCMessage? (Returns quoted string)
            THIS COMMAND SETS/QUERIES THE FORWARD VOICE CHANNEL MESSAGE. 7 CHARACTERS ARE
            REQUIRED. VALID CHARACTERS ARE: 0123456789ABCDEF.

    :MESSage
      :DATA1 '<character_data>'
      :DATA1? (Returns quoted string)
      :DATA2 '<character_data>'
      :DATA2? (Returns quoted string)
            THESE COMMANDS SET/QUERY THE MESSAGE DATA. UP TO 112 CHARACTERS IN 7
            CHARACTER INCREMENTS ARE ALLOWED. VALID CHARACTERS ARE: 0123456678ABCDEF.
```

```
:AFG2
  :AMPS|TACS
    :SAT
      :AM  (See “Real Number Setting Syntax” on page 159)

      :FM  (See “Real Number Setting Syntax” on page 159)

      :FREQuency  (See “Real Number Setting Syntax” on page 159, :STATe not included)

      :LEVel  (See “Real Number Setting Syntax” on page 159)

    :STANdard ’AMPS’
              ’TACS’
              ’JTACS’
    :STANdard? (Returns quoted string)
```

```
:AFG2
  :DTMF

    :FREQuency

      :COLumn (See “Multiple Real Number Setting Syntax” on page 161)

      :ROW (See “Multiple Real Number Setting Syntax” on page 161)

    :OFFTime  (See “Real Number Setting Syntax” on page 159, :STATe not included)
    :OFFTime?

    :ONTime  (See “Real Number Setting Syntax” on page 159, :STATe not included)
    :ONTime?

    :SEQuence ’<character_data>’
    :SEQuence? (Returns quoted string)
        THIS COMMAND SETS/QUERIES THE DTMF TONE SEQUENCE. THE MAXIMUM SEQUENCE IS
        16 CHARACTERS. VALID CHARACTERS ARE: 0123456789ABCD *#.

    :STANdard ’Bell’
    :STANdard? (Returns quoted string)

    :TWISt  (See “Real Number Setting Syntax” on page 159, :STATe and
             :INCRement not included)
    :TWISt?
```

```
:AFG2
  :FGENerator

    :WAVeform 'Sine'
              'Square'
              'Triangle'
              'Ramp(+)'
              'Ramp(-)'
              'DC(+)'
              'DC(-)'
              'Uni Noise'
              'Gau Noise'
    :WAVeform? (Returns quoted string)

    :SUNits 'RMS'
            'Peak'
    :SUNits? (Returns quoted string)
```

```
:AFG2
  :NAMPs|NTACs

    :BUSY 'Idle'
          'Busy'
          'WS Delay'
          '1stBitDly'
    :BUSY? (Returns quoted string)

      :DELay (See "Integer Number Setting Syntax" on page 157, valid range: 0-254)

    :CHANnel 'Cntl'
             'Voice'
    :CHANnel? (Returns quoted string)

    :DSAT
      :MESSage '<character_data>' (6 chars maximum)
      :MESSage? (Returns quoted string)

      :SEND

      :STOP

  [:FOCC]
      :AM  (See "Real Number Setting Syntax" on page 159)

      :FILLer
        :DATA1 '<character_data>'
        :DATA1? (Returns quoted string)
        :DATA2 '<character_data>'
        :DATA2? (Returns quoted string)
            THESE COMMANDS SET/QUERY THE FOCC FILLER DATA. 7 CHARACTERS ARE REQUIRED.
            VALID CHARACTERS ARE: 0123456678ABCDEF.

      :SEND

      :STOP

      :FM  (See "Real Number Setting Syntax" on page 159)

      :LEVel  (See "Real Number Setting Syntax" on page 159)

      :MESSage
        :DATA1 '<character_data>'
        :DATA1? (Returns quoted string)
        :DATA2 '<character_data>'
        :DATA2? (Returns quoted string)
            THESE COMMANDS SET/QUERY THE MESSAGE DATA. UP TO 112 CHARACTERS IN 7
            CHARACTER INCREMENTS ARE ALLOWED. VALID CHARACTERS ARE: 0123456678ABCDEF.

      :RATE  (See "Real Number Setting Syntax" on page 159, :STATe not included)
```

```
:AFG2
   :NAMPS|NTACS
      :FVC
        :AM  (See “Real Number Setting Syntax” on page 159)

        :FM  (See “Real Number Setting Syntax” on page 159)

        :LEVel  (See “Real Number Setting Syntax” on page 159)

        :MESSage ’<character_data>’
        :MESSage? (Returns quoted string)
              THESE COMMANDS SET/QUERY THE MESSAGE DATA. 7 CHARACTERS ARE REQUIRED. VALID
              CHARACTERS ARE: 0123456678ABCDEF.

        :RATE  (See “Real Number Setting Syntax” on page 159, :STATe not included)

        :SEND ’Message’
              ’DST’
        :SEND? (Returns quoted string)

      :STANdard ’NAMPS’
                ’NTACS’
      :STANdard? (Returns quoted string)
```

AF Generator 2 Pre-Modulation Filters

To improve performance, one of four pre-modulation filters is *automatically* selected for each Encoder Mode. The automatically selected filter can only be changed using GPIB commands; however, we recommend you do not change this setting. In order to change the automatically selected filter, the Filter Mode must be set to ON. Filter Mode ON allows independent selection of filters. The Filter Mode ON command must be executed first to override default settings. 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.`** Auto entries take precedence. The syntax to change or query the premodulation filter is shown below.

```
AFG2:FILTER:MODE 'ON|OFF'(select one)
AFG2:FILTER:MODE?(query the current mode setting)
AFG2:FILTER 'NONE|20kHz LPF|250Hz LPF|150Hz LPF'(select one)
AFG2:FILTER?(query the current filter setting)
```

```
:AFGENERATOR2|AFG2|ENCoder

  :FILTer   'NONE'
            '20kHz LPF'
            '250Hz LPF'
            '150Hz LPF'
  :FILTer? (Returns quoted string)

    :MODE   'On'
            'Off'
    :MODE? (Returns quoted string)
```

Call Processing

:CPRocess|CALLP

:MODE 'MEAS'
'DATA'
:MODE? (Returns quoted string)
These commands set/query the type of information collected when an analog call is connected. The Display field is found on the call control screen.

:RCDDATA1?|RCDD1? (Returns quoted string)
:RCDDATA2?|RCDD2? (Returns quoted string)
:RCDDATA3?|RCDD3? (Returns quoted string)
:RCDDATA4?|RCDD4? (Returns quoted string)
:RCDDATA5?|RCDD5? (Returns quoted string)
:RCDDATA6?|RCDD6? (Returns quoted string)
These commands query the information displayed on the right-hand portion of the **CALL CONTROL** screen when the Display field is set to "Data" or "NData". Each command corresponds to a non-labeled data field consisting of 1 line of characters.

:ACTive
This command turns on the forward control channel of the simulated base station. If a call is in any other call processing state, sending the "ACT" command will force a return to the active state. The Active field is found on the **CALL CONTROL** screen.

:REGister
This command initiates a registration attempt by the mobile station. The Test Set must be in the Active state before attempting registration.

:PAGE
This command initiates a page to the mobile station. The Test Set must be in the Active state and the MS Id fields (Phone Num/Min) must have correct values entered for a page attempt to be successful.

:HANDoff
This command initiates a handoff to another voice channel. The commands to set the voice channel, power level, and SAT are "CPR:VCH|VMAC|SAT respectively. The Test Set must be in the connected state for a handoff attempt to be successful.

:RELease
This command terminates an active voice channel connection with the mobile station. The Test Set must be in the connected state for a release attempt to be successful. The Release field is found on the **CALL CONTROL** screen.

```
:CALLP
  :ORDer'Chng PL 0'
        'Chng PL 1'
        'Chng PL 2'
        'Chng PL 3'
        'Chng PL 4'
        'Chng PL 5'
        'Chng PL 6'
        'Chng PL 7'
        'Mainten'
        'Alert'
  :ORDer? (Returns quoted string)
     THESE COMMANDS SEND AN ORDER TYPE MOBILE STATION CONTROL MESSAGE ON
     THE FORWARD VOICE CHANNEL TO THE MOBILE STATION. THE ORDER FIELD IS
     FOUND ON THE CALL CONTROL SCREEN.

  :NMODe'PHONE NUM'
        'MIN2 MIN1'
  :NMODe? (Returns quoted string)
     THIS COMMAND SETS/QUERIES THE FORMAT FOR ENTERING THE MOBILE STATION'S
     IDENTIFICATION. THE "CPR:PNUM" COMMAND SETS THE PHONE NUMBER, AND
     THE "CPR:MIN" COMMAND SETS MIN 1 AND MIN 2.

  :PNUMber '<character_data>'
  :PNUMber? (Returns quoted string)
     10 CHARACTERS MAXIMUM, VALID CHARACTERS: 0123456789

  :MINumber '<character_data>'
  :MINumber? (Returns quoted string)
     THESE COMMANDS SET/QUERY THE MOBILE STATION IDENTIFICATION NUMBER. THE "CPR:NMOD"
     COMMAND SELECTS WHICH FORMAT (PHONE NUMBER OR MIN) THE TEST SET WILL USE FOR CALL
     PROCESSING. 9 CHARACTERS MAXIMUM, VALID CHARACTERS: 0123456789ABCDEF.

  :CSYStem  'AMPS'
            'TACS'
            'JTACS'
            'NAMPS'
            'NTACS'
  :CSYStem? (Returns quoted string)
     THESE COMMANDS SET/QUERY THE TYPE OF CELLULAR SYSTEM IN USE. THE
     SYSTEM TYPE FIELD IS LOCATED ON THE CALL CONTROL SCREEN.

  :CCHannel (See "Integer Number Setting Syntax" on page 157)
     THIS COMMAND SETS THE CONTROL CHANNEL NUMBER. THE CNTRL CHAN FIELD IS
     FOUND ON THE CALL CONTROL SCREEN. VALID RANGE IS 1 THROUGH 1023.

  :AMPLitude (See "Real Number Setting Syntax" on page 159)
     THIS COMMAND SETS THE OUTPUT POWER FROM THE TEST SET'S RF GENERATOR.
     THE AMPLITUDE FIELD IS FOUND ON THE CALL CONTROL SCREEN. VALID RANGE IS +18 TO
     -137 dBm

  :SIDentify (See "Integer Number Setting Syntax" on page 157)
     THIS COMMAND SETS THE (BASE STATION) SYSTEM IDENTIFICATION NUMBER. THE
     SID FIELD IS FOUND ON THE CALL CONTROL SCREEN. VALID RANGE IS 1 THROUGH 4094.
```

```
:CALLP
  :AVCNumber? (Returns quoted string)
    This command queries the voice channel number for the call currently
    connected. The Chan field is found on the CALL CONTROL screen.

  :VCHannel (See "Integer Number Setting Syntax" on page 157)
      This command sets the voice channel number that the mobile station
      will be assigned to during a call setup or handoff. The voice Chan
      field is found on the CALL CONTROL screen. valid range: 1 through 1023.

  :AVCPower? (Returns quoted string)
      This command queries the VMAC (Voice Mobile Attenuation Code) for
      the call currently connected. VMAC determines the mobile station's
      transmitted power level. The Pwr Lvl field is found on the CALL
      CONTROL screen.

  :VMACode (See "Integer Number Setting Syntax" on page 157)
      This command sets/queries the VMAC (Voice Mobile Attenuation Code) to
      be used during the next call setup or handoff. VMAC controls the power
      level transmitted from the mobile station. The Pwr Lvl field is found
      on the CALL CONTROL screen. The valid range is 0 through 7.

  :SATone   '5970Hz'
            '6000Hz'
            '6030Hz'
  :SATone? (Returns quoted string)
      This command sets/queries the SAT (Supervisory Audio Tone) to be used
      during the next call setup or handoff. The Sat field is found on the
      CALL CONTROL screen.

  :AVCSat? (Returns quoted string)
      This command queries the SAT (Supervisory Audio Tone) frequency for
      the call currently connected. The SAT field is found on the CALL
      CONTROL screen.

  :DATA 'RECCW A'
        'RECCW B'
        'RECCW C'
        'RECCW D'
        'RECCW E'
        'RVCORDCON'
        'BSCHALORD'
        'AUTHWORD'
        'UNIQCHCON'
        'RVCORD'
        'RVCBSCHAL'
        'NRVC ORD'
  :DATA? (Returns quoted string)
      These commands select/query the reverse control channel or reverse voice
      channel message to be viewed on the CALL DATA screen. The Display Word
      field is found on the CALL DATA screen.
```

```
:CALLP
  :RECA
        THESE COMMANDS QUERY THE MESSAGE FIELDS FOR RECCW A(REVERSE CONTROL CHANNEL
        WORD A (ABBREVIATED ADDRESS WORD). THE MESSAGE FIELDS FOR RECCW A ARE FOUND ON
        THE CALL DATA SCREEN.

    :FWORd?|F? (Returns quoted string)
    :NAWComing? (Returns quoted string)
    :TFIeld?|T? (Returns quoted string)
    :SERial?|S? (Returns quoted string)
    :EXTended?|E? (Returns quoted string)
    :REServed?|RSVD? (Returns quoted string)
    :SCMark? (Returns quoted string)
    :MINumber? (Returns quoted string)
    :PARity? (Returns quoted string)

  :RECB
        THESE COMMANDS QUERY THE MESSAGE FIELDS FOR RECCW B (REVERSE CONTROL
        CHANNEL WORD B - EXTENDED ADDRESS WORD). THE MESSAGE FIELDS FOR RECCW B
        ARE FOUND ON THE CALL DATA SCREEN.

    :FWORd?|F? (Returns quoted string)
    :NAWComing? (Returns quoted string)
    :LOCal? (Returns quoted string)
    :ORDQualifier? (Returns quoted string)
    :ORDer? (Returns quoted string)
    :LTRY?|LT? (Returns quoted string)
    :REServed?|RSVD? (Returns quoted string)
    :MINumber? (Returns quoted string)
    :PARity? (Returns quoted string)

  :RECC
        THESE COMMANDS QUERY THE MESSAGE FIELDS FOR RECCW C (REVERSE CONTROL
        CHANNEL WORD C - SERIAL NUMBER WORD). THE MESSAGE FIELDS FOR RECCW C
        ARE FOUND ON THE CALL DATA SCREEN.

    :FWORd?|F? (Returns quoted string)
    :NAWComing? (Returns quoted string)
    :SERial? (Returns quoted string)
    :PARity? (Returns quoted string)
```

```
:CALLP
 :RECD
        These commands query the message fields for RECCW D (Reverse Control
        Channel Word D - First Word of the Called-Address). The message
        fields for RECCW C are found on the CALL DATA screen.

   :FWORd?|F? (Returns quoted string)
   :NAWComing? (Returns quoted string)
   :DIGIT1?|DIG1? (Returns quoted string)
   :DIGIT2?|DIG2? (Returns quoted string)
   :DIGIT3?|DIG3? (Returns quoted string)
   :DIGIT4?|DIG4? (Returns quoted string)
   :DIGIT5?|DIG5? (Returns quoted string)
   :DIGIT6?|DIG6? (Returns quoted string)
   :DIGIT7?|DIG7? (Returns quoted string)
   :DIGIT8?|DIG8? (Returns quoted string)
   :PARity? (Returns quoted string)

 :RECE
        These commands query the message fields for RECCW E (Reverse Control
        Channel Word E - Second Word of the Called-Address). The message fields
        for RECCW E are found on the CALL DATA screen.

   :FWORd?|F? (Returns quoted string)
   :NAWComing? (Returns quoted string)
   :DIGIT9?|DIG9? (Returns quoted string)
   :DIGIT10?|DIG10? (Returns quoted string)
   :DIGIT11?|DIG11? (Returns quoted string)
   :DIGIT12?|DIG12? (Returns quoted string)
   :DIGIT13?|DIG13? (Returns quoted string)
   :DIGIT14?|DIG14? (Returns quoted string)
   :DIGIT15?|DIG15? (Returns quoted string)
   :DIGIT16?|DIG16? (Returns quoted string)
   :PARity? (Returns quoted string)

 :RCOConfirm
        These commands query the message fields for RVCOrdCon (Reverse Voice
        Channel Order Confirmation Message). The message fields
        for RVCOrdCon are found on the CALL DATA screen.

   :FWORd?|F? (Returns quoted string)
   :NAWComing? (Returns quoted string)
   :TFIeld?|T? (Returns quoted string)
   :LOCal? (Returns quoted string)
   :ORDQualifier? (Returns quoted string)
   :ORDer? (Returns quoted string)
   :REServed?|RSVD? (Returns quoted string)
   :PARity? (Returns quoted string)
```

```
:CALLP
  :DSPecifier ‘STD’
              'BITS'
  :DSPecifier? (Returns quoted string)
```

THESE COMMANDS DETERMINE HOW SIGNALING MESSAGES ARE BUILT. THE CONTENTS CAN COME FROM INDUSTRY STANDARDS (STD)OR BIT PATTERNS SET ON THE **CALL BIT** SCREEN. THE DATA SPEC FIELD IS LOCATED ON THE **CALL BIT** SCREEN.THE CALL BIT SCREEN IS AVAILABLE FOR THE AMPS, NAMPS,TACS, AND JTACS SYSTEM TYPES.

```
  :MESSage  'SPC WORD1'
            'SPC WORD2'
            'ACCESS'
            'REG INC'
            'REG ID'
            'C-FILMESS'
            'MS WORD1'
            'MSMessOrd'
            'MS IntVCh'
            'FVC O Mes'
            'FVC V Mes'
            ‘RandChalA’
            ‘RandChalB’
            ‘RAND SSD1’
            ‘RAND SSD2’
            ‘RAND SSD3’
            ‘BSChalCon’
            ‘UniqChOrd’
            ‘FVC SSD1’
            ‘FVC SSD2’
            ‘FVC SSD3’
            ‘FVCBSCon’
            ‘FVCUniqCh’
            ‘EXT PROT’
            ‘NCH ASN’
            ‘NTCH ASN’
            ‘WNHO MES’
            ‘NHO MES’
            ‘NTHO MES’
  :MESSage? (Returns quoted string)
```

THESE COMMANDS SELECT/QUERY A FORWARD CONTROL CHANNEL OR FORWARD VOICE CHANNEL MESSAGE TO BE MODIFIED. THE SET MESSAGE FIELD IS FOUND ON THE **CALL BIT** SCREEN.THE CALL BIT SCREEN IS AVAILABLE FOR THE AMPS, NAMPS,TACS, AND JTACS SYSTEM TYPES.

```
:CALLP
  :SPOMESSAGE1|SPOM1
        THESE COMMANDS SET/QUERY THE MESSAGE FIELDS FOR SPC WORD1(SYSTEM PARAMETER
        OVERHEAD MESSAGE WORD 1). THE MESSAGE FIELDS FOR SPC WORD1 ARE FOUND ON THE
        CALL BIT SCREEN.THE CALL BIT SCREEN IS USED WITH AMPS, NAMPS, TACS, AND JTACS.

    :TYPE|T1T2 '<character_data>' (2 chars required, valid chars: 01)
    :TYPE?|T1T2? (Returns quoted string)

    :DCCode '<character_data>' (2 chars required, valid chars: 01)
    :DCCode? (Returns quoted string)

    :SIDentify '<character_data>' (14 chars required, valid chars: 01)
    :SIDentify? (Returns quoted string)

    :REServed|RSVD '<character_data>' (3 chars required, valid chars: 01)
    :REServed?|RSVD? (Returns quoted string)

    :NAWComing '<character_data>' (3 chars required, valid chars: 01)
    :NAWComing? (Returns quoted string)

    :OVERhead '<character_data>' (3 chars required, valid chars: 01)
    :OVERhead? (Returns quoted string)

    :PARity? (Returns quoted string)

  :SPOMESSAGE2|SPOM2
        THESE COMMANDS SET/QUERY THE MESSAGE FIELDS FOR SPC WORD2 (SYSTEM PARAMETER
        OVERHEAD MESSAGE WORD 2). THE MESSAGE FIELDS FOR SPC WORD2 ARE FOUND ON THE
        CALL BIT SCREEN.THE CALL BIT SCREEN IS USED WITH AMPS, NAMPS,TACS, AND JTACS.

    :TYPE|T1T2 '<character_data>' (2 chars required, valid chars: 01)
    :TYPE?|T1T2? (Returns quoted string)

    :DCCode '<character_data>' (2 chars required, valid chars: 01)
    :DCCode? (Returns quoted string)

    :SERial|S  '<character_data>' (1 char required, valid chars: 01)
    :SERial?|S? (Returns quoted string)

    :EXTended|E '<character_data>' (1 char required, valid chars: 01)
    :EXTended?|E? (Returns quoted string)

    :RHOMe|REGHome '<character_data>' (1 char required, valid chars: 01)
    :RHOMe?|REGHome? (Returns quoted string)

    :RROam|REGRoam '<character_data>' (1 char required, valid chars: 01)
    :RROam?|REGRoam? (Returns quoted string)

    :DTX '<character_data>' (2 chars required, valid chars: 01)
    :DTX? (Returns quoted string)

    :NPAGe|Nfield '<character_data>' (5 chars required, valid chars: 01)
    :NPAGe?|Nfield? (Returns quoted string)
```

```
:CALLP
  :SPOMESSAGE2|SPOM2

    :RCFiller '<character_data>' (1 char required, valid chars: 01)
    :RCFiller? (Returns quoted string)

    :CPACcess|CPA '<character_data>' (1 char required, valid chars: 01)
    :CPACcess?|CPA? (Returns quoted string)

    :CMAXimum '<character_data>' (7 chars required, valid chars: 01)
    :CMAXimum? (Returns quoted string)

    :END '<character_data>' (1 char required, valid chars: 01)
    :END? (Returns quoted string)

    :OVERhead '<character_data>' (3 chars required, valid chars: 01)
    :OVERhead? (Returns quoted string)

    :PARity? (Returns quoted string)

  :ACCess
        THESE COMMANDS SET/QUERY THE MESSAGE FIELDS FOR ACCESS (ACCESS TYPE PARAMETERS
        GLOBAL ACTION MESSAGE). THE MESSAGE FIELDS FOR ACCESS ARE FOUND ON THE CALL
        BIT SCREEN. THE CALL BIT SCREEN IS AVAILABLE FOR THE AMPS, NAMPS,TACS, AND
        JTACS SYSTEM TYPES.

    :TYPE|T1T2 '<character_data>' (2 chars required, valid chars: 01)
    :TYPE?|T1T2? (Returns quoted string)

    :DCCode '<character_data>' (2 chars required, valid chars: 01)
    :DCCode? (Returns quoted string)

    :ACTion '<character_data>' (4 chars required, valid chars: 01)
    :ACTion? (Returns quoted string)

    :BISTate|BIS '<character_data>' (1 char required, valid chars: 01)
    :BISTate?|BIS? (Returns quoted string)

    :REServed|RSVD '<character_data>' (15 chars required, valid chars: 01)
    :REServed?|RSVD? (Returns quoted string)

    :END '<character_data>' (1 char required, valid chars: 01)
    :END? (Returns quoted string)

    :OVERhead '<character_data>' (3 chars required, valid chars: 01)
    :OVERhead? (Returns quoted string)

    :PARity? (Returns quoted string)
```

```
:CALLP
  :RINCrement
      THESE COMMANDS SET/QUERY THE MESSAGE FIELDS FOR REG INC
      (REGISTRATION INCREMENT GLOBAL ACTION MESSAGE). THE MESSAGE FIELDS FOR
      REG INC ARE FOUND ON THE CALL BIT SCREEN.THE CALL BIT SCREEN IS AVAILABLE FOR
      THE AMPS, NAMPS,TACS, AND JTACS SYSTEM TYPES.

    :TYPE|T1T2 '<character_data>' (2 chars required, valid chars: 01)
    :TYPE?|T1T2? (Returns quoted string)

    :DCCode '<character_data>' (2 chars required, valid chars: 01)
    :DCCode? (Returns quoted string)

    :ACTion '<character_data>' (4 chars required, valid chars: 01)
    :ACTion? (Returns quoted string)

    :RINCrement '<character_data>' (12 chars required, valid chars: 01)
    :RINCrement? (Returns quoted string)

    :REServed|RSVD '<character_data>' (4 chars required, valid chars: 01)
    :REServed?|RSVD? (Returns quoted string)

    :END '<character_data>' (1 char required, valid chars: 01)
    :END? (Returns quoted string)

    :OVERhead '<character_data>' (3 chars required, valid chars: 01)
    :OVERhead? (Returns quoted string)

    :PARity? (Returns quoted string)

  :RIDentify
      THESE COMMANDS SET/QUERY THE MESSAGE FIELDS FOR REG ID (REGISTRATION ID MESSAGE).
      THE MESSAGE FIELDS FOR REG ID ARE FOUND ON THE CALL BIT SCREEN.THE CALL BIT
      SCREEN IS AVAILABLE FOR THE AMPS, NAMPS,TACS, AND JTACS SYSTEM TYPES.

    :TYPE|T1T2 '<character_data>' (2 chars required, valid chars: 01)
    :TYPE?|T1T2? (Returns quoted string)

    :DCCode '<character_data>' (2 chars required, valid chars: 01)
    :DCCode? (Returns quoted string)

    :IDENtify|REGID '<character_data>' (20 chars required, valid chars: 01)
    :IDENtify?|REGID? (Returns quoted string)

    :END '<character_data>' (1 char required, valid chars: 01)
    :END? (Returns quoted string)

    :OVERhead '<character_data>' (3 chars required, valid chars: 01)
    :OVERhead? (Returns quoted string)

    :PARity? (Returns quoted string)
```

```
:CALLP
  :CFMessage
      These commands set/query the message fields for c-filmess(Control-Filler
      Message). The message fields for c-fillmess are found on the CALL BIT screen.
      The CALL BIT screen is available for the AMPS, NAMPS,TACS, and JTACS system
      types.

    :TYPE|T1T2 '<character_data>' (2 chars required, valid chars: 01)
    :TYPE?|T1T2? (Returns quoted string)

    :DCCode '<character_data>' (2 chars required, valid chars: 01)
    :DCCode? (Returns quoted string)

    :FIELD1|FIEL1|F1 '<character_data>' (6 chars required, valid chars: 01)
    :FIELD1?|FIEL1?|F1? (Returns quoted string)

    :CMACode '<character_data>' (3 chars required, valid chars: 01)
    :CMACode? (Returns quoted string)

    :RESERVED1|RES1|RSVD1 '<character_data>'
       2 chararacters required, valid chararacters: 01
    :RESERVED1?|RES1?|RSVD1? (Returns quoted string)

    :FIELD2|FIEL2|F2 '<character_data>' (2 chars required, valid chars: 01)
    :FIELD2?|FIEL2?|F2? (Returns quoted string)

    :RESERVED2|RES2|RSVD2 '<character_data>'
       2 chararacters required valid chararacters: 01
    :RESERVED2?|RES2?|RSVD2? (Returns quoted string)

    :FIELD3|FIEL3|F3 '<character_data>' (1 char required, valid chars: 01)
    :FIELD3?|FIEL3?|F3? (Returns quoted string)

    :WFOMessage '<character_data>' (1 char required, valid chars: 01)
    :WFOMessage? (Returns quoted string)

    :FIELD4|FIEL4|F4 '<character_data>' (4 chars required, valid chars: 01)
    :FIELD4?|FIEL4?|F4? (Returns quoted string)

    :OVERhead '<character_data>' (3 chars required, valid chars: 01)
    :OVERhead? (Returns quoted string)

    :PARity? (Returns quoted string)
```

```
:CALLP
  :MSWord
        THESE COMMANDS SET/QUERY THE MESSAGE FIELDS FOR MS WORD1 (FCC MOBILE
        STATION CONTROL MESSAGE WORD 1 - ABBREVIATED ADDRESS WORD). THE MESSAGE
        FIELDS FOR MS WORD1 ARE FOUND ON THE CALL BIT SCREEN. THE CALL BIT SCREEN
        IS AVAILABLE FOR THE AMPS, NAMPS,TACS, AND JTACS SYSTEM TYPES.

    :TYPE|T1T2 '<character_data>' (2 chars required, valid chars: 01)
    :TYPE?|T1T2? (Returns quoted string)

    :DCCode '<character_data>' (2 chars required, valid chars: 01)
    :DCCode? (Returns quoted string)

    :MINumber '<character_data>' (24 chars required, valid chars: 01)
    :MINumber? (Returns quoted string)

    :PARity? (Returns quoted string)

  :MSORder
        THESE COMMANDS SET/QUERY THE MESSAGE FIELDS FOR MSMESSORD (FCC MOBILE
        STATION CONTROL MESSAGE EXTENDED ADDRESS WORD - ORDER). THE MESSAGE
        FIELDS FOR MSMESSORD ARE FOUND ON THE CALL BIT SCREEN. THE CALL BIT SCREEN
        IS AVAILABLE FOR THE AMPS, NAMPS,TACS, AND JTACS SYSTEM TYPES.

    :TYPE|T1T2 '<character_data>' (2 chars required, valid chars: 01)
    :TYPE?|T1T2? (Returns quoted string)

    :SCCode '<character_data>' (2 chars required, valid chars: 01)
    :SCCode? (Returns quoted string)

    :MINumber '<character_data>' (10 chars required, valid chars: 01)
    :MINumber? (Returns quoted string)

    :REServed|RSVD '<character_data>' (1 char required, valid chars: 01)
    :REServed?|RSVD? (Returns quoted string)

    :LOCal '<character_data>' (5 chars required, valid chars: 01)
    :LOCal? (Returns quoted string)

    :ORDQualifier '<character_data>' (3 chars required, valid chars: 01)
    :ORDQualifier? (Returns quoted string)

    :ORDer '<character_data>' (5 chars required, valid chars: 01)
    :ORDer? (Returns quoted string)

    :PARity? (Returns quoted string)
```

```
:CALLP
  :MSVoice
        These commands set/query the message fields for MSIntVCh (FCC Mobile
        Station Control Message Extended Address Word - Voice Channel
        Assignment). The message fields for MSIntVCh are found on the CALL BIT
        screen.The CALL BIT screen is available for the AMPS, NAMPS,TACS, and
        JTACS system types.

    :TYPE|T1T2 '<character_data>' (2 chars required, valid chars: 01)
    :TYPE?|T1T2? (Returns quoted string)

    :SCCode '<character_data>' (2 chars required, valid chars: 01)
    :SCCode? (Returns quoted string)

    :MINumber '<character_data>' (10 chars required, valid chars: 01)
    :MINumber? (Returns quoted string)

    :VMACode '<character_data>' (3 chars required, valid chars: 01)
    :VMACode? (Returns quoted string)

    :CHANnel '<character_data>' (11 chars required, valid chars: 01)
    :CHANnel? (Returns quoted string)

    :PARity? (Returns quoted string)

  :FVORder
        These commands set/query the message fields for FVC O Mes (FCC Mobile
        Station Control Order Message). The message fields for FVC O Mes are
        found on the CALL BIT screen. The CALL BIT screen is available for the AMPS,
        NAMPS,TACS, and JTACS system types.

    :TYPE|T1T2 '<character_data>' (2 chars required, valid chars: 01)
    :TYPE?|T1T2? (Returns quoted string)

    :SCCode '<character_data>' (2 chars required, valid chars: 01)
    :SCCode? (Returns quoted string)

    :PSCCode '<character_data>' (2 chars required, valid chars: 01)
    :PSCCode? (Returns quoted string)

    :REServed|RSVD '<character_data>' (9 chars required, valid chars: 01)
    :REServed?|RSVD? (Returns quoted string)

    :LOCal '<character_data>' (5 chars required, valid chars: 01)
    :LOCal? (Returns quoted string)

    :ORDQualifier '<character_data>' (3 chars required, valid chars: 01)
    :ORDQualifier? (Returns quoted string)

    :ORDer '<character_data>' (5 chars required, valid chars: 01)
    :ORDer? (Returns quoted string)

    :PARity? (Returns quoted string)
```

```
:CALLP
  :FVVoice
     These commands set/query the message fields for FVC V Mes (FCC Mobile
     Station Control Voice Channel Assignment Message). The message fields for
     FVC V Mes are found on the CALL BIT screen. The CALL BIT screen is available
     for the amps, namps,tacs, and jtacs system types.

    :TYPE|T1T2 '<character_data>' (2 chars required, valid chars: 01)
    :TYPE?|T1T2? (Returns quoted string)

    :SCCode '<character_data>' (2 chars required, valid chars: 01)
    :SCCode? (Returns quoted string)

    :PSCCode '<character_data>' (2 chars required, valid chars: 01)
    :PSCCode? (Returns quoted string)

    :REServed|RSVD '<character_data>' (8 chars required, valid chars: 01)
    :REServed?|RSVD? (Returns quoted string)

    :VMACode '<character_data>' (3 chars required, valid chars: 01)
    :VMACode? (Returns quoted string)

    :CHANnel '<character_data>' (11 chars required, valid chars: 01)
    :CHANnel? (Returns quoted string)

    :PARity? (Returns quoted string)

  :SWORd
     This command sends the (signaling) word in the Set Message field. The
     Set Message field and the Send Word field are found on the CALL BIT screen.The
     CALL BIT screen is available for the amps, namps,tacs, and jtacs system types.
```

```
:CALLP
  :CMAXimum (See "Integer Number Setting Syntax" on page 157, valid range: 1-4094)
      THIS COMMAND SETS THE NUMBER OF ACCESS CHANNELS IN THE SYSTEM. THIS NUMBER WILL
      DETERMINE HOW MANY CHANNELS MUST BE SCANNED BY THE MOBILE STATION WEHN TRYING TO
      ACCESS THE TEST SET. THE VALID RANGE IS 1 THROUGH 4094. THE CMAX FIELD IS FOUND
      ON THE THE CALL CONFIGURE SCREEN. THE CALL CONFIGURE SCREEN IS AVAILABLE FOR
      THE AMPS, NAMPS,TACS, AND JTACS SYSTEM TYPES.

  :CRFAtten '0 dB'
            '20 dB'
            '40 dB'
  :CRFAtten? (Returns quoted string)
      THESE COMMANDS SET/QUERY THE INPUT ATTENUATION FOR THE RF IN/OUT AND
      ANTENNA IN CONNECTORS WHEN USING THE ANALOG CALL PROCESSING SUBSYSTEM. THE
      INPUT ATT FIELD IS FOUND ON THE CALL CONFIGURE SCREEN.

  :STOLerance 'Narrow'
              'Wide'
  :STOLerance? (Returns quoted string)
      THESE COMMANDS SET/QUERY THE SAT TOLERANCE. THIS SETTING SHOULD BE "WIDE"
      IF THE MOBILE STATION'S AUDIO IS NOT MUTED DURING A CALL. THE SAT TOL
      FIELD IS FOUND ON THE CALL CONFIGURE.

  REGConf 'On'
          'Off'
  REGConf?

  :TIMeout PAGE, <integer> (time in seconds)
  :TIMeout REG, <integer> (time in seconds)
  :TIMeout ALL
  :TIMeout? PAGE (Returns integer value in seconds)
  :TIMeout? REG (Returns integer value in seconds)
      THIS COMMAND SETS/QUERIES THE TIMEOUT PERIOD BEFORE AMPS PAGE AND REGISTRTAION
      OPERATIONS FAIL. THE DEFAULT VALUE IS 20 SECONDS, THE MAXIMUM IS 900 SECONDS.
```

```
:CALLP
  :AMPS

    :AUTHenticate 'Off'
                  'On'
    :AUTHenticate? (Returns quoted string)
          THESE COMMANDS SELECT/QUERY THE ANALOG AUTHENTICATION
          STATE. THE AUTHENT FIELD IS FOUND ON THE AUTHENTICATION
          SCREEN.
      :AKEY '<character_data> (26 chars maximum, valid chars: decimal)'
      :AKEY? (Returns quoted string)

      :AKEY
        :GENerate
          THIS IMMEDIATE ACTION COMMAND GENERATES A NEW A_KEY FOR USE
          IN THE MOBILE STATION. THE RESULTANT CHECKSUM WILL BE
          DISPLAYED IN THE LAST 6 DIGITS OF THE A_KEY FIELD. THE
          A_KEY FIELD IS FOUND ON THE AUTHENTICATION SCREEN. THERE IS
          NO MANUAL (FRONT PANEL) OPERATION THAT GENERATES A NEW
          A_KEY IN THIS MANNER.

      :ONOFF 'On'
             'Off'
      :ONOFF? (Returns quoted string)

      :OON (See "Integer Number Setting Syntax" on page 157, does not include :INCR
          command)
          THIS COMMAND SETS THE NUMBER OF TIMES THE SYSTEM PARAMETER
          OVERHEAD MESSAGE IS SENT. THE 1 OF N FIELD IS FOUND ON THE
          AUTHENTICATION SCREEN.

      :ESNumber '<character_data>'
      :ESNumber? (Returns quoted string)
          THIS COMMAND SETS THE ESN (ELECTRONIC SERIAL NUMBER) OF THE
          MOBILE STATION. THE ESN FIELD IS FOUND ON THE AUTHENTICATION
          SCREEN. 10 CHARACTERS MAXIMUM, VALID CHARACTERS: HEX


      :CCORder 'SSD Upd'
               'Uniq Ch'
      :CCORder? (Returns quoted string)
          THIS COMMAND SENDS/QUERIES AN ORDER TYPE MOBILE STATION
          CONTROL MESSAGE ON THE FORWARD CONTROL CHANNEL TO THE MOBILE STATION.
          THE CC ORDER FIELD IS FOUND ON THE CALL CONTROL SCREEN WHEN THE
          AUTHENT FIELD ON THE AUTHENTICATION SCREEN IS "ON" AND A CALL IS
          NOT CONNECTED.
```

```
:CALLP
  :AMPS
    :AUTH
      :VCORder         'Chng PL 0'
                       'Chng PL 1'
                       'Chng PL 2'
                       'Chng PL 3'
                       'Chng PL 4'
                       'Chng PL 5'
                       'Chng PL 6'
                       'Chng PL 7'
                       'Mainten'
                       'Alert'
      :VCORder? (Returns quoted string)
           THIS COMMAND SENDS/QUERIES AN ORDER TYPE MOBILE STATION
           CONTROL MESSAGE ON THE VOICE CHANNEL TO THE MOBILE STATION. THE VC
           ORDER FIELD IS FOUND ON THE CALL CONTROL SCREEN WHEN THE AUTHENT
           FIELD ON THE AUTHENTICATION SCREEN IS "ON" AND THE MOBILE STATION
           AND TEST SET ARE ON A VOICE CHANNEL.

      :SSDA '<character_data>' (16 CHARACTERSS: HEXADECIMAL)
      :SSDA? (Returns quoted string)

        :NEW '<character_data>' (16 CHARACTERSS: HEXADECIMAL)
        :NEW? (Returns quoted string)

      :SSDB '<character_data>' (16 CHARACTERSS: HEXADECIMAL)
      :SSDB? (Returns quoted string)

        :NEW '<character_data>' (16 CHARACTERSS: HEXADECIMAL)
        :NEW? (Returns quoted string)

      :ASCProcedure '<character_data>' (31 CHARACTERSS: HEXADECIMAL)
      :ASCProcedure
        :RESult? (Returns quoted string)
```

```
:CALLP
 :AMPS
  :AUTH
   :RAND

    :RAND '<character_data>'
    :RAND? (Returns quoted string)
        THESE COMMANDS SET/QUERY THE 16 MOST SIGNIFICANT BITS OF RAND,
        WHICH IS USED IN THE AUTHENTICATION PROCESS. THE RAND_A FIELD
        IS FOUND ON THE AUTHENTICATION SCREEN. 4 HEXADECIMAL CHARACTERS REQUIRED.

    :B '<character_data>'
    :B? (Returns quoted string)
        THESE COMMANDS SET/QUERY THE 16 LEAST SIGNIFICANT BITS OF RAND,
        WHICH IS USED IN THE AUTHENTICATION PROCESS. THE RAND_B FIELD
        IS FOUND ON THE AUTHENTICATION SCREEN. 4 HEXADECIMAL CHARACTERS REQUIRED.

    :U '<character_data>'
    :U? (Returns quoted string)
        THESE COMMANDS SET/QUERY RAND_U, A 24-BIT NUMBER ISSUED BY THE BASE
        STATION IN A UNIQUE CHALLENGE ORDER. THE RAND_U FIELD IS FOUND ON THE
        AUTHENTICATION SCREEN. 6 HEXADECIMAL CHARACTERS REQUIRED.

    :SSD1 '<character_data>'
    :SSD1? (Returns quoted string)
        THESE COMMANDS SET/QUERY THE 24 MOST SIGNIFICANT BITS OF RANDSSD,
        ISSUED BY THE BASE STATION DURING A SSD UPDATE ORDER. THE RANDSSD_1 FIELD
        IS FOUND ON THE AUTHENTICATION SCREEN. 6 HEXADECIMAL CHARACTERS REQUIRED.

    :SSD2 '<character_data>'
    :SSD2? (Returns quoted string)
        THESE COMMANDS SET/QUERY THE 24 BITS BETWEEN RANDSSD_1 AND RANSSD_3.
        RANDSSD IS ISSUED BY THE BASE STATION DURING A SSD UPDATE ORDER. THE
        RANDSSD_2 FIELD IS FOUND ON THE AUTHENTICATION SCREEN. 6 HEXADECIMAL
        CHARACTERS REQUIRED.

    :SSD3 '<character_data>'
    :SSD3? (Returns quoted string)
        THESE COMMANDS SET/QUERY THE 24 LEAST SIGNIFICANT BITS OF RANDSSD,
        ISSUED BY THE BASE STATION DURING A SSD UPDATE ORDER. THE RANDSSD_3
        FIELD IS FOUND ON THE AUTHENTICATION SCREEN. 2 HEXADECIMAL CHARACTERS
        REQUIRED.
```

```
:CALLP
  :AMPS
    :RCA
          THESE COMMANDS SET/QUERY THE MESSAGE FIELDS FOR RANDCHALA (RANDOM
          CHALLENGE A GLOBAL ACTION MESSAGE). THE MESSAGE FIELDS FOR
          RANDCHALA ARE FOUND ON THE CALL BIT SCREEN. THE CALL BIT SCREEN IS
          AVAILABLE FOR THE AMPS, NAMPS,TACS, AND JTACS SYSTEM TYPES.

      :TYPE | T1T2  '<character_data>' (2 chars required: binary)
      :TYPE? | T1T2? (Returns quoted string)

      :DCCode  '<character_data>' (2 chars required: binary)
      :DCCode? (Returns quoted string)

      :ACTion  '<character_data>' (4 chars required: binary)
      :ACTion? (Returns quoted string)

      :RANDA  '<character_data>' (16 chars required: binary)
      :RANDA? (Returns quoted string)

      :END  '<character_data>' (1 char required: binary)
      :END? (Returns quoted string)

      :OVERhead  '<character_data>' (3 chars required: binary)
      :OVERhead? (Returns quoted string)

      :PARity? (Returns quoted string)

    :RCB
          THESE COMMANDS SET/QUERY THE MESSAGE FIELDS FOR RANDCHALA (RANDOM
          CHALLENGE A GLOBAL ACTION MESSAGE). THE MESSAGE FIELDS FOR
          RANDCHALA ARE FOUND ON THE CALL BIT SCREEN. THE CALL BIT SCREEN IS
          AVAILABLE FOR THE AMPS, NAMPS,TACS, AND JTACS SYSTEM TYPES.

      :TYPE | T1T2  '<character_data>' (2 chars required: binary)
      :TYPE? | T1T2? (Returns quoted string)

      :DCCode  '<character_data>' (2 chars required: binary)
      :DCCode? (Returns quoted string)

      :ACTion  '<character_data>' (4 chars required: binary)
      :ACTion? (Returns quoted string)

      :RANDB  '<character_data>' (16 chars required: binary)
      :RANDB? (Returns quoted string)

      :END  '<character_data>' (1 char required: binary)
      :END? (Returns quoted string)

      :OVERhead  '<character_data>' (3 chars required: binary)
      :OVERhead? (Returns quoted string)

      :PARity? (Returns quoted string)
```

```
:CALLP
 :AMPS
   :RSSD1
          These commands set/query the message fields for Rand SSD1 (First SSD
          Update Order Word). The message fields for Rand SSD1 are found on the
          CALL BIT screen. The CALL BIT screen is available for the amps,
          namps,tacs, and jtacs system types.

     :TYPE | T1T2  '<character_data>' (2 chars required: binary)
     :TYPE? | T1T2? (Returns quoted string)

     :SCCode  '<character_data>' (2 chars required: binary)
     :SCCode? (Returns quoted string)

     :RANDSSD1  '<character_data>' (24 chars required: binary)
     :RANDSSD1? (Returns quoted string)

     :PARity? (Returns quoted string)

   :RSSD2
          These commands set/query the message fields for Rand SSD2 (Second SSD
          Update Order Word). The message fields for Rand SSD2 are found on the
          CALL BIT screen.

     :TYPE | T1T2  '<character_data>' (2 chars required: binary)
     :TYPE? | T1T2? (Returns quoted string)

     :SCCode  '<character_data>' (2 chars required: binary)
     :SCCode? (Returns quoted string)

     :RANDSSD2  '<character_data>' (24 chars required: binary)
     :RANDSSD2? (Returns quoted string)

     :PARity? (Returns quoted string)

   :RSSD3
          These commands set/query the message fields for Rand SSD3 (Third SSD
          Update Order Word). The message fields for Rand SSD3 are found on the
          CALL BIT screen. The CALL BIT screen is available for the amps,
          namps,tacs, and jtacs system types.

     :TYPE | T1T2  '<character_data>' (2 chars required: binary)
     :TYPE? | T1T2? (Returns quoted string)

     :SCCode  '<character_data>' (2 chars required: binary)
     :SCCode? (Returns quoted string)

     :RSVD1? (Returns quoted string)

     :RANDSSD3  '<character_data>' (12 chars required: binary)
     :RANDSSD3? (Returns quoted string)

     :RSVD2  '<character_data>' (4 chars required: binary)
     :RSVD2? (Returns quoted string)

     :PARity? (Returns quoted string)
```

```
:CALLP
  :AMPS
    :BSCConfirmation
          These commands set/query the message fields for BSChalCon (Base Station
          Challenge Order Confirmation Word). The message fields for BSChalCon are
          found on the CALL BIT screen. The CALL BIT screen is used for the amps,
          namps,tacs, and jtacs system types.

      :TYPE | T1T2  '<character_data>' (2 chars required: binary)
      :TYPE? | T1T2? (Returns quoted string)

      :SCCode  '<character_data>' (2 chars required: binary)
      :SCCode? (Returns quoted string)

      :RSVD1  '<character_data>' (2 chars required: binary)
      :RSVD1? (Returns quoted string)

      :AUTHBS  '<character_data>' (18 chars required: binary)
      :AUTHBS? (Returns quoted string)

      :RSVD2  '<character_data>' (4 chars required: binary)
      :RSVD2? (Returns quoted string)

      :PARity? (Returns quoted string)

    :UCORder
          These commands set/query the message fields for UniqChOrd (Unique
          Challenge Order Word). The message fields for UniqChOrd are found on the
          CALL BIT screen. The CALL BIT screen is used for amps,namps,tacs,jtacs.

      :TYPE | T1T2  '<character_data>' (2 chars required: binary)
      :TYPE? | T1T2? (Returns quoted string)

      :SCCode  '<character_data>' (2 chars required: binary)
      :SCCode? (Returns quoted string)

      :RANDU  '<character_data>' (24 chars required: binary)
      :RANDU? (Returns quoted string)

      :PARity? (Returns quoted string)

    :FVCSSD1
          These commands set/query the message fields for FVC SSD1 (First SSD
          Update Order Word). The message fields for FVC SSD1 are found on the
          CALL BIT screen. The CALL BIT screen is used for amps,namps,tacs,jtacs.

      :TYPE | T1T2  '<character_data>' (2 chars required: binary)
      :TYPE? | T1T2? (Returns quoted string)

      :RANDSSD1  '<character_data>' (24 chars required: binary)
      :RANDSSD1? (Returns quoted string)

      :RSVD  '<character_data>' (2chars required: binary)
      :RSVD? (Returns quoted string)

      :PARity? (Returns quoted string)
```

```
:CALLP
 :AMPS
   :FVCSSD2
         These commands set/query the message fields for FVC SSD2 (Second SSD
         Update Order Word). The message fields for FVC SSD2 are found on the
         CALL BIT screen. The CALL BIT screen is available for the AMPS,
         NAMPS,TACS, and JTACS system types.

     :TYPE | T1T2  '<character_data>' (2 chars required: binary)
     :TYPE? | T1T2? (Returns quoted string)

     :RANDSSD2  '<character_data>' (24 chars required: binary)
     :RANDSSD2? (Returns quoted string)

     :RSVD  '<character_data>' (2 chars required: binary)
     :RSVD? (Returns quoted string)

     :PARity? (Returns quoted string)

   :FVCSSD3
         These commands set/query the message fields for FVC SSD3 (Third SSD
         Update Order Word). The message fields for FVC SSD3 are found on the
         CALL BIT screen. The CALL BIT screen is available for the AMPS,
         NAMPS,TACS, and JTACS system types.

     :TYPE | T1T2  '<character_data>' (2 chars required: binary)
     :TYPE? | T1T2? (Returns quoted string)

     :RANDSSD3  '<character_data>' (24 chars required: binary)
     :RANDSSD3? (Returns quoted string)

     :RSVD  '<character_data>' (2 chars required: binary)
     :RSVD? (Returns quoted string)

     :PARity? (Returns quoted string)

   :FVCBSConfirmation
         These commands set/query the message fields for FVCBSCon (Base
         Station Challenge Order Confirmation). The message fields for
         FVCBSCon are found on the CALL BIT screen. The CALL BIT screen is
         available for the AMPS, NAMPS,TACS, and JTACS system types.

     :TYPE | T1T2  '<character_data>' (2 chars required: binary)
     :TYPE? | T1T2? (Returns quoted string)

     :RSVD1  '<character_data>' (4 chars required: binary)
     :RSVD1? (Returns quoted string)

     :AUTHBS  '<character_data>' (18 chars required: binary)
     :AUTHBS? (Returns quoted string)

     :RSVD2  '<character_data>' (4 chars required: binary)
     :RSVD2? (Returns quoted string)

     :PARity? (Returns quoted string)
```

```
:CALLP
  :AMPS
    :FVCUChallenge
          These commands set/query the message fields for FVCUniqCh (Unique
          Challenge Order Word). The message fields for FVCUniqCh are found on the
          CALL BIT screen. The CALL BIT screen is available for the AMPS,
          NAMPS,TACS, and JTACS system types.

      :TYPE | T1T2  '<character_data>' (2 chars required: binary)
      :TYPE? | T1T2? (Returns quoted string)

      :RSVD  '<character_data>' (2 chars required: binary)
      :RSVD? (Returns quoted string)

      :RANDU  '<character_data>' (24 chars required: binary)
      :RANDU? (Returns quoted string)

      :PARity? (Returns quoted string)

    :BSCOrder
          These commands query the message fields for BSChalOrd (Base Station
          Challenge Word). The message fields for BSChalOrd are found on the
          CALL DATA screen.

      :FWORd? | F? (Returns quoted string)

      :NAWComing? (Returns quoted string)

      :RANDBS? (Returns quoted string)

      :PARity? (Returns quoted string)

    :AWORd
        These commands query the message fields for AuthWord (Authentication
        Word). The message fields for AuthWord are found on the CALL DATA screen.

      :FWORd? | F? (Returns quoted string)

      :NAWComing? (Returns quoted string)

      :COUNT? (Returns quoted string)

      :RANDC? (Returns quoted string)

      :AUTHR? (Returns quoted string)

      :PARity? (Returns quoted string)
```

```
:CALLP
  :AMPS
    :UCConfirmation
          These commands query the message fields for UniqChCon (Unique
          Challenge Order Confirmation Word). The message fields for UniqChCon
          are found on the CALL DATA screen.

      :FWORd? | F? (Returns quoted string)

      :NAWComing? (Returns quoted string)

      :RSVD? (Returns quoted string)

      :AUTHU? (Returns quoted string)

      :PARity? (Returns quoted string)

    :RVCOrder
        These commands query the message fields for RVCOrd (Reverse Voice Channel
        Generic Order). The message fields for RVCOrdare found on the CALL DATA
        screen.

      :FWORd? | F? (Returns quoted string)

      :NAWComing? (Returns quoted string)

      :T? (Returns quoted string)

      :LOCal? (Returns quoted string)

      :ORDQ? (Returns quoted string)

      :ORDer? (Returns quoted string)

      :RSVD? (Returns quoted string)

      :PARity? (Returns quoted string)

    :RVCBSC
        These commands query the message fields for RVCBSChal (Base Station
        Challenge Order Word). The message fields for RVCBSChalare found on the
        CALL DATA screen.

      :FWORd? | F? (Returns quoted string)

      :NAWComing? (Returns quoted string)

      :T? (Returns quoted string)

      :RANDBS? (Returns quoted string)

      :PARity? (Returns quoted string)
```

```
:CALLP
  :NAMPs
    :NDMMod 'NData'
            'NMeas'
    :NDMMode? (Returns quoted string)
            THESE COMMANDS SET/QUERY THE TYPE OF INFORMATION DISPLAYED ON THE CALL
            CONTROL SCREEN WHEN AN ANALOG CALL IS CONNECTED AND THE SYSTEM TYPE FIELD
            ON THE CALL CONTROL SCREEN IS SET TO "NAMPS". THE DISPLAY FIELD IS
            FOUND ON THE CALL CONTROL SCREEN.

    :CEXTension
      :ACTual? (Returns quoted string)
            THIS COMMAND QUERIES THE NAMPS CHANNEL LOCATION (LOWER, MIDDLE,
            UPPER, WIDE CHANNEL) FOR A CALL CURRENTLY CONNECTED. THE CH LOC FIELD IS
            FOUND ON THE CALL CONTROL SCREEN WHEN THE SYSTEM TYPE FIELD ON THE CALL
            CONTROL SCREEN IS SET TO "NAMPS".

      :SETTing 'Wide'
               'Lower'
               'Middle'
               'Upper'
      :SETTing? (Returns quoted string)
            THIS COMMAND SETS/QUERIES THE NAMPS CHANNEL LOCATION (LOWER, MIDDLE,
            UPPER, WIDE CHANNEL) TO BE USED DURING THE NEXT CALL OR HANDOFF. THE
            CH LOC FIELD IS FOUND ON THE CALL CONTROL SCREEN WHEN THE SYSTEM
            TYPE FIELD ON THE CALL CONTROL SCREEN IS SET TO "NAMPS".

    :DSAT

      :SETTing  '<character_data>'
      :SETTing? (Returns quoted string)
            THIS COMMAND SETS/QUERIES THE NAMPS DSAT (DIGITAL SUPERVISORY AUDIO
            TONE) TO BE USED DURING THE NEXT CALL OR HANDOFF. THE DSAT FIELD IS
            FOUND ON THE CALL CONTROL SCREEN WHEN THE SYSTEM TYPE FIELD ON THE
            CALL CONTROL SCREEN IS SET TO "NAMPS".

      :ACTual? (Returns quoted string)
        THIS COMMAND QUERIES THE NAMPS DSAT (DIGITAL SUPERVISORY AUDIO
        TONE) FOR A CALL CURRENTLY CONNECTED. THE DSAT FIELD IS
        FOUND ON THE CALL CONTROL SCREEN WHEN THE SYSTEM TYPE FIELD ON THE
        CALL CONTROL SCREEN IS SET TO "NAMPS".
```

```
:CALLP
  :NAMPS
    :NORDer 'Chng PL 0'
            'Chng PL 1'
            'Chng PL 2'
            'Chng PL 3'
            'Chng PL 4'
            'Chng PL 5'
            'Chng PL 6'
            'Chng PL 7'
            'Mainten'
            'Alert'
    :NORDer? (Returns quoted string)
      THESE COMMANDS SEND/QUERY THE ORDER MESSAGE TO A MOBILE STATION ON A VOICE
      CHANNEL WHEN THE SYSTEM TYPE FIELD HAS "NAMPS" SELECTED. THE ORDER FIELD
      IS FOUND ON THE CALL CONTROL SCREEN WHEN THE AUTHENT FIELD ON THE
      AUTHENTICATION SCREEN IS "OFF".

    :NOConfirm
      THESE COMMANDS QUERY THE MESSAGE FIELDS FOR NRVC ORD (NARROW ORDER
      OR ORDER CONFIRMATION MESSAGE). THE MESSAGE FIELDS FOR NRVC ORD ARE
      FOUND ON THE CALL DATA SCREEN.

      :TYPE? | T1T2? (Returns quoted string)

      :AWComing? (Returns quoted string)

      :LOCal? (Returns quoted string)

      :OQUalifier? | ORDQ? (Returns quoted string)

      :ORDer? (Returns quoted string)

      :DSCCode? (Returns quoted string)

      :VMACode? (Returns quoted string)

      :OEVen? | OE? (Returns quoted string)

      :RSVD? (Returns quoted string)

      :PARity? (Returns quoted string)
```

```
:CALLP
  :NAMPS
    :EPFControl | EXTP
       THESE COMMANDS SET/QUERY THE MESSAGE FIELDS FOR EXT PROT (FCC MOBILE
       STATION CONTROL MESSAGE). THE MESSAGE FIELDS FOR EXT PROT ARE FOUND ON
       THE CALL BIT SCREEN. THE CALL BIT SCREEN IS AVAILABLE FOR THE AMPS,
       NAMPS,TACS, AND JTACS SYSTEM TYPES.

      :TYPE | T1T2  '<character_data>' (2 chars required: binary)
      :TYPE? | T1T2? (Returns quoted string)

      :SCCode  '<character_data>' (2 chars required: binary)
      :SCCode? (Returns quoted string)

      :MINumber  '<character_data>' (10 chars required: binary)
      :MINumber? (Returns quoted string)

      :EFCIndicator | EF  '<character_data>' (1 char required: binary)
      :EFCIndicator? | EF? (Returns quoted string)

      :EPMLength | MSL  '<character_data>' (5 chars required: binary)
      :EPMLength? | MSL? (Returns quoted string)

      :EPMType | MST  '<character_data>' (8 chars required: binary)
      :EPMType? | MST? (Returns quoted string)

      :PARity? (Returns quoted string)

    :NCAMessage | NCHA
       THESE COMMANDS SET/QUERY THE MESSAGE FIELDS FOR NCH ASN (FCC NARROW
       CHANNEL ASSIGNMENT MESSAGE). THE MESSAGE FIELDS FOR NCH ASN ARE
       FOUND ON THE CALL BIT SCREEN. THE CALL BIT SCREEN IS
       AVAILABLE FOR THE AMPS, NAMPS,TACS, AND JTACS SYSTEM TYPES.

      :TYPE | T1T2  '<character_data>' (2 chars required: binary)
      :TYPE? | T1T2? (Returns quoted string)

      :DSCCode  '<character_data>' (3 chars required: binary)
      :DSCCode? (Returns quoted string)

      :RSVD  '<character_data>' (7 chars required: binary)
      :RSVD? (Returns quoted string)

      :CB13 | C13  '<character_data>' (1 char required: binary)
      :CB13? | C13? (Returns quoted string)

      :CB12 | C12  '<character_data>' (12 chars required: binary)
      :CB12? | C12? (Returns quoted string)

      :VMACode  '<character_data>' (3 chars required: binary)
      :VMACode? (Returns quoted string)

      :CHANnel  '<character_data>' (11 chars required: binary)
      :CHANnel? (Returns quoted string)

      :PARity? (Returns quoted string)
```

```
:CALLP
  :NAMPS
    :NFVMessage | NFVC
          THESE COMMANDS SET/QUERY THE MESSAGE FIELDS FOR NMS FVC (FVC MOBILE
          STATION CONTROL MESSAGE). THE MESSAGE FIELDS FOR NMS FVC ARE
          FOUND ON THE CALL BIT SCREEN. THE CALL BIT SCREEN IS
          AVAILABLE FOR THE AMPS, NAMPS,TACS, AND JTACS SYSTEM TYPES.

      :TYPE | T1T2  '<character_data>' (2 chars required: binary)
      :TYPE? | T1T2? (Returns quoted string)

      :DSCCode  '<character_data>' (3 chars required: binary)
      :DSCCode? (Returns quoted string)

      :PDCCode | PDSCcode '<character_data>' (3 chars required: binary)
      :PDCCode? | PDSCcode? (Returns quoted string)

      :EFCIndicator | EF  '<character_data>' (1 char required: binary)
      :EFCIndicator? | EF? (Returns quoted string)

      :RSVD  '<character_data>' (5 chars required: binary)
      :RSVD? (Returns quoted string)

      :OEVen | OE  '<character_data>' (1 char required: binary)
      :OEVen? | OE? (Returns quoted string)

      :LOCal  '<character_data>' (5 chars required: binary)
      :LOCal? (Returns quoted string)

      :OQU | ORDQ  '<character_data>' (3 chars required: binary)
      :OQU? | ORDQ? (Returns quoted string)

      :ORDer  '<character_data>' (5 chars required: binary)
      :ORDer? (Returns quoted string)

      :PARity? (Returns quoted string)
```

```
:CALLP
  :NAMPS
    :WNHMessage
       THESE COMMANDS SET/QUERY THE MESSAGE FIELDS FOR WNHO MES (WIDE TO NARROW
       HANDOFF MESSAGE). THE MESSAGE FIELDS FOR WNHO MES ARE FOUND ON THE
       CALL BIT SCREEN. THE CALL BIT SCREEN IS AVAILABLE FOR THE AMPS, NAMPS,TACS,
       AND JTACS SYSTEM TYPES.

      :TYPE | T1T2  '<character_data>' (2 chars required: binary)
      :TYPE? | T1T2? (Returns quoted string)

      :SCCode  '<character_data>' (2 chars required: binary)
      :SCCode? (Returns quoted string)

      :PSCCode  '<character_data>' (2 chars required: binary)
      :PSCCode? (Returns quoted string)

      :CTYPe  '<character_data>' (1 char required: binary)
      :CTYPe? (Returns quoted string)

      :DSCCode  '<character_data>' (3 chars required: binary)
      :DSCCode? (Returns quoted string)

      :RSVD  '<character_data>' (2 chars required: binary)
      :RSVD? (Returns quoted string)

      :CB13 | C13  '<character_data>' (1 char required: binary)
      :CB13? | C13? (Returns quoted string)

      :CB12 | C12  '<character_data>' (1 char required: binary)
      :CB12? | C12? (Returns quoted string)

      :VMACode  '<character_data>' (3 chars required: binary)
      :VMACode? (Returns quoted string)

      :CHANnel  '<character_data>' (11 chars required: binary)
      :CHANnel? (Returns quoted string)

      :PARity? (Returns quoted string)
```

```
:CALLP
  :NAMPS
    :NHOMessage
          THESE COMMANDS SET/QUERY THE MESSAGE FIELDS FOR NHO MES (NARROW
          HANDOFF MESSAGE). THE MESSAGE FIELDS FOR NHO MES ARE FOUND ON THE
          CALL BIT SCREEN. THE CALL BIT SCREEN IS AVAILABLE FOR THE AMPS,
          NAMPS,TACS, AND JTACS SYSTEM TYPES.

      :TYPE | T1T2  '<character_data>' (2 chars required: binary)
      :TYPE? | T1T2? (Returns quoted string)

      :DSCCode  '<character_data>' (3 chars required: binary)
      :DSCCode? (Returns quoted string)

      :PDCCode  '<character_data>' (3 chars required: binary)
      :PDCCode? (Returns quoted string)

      :CTYPe  '<character_data>' (1 char required: binary)
      :CTYPe? (Returns quoted string)

      :OEVen | OE  '<character_data>' (1 char required: binary)
      :OEVen? | OE? (Returns quoted string)

      :RSVD  '<character_data>' (2 chars required: binary)
      :RSVD? (Returns quoted string)

      :CB13 | C13  '<character_data>' (1 char required: binary)
      :CB13? | C13? (Returns quoted string)

      :CB12 | C12  '<character_data>' (1 char required: binary)
      :CB12? | C12? (Returns quoted string)

      :VMACode  '<character_data>' (3 chars required: binary)
      :VMACode? (Returns quoted string)

      :CHANnel  '<character_data>' (11 chars required: binary)
      :CHANnel? (Returns quoted string)

      :PARity? (Returns quoted string)
```

```
:CALLP
  :DCCH|DAMP

    :CONNected
       THESE COMMANDS QUERY THE PARAMETERS OF THE CONNECTED CALL.
      :TYPE? (Returns quoted string)
      :CNUMber? (Returns quoted string)
      :SLOT? (Returns quoted string)
      :POWer? (Returns quoted string)
      :DVCCode? (Returns quoted string)
      :SATone? (Returns quoted string)
      :BAND? (Returns quoted string)
      :VOCoder? (Returns quoted string) (DCCH SYSTEM TYPE ONLY)

    :AMODe  'MEAS'
            'DATA'
    :AMODE? Returns quoted string
       THIS COMMAND SETS/QUERIES DATA MODE OR MEASUREMENT MODE.

    :DMODe  'MEAS'
            'DATA'
    :DMODE? Returns quoted string

    :ACTive
      THIS COMMAND INSTRUCTS THE TEST SET TO EMULATE A BASE STATION.

    :REGister
      THIS COMMAND INSTRUCTS THE MOBILE TO REGISTER WITH THE TEST SET (EMULATED BASE
      STATION).

    :PAGE
      THIS COMMAND INSTRUCTS THE TEST SET TO PAGE THE MOBILE IDENTIFIED IN THE MSID
      FIELD.

    :HANDoff
      THIS COMMAND INSTRUCTS THE TEST SET TO MAKE A HANDOFF.

    :RELease
      THIS COMMAND INSTRUCTS THE TEST SET TO RELEASE THE CALL IN PROGRESS.

    :MTYPe  'EVM 1'
            'EVM 10'
            'AD CH PWR'
            'AVG POWER'
            'MAHO'
    :MTYPe? Returns quoted string
       THIS COMMAND SETS/QUERIES THE MEASUREMENT TYPE ON THE CALL CONTROL
       SCREEN WHEN THE DISPLAY FIELD IS SET TO MEAS.
```

```
:CALLP
  :DCCH|DAMP
    :DMTYpe 'EVM 1'
            'EVM 10'
            'AD CH PWR'
            'AVG POWER'
            'DTC WER'
            'DCCH WER'(DCCH SYSTEM TYPE ONLY)
    :DMTYpe?
       THIS COMMAND SETS/QUERIES THE MEASUREMENT TYPE SELECTED IN THE DIG
       MEAS FIELD ON THE DIGITAL MEASUREMENTS SCREEN.

    :CCHannel(See "Integer Number Setting Syntax" on page 157)
    :CCHannel?(Returns integer value)
      THIS COMMAND SETS/QUERIES THE CONTROL CHANNEL SETTING. THE VALID RANGE IS 1 TO 799.

    :AVCHannel
            THE :AVCH COMMANDS SET/QUERY THE ANALOG VOICE CHANNEL ASSIGNMENT.

    :VCHannel(See "Integer Number Setting Syntax" on page 157)
    :VCHannel?(Returns integer value)
            THIS COMMAND SETS/QUERIES THE VOICE CHANNEL NUMBER. THE VALID RANGE IS
            1 THROUGH 799, 990 THROUGH 1023(CELLULAR); 1 THROUGH 1999 (US PCS).

    :VMACode(See "Integer Number Setting Syntax" on page 157)
    :VMACode?(Returns integer value)
            THIS COMMAND SETS/QUERIES THE POWER LEVEL THAT THE MOBILE IS TO USE. THE
            VALID RANGE IS 0 THROUGH 7. NOTE THAT 0 IS MAXIMUM POWER.

    :SATone '5970Hz'
             '6000Hz'
             '6030Hz'
    :SATone? (Returns quoted string)

    :ORDer 'Chng PL 0'
           'Chng PL 1'
           'Chng PL 2'
           'Chng PL 3'
           'Chng PL 4'
           'Chng PL 5'
           'Chng PL 6'
           'Chng PL 7'
           'Mainten'
           'Alert'
    :ORDer? (Returns quoted string)
```

```
:CALLP
  :DCCH|DAMP
    :DTCHannel
          THE :DTCH COMMANDS SET/QUERY THE DIGITAL TRAFFIC CHANNEL ASSIGNMENT.

    :TCHannel(See "Integer Number Setting Syntax" on page 157)
    :TCHannel?(Returns integer value)
          THIS COMMAND SETS/QUERIES THE TRAFFIC CHANNEL NUMBER. THE VALID RANGE IS
          1 THROUGH 799, 990 THROUGH 1023(CELLULAR); 1 THROUGH 1999 (US PCS).

    :SLOT(See "Integer Number Setting Syntax" on page 157)
    :SLOT?(Returns integer value)
          THIS COMMAND SETS/QUERIES THE TIMESLOT WHICH THE MOBILE IS DIRECTED TO USE.
          THE VALID RANGE IS 1 THROUGH 6.

    :DMACode(See "Integer Number Setting Syntax" on page 157)
    :DMACode?(Returns integer value)
          THIS COMMAND SETS/QUERIES THE POWER LEVEL THAT THE MOBILE IS TO USE. THE
          VALID RANGE IS 0 THROUGH 10. NOTE THAT 0 IS MAXIMUM POWER.

    :DVCCode(See "Integer Number Setting Syntax" on page 157)
    :DVCCode?(Returns integer value)
          THIS COMMAND SETS/QUERIES THE DIGITAL VERIFICATION COLOR CODE FOR THE DTC.
          THE VALID RANGE IS 1 THROUGH 255.

    :ORDer'Chng PL 0'
          'Chng PL 1'
          'Chng PL 2'
          'Chng PL 3'
          'Chng PL 4'
          'Chng PL 5'
          'Chng PL 6'
          'Chng PL 7'
          'Mainten'
          'Alert'
          'Chng PL 8'('DCCH SYSTEM TYPE ONLY')
          'Chng PL 9'('DCCH SYSTEM TYPE ONLY')
          'Chng PL 10'('DCCH SYSTEM TYPE ONLY')
          'SEND MWI'('DCCH SYSTEM TYPE ONLY')
          'SEND SMS'('DCCH SYSTEM TYPE ONLY')
    :ORDer? (Returns quoted string)
          THIS COMMAND SETS/QUERIES THE CHANGE POWER OPERATION. WHEN AUTHENTICATION IS
          TURNED ON, THE :DCCH:AUTH:DTCO COMMAND MUST BE USED TO CHANGE POWER LEVEL.

    :DTCRate 'Full'
    :DTCRate? (Returns quoted string)

    :DTCBurst'Norm'
          'Shorten'
    :DTCBurst? (Returns quoted string)

  :VTYPe  'AVC'
          'DTC'
  :VTYPe? (Returns quoted string)
```

```
:CALLP
  :DCCH|DAMP
    :VTYPe
      THE FOLLOWING :VTYPE COMMANDS ARE FOR THE DCCH SYSTEM TYPE ONLY.
      :INTerim
        :BAND 'Std'
              'PCS'
        :BAND? (Returns quoted string)
      :BAND 'US PCS'
            'Cellular'
      :BAND? (Returns quoted string)

    :NMODe  'PHONE NUM'
            'MIN2 MIN1'
            'IMSI DEC' (DCCH SYSTEM TYPE ONLY)
            'IMSI HEX' (DCCH SYSTEM TYPE ONLY)
    :NMODe? (Returns quoted string)
      THIS COMMNAD SETS/QUERIES THE TYPE OF MOBILE STATION IDENTIFICATION (MSID) THAT
      WILL BE DISPLAYED. THIS COMMAND IS USED IN CONJUCTION WITH THE :PNUM, :MIN, :HIMS,
      AND :DIMS COMMANDS.

    :PNUMber (40) '<character_data>'
    :PNUMber (40)? (Returns quoted string)
      THIS COMMAND SETS/QUERIES THE PHONE NUMBER ENTERED IN THE MSID FIELD. THIS COMMAND
      IS USED WITH THE :NMOD 'PHONE NUM' COMMAND. 10 CHARACTERS MAXIMUM.

    :MINumber (41) '<character_data>'
    :MINumber (41)? (Returns quoted string)
      THIS COMMAND SETS/QUERIES THE MIN NUMBER ENTERED IN THE MSID FIELD. THIS COMMAND
      IS USED WITH THE :NMOD 'MIN2 MIN1' COMMAND. 9 CHARACTERS MAXIMUM.

    :AMPLitude(See "Real Number Setting Syntax" on page 159)
      THIS COMMAND SETS THE AMPLITUDE OF THE RF SIGNAL THAT THE TEST SET WILL TRANSMIT.
      THE ALLOWABLE RANGE IS -137 TO +18 DBM.

    :SIDentify (See "Integer Number Setting Syntax" on page 157)
    :SIDentify? (Returns integer value.)
      THIS COMMAND SETS THE SYSTEM IDENTIFICATION (SID) OF THE SYSTEM WHICH THE TEST SET
      IS EMULATING.
```

```
:CALLP
  :DCCH|DAMP
    :STOLerance'Narrow'
          'Wide'
    :STOLerance? (Returns quoted string)
        THESE COMMANDS SET/QUERY THE SAT TOLERANCE. THIS SETTING SHOULD BE "WIDE"
        IF THE MOBILE STATION'S AUDIO IS NOT MUTED DURING A CALL. THE SAT TOL
        FIELD IS FOUND ON THE DAMPS OR DCCH CALL CONFIGURE SCREEN.

    :ZPOWer
      THIS COMMAND ZEROS THE TEST SET'S POWER METER. THIS COMMAND CONTROLS THE
      POWER METER FIELD ON THE DAMPS CALL CONFIGURE AND DCCH CALL CONFIGURE
      SCREEN.

    :CNUMber '<character data>'
    :CNUMber? (Returns quoted string)
        THIS COMMAND SETS/QUERIES THE CALLING NUMBER OF THE STATION THAT IS CALLING THE
        MOBILE. THE CALLING NUMBER CAN BE UP TO 10 CHARACTERS.

    :DSSTandard'Std'
          'NonStd'
    :DSSTandard? (Returns quoted string)
        THIS COMMAND SETS/QUERIES WHETHER THE RECEIVED SIGNAL SHOULD CONFROM TO STANDARD
        DCCH OR DAMPS PROTOCOL. 'NONSTD' CAUSES THE THE DSP TO IGNORE PROTOCOL
        DISCREPANCIE AND REPORT AN ERROR ONLY IF THE SIGNAL LEVEL IS TOO HIGH.
```

```
:CALLP
  :DCCH|DAMP
    :NEIGhbors
     [:NUMBer](See “Integer Number Setting Syntax” on page 157)
     [:NUMBer?](Returns integer value)
        THIS COMMAND SETS/QUERIES THE NUMBER OF NEIGHBOR CHANNELS TO BE EVALUATED WITH THE
        MOBILE ASSISTED HANDOFF (:MAHO COMMAND).

     :CHANNEL1 | CHAN1(See “Integer Number Setting Syntax” on page 157)
          THE :CHAN1:BAND COMMANDS ARE VALID ONLY FOR THE DCCH SYSTEM TYPE.
      :BAND          ‘Cellular’
                     ‘US PCS’
      :BAND? (Returns quoted string)
     :CHANNEL1? | CHAN1?(Returns integer value)

     :CHANNEL2 | CHAN2(See “Integer Number Setting Syntax” on page 157)
          THE :CHAN2:BAND COMMANDS ARE VALID ONLY FOR THE DCCH SYSTEM TYPE.
      :BAND          ‘Cellular’
                     ‘US PCS’
      :BAND? (Returns quoted string)
     :CHANNEL2? | CHAN2?(Returns integer value)

     :CHANNEL3 | CHAN3(See “Integer Number Setting Syntax” on page 157)
          THE :CHAN3:BAND COMMANDS ARE VALID ONLY FOR THE DCCH SYSTEM TYPE.
      :BAND          ‘Cellular’
                     ‘US PCS’
      :BAND? (Returns quoted string)
     :CHANNEL3? | CHAN4?(Returns integer value)

     :CHANNEL4 | CHAN4(See “Integer Number Setting Syntax” on page 157)
          THE :CHAN4:BAND COMMANDS ARE VALID ONLY FOR THE DCCH SYSTEM TYPE.
      :BAND          ‘Cellular’
                     ‘US PCS’
      :BAND? (Returns quoted string)
     :CHANNEL4? | CHAN4?(Returns integer value)

     :CHANNEL5 | CHAN5(See “Integer Number Setting Syntax” on page 157)
          THE :CHAN5:BAND COMMANDS ARE VALID ONLY FOR THE DCCH SYSTEM TYPE.
      :BAND          ‘Cellular’
                     ‘US PCS’
      :BAND? (Returns quoted string)
     :CHANNEL5? | CHAN5?(Returns integer value)

     :CHANNEL6 | CHAN6(See “Integer Number Setting Syntax” on page 157)
          THE :CHAN6:BAND COMMANDS ARE VALID ONLY FOR THE DCCH SYSTEM TYPE.
      :BAND          ‘Cellular’
                     ‘US PCS’
      :BAND? (Returns quoted string)
     :CHANNEL6? | CHAN6?(Returns integer value)
```

```
:CALLP
  :DCCH|DAMP
    :NEIGhbors
      :DVCCODE1 | DVCC1(See “Integer Number Setting Syntax” on page 157)
      :DVCCODE1? | DVCC1?(Returns integer value)
      :DVCCODE2 | DVCC2(See “Integer Number Setting Syntax” on page 157)
      :DVCCODE2? | DVCC2?(Returns integer value)
      :DVCCODE3 | DVCC3(See “Integer Number Setting Syntax” on page 157)
      :DVCCODE3? | DVCC3?(Returns integer value)
      :DVCCODE4 | DVCC4(See “Integer Number Setting Syntax” on page 157)
      :DVCCODE4? | DVCC4?(Returns integer value)
      :DVCCODE5 | DVCC5(See “Integer Number Setting Syntax” on page 157)
      :DVCCODE5? | DVCC5?(Returns integer value)
      :DVCCODE6 | DVCC6(See “Integer Number Setting Syntax” on page 157)
      :DVCCODE6? | DVCC6?(Returns integer value)

      :SATONE1 | SAT1 ‘$$$’
      :SATONE1? | SAT1? (Returns quoted string)
      :SATONE2 | SAT2 ‘$$$’
      :SATONE2? | SAT2? (Returns quoted string)
      :SATONE3 | SAT3 ‘$$$’
      :SATONE3? | SAT3? (Returns quoted string)
      :SATONE4 | SAT4 ‘$$$’
      :SATONE4? | SAT4? (Returns quoted string)
      :SATONE5 | SAT5 ‘$$$’
      :SATONE5? | SAT5? (Returns quoted string)
      :SATONE6 | SAT6 ‘$$$’
      :SATONE6? | SAT6? (Returns quoted string)


    :MDISPLAY1|MDIS1 ‘EVM’
                     ‘PEAK EVM’
                     ‘PHASE ERR’
                     ‘MAG ERR’
                     ‘ORGIN OFS’
                     ‘DROOP’
                     ‘SYNC LOC’
                     ‘MAX ABS’
    :MDIS1? Returns quoted string
        THIS COMMAND SETS/QUERIES MEASUREMENT THAT WILL BE DISPLAYED IN THE
        UPPER-RIGHT MEASUREMENT DISPLAY FIELD ON THE DIGITAL MEASUREMENTS SCREEN.

    :MDISPLAY2|MDIS2 ‘EVM’
                     ‘PEAK EVM’
                     ‘PHASE ERR’
                     ‘MAG ERR’
                     ‘ORGIN OFS’
                     ‘DROOP’
                     ‘SYNC LOC’
                     ‘MAX ABS’
    :MDIS2? Returns quoted string
        THIS COMMAND SETS/QUERIES MEASUREMENT THAT WILL BE DISPLAYED IN THE
        LOWER-RIGHT MEASUREMENT DISPLAY FIELD ON THE DIGITAL MEASUREMENTS SCREEN.
```

```
:CALLP
  :DCCH|DAMP
    :GMODe  'AUTO'
            'HOLD'
    :GMODe?
      THIS COMMAND SETS/QUERIES THE AUTOMATIC OR FIXED (HOLD) MODE OF THE RF ATTENUATOR
      AND DSP GAIN.

    :HAPGain'0 DB'
            '6 DB'
            '12 DB'
            '18 DB'
            '24 DB'
            '30 DB'
            '36 DB'
            '42 DB'
            '48 DB'
            '54 DB'
            '60 DB'
            '66 DB'
            '72 DB'
    :HAPGain?
        THIS COMMAND SETS/QUERIES THE GAIN OF THE RF ATTENUATOR AND THE DSP GAIN WHEN THE
        :GMODE IS 'HOLD' AND AN AVERAGE POWER MEASUREMENT IS SELECTED.

    :HEGain '0 DB'
            '6 DB'
            '12 DB'
            '18 DB'
            '20 DB'
            '26 DB'
            '32 DB'
            '38 DB'
            '40 DB'
            '46 DB'
            '52 DB'
            '58 DB'
    :HEGain?
        THIS COMMAND SETS/QUERIES THE GAIN OF THE RF ATTENUATOR AND THE DSP GAIN WHEN THE
        :GMODE IS 'HOLD' AND AN EVM OR ADJACENT CHANNEL POWER MEASUREMENT IS SELECTED.

    :AGAin?
        THIS COMMAND QUERIES THE AUTOMATIC GAIN SETTING WHEN THE :GMODE IS 'AUTO'. THE
        RETURNED VALUE IS EQUIVALENT TO THE SETTING IN THE PWR GAIN FIELD ON THE
        DIGITAL MEASUREMENTS SCREEN.
```

```
:CALLP
  :DCCH|DAMP
    :TIMeout (See "Integer Number Setting Syntax" on page 157)
    :TIMeout? REG (Returns integer value in seconds)
        THIS COMMAND SETS/QUERIES THE TIMEOUT PERIOD BEFORE DCCH PAGE AND REGISTRTAION
        OPERATIONS FAIL. THE DEFAULT VALUE IS 6 SECONDS, THE RANGE IS 1 TO 120 SECONDS.

    :RCDDATA1? | RCDD1? (Returns quoted string)
    :RCDDATA2? | RCDD2? (Returns quoted string)
    :RCDDATA3? | RCDD3? (Returns quoted string)
    :RCDDATA4? | RCDD4? (Returns quoted string)
    :RCDDATA5? | RCDD5? (Returns quoted string)
    :RCDDATA6? | RCDD6? (Returns quoted string)
    :RCDDATA7? | RCDD7? (Returns quoted string)
        THESE COMMANDS QUERY THE INFORMATION DISPLAYED ON THE RIGHT-HAND PORTION OF
        THE CALL CONTROL SCREEN WHEN THE DISPLAY FIELD IS SET TO DATA. EACH COMMAND
        CORRESPONDS TO A NON-LABELED DATA FIELD CONSISTING OF 1 LINE OF CHARACTERS.

    :NMWaiting(See "Integer Number Setting Syntax" on page 157)
    :NMWaiting?(Returns integer value)

    :SMSMessage '<character data>'
    :SMSMessage? (Returns quoted string)
        THIS COMMAND SETS/QUERIES THE SMS MSG FIELD ON THE CALL CONTROL SCREEN WHEN THE
        :SMS:TYPE COMMAND IS 'AUTO'. A 243-CHARACTER MESSAGE IS AUTOMATICALLY GENERATED.
        YOU CAN EDIT ONLY THE FIRST 96 CHARACTERS OF THIS MESSAGE. THE MESSAGE IS SENT
        WHEN THE :CORD 'SEND SMS' COMMAND IS EXECUTED.
```

```
:CALLP
  :DCCH|DAMP
    :FSACch
      :CPOVerride
        :ENABle
        :DISable
            ENABLE THIS COMMAND WHEN YOU WANT TO TURN OFF LAYER 3 CALL PROCESSING AND
            LIMIT LAYER 2 CALL PROCESSING TO CALCULATING THE CRC OF THE LAYER 2 WORD AND
            FILTERING THE LAYER 2 SACCH FRAMES.

      :FALog
        :ENABle
        :DISable
            USE THIS COMMAND TO ENABLE SENDING ANY RECEIVED REVERSE FACCH WORD MESSAGE
            OVER GPIB. THE COMMAND :RFSW ACTUALLY SENDS THE INFORMATION.

      :SALog
        :ENABle
        :DISable
            USE THIS COMMAND TO ENABLE SENDING ANY RECEIVED NON-NULL SACCH WORD MESSAGE
            OVER GPIB. THE COMMAND :RFSW ACTUALLY SENDS THE INFORMATION.

      :BCOunt(See "Integer Number Setting Syntax" on page 157)
        UPDate

      :PERiod(See "Integer Number Setting Syntax" on page 157)
      :PERiod?(Returns integer value)
            IF THE PERIOD IS SET TO A NON-ZERO VALUE, THE SCHEDULED WORDS WILL BE
            TRANSMITTED STARTING AT ZERO AND REPEATING EVERY "PERIOD" BLOCKS. WORDS
            SCHEDULED IN BLOCKS GREATER THAN THE PERIOD WILL NOT BE SENT. IF THE PERIOD
            IS ZERO, NO WORDS ARE SENT.

      :CLEar '<block count>,<number of words>'
        :ALL
      :CLEar? (Returns quoted string)
            EXAMPLE: CALLP:DCCH:FSAC '302,7' CLEARS THE SEVEN CONSECUTIVE WORDS
            STARTING WITH THE WORD AT BLOCK COUNT 302 (WORDS IN BLOCKS 302 THROUGH 308
            ARE CLEARED).

      :SEND
      :STOP
            THESE COMMANDS START AND STOP THE SENDING OF WORDS.
```

```
:CALLP
  :DCCH|DAMP
    :FACCh
      :SEND
      :STOP
           THESE COMMANDS START AND STOP THE SENDING OF FACCH WORDS. IF A FACCH WORD
           HAS NOT BEEN SCHEDULED FOR A GIVEN BLOCK, A VALID SPEECH FROM WILL BE SENT.
           IF THE :PERIOD IS ZERO, NO WORDS ARE SENT.

      :FFSWord '<forward block>,<default flag command>,<word command>'
      :FFSWord? (Returns quoted string)
           (DCCH SYSTEM TYPE ONLY).
           EXAMPLE CALLP:DCCH:FACC:FFSW '300,10,0123456789ABCFEDCBA9876543'
           FORWARD BLOCK: 300
           DEFAULT COMMAND FLAG: 10: TWO DIGITS INDICATE TWO WORDS,
                                     1 = REPEAT WORD 1,
                                     0 = DO NOT REPEAT WORD 2
           WORD COMMAND:FIRST WORD = 123456789ABC
                        SECOND WORD = FEDCBA9876543
           YOU CAN SEND ONE TO FOUR WORDS.

      :FWORd
      :FWORd?
           (DAMPS SYSTEM TYPE ONLY)

      :CLEar '<block count>, <number of words>'
        :ALL
      :CLEar? (Returns quoted string)
           EXAMPLE: CALLP:DCCH:FACC '302,7' CLEARS THE SEVEN CONSECUTIVE WORDS
           STARTING WITH THE WORD AT BLOCK COUNT 302 (WORDS IN BLOCKS 302 THROUGH 308
           ARE CLEARED).
```

```
:CALLP
  :DCCH|DAMP
    :SACCh
      :SEND
      :STOP
            THESE COMMANDS START AND STOP THE SENDING OF FACCH WORDS. IF A SACCH WORD
            HAS NOT BEEN SCHEDULED FOR A GIVEN BLOCK, THE WORD FOR THAT BLOCK WILL
            CONTAIN FILLER BITS. IF THE :PERIOD IS ZERO, NO WORDS ARE SENT.

      :FFSWord '<forward block>,<default flag command>,<word command>'
      :FFSWord? (Returns quoted string)
            (DCCH SYSTEM TYPE ONLY).
            EXAMPLE CALLP:DCCH:SACC:FFSW '300,10,0123456789ABCFEDCBA9876543'
            FORWARD BLOCK: 300
            DEFAULT COMMAND FLAG: 10: TWO DIGITS INDICATE TWO WORDS,
                                      1 = REPEAT WORD 1,
                                      0 = DO NOT REPEAT WORD 2
            WORD COMMAND:FIRST WORD = 123456789ABC
                         SECOND WORD = FEDCBA9876543
            YOU CAN SEND ONE TO FOUR WORDS.

      :FWORd
      :FWORd?
            (DAMPS SYSTEM TYPE ONLY)

      :CLEar '<block count>, <number of words>'
        :ALL
      :CLEar? (Returns quoted string)
            EXAMPLE: CALLP:DCCH:FSAC '302,7' CLEARS THE SEVEN CONSECUTIVE WORDS
            STARTING WITH THE WORD AT BLOCK COUNT 302 (WORDS IN BLOCKS 302 THROUGH 308
            ARE CLEARED).
```

```
:CALLP
  :DCCH|DAMP
    :NETWork
      [:SET] ‘$$$’
      [:SET?]   <query> (Returns quoted string)

      :NUMBer(See “Integer Number Setting Syntax” on page 157)
      :NUMBer? (Returns integer value)
      :TYPE1 ‘$$$’
      :TYPE1? (Returns quoted string)
      :TYPE2 ‘$$$’
      :TYPE2? (Returns quoted string)
      :TYPE3 ‘$$$’
      :TYPE3? (Returns quoted string)
      :TYPE4 ‘$$$’
      :TYPE4? (Returns quoted string)
      :TYPE5 ‘$$$’
      :TYPE5? (Returns quoted string)
      :TYPE6 ‘$$$’
      :TYPE6? (Returns quoted string)

      :SIDENTIFY1 | SID1 ‘$$$’
      :SIDENTIFY1? | SID1? (Returns quoted string)
      :SIDENTIFY2 | SID2 ‘$$$’
      :SIDENTIFY2? | SID2? (Returns quoted string)
      :SIDENTIFY3 | SID3 ‘$$$’
      :SIDENTIFY3? | SID3? (Returns quoted string)
      :SIDENTIFY4 | SID4 ‘$$$’
      :SIDENTIFY4? | SID4? (Returns quoted string)
      :SIDENTIFY5 | SID5 ‘$$$’
      :SIDENTIFY5? | SID5? (Returns quoted string)
      :SIDENTIFY6 | SID6 ‘$$$’
      :SIDENTIFY6? | SID6? (Returns quoted string)
```

```
:CALLP
  :DCCH
    :PCS

      :MODE 'ON'
            'OFF'
      :MODE? Returns quoted string

      :TEMP
        :COMP
            THIS COMMAND INITIATES TEMPERATURE COMPENSATION.
            TO PERFORM TEMPERATURE COMPENSATION ONLY WHEN NECESSARY, USE THE FOLLOWING
            COMMANDS.
                        SERV:LATCH:SEL 'pcs_temp_comp_status'
                        SERV:LATCH:VAL?
                        CALLP:DCCH:PCS:TEMP:COMP


      :PORT 'IN_OUT'
            'OUT'
      :PORT?
        THIS COMMAND SETS/QUERIES THE SOURCE OUTPUT PORT ON THE PCS INTERFACE WHEN
        THE PCS MODE IS ACTIVATED.

      :RFOFfset (See "Real Number Setting Syntax" on page 159)
      :RFOFfest? (Returns real number)
        THIS COMMAND SETS THE COMPENSATION FOR PATH LOSS AT THE PCS INTERFACE'S RF IN/OUT
        PORT IN DB. ENABLE THE COMPENSATION USING THE :CONF:OFL:MODE 'ON' COMMAND.

      :CONNected 'Pres'
                 'Abs'
      :CONNected?

      :DETector'DTC Mode'
            'CW Mode'
      :DETector?

      :MAHOError xx.xx
      :MAHOError?

      :AMPLitude (See "Real Number Setting Syntax" on page 159)
      :AMPLitude?
        THIS COMMAND SETS THE RF GERNERATOR'S AMPLITUDE AT THE RF OUTPUT OF THE PCS
        INTERFACE.
```

```
:CALLP
  :DCCH
    :CCTYpe 'DIG'
            'ANALOG'
    :CCTYpe?
      (DCCH SYSTEM TYPE ONLY)
      THIS COMMAND SETS/QUERIES THE CONTROL CHANNEL TYPE IN THE CNTRL CHAN FIELD ON
      THE CALL CONTROL SCREEN. THE DIG/ANALOG FIELD IS ONLY DISPLAYED WHEN THE SYSTEM
      TYPE IS SET TO DCCH.

      :BAND 'US PCS'
            'Cellular'
      :BAND? (Returns quoted string)

    :CORDer 'SSD Upd'
            'Uniq Ch'
            'Send MWI'
            'Send SMS'
    :CORDer? (Returns quoted string)
      THIS COMMAND SENDS/QUERIES A MESSAGE WAITING INDICATION, OR SHORT MESSAGE. WHEN
      AUTHENTICATION IS ENABLED, THIS COMMAND ALSO SETS/QUERIES SHARED SECRET DATA UPDATE
      OR UNIQUE CHALLENGE.

    :CDVCcode(See "Integer Number Setting Syntax" on page 157)
    :CDVCcode?(Returns integer value)
      THIS COMMAND SETS/QUERIES THE DIGITAL VERIFICATION COLOR CODE (DVCC) FOR THE DIGITAL
      CONTROL CHANNEL (DCCH).

    :DTCError (See "Real Number Setting Syntax" on page 159)
    :DTCError? (returns real number value in percent)
        THIS COMMAND SETS/QUERIES THE BIT ERROR RATE INJECTED INTO THE MAHO MEASUREMENT
        PROCESS. THE DTC MUST BE ACTIVATED (A CALL MUST BE UP) WHEN THIS VALUE IS SET.
        THE VALUE IS ENTERED IN PERCENT WITH 0.01% RESOLUTION. THE MAXIMUM VALUE IS 20%.

    :GTESt
    :GTESt?

    :VOCoder'VSELP'
            'ACELP'
    :VOCoder?
          THIS COMMAND SET/QUERIES THE TYPE OF VOCODER USED BY THE MOBILE.

    :HIMSidentify '<character_data>'
    :HIMSidentify? (Returns quoted string)
      THIS COMMAND SETS/QUERIES THE INTERNATIONAL MOBILE STATION IDENTITY (IMSI) IN
      HEXADECIMAL. THIS COMMAND IS USED WITH THE :NMOD 'IMSI HEX' COMMAND. 13 HEXADECIMAL
      CHARACTERS MAXIMUM.

    :DIMSidentify '<character_data>'
    :DIMSidentify? (Returns quoted string)
      THIS COMMAND SETS/QUERIES THE INTERNATIONAL MOBILE STATION IDENTITY (IMSI) IN
      DECIMAL. THIS COMMAND IS USED WITH THE :NMOD 'IMSI DEC' COMMAND. 15 DECIMAL
      CHARACTERS MAXIMUM.
```

```
:CALLP
  :DCCH
    :MCCode(See “Integer Number Setting Syntax” on page 157)
    :MCCode?(Returns integer value)
      THIS COMMAND SETS/QUERIES THE MOBILE COUNTRY CODE.

    :MSCapability
      :BAND ‘Cellular’
            ‘US PCS’
            ‘Band 10’
      :BAND? (Returns quoted string)
        THIS COMMAND SETS/QUERIES THE CHANNEL BAND ASSIGNMENT OF THE TRAFFIC CHANNEL.

    :ABURst ‘Norm’
            ‘Abbrev’
    :ABURst? (Returns quoted string)
      THIS COMMAND SETS/QUERIES THE ACCESS BURST TYPE (NORMAL OR ABBREVIATED). THE ACCESS
      BURST FIELD IS FOUND ON THE DCCH CALL CONFIGURE SCREEN.
```

```
:CALLP
  :DCCH
    :AUTHenticate

    :ONOFf‘On’
         ‘Off’
    :ONOFf? (Returns quoted string)
      THIS COMMAND ENABLES OR DISABLES AUTHENTICATION.

    :AKEY ‘<character data>’
      :CHECksum ‘<character data>’
      :CHECksum? (Returns quoted string)
      :GENerate
    :AKEY? (Returns quoted string)
      THIS COMMAND SETS/QUERIES THE A-KEY. THE A-KEY IS A 26 DIGIT NUMBER STORED IN
      THE MOBILE’S PERMANENT SECURITY AND IDENTIFICATION MEMORY AND IS NOT ACCESIBLE TO
      THE USER. YOU MUST KNOW THE A-KEY FOR THE MOBILE IN ORDER TO USE THE TEST SET’S
      AUTHENTICATION FEATURE. THIS COMMAND ALLOWS YOU TO ENTER THE FIRST 20 DIGITS OF
      THE A-KEY. THE LAST 6 DIGITS ARE COMPUTED USING THE A SPECIAL ALGORITHM AND ARE
      ATUOMATICALLY ENTERED AS THE CHECKSUM.

    :ESNumber ‘<character data>’ (up to 8 hex chars)
    :ESNumber? (Returns quoted string)
      THIS COMMAND SETS/QUERIES THE MOBILE’S ELECTRONIC SERIAL NUMBER.

    :CCORder‘SSD Upd’
           ‘Uniq Ch’
           ‘Send MWI’
           ‘Send SMS’
    :CCORder? (Returns quoted string)

    :VCORder‘Chng PL 0’
           ‘Chng PL 1’
           ‘Chng PL 2’
           ‘Chng PL 3’
           ‘Chng PL 4’
           ‘Chng PL 5’
           ‘Chng PL 6’
           ‘Chng PL 7’
           ‘Chng PL 8’
           ‘Chng PL 9’
           ‘Chng PL 10’
           ‘SSD Upd’
           ‘Uniq Ch’
           ‘Send MWI’
           ‘Send SMS’
    :VCORder? (Returns quoted string)
```

```
:CALLP
  :DCCH
    :AUTHenticate
      :DTCOrder‘Chng PL 0’
               ‘Chng PL 1’
               ‘Chng PL 2’
               ‘Chng PL 3’
               ‘Chng PL 4’
               ‘Chng PL 5’
               ‘Chng PL 6’
               ‘Chng PL 7’
               ‘Chng PL 8’
               ‘Chng PL 9’
               ‘Chng PL 10’
               ‘SSD Upd’
               ‘Uniq Ch’
               ‘Send MWI’
               ‘Send SMS’
      :DTCOrder? (Returns quoted string)

      :SSDA ‘<character data>’ (16 hex chars required)
        :NEW ‘<character data>’ (16 hex chars required)
        :NEW? (Returns quoted string)
      :SSDA? (Returns quoted string)

      :SSDB ‘<character data>’ (16 hex chars required)
        :NEW ‘<character data>’ (16 hex chars required)
        :NEW? (Returns quoted string)
      :SSDB? (Returns quoted string)

      :ASCProcedure ‘<character data>’ (31 hex chars required)
      :ASCProcedure
        :RESult? (Returns quoted string)

      :RANDom ‘<character data>’ (Up to 8 hex digits)
      :RANDom? (Returns quoted string)
      :RANDom
        :A ‘<character data>’ (Up to 4 hex digits)
        :A? (Returns quoted string)
        :B ‘<character data>’ (Up to 4 hex digits)
        :B? (Returns quoted string)
        :U ‘<character data>’ (Up to 6 hex digits)
        :U? (Returns quoted string)
        :SSD ‘<character data>’ (Up to 14 hex digits)
        :SSD? (Returns quoted string)
        :SSD1 ‘<character data>’ (Up to 6 hex digits)
        :SSD1? (Returns quoted string)
        :SSD2 ‘<character data>’ (Up to 6 hex digits)
        :SSD2? (Returns quoted string)
        :SSD3 ‘<character data>’ (Up to 2 hex digits)
        :SSD3? (Returns quoted string)
```

```
:CALLP
  :DCCH
    :MWI
       These commands control the message waiting indicator function.

     :NVOice(See "Integer Number Setting Syntax" on page 157)
     :NVOice?(Returns integer value)
        This command sets/queries the number of voice messages that are
        waiting for the mobile to respond to (0 to 99).

     :NSMS(See "Integer Number Setting Syntax" on page 157)
     :NSMS?(Returns integer value)
       This command sets/queries the number of short message service messages that are
       waiting for the mobile to respond to (0 to 99).

     :NFAX(See "Integer Number Setting Syntax" on page 157)
     :NFAX?(Returns integer value)
       This command sets/queries the number of fax messages that are waiting for the
       mobile to respond to (0 to 99).

    :SMS
       These commands control the short message service fucntion.

     :TYPE 'Cust'
           'Auto'
     :TYPE? (Returns quoted string)
        This command sets/queries the type of message to be sent to the mobile. 'cust'
        allows you to enter a 96 character string using the :sms:cont command. 'auto'
        enters a factory defined, 243 character string. The message is sent using the
        :CORD 'SEND SMS' command.

     :SMSSize(See "Integer Number Setting Syntax" on page 157)
     :SMSSize?(Returns integer value)
       This command sets/queries the number of characters of the short message that are
       sent.

     :CONTents '<character data>' (up to 96 chars)
     :CONTents? (Returns quoted string)
       This command sets/queries the contents of the short message that is sent wehn the
       short message type is custom (cust).
```

```
:CALLP
  :DCCH
    :CID
      THIS COMMANDS CONTROL THE CALLER IDENTIFICATION FUNCTION.

      :CNUMber '<character data>' (up to 11 chars)
      :CNUMber? (Returns quoted string)
        THIS COMMAND SETS/QUERIES THE NUMBER OF THE STATION THAT IS CALLING THE MOBILE.

      :CNAMe '<character data>' (up to 25 chars)
      :CNAMe? (Returns quoted string)
        THIS COMMAND SETS/QUERIES THE NAME OF THE STATION THAT IS CALLING THE
        MOBILE.

      :NSIZe(See "Integer Number Setting Syntax" on page 157)
      :NSIZe?(Returns integer value)
        THIS COMMAND SETS/QUERIES THE NUMBER OF CHARACTERS IN THE CALLING NAME THAT ARE
        SENT.

      :PTYPe'Pres OK'
           'Pres Res'
           'Not Avail'
      :PTYPe? (Returns quoted string)
        THIS COMMAND SETS/QUERIES THE CALLER IDENTIFICATION PRESENTATION TYPE.
           Pres ok - BOTH CALLING NAME AND NUMBER ARE SENT
           Pres res - ONLY THE CALLING NUMBER IS SENT
           Not avail - NEITHER THE CALLING NAME OR NUMBER IS SENT

      :SINDicator'Not Scrn'
           'Ver&Pass'
           'Ver&Fail'
           'Nwrk Prov'
      :SINDicator? (Returns quoted string)
        THIS COMMAND SETS/QUERIES CALL SCREENING.
           not scrn - NOT SCREENED
           ver&pass - VERIFIED AND PASSED
           ver&fail - VERIFIED AND FAILED
           nwrk prov - NETWORK PROVIDED SCREENING
```

```
:CALLP
  :DCCH
    :SYSTems

    :PUBLic'On'
         'Off'
    :PUBLic? (Returns quoted string)

    :NUMBer(See "Integer Number Setting Syntax" on page 157)
    :NUMBer?(Returns integer value)
      THIS COMMAND SETS/QUERIES THE NUMBER OF THE RESIDENTIAL OR PUBLIC SYSTEM.

    :SID1 'PSID'
         'RSID'
    :SID1? (Returns quoted string)
    :SID1
      :NUMBer(See "Integer Number Setting Syntax" on page 157)
         THIS COMMAND SETS/QUERIES THE PRIVATE OR RESIDENTIAL SYSTEMS AND THE
         ASSOCIATED SYSTEM NUMBER FOR EACH SYSTEM. THE RANGE OF VALUES IS 1 THROUGH
         65535.

    :SID2 'PSID'
         'RSID'
    :SID2? (Returns quoted string)
    :SID2
      :NUMBer(See "Integer Number Setting Syntax" on page 157)
         THIS COMMAND SETS/QUERIES THE PRIVATE OR RESIDENTIAL SYSTEMS AND THE
         ASSOCIATED SYSTEM NUMBER FOR EACH SYSTEM. THE RANGE OF VALUES IS 1 THROUGH
         65535.

    :SID3 'PSID'
         'RSID'
    :SID3? (Returns quoted string)
    :SID3
      :NUMBer(See "Integer Number Setting Syntax" on page 157)
         THIS COMMAND SETS/QUERIES THE PRIVATE OR RESIDENTIAL SYSTEMS AND THE
         ASSOCIATED SYSTEM NUMBER FOR EACH SYSTEM. THE RANGE OF VALUES IS 1 THROUGH
         65535.

    :SID4 'PSID'
         'RSID'
    :SID4? (Returns quoted string)
    :SID4
      :NUMBer(See "Integer Number Setting Syntax" on page 157)
         THIS COMMAND SETS/QUERIES THE PRIVATE OR RESIDENTIAL SYSTEMS AND THE
         ASSOCIATED SYSTEM NUMBER FOR EACH SYSTEM. THE RANGE OF VALUES IS 1 THROUGH
         65535.

    :SID5 'PSID'
         'RSID'
    :SID5? (Returns quoted string)
    :SID5
      :NUMBer(See "Integer Number Setting Syntax" on page 157)
         THIS COMMAND SETS/QUERIES THE PRIVATE OR RESIDENTIAL SYSTEMS AND THE
         ASSOCIATED SYSTEM NUMBER FOR EACH SYSTEM. THE RANGE OF VALUES IS 1 THROUGH
         65535.
```

```
:CALLP
  :DCCH
    :SYSTems
      :SID6 'PSID'
            'RSID'
      :SID6? (Returns quoted string)
      :SID6
       :NUMBer(See "Integer Number Setting Syntax" on page 157)
            THIS COMMAND SETS/QUERIES THE PRIVATE OR RESIDENTIAL SYSTEMS AND THE
            ASSOCIATED SYSTEM NUMBER FOR EACH SYSTEM. THE RANGE OF VALUES IS 1 THROUGH
            65535.

      :SID7 'PSID'
            'RSID'
      :SID7? (Returns quoted string)
      :SID7
       :NUMBer(See "Integer Number Setting Syntax" on page 157)
            THIS COMMAND SETS/QUERIES THE PRIVATE OR RESIDENTIAL SYSTEMS AND THE
            ASSOCIATED SYSTEM NUMBER FOR EACH SYSTEM. THE RANGE OF VALUES IS 1 THROUGH
            65535.

      :SID8 'PSID'
            'RSID'
      :SID8? (Returns quoted string)
      :SID8
       :NUMBer(See "Integer Number Setting Syntax" on page 157)
            THIS COMMAND SETS/QUERIES THE PRIVATE OR RESIDENTIAL SYSTEMS AND THE
            ASSOCIATED SYSTEM NUMBER FOR EACH SYSTEM. THE RANGE OF VALUES IS 1 THROUGH
            65535.
      :MCCode(See "Integer Number Setting Syntax" on page 157)
      :MCCode?(Returns integer value)

      :SOCode(See "Integer Number Setting Syntax" on page 157)
      :SOCode?(Returns integer value)
       THIS COMMAND SETS/QUERIES THE SYSTEM OPERATING CODE WHEN USING A NON-PUBLIC
       SYSTEM.
```

Configure

```
:CONFigure

  :ARTSwitching 'Auto'
                'Manual'
  :ARTSwitching? (Returns quoted string)
        THESE COMMANDS SET/QUERY THE RX/TX CNTL SETTINGS. RX/TX CNTL REFERS TO
        THE TEST SET'S ABILITY TO AUTOMATICALLY SWITCH BETWEEN THE RX TEST AND
        TX TEST SCREENS WHEN A CARRIER OR MICROPHONE PTT (PUSH-TO-TALK) IS
        DETECTED. THE RX/TX CNTL FIELD IS FOUND ON THE CONFIGURE SCREEN.

  :BADDress (See "Integer Number Setting Syntax" on page 157)
        THIS COMMAND SETS THE GPIB ADDRESS. THE GPIB ADRS FIELD IS
        FOUND ON THE I/O CONFIGURE SCREEN. VALID RANGE IS 0 THROUGH 30.

  :BEEPer 'Off'
          'Quiet'
          'Loud'
  :BEEPer? (Returns quoted string)
        THESE COMMANDS SET THE BEEPER VOLUME. THE BEEPER FIELD IS FOUND
        ON THE CONFIGURE SCREEN.

  :BMODe 'Control'
         'Talk&Lstn'
  :BMODe? (Returns quoted string)
        THESE COMMANDS SET THE TEST SET'S GPIB MODE. THE MODE FIELD IS FOUND ON
        THE I/O CONFIGURE SCREEN.

  :CALDate '<string>'
  :CALDate?
        THIS COMMAND SETS/QUERIES THE DATE OF THE LAST CALIBRATION OF THE INSTRUMENT. UP
        TO 11 CHARACTERS CAN BE ENTERED. THIS VALUE IS NOT AUTOMATICALLY UPDATED WHEN THE
        TEST SET IS CALIBRATED. YOU MUST ENTER THE DATE USING THIS COMMAND.
        THE CALIBRATION DATE CANNOT BE ENTERED ON THE MANUAL USER INTERFACE, BUT THE DATE
        ENTERED USING THIS COMMAND CAN BE READ IN THE LAST CALIB FIELD ON THE CONFIGURE
        SCREEN.

  :DATE (See "Integer Number Setting Syntax" on page 157)
        THIS COMMAND SETS THE DATE. THE DATE FIELD IS FOUND ON THE CONFIGURE
        SCREEN. THE FORMAT FOR ENTERING THE DATE IS 6 DIGITS: MMDDYY, WHERE MM=MONTH,
        DD=DAY, YY=YEAR (JANUARY 01, 2001 = 010101).
```

:CONF
:EDISk '<character_data>'
This command enters a mass storage device specifier in the External Disk Specification field. The mass storage device specified in this field will be used for data transfer when "disk" is selected from the list of choices available from the Select Procedure Location field found on the **tests (Main Menu) screen**. The External Disk Specification field is found on the **TESTS (External Devices)** screen. Entry format is :,xxx,y where xxx=GPIB address, and y=unit number.
:EDISk? (Returns quoted string)

:INTensity (See "Integer Number Setting Syntax" on page 157)
This command sets the screen (crt) intensity. The intensity field is found on the **CONFIGURE**screen. Valid range is 0 through 18.

:NOTChmode 'AFGen1'
'None'
:NOTChmode? (Returns quoted string)
These commands select/query a feature of the Test Set that allows a coupling to exist between the audio source AF Generator 1 and a notch filter settable by the Notch Freq field. The Notch Coupl field, found on the **CONFIGURE** screen, **determines whether or not this** coupling exists. The Notch Freq field is found on the **AF ANALYZER** screen.

:OFLevel

:MODE 'On'
'Off'
:MODE? (Returns quoted string)
These commands set/query the RF Level Offset field. The RF level offset compensates for path loss between the Test Set and the mobile station. Values are entered in the fields that correspond with the front panel connector being used (see next three commands). The RF Level Offset field is found on the **CONFIGURE** screen.

:ANTenna (See "Real Number Setting Syntax" on page 159, :STATe not included)
This command sets the path loss from the mobile station to the ANTENNA IN connector. This correction is applied when the RF Level Offset field is "ON". The Antenna In and RF Level Offset fields are found on the **CONFIGURE** screen. The valid range is -100.0 to 100.0.

:DUPLex (See "Real Number Setting Syntax" on page 159, :STATe not included)
This command sets the path loss from the DUPLEX OUT connector (when the PCS Intrfc Cntrl field on the CONFIGURE screen is set to "Off"), or the RF Out Only field (when the PCS Intrfc Cntrl field on the CONFIGURE screen is set to "On"). This correction is applied when the RF Level Offset field is "ON". The Duplex Out, RF Out only, and RF Level Offset fields are found on the **CONFIGURE** screen. The valid range is -100.0 to 100.0.

:RFINout (See "Real Number Setting Syntax" on page 159, :STATe not included)
This command sets the path loss from the RF IN/OUT connector to the mobile station. This correction is applied when the RF Level Offset field is "ON". The RF In/Out and RF Level Offset fields are found on the **CONFIGURE** screen. The valid range is -100.0 to 100.0.

```
:CONF
  :OFRequency (See "Real Number Setting Syntax" on page 159, :STATe not included)
        THIS COMMAND SETS THE FREQUENCY OFFSET BETWEEN THE TEST SET'S GENERATOR AND
        ANALYZER, DISPLAYED IN THE (GEN)-(ANL) FIELD WHEN THE RF DISPLAY FIELD
        (CONF:RFD) IS SET TO "FREQ". THE RF OFFSET FIELD MUST BE "ON" FOR THE
        FREQUENCY OFFSET TO BE APPLIED. THE RF OFFSET AND (GEN)-(ANL)
        FIELDS ARE FOUND ON THE CONFIGURE SCREEN.

  :OMODe 'On'
         'Off'
  :OMODe? (Returns quoted string)
        THESE COMMANDS SET/QUERY THE RF OFFSET FIELD, WHICH ENABLES OR DISABLES THE
        FREQUENCY OFFSET DISPLAYED IN THE (GEN)-(ANL) FIELD. THE RF OFFSET FIELD IS
        FOUND ON THE CONFIGURE SCREEN.

  :OPERation

    :AUTO
        THIS COMMAND ENABLES AUTORANGING AND AUTOTUNING ROUTINES IN THE
        TEST SET. THE RANGE HOLD FIELD IS FOUND ON THE CONFIGURE SCREEN.

    :HOLD
        THIS COMMAND DISABLES AUTORANGING AND AUTOTUNING ROUTINES IN THE
        TEST SET. THE RANGE HOLD FIELD IS FOUND ON THE CONFIGURE SCREEN.

  :PRINt

    :ADDRess (See "Integer Number Setting Syntax" on page 157)
        THIS COMMAND SETS THE PRINTER ADDRESS USED WHEN "HPIB" IS SELECTED
        IN THE PRINTER PORT: FIELD. THE PRINTER PORT: AND PRINTER ADRS FIELDS ARE FOUND
        ON THE PRINT CONFIGURESCREEN. THE VALID RANGE IS 0 THROUGH 30.

    :LINes|LINE (See "Integer Number Setting Syntax" on page 157)
        THIS COMMAND SETS THE NUMBER OF LINES PRINTED PER PAGE. THE LINES/PAGE FIELD IS
        FOUND ON THE PRINT CONFIGURE SCREEN. THE VALID RANGE IS 5 TO 120.

    :DESTination|PORTs 'Serial'
                       'HPIB'
                       'Parallel'
    :DESTination?|PORTs? (Returns quoted string)
        THESE COMMANDS SET/QUERY THE PRINTER PORT: FIELD SETTING. THE
        PRINTER PORT: FIELD IS FOUND ON THE PRINT CONFIGURE SCREEN.
```

```
:CONF
  :PRIN
    :FFSTart 'Yes'
             'No'
    :FFSTart? (Returns quoted string)
        These commands set/query the FF At Start: field, which determines if
        there will be a form feed at the start of printing. The FF at Start:
        field is found on the PRINT CONFIGURE screen.

    :FFENd 'Yes'
           'No'
    :FFENd? (Returns quoted string)
        These commands set/query the FF at End: field, which determines if
        there will be a form feed at the end of printing. The FF at End:
        field is found on the PRINT CONFIGURE screen.


    :TITLe '<character_data>'
    :TITLe? (Returns quoted string)
        These commands setup/query the Print Title: field, which determines what
        will be printed at the top of the printout. The Print Title: field is
        found on the PRINT CONFIGURE screen. The maximum number of characters that can
        be entered is 50. Valid characters are:ABCDEFGHIJKLMNOPQRSTUVWXYZ_012345
        6789abcdefghijklmnopqrstuvwxyz!"#$%&'()*+,-./:;<=>?@[\]^'{|}~

    :PRINter|HPModel|HPMO 'ThinkJet'
                          'QuietJet'
                          'PaintJet'
                          'DeskJet'
                          'LaserJet'
                          'Epson FX-80'
                          'Epson LQ-850'
    :PRINter?|HPModel?|HPMO? (Returns quoted string)
        These commands set/query the Model: field, which determines what model of
        printer is connected to the Test Set. The Model: field is found on the
        PRINT CONFIGURE screen.
```

```
:CONF
  :RFCStandard'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'
               'MS LTR800'
               'LS LTR800'
               'MS LTR900'
               'LS LTR900'
               'USER-DEF'
  :RFCStandard? (Returns quoted string)
               These commands set/query the RF Chan Std (RF Channel Standard)
               field. This setting determines the Test Set's RF Generator and
               RF Analyzer frequency mapping when "Chan" is selected in the RF
               Display field. Some standards require an Agilent 83236B with opt. 700 (all
               TACS variants). The RF Display field is found on the CONFIGURE screen.
               The RF Chan Std field is found on the CONFIGURE screen.

  :RFDMode 'Freq'
           'Chan'
  :RFDMode? (Returns quoted string)
         These commands set/query the format for entering and displaying the Test
         Set's RF Generator and RF Analyzer frequency settings (by frequency or by
         channel number). The RF Display field is found on the CONFIGURE screen.

  :RFIMpedance '50 ohm'
               'emf'
  :RFIMpedance? (Returns quoted string)
               These commands set/query the way RF generator voltages are
               expressed (across a 50 ohm load or open circuit), and this setting is
               displayed in the RFGen Volts field. The Amplitude field units must be
               set to V, mV, uV, or dBuV for this field to have an effect. The RFGen
               Volts field is found on the CONFIGURE screen.

  :RTSWitching 'Carrier'
               'PTT'
  :RTSWitching? (Returns quoted string)
    These commands set/query the signal that will cause automatic switching between
    the RX Test and TX Test screens when the RX/TX Cntl field is set to Auto. when an
    RF carrier is detected. PTT (Push-To-Talk)causes the Test Set to automatically
    switch to the RX Test screen when a microphone connected to the MIC/ACC connector is
    keyed. The RX/TX Cntl field is found on the CONFIGURE screen.
```

```
:CONF
  :SPORt

    :BAUD '150'
          '300'
          '600'
          '1200'
          '2400'
          '4800'
          '9600'
          '19200'
    :BAUD? (Returns quoted string)
        THESE COMMANDS SET/QUERY THE SERIAL PORT BAUD RATE. THE SERIAL
        BAUD FIELD IS FOUND ON THE I/O CONFIGURE SCREEN.

    :PARity 'None'
            'Odd'
            'Even'
            'Always 1'
            'Always 0'
    :PARity? (Returns quoted string)
        THESE COMMANDS SET/QUERY THE SERIAL PORT PARITY. THE PARITY FIELD IS
        FOUND ON THE I/O CONFIGURE SCREEN.

    :DATA  '7 Bits'
           '8 Bits'
    :DATA? (Returns quoted string)
        THESE COMMANDS SET/QUERY THE NUMBER OF BITS USED FOR EACH WORD OF SERIAL
        DATA WHEN USING THE SERIAL PORT. THE DATA LENGTH FIELD IS FOUND ON THE
        I/O CONFIGURE SCREEN.

    :STOP '1 Bit'
          '2 Bits'
    :STOP? (Returns quoted string)
        THESE COMMANDS SET/QUERY THE NUMBER OF STOP BITS USED FOR SERIAL
        COMMUNICATIONS WHEN USING THE SERIAL PORT. THE STOP LENGTH FIELD IS
        FOUND ON THE I/O CONFIGURE SCREEN.

    :RPACe 'Xon/Xoff'
           'None'
    :RPACe? (Returns quoted string)
        THESE COMMANDS SET/QUERY THE XON/XOFF CAPABILITY USED FOR CONTROLLING THE
        PACE OF SERIAL COMMUNICATIONS WHEN THE TEST SET IS RECEIVING DATA VIA
        THE SERIAL PORT. THE RCV PACE FIELD IS FOUND ON THE I/O CONFIGURE SCREEN.

    :XPACe 'Xon/Xoff'
           'None'
    :XPACe? (Returns quoted string)
        THESE COMMANDS SET/QUERY THE XON/XOFF CAPABILITY USED FOR CONTROLLING THE
        PACE OF SERIAL COMMUNICATIONS WHEN THE TEST SET IS TRANSMITTING DATA VIA
        THE SERIAL PORT. THE XMT PACE FIELD IS FOUND ON THE I/O CONFIGURE SCREEN.
```

```
:CONF
  :SPOR
    :SIN|SINPut 'Inst'
                'IBASIC'
    :SIN?|SINPut? (Returns quoted string)
          THESE COMMANDS SET/QUERY THE DESTINATION OF DATA CHARACTERS RECEIVED
          BY THE TEST SET VIA THE SERIAL PORT. 'INST' ALLOWS USE OF AN
          EXTERNAL KEYBOARD. 'IBASIC' ALLOWS THE IBASIC CONTROLLER TO READ
          THE SERIAL PORT WHILE A PROGRAM IS RUNNING. THE SERIAL IN FIELD IS
          FOUND ON THE I/O CONFIGURE SCREEN.

    :IBECho 'On'
            'Off'
    :IBECho? (Returns quoted string)
        THESE COMMANDS SET/QUERY THE SCREEN AND ERROR MESSAGE ECHOING FROM
        IBASIC. THE IBASIC ECHO FIELD IS FOUND ON THE I/O CONFIGURE SCREEN.

    :IECHo 'On'
           'Off'
    :IECHo? (Returns quoted string)
        THESE COMMANDS SET/QUERY THE CHARACTER AND SCREEN ECHOING WHEN USING
        AN EXTERNAL ASCII RS-232 TERMINAL OR COMPUTER TO ENTER OR EDIT
        IBASIC PROGRAMS. THE INST ECHO FIELD IS FOUND ON THE I/O CONFIGURE SCREEN.

  :SPB

    :BAUD '150'
          '300'
          '600'
          '1200'
          '2400'
          '4800'
          '9600'
          '19200'
    :BAUD? (Returns quoted string)

    :PARity 'None'
            'Odd'
            'Even'
            'Always 1'
            'Always 0'
    :PARity? (Returns quoted string)

    :DATA '7 Bits'
          '8 Bits'
    :DATA? (Returns quoted string)

    :STOP '1 Bit'
          '2 Bits'
    :STOP? (Returns quoted string)

    :RPACe 'Xon/Xoff'
           'None'
    :RPACe? (Returns quoted string)
```

```
:CONF
  :SPB
    :XPACe 'Xon/Xoff'
           'None'
    :XPACe? (Returns quoted string)

  :TIME (See "Real Number Setting Syntax" on page 159, :DUNits, :INCRement, :UNITs,
         :STATe not included)
               THIS COMMAND SETS THE TIME-OF-DAY. THE TIME FIELD IS FOUND ON THE
               CONFIGURE SCREEN.

  :INPut 'RF In'
         'Ant'
  :INPut? (Returns quoted string)
               THESE COMMANDS SET/QUERY THE RF INPUT PORT. THE INPUT PORT
               FIELD IS FOUND ON THE CONFIGURE, TX TEST, AND RF ANALYZER SCREENS
               WHEN THE PCS MODE FIELD ON THE CONFIGURE SCREEN IS SET
               TO OFF AND THE POWER HAS BEEN CYCLED TO TURN PCS MODE OFF.

  :OUTPut 'RF Out'
          'Dupl'
          'only'
  :OUTPut? (Returns quoted string)
        THESE COMMANDS SET/QUERY THE RF OUTPUT PORT. "DUPL" IS AVAILABLE WHEN
        THE PCS MODE FIELD IS "OFF". THE CHOICE "ONLY" IS AVAILABLE WHEN THE
        PCS MODE FIELD IS "ON". THE OUTPUT PORT FIELD IS FOUND ON THE
        CONFIGURE SCREEN.

  :ATTenuator '0 dB'
              '20 dB'
              '40 dB'
              '60 dB' (available when PCS Mode is On)
              '20 dB LC' (available when PCS Mode On)
  :ATTenuator? (Returns quoted string)
        THESE COMMANDS SET/QUERY THE AMOUNT OF INPUT ATTENUATION IN THE PATH OF THE
        SELECTED INPUT PORT. SETTING THE INPUT ATTEN FIELD TO "HOLD"
        (CONF:ATT:MODE 'HOLD') PREVENTS THE RF AUTO-RANGING PROCESS FROM
        CHANGING THE ATTENUATION SETTING. THE INPUT ATTEN FIELD IS FOUND ON THE
        CONFIGURE, RF ANALYZER, AND SPECTRUM ANALYZER SCREENS.

  :MODE 'Auto'
        'Hold'
  :MODE? (Returns quoted string)
        THESE COMMANDS SET/QUERY THE RF AUTO-RANGING MODE. SETTING THE INPUT
        ATTEN FIELD TO "HOLD" (CONF:ATT:MODE 'HOLD') PREVENTS THE
        RF AUTO-RANGING PROCESS FROM CHANGING THE ATTENUATION
        SETTING.THE INPUT ATTEN FIELD IS FOUND ON THE CONFIGURE, RF
        ANALYZER, AND SPECTRUM ANALYZER SCREENS.

  :SRLocation 'INTERNAL'
              'CARD'
              'RAM'
              'DISK'
  :SRLocation? (Returns quoted string)
        THESE COMMANDS SET/QUERY THE SAVE/RECALL MEMORY LOCATION. THE
        SAVE/RECALL FIELD IS FOUND ON THE I/O CONFIGURE SCREEN.
```

:CONF

:UDBFrequency (See “Real Number Setting Syntax” on page 159, :DUNits, :UNITs, :STATe,:INCRement not included)

THIS COMMAND SETS THE BASE FREQUENCY SETTING, DISPLAYED IN THE BASE FREQ FIELD WHEN THE RF DISPLAY FIELD (CONF:RFD) IS SET TO “CHAN”, AND THE RF CHAN STD (CONF:RFCS) FIELD IS SET TO “USER-DEF” (USER-DEFINED). THE BASE FREQ AND RF CHAN STD FIELDS ARE FOUND ON THE **CONFIGURE** SCREEN.

:UDCSpacing (See “Real Number Setting Syntax” on page 159, :DUNits, :UNITs, :STATe, :INCRement not included)

THIS COMMAND SETS THE FREQUENCY SPACING BETWEEN CHANNELS, DISPLAYED IN THE CHAN SPACE FIELD WHEN THERF DISPLAY FIELD (CONF:RFD) IS SET TO “CHAN”, AND THE RF CHAN STD (CONF:RFCS) FIELD IS SET TO “USER-DEF” (USER-DEFINED). THE CHAN SPACE AND RF CHAN STD FIELDS ARE FOUND ON THE **CONFIGURE** SCREEN.

:UDOFrequency (See “Real Number Setting Syntax” on page 159,:DUNits,:UNITs, :STATe, :INCRement not included)

THIS COMMAND SETS THE FREQUENCY OFFSET BETWEEN THE TEST SET’S GENERATOR AND ANALYZER, DISPLAYED IN THE TX-RX OFFST FIELD WHEN THE RF CHAN STD FIELD (CONF:RFCS) IS SET TO “USER-DEF” USER-DEFINED), AND THE RF DISPLAY FIELD IS SET TO “CHAN”. THE RX-TX OFFST AND RF CHAN STD FIELDS ARE FOUND ON THE **CONFIGURE**SCREEN.

Decoder

```
:DECoder

:ARM
  :MODE ’Single’
        ’Cont’
  :MODE? (Returns quoted string)

:MODE ’AMPS-TACS’
      ’Digi Page’
      ’DTMF’
      ’Func Gen’
      ’NAMP-NTAC’
      ’Tone Seq’
      ’CDCSS’        (see 8920B programmer’s guide for syntax)
      'NMT'          (see 8920B programmer’s guide for syntax)
      'MPT 1327'     (see 8920B programmer’s guide for syntax)
      'LTR'          (see 8920B programmer’s guide for syntax)
      'EDACS'        (see 8920B programmer’s guide for syntax)
:MODE? (Returns quoted string)

:POLarity 'Norm'
          'Invert'
:POLarity? (Returns quoted string)

:LEVel

  :AM (See “Real Number Setting Syntax” on page 159, :STATe not included)

  :FM (See “Real Number Setting Syntax” on page 159, :STATe not included)

  :VOLTs (See “Real Number Setting Syntax” on page 159, :STATe not included)

:STOP
```

```
:DEC
  :AMPS|TACS

    :BLOCks (See “Integer Number Setting Syntax” on page 157, valid range: 1-18)

    :MESSage’FOCC A&B’
             ’FOCC A’
             ’FOCC B’
             ’RECC’
             ’FVC’
             ’RVC’
    :MESSage? (Returns quoted string)

    :GATE (See “Real Number Setting Syntax” on page 159, :STATe not included)

    :STANdard’AMPS’
              ’TACS’
              ’JTACS’
    :STANdard? (Returns quoted string)

    :TRIGger
      :PATTern ’<character_data>’ (127 chars max, valid chars: .01)
      :PATTern? (Returns quoted string)

  :DTMF
    :GATE (See “Real Number Setting Syntax” on page 159, :STATe not included)

  :FGENerator
    :GATE (See “Real Number Setting Syntax” on page 159, :STATe not included)

  :NAMPs|NTACs

    :CHANnel ’Cntl’
      ’Voice’
    :CHANnel? (Returns quoted string)

    :DTMF
      :GATE (See “Real Number Setting Syntax” on page 159, :STATe not included)

    :GATE (See “Real Number Setting Syntax” on page 159, :STATe not included)

    :RVC ’DSAT’
         ’DATA’
         ’DTMF’
    :RVC? (Returns quoted string)

    :STANdard’NAMPS’
              ’NTACS’
    :STANdard? (Returns quoted string)

    :TRIGger
      :PATTern ’<character_data>’ (127 chars max, valid chars: .01)
      :PATTern? (Returns quoted string)
```

Display

```
:DISPlay ACNTrol        (DISPLAYS THE CALL CONTROL SCREEN.)
         ACPower        (DISPLAYS THE ADJACENT CHANNEL POWER SCREEN.)
         AFANalyzer     (DISPLAYS THE AF ANALYZER SCREEN.)
         AUTHentication (DISPLAYS THE CALL CONTROL: AUTHENTICATION SCREEN.)
         CBIT           (DISPLAYS THE CALL CONTROL: CALL BIT SCREEN)
         CCNFigure      (DISPLAYS THE CALL CONTROL: CALL CONFIGURE SCREEN.)
         CDATa          (DISPLAYS THE CALL CONTROL: CALL DATA SCREEN.)
         CMEasure       (DISPLAYS THE CALL CONTROL: ANALOG MEAS SCREEN.)
         CONFigure      (DISPLAYS THE CONFIGURE SCREEN.)
         DECoder        (DISPLAYS THE SIGNALING DECODER SCREEN.)
         DUPLex         (DISPLAYS THE DUPLEX SCREEN.)
         ENCoder        (DISPLAYS THE SIGNALING ENCODER SCREEN.)
         HELP           (DISPLAYS THE HELP SCREEN.)
         IOConfigure    (DISPLAYS THE I/O CONFIGURE SCREEN.)
         MESSages       (DISPLAYS THE MESSAGE SCREEN.)
         OSCilloscope   (DISPLAYS THE OSCILLOSCOPE SCREEN.)
         PCONfigure     (DISPLAYS THE PRINT CONFIGURE SCREEN.)
         RFANalyzer     (DISPLAYS THE RF ANALYZER SCREEN.)
         RFGen          (DISPLAYS THE RF GENERATOR SCREEN.)
         RX             (DISPLAYS THE RX TEST SCREEN.)
         SANalyzer      (DISPLAYS THE SPECTRUM ANALYZER SCREEN.)
         SERVice        (DISPLAYS THE SERVICE SCREEN.)
         TCONfigure     (DISPLAYS THE TESTS (EXTERNAL DEVICES) SCREEN.)
         TESTs          (DISPLAYS THE TESTS (MAIN MENU) SCREEN.)
         TEXec          (DISPLAYS THE TESTS (EXECUTION CONDITIONS) SCREEN.)
         TFReq          (DISPLAYS THE TESTS (CHANNEL INFORMATION) SCREEN.)
         TIBasic        (DISPLAYS THE TESTS (IBASIC CONTROLLER) SCREEN.)
         TMAKe          (DISPLAYS THE TESTS (SAVE/DELETE PROCEDURE) SCREEN.)
         TPARm          (DISPLAYS THE TESTS (TEST PARAMETERS) SCREEN.)
         TSEQn          (DISPLAYS THE TESTS (ORDER OF TESTS) SCREEN.)
         TSPec          (DISPLAYS THE TESTS (PASS/FAIL LIMITS) SCREEN.)
         TX             (DISPLAYS THE TX TEST SCREEN.)
         CMEasure       (DISPLAYS THE ANALOG MEAS SCREEN.)
         REMote         (LOCKS THE DISPLAY)
:DISPlay? (Returns currently displayed screen's name)
```

Measure

:MEASure

:RESet
THIS COMMAND RESTARTS ALL MEASUREMENTS THAT ARE IN PROGRESS. THIS FUNCTION IS ALSO PERFORMED BY PRESSING THE **MEAS RESET** KEY

:ACPower

:LRATio? (Returns real value)
THIS COMMAND QUERIES THE ADJACENT CHANNEL POWER MEASUREMENT, SPECIFICALLY THE RATIO OF SIGNAL POWER AT A FREQUENCY BELOW THE DUT'S (DEVICE-UNDER-TEST'S) CHANNEL FREQUENCY TO SIGNAL POWER AT THE DUT'S SELECTED CHANNEL FREQUENCY. THE LOWER ACP RATIO FIELD IS DISPLAYED ON THE **ADJACENT CHANNEL POWER** SCREEN.

:LRATio (See **"Number Measurement Syntax" on page 163**)

:URATio? (Returns real value)
THIS COMMAND QUERIES THE ADJACENT CHANNEL POWER MEASUREMENT, SPECIFICALLY THE RATIO OF SIGNAL POWER AT A FREQUENCY ABOVE THE DUT'S (DEVICE-UNDER-TEST'S) CHANNEL FREQENCY TO SIGNAL POWER AT THE DUT'S SELECTED CHANNEL FREQUENCY. THE UPPER ACP RATIO FIELD ISDISPLAYED ON THE **ADJACENT CHANNEL POWER** SCREEN.

:URATio (See **"Number Measurement Syntax" on page 163**)

:LLEVel? (Returns real value)
THIS COMMAND QUERIES THE ABSOLUTE SIGNAL POWER AT A FREQUENCY BELOW THE TEST SET'S TUNE FREQUENCY. THE LOWER ACP LEVEL FIELD IS DISPLAYED ON THE **ADJACENT CHANNEL POWER** SCREEN.

:LLEVel (See **"Number Measurement Syntax" on page 163**)

:ULEVel? (Returns real value)
THIS COMMAND QUERIES THE ABSOLUTE SIGNAL POWER AT A FREQUENCY ABOVE THE TEST SET'S TUNE FREQUENCY. THE UPPER ACP LEVEL FIELD IS DISPLAYED ON THE **ADJACENT CHANNEL POWER** SCREEN.

:ULEVel (See **"Number Measurement Syntax" on page 163**)

```
:MEAS
  :AFRequency

    :ACLevel? (Returns real value)
        THIS COMMAND QUERIES THE AC LEVEL MEASUREMENT. THE AC LEVEL FIELD IS
        DISPLAYED ON THE AF ANALYZER, RF ANALYZER, TX TEST, AND DUPLEX
        TEST SCREENS WHEN ONE OF THE FOLLOWING AUDIO SOURCES IS SELECTED FROM
        THE AF ANL IN FIELD: SSB DEMOD, AUDIO IN, RADIO INT, EXT MOD, MIC
        MOD, OR AUDIO OUT. (USE THE "AFAN:INPUT ''" COMMAND).
    :ACLevel (See "Number Measurement Syntax" on page 163)

    :AM? (Returns real value)
        THIS COMMAND QUERIES THE AM DEPTH OF MODULATION. THE AM DEPTH FIELD
        IS DISPLAYED ON THE AF ANALYZER, RF ANALYZER, TX TEST, AND
        DUPLEX TEST SCREENS WHEN AM DEMOD OR AM MOD ARE SELECTED FROM THE
        AF ANL IN FIELD. (USE THE "AFAN:INPUT ''" COMMAND) AND SNR(SIGNAL-
        TO-NOISE) IS NOT SELECTED FROM THE AUDIO FREQUENCY MEASUREMENTS.
    :AM (See "Number Measurement Syntax" on page 163)

    :CURRent? (Returns real value)
        THIS COMMAND QUERIES THE CURRENT MEASUREMENT. CURRENT IS DISPLAYED IN
        AN UNNAMED FIELD ON THE AF ANALYZER, RF ANALYZER, TX TEST, AND
        DUPLEX TEST, AND ANALOG MEAS SCREENS WHEN THE CURRENT MEASUREMENT IS
        SELECTED(USE THE "MEAS:AFREQUENCY:SELECT 'CURRENT'" COMMAND).
    :CURRent (See "Number Measurement Syntax" on page 163)

    :DCAM? (Returns real value)
        THIS COMMAND QUERIES THE DC AM MEASUREMENT. THE DC AM MEASUREMENT IS
        DISPLAYED IN AN UNNAMED FIELD ON THE AF ANALYZER, RF ANALYZER, TX
        TEST, AND DUPLEX TEST SCREENS WHEN; DC LEVEL ISSELECTED (USE THE
        "MEAS:AFREQUENCY:SELECT 'DC LEVEL'" COMMAND) AND AM DEMOD OR AM
        MOD ARE SELECTED FROM THE AF ANL IN FIELD. (USE THE"AFAN:INPUT ''"
        COMMAND).
    :DCAM (See "Number Measurement Syntax" on page 163)

    :DCFM? (Returns real value)
        THIS COMMAND QUERIES THE DC FM MEASUREMENT. THE DC FM MEASUREMENT IS
        DISPLAYED IN AN UNNAMED FIELD ON THE AF ANALYZER, RF ANALYZER, TX
        TEST, AND DUPLEX TEST SCREENS WHEN; DC LEVEL IS SELECTED (USE THE
        "MEAS:AFREQUENCY:SELECT 'DC LEVEL'" COMMAND) AND FM DEMOD OR FM
        MOD ARE SELECTED FROM THE AF ANL IN FIELD. (USE THE "AFAN:INPUT''"
        COMMAND).
    :DCFM  (See "Number Measurement Syntax" on page 163)

    :DCVolts? (Returns real value)
        THIS COMMAND QUERIES THE DC VOLTAGE MEASUREMENT. THE DC
        VOLTAGE MEASUREMENT IS DISPLAYED IN AN UNNAMED FIELD ON THE AF
        ANALYZER, RF ANALYZER, TX TEST, AND DUPLEX TEST, AND ANALOG MEAS
        SCREENS WHEN; DC LEVEL IS SELECTED (USE THE "MEAS:AFREQUENCY:SELECT
        'DC LEVEL'" COMMAND) AND ONE OF THE FOLLOWING AUDIO SOURCES
        ARE SELECTED FROM THE AF ANL IN FIELD: SSB DEMOD, AUDIO IN,
        RADIO INT, EXT MOD, MIC MOD, OR AUDIO OUT. (USE THE
        "AFAN:INPUT ''" COMMAND.
    :DCVolts (See "Number Measurement Syntax" on page 163)
```

```
:MEAS
  :AFR
    :DISTortion?|DISTN? (Returns real value)
        THIS COMMAND QUERIES THE DISTORTION MEASUREMENT. DISTN IS DISPLAYED IN AN
        UNNAMED FIELD ON THE AF ANALYZER, RF ANALYZER, TX TEST, AND DUPLEX
        TEST, AND ANALOG MEAS SCREENS WHEN DISTN IS SELECTED (USE THE
        "MEAS:AFREQUENCY:SELECT'DISTN'" COMMAND).
    :DISTortion|DISTN (See "Number Measurement Syntax" on page 163)

    :FM? (Returns real value)
        THIS COMMAND QUERIES THE FM DEVIATION MEASUREMENT. THE FM DEVIATION FIELD
        IS DISPLAYED ON THE AF ANALYZER, RF ANALYZER, TX TEST, AND DUPLEX
        TEST, AND ANALOG MEAS SCREENS WHEN FM DEMOD OR FM MOD IS SELECTED
        FROM THE AF ANL IN FIELD (USE THE "AFAN:INPUT ''" COMMAND) AND SNR
        (SIGNAL-TO-NOISE) IS NOT SELECTED FROM THE AUDIO FREQUENCY MEASUREMENTS.
    :FM (See "Number Measurement Syntax" on page 163)

    :FREQuency? (Returns real value)
        THIS COMMAND QUERIES THE AUDIO FREQUENCY MEASUREMENT. AF FREQ IS DISPLAYED
        IN AN UNNAMED FIELD ON THE AF ANALYZER, RF ANALYZER, TX TEST, AND
        DUPLEX TEST SCREENS WHEN AF FREQ IS SELECTED (USE THE
        "MEAS:AFREQUENCY:SELECT 'AF FREQ'" COMMAND).
    :FREQuency (See "Number Measurement Syntax" on page 163)

    :SELect 'SINAD'
            'Distn'
            'SNR'
            'AF Freq'
            'DC Level'
            'Current'
        THESE COMMANDS SELECT THE AUDIO FREQUENCY ANALYZER MEASUREMENT. THE UNNAMED
        FIELD THAT DISPLAYS THESE MEASUREMENTS IS LOCATED ON THE AF ANALYZER, RF
        ANALYZER, TX TEST, AND DUPLEX TEST, AND ANALOG MEAS SCREENS.
    :SELect? (Returns quoted string)
        THIS COMMANDS QUERIES THE AUDIO FREQUENCY ANALYZER MEASUREMENT. THE UNNAMED
        FIELD THAT DISPLAYS THESE MEASUREMENTS IS LOCATED ON THE AF ANALYZER,
        RF ANALYZER, TX TEST, AND DUPLEX TEST SCREENS.

    :SINAD? (Returns real value)
        THIS COMMAND QUERIES THE SINAD MEASUREMENT. SINAD IS DISPLAYED IN AN
        UNNAMED FIELD ON THE AF ANALYZER, RF ANALYZER, TX TEST, AND
        DUPLEX TEST, AND ANALOG MEAS SCREENS WHEN SINAD IS SELECTED (USE THE
        "MEAS:AFREQUENCY:SELECT 'SINAD'" COMMAND).
    :SINAD (See "Number Measurement Syntax" on page 163)

    :SNR? (Returns real value)
        THIS COMMAND QUERIES THE SNR (SIGNAL-TO-NOISE) MEASUREMENT. SNR IS
        DISPLAYED IN AN UNNAMED FIELD ON THE AF ANALYZER, RF ANALYZER, TX
        TEST, AND DUPLEX TEST, AND ANALOG MEAS SCREENS WHEN SNR IS SELECTED
        (USE THE "MEAS:AFREQUENCY:SELECT 'SNR'" COMMAND).
    :SNR (See "Number Measurement Syntax" on page 163)
```

```
:MEAS
  :DCCHannel | DAMPS
    :MTYPe 'EVM 1'
           'EVM 10'
           'Ad Ch Pwr'
           'Avg Power'
           'MAHO'
    :MTYPe? (Returns quoted string)

    :DMTYPe 'EVM 1'
            'EVM 10'
            'Ad Ch Pwr'
            'Avg Power'
            'BER'
            'DTC WER'
            'DCCH WER'
    :DMTYPe? (Returns quoted string)

    :MDISPLAY1 | MDIS1 'EVM'
                      'Peak EVM'
                      'Phase Err'
                      'Mag Err'
                      'Orgin Ofs
                      'DROOP'
                      'Sync Loc'
                      'Max Abs'
    :MDISPLAY1? | MDIS1? (Returns quoted string)
    :MDISPLAY2 | MDIS2 'EVM'
                      'Peak EVM'
                      'Phase Err'
                      'Mag Err'
                      'Orgin Ofs
                      'DROOP'
                      'Sync Loc'
                      'Max Abs'
    :MDISPLAY2? | MDIS2? (Returns quoted string)

    :EVMMeasure

      :FERRor?
      :FERRor (See "Number Measurement Syntax" on page 163)

      :TPOWer?
      :TPOWer (See "Number Measurement Syntax" on page 163)

      :EVMagnitude?
      :EVMagnitude (See "Number Measurement Syntax" on page 163)

      :PEVMagnitude?
      :PEVMagnitude (See "Number Measurement Syntax" on page 163)

      :PERRor?
      :PERRor (See "Number Measurement Syntax" on page 163)
```

```
:MEAS
  :DCCH|DAMP
    :EVMM
      :MERRor?
      :MERRor (See “Number Measurement Syntax” on page 163)

      :OOFFset?
      :OOFFset (See “Number Measurement Syntax” on page 163)

      :DROop?
      :DROop (See “Number Measurement Syntax” on page 163)

      :SLOCation?
      :SLOCation (See “Number Measurement Syntax” on page 163)

      :MABSolute?
      :MABSolute (See “Number Measurement Syntax” on page 163)

    :ACPower

      :LADJacent?
      :LADJacent (See “Number Measurement Syntax” on page 163)

      :LALTernate?
      :LALTernate (See “Number Measurement Syntax” on page 163)

      :L2ALternate?
      :L2ALternate(See “Number Measurement Syntax” on page 163)

      :HALTernate?
      :HALTernate (See “Number Measurement Syntax” on page 163)

      :H2ALternate?
      :H2ALternate (See “Number Measurement Syntax” on page 163)

    :APOWer

      [:VALue?]
      [:VALue] (See “Number Measurement Syntax” on page 163)

      :MABS?
      :MABS (See “Number Measurement Syntax” on page 163)

    :MAHandoff

      :CRSStrength? (Returns quoted string)

      :CBERate? (Returns quoted string)

      :NRSSTRENGTH1? | NRSS1? (Returns quoted string)
      :NRSSTRENGTH2? | NRSS2? (Returns quoted string)
      :NRSSTRENGTH3? | NRSS3? (Returns quoted string)
      :NRSSTRENGTH4? | NRSS4? (Returns quoted string)
      :NRSSTRENGTH5? | NRSS5? (Returns quoted string)
      :NRSSTRENGTH6? | NRSS6? (Returns quoted string)
```

```
:MEAS
  :DCCH|:DAMPS
    :BER
      [:VALue?]
      [:VALue] (See “Number Measurement Syntax” on page 163)
      :ARM

      :DARM

      :MODE ‘Single’
            ‘Cont’
      :MODE? (Returns quoted string)

      :MBIT?
      :MBIT (See “Integer Number Setting Syntax” on page 157, :INCRement only)

      :BREad? (Returns quoted string)
          THIS COMMAND RETURNS THE NUMBER OF BITS READ.

    :WER
      [:VALue?] (See “Number Measurement Syntax” on page 163)
          THIS COMMAND QUERIES THE LOOPBACK WER. THE VALUE IS RETURNED IN %.
      [:VALue]

      :ARM

      :DARM

      :DTCType‘SPEECH’
            ‘FACCH’
            ‘SACCH’
      :DTCType? (Returns quoted string)

      :MWORd (See “Integer Number Setting Syntax” on page 157)
          THIS COMMAND SETS THE MAXIMUM WORDS FOR THE MEASUREMENT.

      :WREad? (Returns quoted string)
          THIS COMMAND RETURNS THE NUMBER OF WORDS READ.
```

```
:MEAS
  :OSCilloscope

    :MARKer

      :LEVel
        :AM? (Returns real value)
            THIS COMMAND QUERIES THE INSTANTANEOUS AM DEPTH OF MODULATION AT THE
            OSCILLOSCOPE LVL MARKER LOCATION. THE MARKER LVL FIELD ON THE
            OSCILLOSCOPE SCREEN DISPLAYS AM AT THE MARKER LOCATION WHEN AM
            DEMOD OR AM MOD ARE SELECTED FROM THE AF ANL IN FIELD (USE THE
            "AFAN:INPUT ''" COMMAND).
        :AM  (See "Number Measurement Syntax" on page 163, :METer not included)

        :FM? (Returns real value)
            THIS COMMAND QUERIES THE INSTANTANEOUS FM DEVIATION AT THE
            OSCILLOSCOPE MARKER LOCATION. THE MARKER LVL FIELD ON THE
            OSCILLOSCOPE SCREEN DISPLAYS FM AT THE MARKER LOCATION WHEN FM
            DEMOD OR FM MOD ARE SELECTED FROM THE AF ANL IN FIELD (USE THE
            "AFAN:INPUT ''" COMMAND).
        :FM  (See "Number Measurement Syntax" on page 163, :METer not included)

        :VOLTs? (Returns real value)
            THIS COMMAND QUERIES THE VOLTAGE LEVEL AT THE OSCILLOSCOPE
            MARKER LOCATION. THE MARKER LVL FIELD ON THE OSCILLOSCOPE
            SCREEN DISPLAYS VOLTAGE AT THE MARKER LOCATION WHEN ONE OF THE
            FOLLOWING AUDIO SOURCES ARE SELECTED FROM THE AF ANL IN FIELD:
            SSB DEMOD, AUDIO IN, RADIO INT EXT MOD, MIC MOD, OR AUDIO
            OUT (USE THE "AFAN:INPUT ''" COMMAND).
        :VOLTs  (See "Number Measurement Syntax" on page 163, :METer not included)

      :TIME? (Returns real value)
            THIS COMMAND QUERIES THE TIME ELAPSED FROM THE TRIGGER POINT TO
            THE CURRENT OSCILLOSCOPE MARKER LOCATION. THE TIME MARKER IS
            DISPLAYED ON THE OSCILLOSCOPE SCREEN.
        :TIME  (See "Number Measurement Syntax" on page 163, :METer not included)

    :TRACe?
          RETURNS ARRAY OF 417 REAL VALUES. 0=FIRST VALUE (LEFT SIDE OF TRACE DISPLAY),
          416=LAST VALUE (RIGHT SIDE OF TRACE DISPLAY).
```

Measure

```
:MEAS
  :RFRequency

    :FREQuency

      :ABSolute? (Returns real value)
            THIS COMMAND QUERIES THE ABSOLUTE TRANSMITTER FREQUENCY. A FIELD NAMED TX
            FREQUENCY DISPLAYS THE ABSOLUTE TRANSMITTER FREQUENCY WHEN THE TUNE MODE
            FIELD IS SET TO AUTO (USE THE "RFAN:TMODE 'AUTO'" COMMAND). (THE TUNE
            MODE FIELD IS DISPLAYED WHEN THE RF DISPLAY FIELD ON THE CONFIGURE
            SCREEN HAS "FREQ" SELECTED). THE TX FREQUENCY FIELD IS DISPLAYED ON THE
            RF ANALYZER, RF GENERATOR, TX TEST, AND DUPLEX TEST SCREENS
      :ABSolute (See "Number Measurement Syntax" on page 163)

      :ERRor? (Returns real value)
            THIS COMMAND QUERIES THE TRANSMITTER FREQUENCY ERROR MEASUREMENT, RELATIVE
            TO THE TUNE FREQUENCY FIELD SETTING. A FIELD NAMED TX FREQ ERROR DISPLAYS
            FREQUENCY ERROR WHEN THE TUNE MODE FIELD IS SET TO MANUAL (USE THE
            "RFAN:TMODE 'MANUAL'" COMMAND).(THE TUNE MODE FIELD IS DISPLAYED WHEN
            THE RF DISPLAY FIELD ON THE CONFIGURE SCREEN HAS "CHAN" SELECTED). THE
            TX FREQ ERROR FIELD IS DISPLAYED ON THE RF ANALYZER, RF GENERATOR,
            TX TEST, AND DUPLEX TEST SCREENS.
      :ERRor (See "Number Measurement Syntax" on page 163)

    :POWer? (Returns real value)
            THIS COMMAND QUERIES THE TRANSMITTER POWER MEASUREMENT. THE TX POWER FIELD
            IS DISPLAYED ON THE RF ANALYZER, RF GENERATOR, TX TEST, AND DUPLEX
            TEST SCREENS.
      :POWer (See "Number Measurement Syntax" on page 163)

  :SANalyzer

    :MARKer

      :FREQuency? (Returns real value)
            THIS COMMAND QUERIES THE FREQUENCY AT THE CURRENT SPECTRUM ANALYZER
            FREQ MARKER POSITION. THE FREQ MARKER IS DISPLAYED ON THE SPECTRUM
            ANALYZER SCREEN.
      :FREQuency     (See "Number Measurement Syntax" on page 163, :METer not
                      included)

      :LEVel? (Returns real value)
            THIS COMMAND QUERIES THE RF LEVEL AT THE CURRENT SPECTRUM ANALYZER
            LVL MARKER POSITION. THE LVL MARKER IS DISPLAYED ON THE SPECTRUM
            ANALYZER SCREEN.
      :LEVel  (See "Number Measurement Syntax" on page 163, :METer not included)

    :TRACe?
        RETURNS ARRAY OF 417 REAL VALUES. 0=FIRST VALUE (LEFT SIDE OF TRACE DISPLAY),
        416=LAST VALUE (RIGHT SIDE OF TRACE DISPLAY)
```

```
:MEAS
  :DECoder

    :AMPS|TACS

      :NBITs? (Returns integer value)

      :DATA? (Returns quoted string)

      :CDATa? (Returns quoted string)

    :DTMF

      :LOW
        :FREQuency

          :ABSolute? (Returns up to 19 real values)
          :ABSolute (See "Multiple Number Measurement Syntax" on page 165)

          :ERRor? (Returns up to 19 real values)
          :ERRor (See "Multiple Number Measurement Syntax" on page 165)

          :DISPlay'Freq'
          'Frq Err'
          :DISPlay? (Returns quoted string)

      :HIGH
        :FREQuency

          :ABSolute? (Returns up to 19 real values)
          :ABSolute (See "Multiple Number Measurement Syntax" on page 165)

          :ERRor (See "Multiple Number Measurement Syntax" on page 165)
          :ERRor? (Returns up to 19 real values)

        :DISPlay'Freq'
            'Frq Err'
        :DISPlay? (Returns quoted string)

      :TIME

        :OFF? (Returns up to 19 real values)
        :OFF (See "Multiple Number Measurement Syntax" on page 165)

        :ON? (Returns up to 19 real values)
        :ON (See "Multiple Number Measurement Syntax" on page 165)

      :SYMBol? (Returns quoted string)
```

```
:MEAS
  :DEC
    :FGENerator
      :FREQuency? (Returns real value)
      :FREQuency (See “Number Measurement Syntax” on page 163)

    :NAMPs|NTACs

      :NBITs? (Returns integer value)

      :DSAT
        :DATA? (Returns quoted string)

      :DTMF
        :LOW
          :DISPlay   ’Freq’
                     ’Frq Err’
          :DISPlay? (Returns quoted string)

          :FREQuency

            :ABSolute? (Returns up to 17 real values)
            :ABSolute  (See “Multiple Number Measurement Syntax” on page 165)

            :ERRor? (Returns up to 17 real values)
            :ERRor  (See “Multiple Number Measurement Syntax” on page 165)

        :HIGH
          :DISPlay   ’Freq’
                     ’Frq Err’
          :DISPlay? (Returns quoted string)

          :FREQuency

            :ABSolute? (Returns up to 17 real values)
            :ABSolute  (See “Multiple Number Measurement Syntax” on page 165)

            :ERRor? (Returns up to 17 real values)
            :ERRor  (See “Multiple Number Measurement Syntax” on page 165)

        :SYMBol? (Returns quoted string)

        :TIME
          :ON? (Returns up to 17 real values)
          :ON  (See “Multiple Number Measurement Syntax” on page 165)

          :OFF? (Returns up to 17 real values)
          :OFF  (See “Multiple Number Measurement Syntax” on page 165)

    :RECC
      :DATA? (Returns quoted string)

    :RVC
      :DATA? (Returns quoted string)
```

Oscilloscope

:OSCilloscope

:CONTrol 'Main'
'Trigger'
'Marker'

:CONTrol? (Returns quoted string)
THESE COMMANDS SELECT/QUERY THE ANALOG OSCILLOSCOPE MENUS. THE CONTROLS FIELD IS LOCATED ON THE **OSCILLOSCOPE** SCREEN.

:MARKer

:NPEak
THIS COMMAND CAUSES THE MARKER TO MOVE TO THE MINIMUM VALUE OF THE *AVERAGE* LEVEL MEASURED ON THE DISPLAY. THE MARKER TO FIELD IS FOUND ON THE **OSCILLOSCOPE** SCREEN WHEN MARKER IS SELECTED IN THE CONTROLS FIELD.

:PPEak
THIS COMMAND CAUSES THE MARKER TO MOVE TO THE MAXIMUM VALUE OF THE *AVERAGE* LEVEL MEASURED ON THE DISPLAY. THE MARKER TO FIELD IS FOUND ON THE **OSCILLOSCOPE** SCREEN WHEN MARKER IS SELECTED IN THE CONTROLS FIELD.

:POSition (See **"Real Number Setting Syntax" on page 159**, :STATE not included, valid range 0 to 10)
THIS COMMAND POSITIONS THE MARKER ACCORDING TO THE NUMBER OF SCALE DIVISIONS FROM THE LEFT SIDE OF THE SCREEN. THE POSITION TO FIELD IS FOUND ON THE **OSCILLOSCOPE** SCREEN WHEN MARKER IS SELECTED IN THE CONTROLS FIELD.

```
:OSC
  :SCALe
    :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'
    :TIME? (Returns quoted string)
        THESE COMMANDS SELECT/QUERY THE HORIZONTAL SWEEP TIME-PER-DIVISION.
        THE TIME/DIV FIELD IS DISPLAYED ON THE OSCILLOSCOPE SCREEN. THE
        TIME/DIV FIELD IS LOCATED ON THE OSCILLOSCOPE SCREEN WHEN MAIN IS
        SELECTED IN THE CONTROLS FIELD.

    :NADC (See "Integer Number Setting Syntax" on page 157, :INCRement only)
    :NADC?

    :VERTical

      :AM '50%'
          '20%'
          '10%'
          '5%'
          '2%'
          '1%'
          '0.5%'
          '0.2%'
          '0.1%'
          '0.05%'
      :AM? (Returns quoted string)
           THESE COMMANDS SELECT/QUERY THE VERTICAL AXIS AMPLITUDE-PER-DIVISION WHEN
           AM MOD OR AM DEMOD ARE SELECTED IN THE AF ANL INPUT FIELD, LOCATED ON
           THE AF ANALYZER SCREEN. THE VERT/DIV FIELD IS LOCATED ON THE
           OSCILLOSCOPE SCREEN WHEN MAIN IS SELECTED IN THE CONTROLS FIELD.
```

```
: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'
      :FM? (Returns quoted string)
          THESE COMMANDS SELECT/QUERY THE VERTICAL AXIS AMPLITUDE-PER-DIVISION WHEN
          FM MOD OR FM DEMOD ARE SELECTED IN THE AF ANL INPUT FIELD, LOCATED ON
          THE AF ANALYZER SCREEN. THE VERT/DIV FIELD IS LOCATED ON THE
          OSCILLOSCOPE SCREEN WHEN MAIN IS SELECTED IN THE CONTROLS FIELD.

      :OFFSet (See "Real Number Setting Syntax" on page 159, :STATE not included)
          THIS COMMAND SELECTS THE VERTICAL AXIS (DC) OFFSET, MOVING THE DISPLAYED
          SIGNAL ABOVE OR BELOW THE OSCILLOSCOPE'S FIXED CENTERLINE. THE VERT OFFSET
          FIELD IS LOCATED ON THE OSCILLOSCOPE SCREEN WHEN MAIN IS SELECTED IN THE
          CONTROLS FIELD. VALID RANGE IS -4 TO +4.

      :VOLTs '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'
      :VOLTs? (Returns quoted string)
             THESE COMMANDS SELECT/QUERY THE VERTICAL AXIS AMPLITUDE-PER-DIVISION
             WHEN ANY CHOICE OTHER THAN FM MOD, FM DEMOD, AM MOD, OR AM DEMOD
             IS SELECTED IN THE AF ANL INPUT FIELD. THE AF ANL INPUT FIELD IS
             LOCATED ON THE AF ANALYZER SCREEN. THE VERT/DIV FIELD IS LOCATED ON
             THE OSCILLOSCOPE SCREEN WHEN MAIN IS SELECTED IN THE CONTROLS FIELD.
```

```
:OSC
  :TRIGger

    :LEVel (See "Real Number Setting Syntax" on page 159, :STATE, :DUNits, :UNITs,
            :INCRement:MODE, :INCRement:DUNits, not included)
        THIS COMMAND SELECTS THE VERTICAL AXIS (DC) OFFSET, MOVING THE DISPLAYED
        SIGNAL ABOVE OR BELOW THE OSCILLOSCOPE'S FIXED CENTERLINE. THE VERT OFFSET
        FIELD IS LOCATED ON THE OSCILLOSCOPE SCREEN WHEN MAIN IS SELECTED IN THE
        CONTROLS FIELD.

    :MODE 'Cont'
          'Single'
    :MODE? (Returns quoted string)
        THESE COMMANDS SELECT/QUERY THE OSCILLOSCOPE TRIGGER MODE. IF THE CURRENTLY
        SELECTED TRIGGER MODE IS SINGLE, USE THE "TRIG" COMMAND TO TRIGGER EACH
        NEW MEASUREMENT. THE CONT/SINGLE FIELD IS LOCATED ON THE OSCILLOSCOPE
        SCREEN WHEN TRIGGER IS SELECTED IN THE CONTROLS FIELD.

    :DELay (See "Real Number Setting Syntax" on page 159, :STATE, :DUNits, :UNITs,
            :INCRement:MODE, :INCRement:DUNits, not included)
        THIS COMMAND SELECTS THE TRIGGER DELAY. POSITIVE VALUES DELAY THE
        MEASUREMENT TRIGGER, NEGATIVE VALUES APPLY A PRE-TRIGGER FUNCTION TO EACH
        MEASUREMENT. THE TRIG-DELAYFIELD IS LOCATED ON THE OSCILLOSCOPE SCREEN
        WHEN TRIGGER IS SELECTED IN THE CONTROLS FIELD. VALID RANGE DEPENDS ON TIME/DIV
        SETTING.


    :PRETrigger (See "Real Number Setting Syntax" on page 159, :STATE, :DUNits,
                 :UNITs, :INCRement:MODE,:INCRement:DUNits not included)
        THIS COMMAND APPLIES A PRE-TRIGGER FUNCTION TO EACH MEASUREMENT.

    :RESet
        THIS COMMAND TRIGGERS A MEASUREMENT. THE RESET FIELD IS DISPLAYED ON THE
        OSCILLOSCOPE SCREEN WHEN TRIGGER IS SELECTED IN THE CONTROLS FIELD. IT
        APPLIES A PRE-TRIGGER FUNCTION TO EACH MEASUREMENT.

    :SENSe 'Pos'
           'Neg'
    :SENSe? (Returns quoted string)
        THESE COMMANDS SELECT/QUERY WHETHER TRIGGERING OCCURS ON THE POSITIVE OR
        NEGATIVE-GOING SLOPE OF THE INPUT SIGNAL. THE POS/NEG FIELD IS LOCATED ON
        THE OSCILLOSCOPE SCREEN WHEN TRIGGER IS SELECTED IN THE CONTROLS FIELD.
```

```
:OSC
  :TRIG
    :SOURce 'Internal'
            'Ext (TTL)'
            'Encoder'
    :SOURce? (Returns quoted string)
```

THESE COMMANDS SELECT/QUERY THE TRIGGER SOURCE. THE INTERNAL FIELD IS LOCATED ON THE **OSCILLOSCOPE** SCREEN WHEN TRIGGER IS SELECTED IN THE CONTROLS FIELD.

```
    :TYPE 'Auto'
          'Norm'
    :TYPE? (Returns quoted string)
```

THESE COMMANDS SELECT/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. NORMAL REQUIRES A SPECIFIC TRIGGERING SIGNAL BEFORE TRIGGERING. THE AUTO/NORM FIELD IS LOCATED ON THE **OSCILLOSCOPE** SCREEN WHEN TRIGGER IS SELECTED IN THE CONTROLS FIELD.

Program

The PROGram subsystem provides a set of commands which allow an external controller to generate and control an IBASIC program within the Test Set.

:PROGram

[:SELected]

:DEFine <#0><program><NL><END> (if length of program is not known)
<#><NUM OF DIGITS IN COUNT FIELD><COUNT FIELD: NUM OF DATA BYTES IN PROGRAM>
<PROGRAM DATA BYTES> (if length of program is known)

:DEFine? (Returns <program>)

THIS COMMAND IS USED TO DOWNLOAD AN IBASIC PROGRAM INTO THE TEST SET. 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.

:EXECute <program_command>

THIS COMMAND EXECUTES, FROM AN EXTERNAL CONTROLLER, AN IBASIC COMMAND IN THE TEST SET'S BUILT-IN IBASIC CONTROLLER.

:STATe CONTinue
PAUSe
RUN
STOP

THESE COMMANDS SET, FROM AN EXTERNAL CONTROLLER, THE EXECUTION STATE OF THE IBASIC PROGRAM CURRENTLY LOADED IN THE TEST SET.

:STATe? (Returns program state)

THIS COMMAND QUERIES, FROM AN EXTERNAL CONTROLLER, THE CURRENT EXECUTION STATE OF THE IBASIC PROGRAM CURRENTLY LOADED IN THE TEST SET.

Program

```
:PROG
[:SELected]
  :NUMBer <varname>{,<nvalues>}
    THIS COMMAND SETS, FROM AN EXTERNAL CONTROLLER, THE VALUE OF NUMERIC
    VARIABLES OR ARRAYS IN THE IBASIC PROGRAM CURRENTLY LOADED IN THE
    TEST SET.

  :NUMBer? <varname> (Returns value of <varname>)
    THIS COMMAND QUERIES, FROM AN EXTERNAL CONTROLLER, THE VALUE OF NUMERIC
    VARIABLES OR ARRAYS IN THE IBASIC PROGRAM CURRENTLY LOADED IN THE
    TEST SET.

  :STRing <varname>{,<svalues>}
    THIS COMMAND SETS, FROM AN EXTERNAL CONTROLLER, THE VALUE OF STRING
    VARIABLES OR STRING ARRAYS IN THE IBASIC PROGRAM CURRENTLY LOADED IN THE
    TEST SET.

  :STRing? <varname> (Returns value of <varname>)
    THIS COMMAND QUERIES, FROM AN EXTERNAL CONTROLLER, THE VALUE OF STRING
    VARIABLES OR STRING ARRAYS IN THE IBASIC PROGRAM CURRENTLY LOADED IN THE
    TEST SET.

  :WAIT
  :WAIT? (Returns integer value)

  :DELete
    :ALL
          THIS COMMAND DELETES THE IBASIC PROGRAM CURRENTLY LOADED IN
          THE TEST SET.
```

Radio Interface

```
:RINTerface

  :INTERRUPT1|INT1'ARM'
                'DISABLE'
  :INTERRUPT1|INT1? (Returns quoted string)
       THIS COMMAND ARMS OR DISARMS THE INTERRUPT 1 PIN. WHEN IT IS ARMED, AND THE PIN
       IS PULLED LOW BY AN EXTERNAL DEVICE, TRIGGERED IS DISPLAYED BELOW THE FIELD UNTIL
       THE INTERRUPT IS RE-ARMED.

    :STATus (Returns Armed or Disabled)


  :INTERRUPT1|INT2'ARM'
                'DISABLE'
  :INTERRUPT2|INT2? (Returns quoted string)
       THIS COMMAND ARMS OR DISARMS THE INTERRUPT 1 PIN. WHEN IT IS ARMED, AND THE PIN
       IS PULLED LOW BY AN EXTERNAL DEVICE, TRIGGERED IS DISPLAYED BELOW THE FIELD UNTIL
       THE INTERRUPT IS RE-ARMED.

    :STATus (Returns Armed or Disabled)

  :PARallel

    :CONFigure (See "Integer Number Setting Syntax" on page 157.)
    :CONFigure? (Returns quoted string)
       THIS COMMAND DESIGNATES WHICH OF THE 16 PARALLEL DATA PINS WILL BE USED AS
       INPUTS. A HEXADECIMAL NUMBER FROM 0000 TO FFFF CAN BE ENTERED IN THIE COMMAND.
       0000 = NO PINS AS INPUTS, FFFF = ALL 16 PINS AS INPUTS.

    :INPut
      :DATA? (Returns integer value)
      :READ
       THIS COMMAND DISPLAYS THE VALUE ON THE PARALLEL DATA PINS (PARALLEL DATA IN
       FIELD). THE DATA APPEARS BITWISE, WITH 16 BITS ORGANIZED FROM MSB TO LSB.

    :OUTPut
      :DATA (See "Integer Number Setting Syntax" on page 157.)
      :SEND
         THIS COMMAND CLOCKS THE DATA IN THE OUTPUT DATA FIELD TO THE PARALLEL DATA
         PINS. IT ALSO OUTPUTS A PULSE ON THE STROBE PIN.

      :STRobe'HIGH'
             'LOW'
      :STRobe? (Returns quoted string)
         THIS COMMAND SETS THE POLARITY OF THE PULSE ON THE STROBE PIN. THIS PULSE
         OCCURS WHEN THE SEND DATA FIELD IS SELECTED.
```

```
:RINT
  :SERial

    :INPut
      :COUNT (See “Integer Number Setting Syntax” on page 157.)
      :COUNT? (Returns integer value)

    :OUTPut
      :COUNt (See “Integer Number Setting Syntax” on page 157.)
      :COUNt? (Returns integer value)

      :DATA
      :DATA? (Returns quoted string)

      :SEND
          THIS COMMAND CLOCKS THE DATA IN THE OUTPUT DATA FIELD TO THE PARALLEL DATA
          PINS. IT ALSO OUTPUTS A PULSE ON THE STROBE PIN.

      :STRobe‘HIGH’
             ‘LOW’
      :STRobe? (Returns quoted string)
          THIS COMMAND SETS THE POLARITY OF THE PULSE ON THE STROBE PIN. THIS PULSE
          OCCURS WHEN THE SEND DATA FIELD IS SELECTED.
```

RF Analyzer

:RFANalyzer

:ATTenuator '40 dB'
'20 dB'
'0 dB'
:ATTenuator? (Returns quoted string)
THESE COMMANDS SET/QUERY THE AMOUNT OF INPUT ATTENUATION IN THE PATH OF THE SELECTED INPUT PORT. SETTING THE INPUT ATTEN FIELD TO "HOLD" (CONF:ATT:MODE 'HOLD') PREVENTS THE RF AUTO-RANGING PROCESS FROM CHANGING THE ATTENUATION SETTING. THE INPUT ATTEN FIELD IS FOUND ON THE **CONFIGURE, RF ANALYZER,** AND **SPECTRUM ANALYZER** SCREENS.

:MODE 'Auto'
'Hold'
:MODE? (Returns quoted string)
THESE COMMANDS SET/QUERY THE RF AUTO-RANGING MODE. SETTING THE INPUT ATTEN FIELD TO "HOLD" (CONF:ATT:MODE 'HOLD') PREVENTS THE RF AUTO-RANGING PROCESS FROM CHANGING THE ATTENUATION SETTING.THE INPUT ATTEN FIELD IS FOUND ON THE **CONFIGURE, RF ANALYZER,** AND **SPECTRUM ANALYZER** SCREENS.

:FREQuency (See **"Real Number Setting Syntax" on page 159**, :STATe not included)
THIS COMMAND SETS TUNE FREQUENCY FOR THE RF ANALYZER. THE TUNE FREQ FIELD IS FOUND ON THE **RF ANALYZER** SCREEN **WHEN THE** RF **DISPLAY FIELD ON THE CONFIGURE SCREEN IS SET TO FREQ. THE CENTER FREQ FIELD IS FOUND ON THE SPECTRUM ANALYZER** SCREEN WHEN THE CONTROLS FIELD IS SET TO MAIN, AND THE RF **DISPLAY FIELD ON THE CONFIGURE SCREEN IS SET TO FREQ**.

:GTIMe (See **"Real Number Setting Syntax" on page 159**, :DUNits, :UNITs only)
THIS COMMAND SETS THE GATE TIME FOR THE RF FREQUENCY COUNTER. THE RF CNT GATE FIELD IS FOUND ON THE **RF ANALYZER** SCREEN.

:IFBW '15 kHz'
'230 kHz'
:IFBW? (Returns quoted string)
THESE COMMANDS SET/QUERY THE IF (INTERMEDIATE FREQUENCY) FILTER BANDWIDTH. THE IF FILTER FIELD IS FOUND ON THE **RF ANALYZER** SCREEN.

```
:RFAN
  :INPut 'RF In'
         'Ant'
  :INPut? (Returns quoted string)
         These commands set/query the RF input port. The Input Port
         field is found on the CONFIGURE, TX TEST, and RF ANALYZER screens
         when the PCS Mode field on the CONFIGURE screen is set
         to Off and the power has been cycled to turn PCS mode off. (This field
         is coupled to the RF In/Ant field on the SPECTRUM ANALYZER screen.

  :PMEasurement

    :DETector 'Peak'
              'Sample'
    :DETector? (Returns quoted string)
         These commands set/query the way analog transmitter power measurements
         are made. The TX Pwr Meas field is found on the RF ANALYZER and
         TX TEST screens when the PCS Intr.

    :ZERO
         This command establishes a 0.0000 W reference for measuring RF power
         at the RF IN/OUT por. The TX Pwr Zero field is found on the RF
         ANALYZER and TX TEST screens.

  :SENSitivity 'Normal'
               'High'
  :SENSitivity? (Returns quoted string)

  :SQUelch 'Pot'
           'Open'
           'Fixed'
  :SQUelch? (Returns quoted string)

  :TKEY 'On'
        'Off'
  :TKEY? (Returns quoted string)

  :TMODe 'Auto'
         'Manual'
  :TMODe? (Returns quoted string)
```

RF Generator

:RFGenerator

:ATTenuator'On'
'Off'
:ATTenuator? (Returns quoted string)
These commands set/query the attenuator hold function. Attenuator hold will apply to either the Test Set or the PCS INTERFACE, depending on the current PCS mode. The Atten Hold field is displayed on the **RF GENERATOR, RX TEST, OR DUPLEX TEST** screens.

:AMPLitude (See **"Real Number Setting Syntax" on page 159**)
This command sets the RF generator amplitude. The Amplitude field is found on the **RF GENERATOR, RX TEST, OR DUPLEX TEST** screens. The Amplitude field is found on the **SPECTRUM ANALYZER** screen when the Controls field is set to "RF Gen".

:FM

:COUPling 'AC'
'DC'
:COUPling? (Returns quoted string)
These commands set/query the type of coupling between the MODULATION INPUT rear-panel connector and the RF generator's FM modulator. The FM Coupling field is displayed on the **RFGENERATOR, DUPLEX TEST, AND VARIOUS ENCODER** screens.

:DCZero
This command offsets any DC bias that exists when "DC" is selected in the command above. The DC FM Zero field is found on the **RF GENERATOR** screen.

:RFG

:FREQuency (See **“Real Number Setting Syntax” on page 159**, :STATe not included)

This command sets the RF generator frequency. The frequency entered using this command is applied when the RF Display field on the **CONFIGURE** screen is set to Freq. The RF Gen Freq field is found on the **RX TEST**, and **DUPLEX TEST** screens when the RF Display field on the **CONFIGURE** screen is set to Freq. The RF Gen Freq field is found the RF Display field on the **CONFIGURE** screen is set to Freq. The RF Gen Freq field is found on the **SPECTRUM ANALYZER** screen when the Controls field is set to “RF Gen” and the RF Display field on the **CONFIGURE** screen is set to Freq.

:OUTPut 'RF Out'
'Dupl' (PCS mode “Off”)
'Only' (PCS mode “On”)

:OUTPut? (Returns quoted string)

These commands set/query the RF output port. The Output Port field is found on the **CONFIGURE, RF GENERATOR, DUPLEX TEST, AND RX TEST SCREENS.** The Output Port field is found on the **SPECTRUM ANALYZER SCREEN WHEN THE** Controls field is set to “RF Gen”.

```
:RFG
  :MODulation

    :AOUT 'AC'
          'DC'
    :AOUT? (Returns quoted string)
        THESE COMMANDS SET/QUERY THE TYPE OF COUPLING BETWEEN THE DEMODULATED AUDIO
        AND THE AUDIO OUT FRONT-PANEL CONNECTOR. THE AUDIO OUT FIELD IS
        FOUND ON THE RF GENERATOR SCREEN.

    :EXTernal

      :AM (See "Real Number Setting Syntax" on page 159)
        THIS COMMAND SETS THE AM SENSITIVITY OF THE RF GENERATOR WHEN AM IS
        APPLIED THROUGH THE MODULATION INPUT REAR-PANEL CONNECTOR. THE MOD IN
        TO FIELD IS FOUND ON THE RF GENERATOR SCREEN.

      :DESTination 'AM (/Vpk)'
                   'FM (/Vpk)'
      :DESTination? (Returns quoted string)
            THESE COMMANDS SET/QUERY THE TYPE OF MODULATION THAT WILL BE APPLIED TO THE
            RF GENERATOR, USING THE MODULATION INPUT REAR-PANEL CONNECTOR AS A
            MODULATION SOURCE. THE MOD IN TO FIELD IS FOUND ON THE RF GENERATOR
            SCREEN.

      :FM (See "Real Number Setting Syntax" on page 159)
            THIS COMMAND SETS THE FM SENSITIVITY OF THE RF GENERATOR WHEN FM IS
            APPLIED THROUGH THE MODULATION INPUT REAR-PANEL CONNECTOR. THE MOD IN
            TO FIELD IS FOUND ON THE RF GENERATOR SCREEN.

      :PEMPhasis 'On'
                 'Off'
      :PEMPhasis? (Returns quoted string)
            THESE COMMANDS SET/QUERY THE MICROPHONE PRE-EMPHASIS STATE. THE MIC
            PRE-EMP FIELD IS FOUND ON THE RF GENERATOR SCREEN. THE MIC PRE-EMP
            MODE, (SEE COMMAND BELOW) MUST BE SET TO "HOLD" TO TURN PRE-EMPHASIS OFF.

        :MODE 'Auto'
              'Hold'
        :MODE? (Returns quoted string)
            THESE COMMANDS SET/QUERY THE MICROPHONE PRE-EMPHASIS MODE. THE MIC
            PRE-EMP FIELD IS FOUND ON THE RF GENERATOR SCREEN. THE MIC PRE-EMP
            MODE, MUST BE SET TO "HOLD" TO TURN PRE-EMPHASIS OFF (SEE COMMAND ABOVE).
```

RF Path Control

```
:DGGenerator

  :PATH   'Bypass'
          'IQ'
  :PATH? (Returns quoted string)
```

Save/Recall Registers

```
[:REGister]
   :CLEar <integer_value>|'<character_data>'
     :ALL
   :RECall <integer_value>|'<character_data>'
   :SAVE <integer_value>|'<character_data>'
   :LIST? (Returns quoted string)
```

Special (GPIB Only Commands)

```
:SPECial

  :DISPlay  'LOCKED'
            'UNLOCKED'
  :DISPlay? (Returns quoted string)
      THESE COMMANDS ARE USED TO SPEED UP REMOTE OPERATION BY "LOCKING"
      THE DISPLAY.
```

Spectrum Analyzer

```
:SANalyzer

  :ATTenuator '40 dB'
              '20 dB'
              '0 dB'
  :ATTenuator? (Returns quoted string)

    :MODE 'Auto'
          'Hold'
    :MODE? (Returns quoted string)

  :CFRequency (See "Real Number Setting Syntax" on page 159, :STATe not included)

  :CONTrol 'Main'
           'RF Gen'
           'Marker'
           'Auxiliary'
  :CONTrol? (Returns quoted string)

  :DISPlay
    :SCALe '1 dB/div'
           '2 dB/div'
           '10 dB/div'
    :SCALe? (Returns quoted string)

  :INPut 'RF In'
         'Ant'
  :INPut? (Returns quoted string)

  :MARKer

    :CFRequency

    :NPEak

    :EXCursion (See "Integer Number Setting Syntax" on page 157)

    :NPLevel (See "Real Number Setting Syntax" on page 159, :STATe not included)

    :PEAK

    :POSition (See "Real Number Setting Syntax" on page 159, :STATe not included)

    :RLEVel
```

```
:SAN
  :RFGenerator 'Track'
               'Fixed'
  :RFGenerator? (Returns quoted string)

  :RLEVel (See "Real Number Setting Syntax" on page 159, :STATe not included)

  :SPAN (See "Real Number Setting Syntax" on page 159, :STATe not included)

  :TGENerator

    :AMPLitude (See "Real Number Setting Syntax" on page 159)

    :DESTination  'RF Out'
                  'Dupl'
    :DESTination? (Returns quoted string)

    :OFRequency (See "Real Number Setting Syntax" on page 159, :STATe not included)

    :SWEep 'Norm'
           'Invert'
    :SWEep? (Returns quoted string)

  :TRACe

    :MHOLd 'No Pk/Avg'
           'Pk Hold'
           'Avg 1'
           'Avg 2'
           'Avg 3'
           'Avg 4'
           'Avg 5'
           'Avg 10'
           'Avg 20'
           'Avg 50'
           'Avg 100'
           'Off'
    :MHOLd? (Returns quoted string)

    :NORMalize 'A-Only'
               'A-B'
    :NORMalize? (Returns quoted string)

    :SAVE
```

Status

```
:STATus

  :PRESet

  :CALibration

    :CONDition? (Returns integer value)

    :ENABle <integer_value>
    :ENABle? (Returns integer value)

   [:EVENt]? (Returns integer value)

    :NTRansition <integer_value>
    :NTRansition? (Returns integer value)

    :PTRansition <integer_value>
    :PTRansition? (Returns integer value)

  :COMMunicate

    :CONDition? (Returns integer value)

    :ENABle <integer_value>
    :ENABle? (Returns integer value)

   [:EVENt]? (Returns integer value)

    :NTRansition <integer_value>
    :NTRansition? (Returns integer value)

    :PTRansition <integer_value>
    :PTRansition? (Returns integer value)
```

```
:STAT
  :HARDWARE1|HARD1

    :CONDition? (Returns integer value)

    :ENABle <integer_value>
    :ENABle? (Returns integer value)

   [:EVENt]? (Returns integer value)

    :NTRansition <integer_value>
    :NTRansition? (Returns integer value)

    :PTRansition <integer_value>
    :PTRansition? (Returns integer value)

  :HARDWARE2|HARD2

    :CONDition? (Returns integer value)

    :ENABle <integer_value>
    :ENABle? (Returns integer value)

   [:EVENt]? (Returns integer value)

    :NTRansition <integer_value>
    :NTRansition? (Returns integer value)

    :PTRansition <integer_value>
    :PTRansition? (Returns integer value)
```

```
:STAT
  :OPERation

    :CONDition? (Returns integer value)

    :ENABle <integer_value>
    :ENABle? (Returns integer value)

   [:EVENt]? (Returns integer value)

    :NTRansition <integer_value>
    :NTRansition? (Returns integer value)

    :PTRansition <integer_value>
    :PTRansition? (Returns integer value)

  :QUEStionable

    :CONDition? (Returns integer value)

    :ENABle <integer_value>
    :ENABle? (Returns integer value)

   [:EVENt]? (Returns integer value)

    :NTRansition <integer_value>
    :NTRansition? (Returns integer value)

    :PTRansition <integer_value>
    :PTRansition? (Returns integer value)

  :MEASuring

    :CONDition? (Returns integer value)

    :ENABle <integer_value>
    :ENABle? (Returns integer value)

   [:EVENt]? (Returns integer value)

    :NTRansition <integer_value>
    :NTRansition? (Returns integer value)

    :PTRansition <integer_value>
    :PTRansition? (Returns integer value)
```

```
:STAT
  :CALLProc

    :CONDition? (Returns integer value)

    :ENABle <integer_value>
    :ENABle? (Returns integer value)

   [:EVENt]? (Returns integer value)

    :NTRansition <integer_value>
    :NTRansition? (Returns integer value)

    :PTRansition <integer_value>
    :PTRansition? (Returns integer value)
```

System

```
:SYSTem
 [:ERRor]? (Returns integer value followed by quoted string)
```

Tests

```
:TESTs

   :COMMENT1|COMM1 '<character_data>'
            50 CHARACTERS MAX. VALID CHARS: ABCDEFGHIJKLMNOPQRSTUVWXYZ_0123456789
            abcdefghijklmnopqrstuvwxyz!"#$%&'()*+,-./:;<=>?@[\]^'{|}~
   :COMMENT1?|COMM1? (Returns quoted string)

   :COMMENT2|COMM2 '<character_data>'
            50 CHARACTERS MAX. VALID CHARS: ABCDEFGHIJKLMNOPQRSTUVWXYZ_0123456789
            abcdefghijklmnopqrstuvwxyz!"#$%&'()*+,-./:;<=>?@[\]^'{|}~
   :COMMENT2?|COMM2? (Returns quoted string)

   :CONFigure|CNFG <integer_value>,'<character_data>','<character_data>',
                   <integer_value>,'<character_data>'
   :CONFigure?|CNFG? <integer_value>
         (Returns unquoted string of 5 elements separated by commas)

   :EXECution

     :DESTination 'Crt
                  'Printer'
     :DESTination? (Returns quoted string)

     :FAILure 'Continue'
              'Stop'
     :FAILure? (Returns quoted string)

     :HEADING1|HEAD1 '<character_data>'
            50 CHARACTERS MAX. VALID CHARS: ABCDEFGHIJKLMNOPQRSTUVWXYZ_0123456789
            abcdefghijklmnopqrstuvwxyz!"#$%&'()*+,-./:;<=>?@[\]^'{|}~
     :HEADING1?|HEAD1? (Returns quoted string)

     :HEADING2|HEAD2 '<character_data>'
            50 CHARACTERS MAX. VALID CHARS: ABCDEFGHIJKLMNOPQRSTUVWXYZ_0123456789
            abcdefghijklmnopqrstuvwxyz!"#$%&'()*+,-./:;<=>?@[\]^'{|}~
     :HEADING2?|HEAD2? (Returns quoted string)

     :RESults 'All'
              'Failures'
     :RESults? (Returns quoted string)

     :RUN  'Continuous'
           'Single Step'
     :RUN? (Returns quoted string)
```

```
:TEST
  :FREQuency  <integer_value>,<real_value>,’<character_data>’,<real_value>,
              ’<character_data>’,’YES|NO’,’YES|NO’
  :FREQuency? <integer_value>
      (Returns unquoted string of7 elements separated by commas)

  :LIBRary? (Returns unquoted string of 3 elementsseparated by commas)

  :PARMameter|PARameter

    [:NUMBer] <integer_value>,<real_value>
    [:NUMBer]? <integer_value>
        (Returns unquoted string of 2 elements separated by commas)

    :STRing ’<character_data>’,<real_value>
    :STRing? ’<character_data>’
        (Returns unquoted string of 2 elements separated by commas)

  :PROCedure

    :AUTostart|AUTO ’ON’
                    ’OFF’
    :AUTostart?|AUTO? (Returns quoted string)

    :LOCation ’RAM’
              ’ROM’
              ’CARD’
              ’Disk’
    :LOCation? (Returns quoted string)

    :NAME ’<character_data>’
            (10 CHARACTERS MAX. VALID CHARS:ABCDEFGHIJKLMNOPQRSTUVWXYZ_0123456789
    :NAME? (Returns quoted string)

    :RUN

    :RUNTest
```

```
:TEST
  :SEQNumber
    [:NUMBer] <integer_value>,'<character_data>'
        249 CHARACTERS MAX. VALID CHARACTERS: 0123456789,YN
    [:NUMBer]? <integer_value>
        (Returns unquoted string of 3 elements separated by commas)

  :SPEC

    [:NUMBer] <integer_value>,<real_value>,<real_value>,'Upper|Lower|Both|None'
    [:NUMBer]? <integer_value>
        (Returns unquoted string of 4 elements separated by commas)

    :STRing '<character_data>',<real_value>,<real_value>,'Upper|Lower|Both|None'
    :STRing? '<character_data>'
            (Returns unquoted string of 4 elements separated by commas)
```

Trigger

```
:TRIGger

 [:IMMediate]
            THIS COMMAND TRIGGERS ALL ACTIVE MEASUREMENTS.
  :ABORt
        THIS COMMAND ENDS A MEASUREMENT CYCLE IN PROGRESS.

  :ASTate 'Arm'
          'Disarm'
        THESE COMMANDS TRIGGER/ABORT ALL ACTIVE MEASUREMENTS.
  :ASTate? (Returns quoted string)

  :MODE

    :RETRigger REPetitive
               SINGle
    :RETRigger? (Returns unquoted string)
        THESE COMMANDS SET/QUERY THE TRIGGER MODE. REPETITIVE TRIGGER
        MODE CAUSES THE TEST SET TO AUTOMATICALLY BEGIN A NEW
        MEASUREMENT CYCLE EACH TIME A MEASUREMENT CYCLE ENDS. SINGLE
        TRIGGER MODE CAUSES THE TEST SET TO WAIT FOR A TRIGGER (TRIG)
        COMMAND BEFORE BEGINNING A NEW MEASUREMENT CYCLE.

    :SETTling FAST
              FULL
    :SETTling? (Returns unquoted string)
        THESE COMMANDS SET/QUERY THE TRANSIENT SETTLING MODE.
```

Integer Number Setting Syntax

```
:Previous Syntax<integer_value>
:Previous Syntax? (Returns integer value)

      #B<binary integer_value> (Max 32 bits, ex.: #B10101010)
      #O<octal integer_value>
      #H<hexidecimal integer_value>

  :INCRement UP|DOWN
  :INCRement? (Returns integer value)
```

Real Number Setting Syntax

```
:Previous Syntax<real_value>[display unit_of_measure] (ex: -75 or -75dBm)
:Previous Syntax? (Returns real value)

  :DUNits <display unit_of_measure>
  :DUNits? (Returns display units)

  :UNITs <GPIB unit_of_measure>
  :UNITs? (Returns GPIB units)

  :STATe 1|ON
         0|OFF
  :STATe? (Returns 1 or 0)

  :INCRement <incr_value>[display unit_of_meas] (ex:3.5 or 3.5dBm)
  :INCRement UP|DOWN
  :INCRement? (Returns increment value)

  :DUNits <display unit_of_measure>
  :DUNits? (Returns INCRement display units)

  :MODE LINear|LOGarithm
  :MODE? (Returns LIN or LOG)

  :MULTiply (Multiplies current setting by 10)

  :DIVide (Divides current setting by 10)
```

Multiple Real Number Setting Syntax

```
:Previous Syntax<integer_value>,<real_value>[display unit_of_measure]
:Previous Syntax? <integer_value> (Returns real value)

  :DUNits <integer_value>,<display unit_of_measure>
  :DUNits? <integer_value> (Returns display unit_of_measure)

  :UNITs <integer_value>,<GPIB unit_of_measure>
  :UNITs? <integer_value> (Returns GPIB unit_of_measure)

  :INCRement <integer_value>,<incr_value>[display unit_of_meas]
  :INCRement <integer_value>,UP|DOWN
  :INCRement? <integer_value> (Returns increment value)

  :DUNits <integer_value>,<display unit_of_measure>
  :DUNits? <integer_value> (Returns display unit_of_measure)

  :MODE <integer_value>,LINear|LOGarithm
  :MODE? <integer_value> (Returns LIN or LOG)

  :MULTiply <integer_value>

  :DIVide <integer_value>
```

Number Measurement Syntax

```
:Previous Syntax

  :STATe 1|ON
         0|OFF
  :STATe? (Returns 1 or 0)

  :DUNits <display unit_of_measure>
  :DUNits? (Returns display unit_of_measure)

  :UNITs <GPIB unit_of_measure>
  :UNITs? (Returns GPIB unit_of_measure)

  :AUNits <Annunicator unit_of_measure>
  :AUNits? (Returns annunicator unit_of_measure)

  :AVERage[:VALue] <real_value>
  :AVERage[:VALue]? (Returns number of averages setting)

    :RESet

    :STATe 1|ON
           0|OFF
    :STATe? (Returns 1 or 0)

  :REFerence

   [:VALue] <real_value>[GPIB unit_of_measure for relative level]
   [:VALue]? (Returns reference value)

    :DUNits <display unit_of_measure>
    :DUNits? (Returns display unit_of_measure)

    :STATe 1|ON
           0|OFF
    :STATe? (Returns 1 or 0)

  :HLIMit

   [:VALue] <real_value>[display unit_of_measure]
   [:VALue]? (Returns real value)

    :DUNits <display unit_of_measure>
    :DUNits? (Returns display unit_of_measure)

    :RESet
```

```
:Previous Syntax
  :HLIM
    :EXCeeded? (Returns 1 or 0)

    :STATe1|ON
      0|OFF
    :STATe? (Returns 1 or 0)

  :LLIMit

   [:VALue] <real_value>[display unit_of_measure]
   [:VALue]? (Returns real value)

    :DUNits <display unit_of_measure>
    :DUNits? (Returns display unit_of_measure)

    :RESet

    :EXCeeded? (Returns 1 or 0)

    :STATe 1|ON
           0|OFF
    :STATe? (Returns 1 or 0)

  :METer

   [:STATe] 1|ON
            0|OFF
   [:STATe]? (Returns 1 or 0)

    :HEND <real_value>[display unit_of_measure]
    :HEND? (Returns real value)

      :DUNits <display unit_of_measure>
      :DUNits? (Returns display unit_of_measure)

    :LEND <real_value>[display unit_of_measure]
    :LEND? (Returns real value)

      :DUNits <display unit_of_measure>
      :DUNits? (Returns display unit_of_measure

    :INTerval <integer_value>
    :INTerval? (Returns integer value)
```

Multiple Number Measurement Syntax

```
:Previous Syntax

  :DUNits <display unit_of_measure>
  :DUNits? (Returns display unit_of_measure)

  :UNITs <GPIB unit_of_measure>
  :UNITs? (Returns GPIB unit_of_measure)

  :STATe 1|ON
         0|OFF
  :STATe? (Returns 1 or 0)
```

3

GPIB Common Commands

IEEE 488.2 Common Commands

The IEEE 488.2 Standard defines a set of common commands which provide for uniform communication between devices on the GPIB. These commands are common to all instruments which comply with the IEEE 488.2 Standard. These commands control some of the basic instrument functions, such as instrument identification, instrument reset, and instrument status reporting.

The following common commands are implemented in the Test Set:

Table 2 Test Set IEEE 488.2 Common Commands

Mnemonic	Command Name
*CLS	Clear Status Command
*ESE	Standard Event Status Enable Command
*ESE?	Standard Event Status Enable Query
*ESR?	Standard Event Status Register Query
*IDN?	Identification Query
*OPC	Operation Complete Command
*OPC?	Operation Complete Query
*OPT?	Option Identification Query
*PCB	Pass Control Back Command
*RCL	Recall Command
*RST	Reset Command
*SAV	Save Command
*SRE	Service Request Enable Command
*SRE?	Service Request Enable Query
*STB?	Read Status Byte Query
*TRG	Trigger Command
*TST?	Self-Test Query
*WAI	Wait-To-Continue Command

Common Command Descriptions

*IDN? (Identification Query)

"Example program" on page 169

The *IDN? query causes a device to send its identification information over the bus. The Test Set responds to the *IDN? command by placing its identification information, in ASCII format, into the Output Queue. The response data is obtained by reading the Output Queue into a string variable of length 72. The response data is organized into four fields separated by commas. The field definitions are described in Table 3.

Table 3 Device Identification

Field	Contents	Typical Response from Test Set	Comments
1	Manufacturer	Agilent Technologies	
2	Model	8920B	
3	Serial Number	US12345678	ASCII character "0", decimal value 48, if not available
4	Firmware Revision Level	A.02.04	ASCII character "0", decimal value 48,if not available

NOTE: The Serial Number format can take one of two forms:

```
AAXXXXXXXX
or
XXXXAXXXXX
```

A = alpha character
X = numeric character

The form returned will depend upon the manufacturing date of the Test Set being queried.

Example program

```
10 DIM A$[72]
20 OUTPUT 714;"*IDN?"
30 ENTER 714;A$
40 PRINT A$
50 END
```

Example response

```
Agilent Technologies,8920B,US35210066,A.02.31
```

*OPT? (Option Identification Query)

“Example program” on page 170

The *OPT? command tells the Test Set to identify any reportable device options or filters installed in the unit. The Test Set responds to the *OPT? command by placing information which describes any reportable installed options into the Output Queue. The data is in ASCII format. The response data is obtained by reading the Output Queue into a string variable. The response data is organized into fields separated by commas.

Example program

```
10 DIM A$[255]
20 OUTPUT 714;"*OPT?"
30 ENTER 714;A$
40 PRINT A$
50 END
```

Example response

```
CCITT,6KHZ BPF
```

*RST (Reset)

The *RST command resets the Test Set. When the *RST command is received the majority of fields in the Test Set are “restored” to a default value, some fields are “maintained” at their current state and some are “initialized” to a known state. Other operational characteristics are also affected by the *RST command as follows:

- All pending operations are aborted.
- The Test Set’s display screen is in the UNLOCKED state.
- Measurement triggering is set to TRIG:MODE:SETT FULL;RETR REP.
- Any previously received Operation Complete command (*OPC) is cleared.
- Any previously received Operation Complete query command (*OPC?) is cleared.
- The power-up self-test diagnostics are not performed.
- The contents of the SAVE/RECALL registers are not affected.
- Calibration data is not affected.
- The GPIB interface is not reset (any pending Service Request is not cleared).
- All Enable registers are unaffected: Service Request, Standard Event, Communicate, Hardware #1, Hardware #2, Operation, Calibration, and Questionable Data/Signal.
- All Negative Transition Filter registers are unaffected: Communicate, Hardware #1, Hardware #2, Operational, Calibration, and Questionable Data/Signal.
- All Positive Transition Filter registers are unaffected: Communicate, Hardware #1, Hardware #2, Operational, Calibration, and Questionable Data/Signal.
- The contents of the RAM memory are unaffected.
- The contents of the Output Queue are unaffected.
- The contents of the Error Queue are unaffected.

*TST? (Self-Test Query)

"Example program" on page 171

The *TST? self-test query causes the Test Set to execute a series of internal self-tests and place a numeric response into the Output Queue indicating whether or not the Test Set completed the self-test without any detected errors. The response data is obtained by reading the Output Queue into a numeric variable, real or integer. Upon successful completion of the self-test the Test Set settings are restored to their values prior to receipt of the *TST? command. The numeric response definition is as shown in Table 4.

Table 4 Self-Test Response

Detected Error	Returned Error Code (Decimal)	Error Code Displayed on Test Set's CRT (Hexadecimal)
None (all self-tests passed)	0	0000
68000 Processor Failure	2	0002
ROM Checksum Failure	4	0004
Standard Non-Volatile System RAM Failure	8	0008
Non-Volatile System RAM Failure	16	0010
6840 Timer Chip Failure	32	0020
Real-time Clock Chip Failure	64	0040
Keyboard Failure (stuck key)	128	0080
RS-232 Chip (I/O option installed and not functioning correctly)	256	0010
Serial Bus Communications Failure with a Standard Board	512	0200
Signaling Board Self-Test Failure	1024	0400
CRT Controller Self-Test Failure	2048	0800
Miscellaneous Hardware Failure	4096	1000

Example program

```
10 INTEGER Slf_tst_response
20 OUTPUT 714;"*TST?"
30 ENTER 714;Slf_tst_respons
40 PRINT Slf_tst_respons
50 END
```

Example response

```
512
```

*OPC (Operation Complete)

"Example program: Using *OPC to generate a Service Request" on page 173
"Example program: Using *OPC through polling of the Standard Event Status Register" on page 173

The *OPC command allows for synchronization between the Test Set and an external controller. The *OPC command causes the Test Set to set bit 0, Operation Complete, in the Standard Event Status Register to the TRUE, logic 1, state when the Test Set completes all pending operations. Detection of the Operation Complete message can be accomplished by continuous polling of the Standard Event Status Register using the *ESR? common query command. However, using a service request eliminates the need to poll the Standard Event Status Register thereby freeing the controller to do other useful work.

NOTE: The *OPC command does not necessarily cause bit 0 in the Standard Event Status Register to be set true immediately following a measurement completion or the completion of a state or condition change in the Test Set. The instrument control processor is able to query the signal measurement instrumentation to determine if a measurement cycle has completed. However, the instrument control processor is not able to query the signal generation instrumentation to determine if the signal(s) have settled. In order to ensure that all signals have settled to proper values, the instrument control processor initiates a *one-second delay* upon receipt of the *OPC, *OPC? and *WAI commands. In parallel with the one-second timer the instrument control processor commands all active measurements to tell it when the measurement(s) are done. If an active (on) measurement displays four dashes (----) and the Test Set is configured with a PCS Interface, the *OPC, *OPC? and *WAI commands are never "done". Turn off any measurements that may cause this condition, or command the Test Set to single trigger mode. If the Test Set is not configured with a PCS Interface, and an active measurement displays four dashes (----), the conditions required to satisfy *OPC, *OPC? and *WAI commands may be satisfied, but a valid measurement result will not be obtained.It is only when all active measurements are done and the one-second timer has elapsed, that the *OPC, *OPC? and *WAI commands are satisfied. Many state changes or measurement cycles take much less than one second. For this reason, *OPC should not be used when program execution speed is an issue.

CAUTION: The *OPC command should *not* be used for determining if a call processing state command has completed successfully. Using the *OPC command with a Call Processing Subsystem state command results in a deadlock condition.

For example, the following command sequence should not be used:

```
OUTPUT 714;"CALLP:ACTive;*OPC"
```

The *OPC command should not be used with any of the following Call Processing Subsystem commands: :ACTive, :REGister, :PAGE, :HANDoff, :RELease.

CAUTION: The Call Processing Subsystem Status Register Group should be used to control program flow.

Example program: Using *OPC to generate a Service Request

```
10  OUTPUT 714;"*SRE 32" ! Enable SRQ on events in the Standard Event Status Register
20 OUTPUT 714;"*ESE 1" ! Enable Operation Complete bit in Standard Event Status Register
30  ON INTR 7,15 CALL Srvice_interupt ! Set up interrupt
40  ENABLE INTR 7;2 ! Enable SRQ interrupts
50  OUTPUT 714;"DISP RFG;RFG:OUTP 'Dupl';AMPL 0 dBm;FREQ 320 MHz;*OPC"
60  LOOP ! Dummy loop to do nothing
70    DISP "I am in a dummy loop."
80  END LOOP
90  END
100 SUB Srvice_interupt
110  PRINT "All operations complete."! Note: This interrupt service routine is
120  !not complete. Refer to "Status Byte/Service Request Enable Register" in
130  !Status Reporting in the Agilent 8920B Programmer's Guide for complete information.
140 SUBEND
```

The above program enables bit 0 in the Standard Event Status Enable Register and also bit 5 in the Service Request Enable Register so that the Test Set will request service whenever the OPC event bit becomes true. After the service request is detected the program can take appropriate action.

Refer to "Status Byte Register" and "Service Request Enable Register" in the Advanced Operations chapter of the *Agilent 8920B Programmer's Guide* for further information.

Example program: Using *OPC through polling of the Standard Event Status Register

```
10 INTEGER Stdevnt_reg_val
20 OUTPUT 714;"DISP RFG;RFG:OUTP 'Dupl';AMPL 0 dBm;FREQ 320 MHz;*OPC"
30 LOOP
40  OUTPUT 714;"*ESR?"                ! Poll the register
50  ENTER 714;Stdevnt_reg_val
60  EXIT IF BIT(Stdevnt_reg_val,0)    ! Exit if Operation Complete bit set
70 END LOOP
80 PRINT "All operations complete."
90 END
```

*OPC? (Operation Complete Query)

The *OPC? query allows for synchronization between the Test Set and an external controller by reading the Output Queue or by polling the Message Available (MAV) bit in the Status Byte Register. The *OPC? query causes the Test Set to place an ASCII character, 1, into its Output Queue when the Test Set completes all pending operations. A consequence of this action is that the MAV bit in the Status Byte Register is set to the 1 state.

"Using the *OPC? query by reading Output Queue" on page 175
"Using the *OPC? query to set the MAV bit in the Status Byte Register" on page 175

NOTE: The Test Set contains signal generation and signal measurement instrumentation. The instrument control processor is able to query the signal measurement instrumentation to determine if a measurement cycle has completed. However, the instrument control processor is not able to query the signal generation instrumentation to determine if the signal(s) have settled. In order to ensure that all signals have settled to proper values, the instrument control processor initiates a one-second delay upon receipt of the *OPC, *OPC? and *WAI commands. In parallel with the one-second timer the instrument control processor commands all active measurements to tell it when the measurement(s) are done. When all active measurements are done and the one-second timer has elapsed, the *OPC, *OPC? and *WAI commands are satisfied.

CAUTION: The *OPC? command should *not* be used for determining if a Call Processing Subsystem state command has completed successfully. Call Processing Subsystem states do not complete, a state is either active or not active. Using the *OPC? command with a Call Processing Subsystem state command results in a deadlock condition. The control program will continuously query the Output Queue for a 1 but the 1 will never be placed in the Output Queue because the command never 'completes'.

For example, the following command sequence should not be used:

```
OUTPUT 714;"CALLP:ACTive;*OPC?"
```

The *OPC? command should not be used with any of the following Call Processing Subsystem commands: :ACTive, :REGister, :PAGE, :HANDoff, :RELease.

The Call Processing Subsystem Status Register Group should be used to control program flow.

Using the *OPC? query by reading Output Queue

Bit 4 in the Service Request Enable Register is set to a value of zero (disabled). The *OPC? query is sent to the Test Set at the end of a command message data stream. The application program then attempts to read the *OPC? query response from the Test Set's Output Queue. The Test Set will not put a response to the *OPC? query into the Output Queue until the commands have all finished.

NOTE: Reading the response to the *OPC? query has the penalty that both the GPIB bus and the Active Controller handshake are in temporary holdoff state while the Active Controller waits to read the *OPC? query response from the Test Set.

Example program

```
10 INTEGER Output_que_val
20 OUTPUT 714;"*SRE 0"! Disable Service Requests
30 OUTPUT 714;"DISP RFG;RFG:OUTP 'Dupl';AMPL 0 dBm;FREQ 320 MHz;*OPC?"
40 ENTER 714;Output_que_val ! Program will wait here until all
50                          ! operations complete
60 PRINT "All operations complete."
70 END
```

Using the *OPC? query to set the MAV bit in the Status Byte Register

Bit 4 in the Service Request Enable Register is set to a value of 1 (enabled). The *OPC? query is sent to the Test Set at the end of a command message data stream. The Test Set will request service when the MAV bit in the Status Byte register is set to the TRUE, logic 1, state. After the service request is detected the application program can take appropriate action.

Refer to "Status Byte Register" and "Service Request Enable Register" in the Advanced Operations chapter of the *Agilent 8920B Programmer's Guide* for further information.

Example program

```
10  OUTPUT 714;"*SRE 16"              ! Enable SRQ on data available in
20                                    ! Output Queue (MAV bit)
30  ON INTR 7,15 CALL Srvice_interupt  ! Set up interrupt
40  ENABLE INTR 7;2                   ! Enable SRQ interrupts
50  OUTPUT 714;"DISP RFG;RFG:OUTP 'Dupl';AMPL 0 dBm;FREQ 320 MHz;*OPC?"
60  LOOP                              ! Dummy loop to do nothing
70   DISP "I am in a dummy loop."
80  END LOOP
90  END
100 SUB Srvice_interupt
110  ENTER 714;Output_que_val         ! Read the 1 returned by the *OPC?
120                                   ! query command
130  PRINT "All operations complete."
140  ! Note:
150  ! This interrupt service routine is not complete.
160  ! Refer to "Status Byte/Service Request Enable Register" in
170  !Status Reporting in the Agilent 8920B Programmer's Guide .
180 SUBEND
```

*WAI (Wait To Complete)

The *WAI command stops the Test Set from executing any further commands or queries until all commands or queries preceding the *WAI command have completed.

Example statement

```
OUTPUT 714;"DISP RFG;RFG:OUTP 'Dupl';*WAI;AMPL 0 dBm"
```

NOTE: The Test Set contains signal generation and signal measurement instrumentation. The instrument control processor is able to query the signal measurement instrumentation to determine if a measurement cycle has completed. However, the instrument control processor is not able to query the signal generation instrumentation to determine if the signal(s) have settled. In order to ensure that all signals have settled to proper values, the instrument control processor initiates a one-second delay upon receipt of the *OPC, *OPC? and *WAI commands. In parallel with the one-second timer the instrument control processor commands all active measurements to tell it when the measurement(s) are done. When all active measurements are done and the one-second timer has elapsed, the *OPC, *OPC? and *WAI commands are satisfied.

CAUTION: The *WAI command should *not* be used for determining if a Call Processing Subsystem state command has completed successfully. Call Processing Subsystem states do not complete, a state is either active or not active. Using the *WAI command with a Call Processing Subsystem state command results in a deadlock condition. The Test Set will not process any further GPIB commands until the Call Processing Subsystem command preceding the *WAI command completes but the command never 'completes'.

For example, the following command sequence should not be used:

```
OUTPUT 714;"CALLP:ACTive;*WAI;:CALLP:REGister"
```

The *WAI command should not be used with any of the following Call Processing Subsystem commands: :ACTive, :REGister, :PAGE, :HANDoff, :RELease.

The Call Processing Subsystem Status Register Group should be used to control program flow.

*CLS (Clear Status)

The *CLS command clears the contents (sets all bits to zero) of all Event Registers summarized in the Status Byte. The *CLS command also empties all queues (removes all current messages) which are summarized in the Status Byte, except the Output Queue. The following Event Registers are affected:

Hardware 1 Status Register
Hardware 2 Status Register
Questionable Data/Signal Register
Standard Event Status Register
Operational Status Register
Calibration Status Register
Communicate Status Register

The Following message queues are affected:

Error Message Queue

NOTE: The *CLS command does not clear the contents of the Message screen which is displayed on the CRT when SHIFT, RX is selected. This display is only cleared when the unit is powered on.

*ESE (Standard Event Status Enable)

The Test Set responds to the *ESE command. See “Standard Event Status Register Group” in the Advanced Operations chapter of the *Agilent 8920B Programmer’s Guide* for a detailed explanation of the *ESE command.

*ESE? (Standard Event Status Enable Query)

The Test Set responds to the *ESE? command. See “Standard Event Status Register Group” in the Advanced Operations chapter of the *Agilent 8920B Programmer’s Guide* for a detailed explanation of the *ESE? command.

*ESR? (Standard Event Status Register Query)

The Test Set responds to the *ESR? command. See “Standard Event Status Register Group” in the Advanced Operations chapter of the *Agilent 8920B Programmer’s Guide* for a detailed explanation of the *ESR? command.

*PCB (Pass Control Back)

The Test Set accepts the *PCB command. Refer to “Passing Instrument Control” in the Advanced Operations chapter of the *Agilent 8920B Programmer’s Guide*.

*SRE (Service Request Enable)

The Test Set responds to the *SRE command. See “Status Byte Register” and “Service Request Enable Register” in the Advanced Operations chapter of the *Agilent 8920B Programmer’s Guide* for a detailed explanation of the *SRE command.

*SRE? (Service Request Enable Query)

The Test Set responds to the *SRE? command. See “Status Byte Register” and “Service Request Enable Register” in the Advanced Operations chapter of the *Agilent 8920B Programmer’s Guide* for a detailed explanation of the *SRE? command.

*STB? (Status Byte Query)

The Test Set responds to the *STB? command. See “Status Byte Register” and “Service Request Enable Register” in the Advanced Operations chapter of the *Agilent 8920B Programmer’s Guide* for a detailed explanation of the *STB? command.

*TRG (Trigger)

The *TRG command is equivalent to the IEEE 488.1 defined Group Execute Trigger (GET) message and has the same effect as a GET when received by the Test Set. The Test Set responds to the *TRG command by triggering all currently active measurements.

*RCL
(Recall Instrument State)

The *RCL command restores the state of the Test Set from a file previously stored in battery-backed internal memory, on a memory card, on a RAM disk, or on an external disk. The *RCL command is followed by a decimal number in the range of 0 to 99 which indicates which Test Set SAVE/RECALL file to recall. The mass storage location for SAVE/RECALL files is selected using the **SAVE/RECALL** field on the I/O CONFIGURE screen.

The *RCL command cannot be used to recall files with names which contain non-numeric characters or a decimal number greater than 99. To recall SAVE/RECALL files saved with names which contain non-numeric characters or a decimal number greater than 99, use the REG:RECall filename command (see RECALL in the “Equivalent Front-Panel Key Commands” section of chapter 4 of the *Agilent 8920B Programmer’s Guide*).

*SAV
(Save Instrument State)

The *SAV command saves the present state of the Test Set into a file in battery-backed internal memory, on a memory card, on a RAM disk, or on an external disk. The *SAV command is followed by a decimal number in the range of 0 to 99 which indicates the name of the stored SAVE/RECALL file. The mass storage location for SAVE/RECALL files is selected using the **SAVE/RECALL** field on the I/O CONFIGURE screen.

The *SAV command cannot be used to save the present state of the Test Set to a file with a name which contains non-numeric characters or a decimal number greater than 99. To save the present state of the Test Set to a file with a name which contains non-numeric characters or a decimal number greater than 99, use the REG:SAVE filename command (see SAVE in the “Equivalent Front-Panel Key Commands” section of chapter 4 of the *Agilent 8920B Programmer’s Guide*).

4

Remote Capabilities

Remote Capabilities Table of Contents

Remote Operating Capabilities

Remote Operating Configurations

The general purpose interface bus (GPIB) an implementation of the IEEE 488.1-1987 Standard Digital Interface for Programmable Instrumentation. Incorporation of the GPIB into the Test Set provides several valuable remote operating configurations:

- Programs running in the Test Set's built-in IBASIC Controller can control all the Test Set's functions using its internal GPIB. This capability provides a single-instrument automated test system. (The Agilent 11807 Radio Test Software utilizes this capability.)
- Programs running in the Test Set's built-in IBASIC Controller can control other instruments connected to the external GPIB.
- An external controller, connected to the external GPIB, can remotely control the Test Set.
- A GPIB printer, connected to the external GPIB, can be used to print test results and full screen images.

Remote Interface Functions

Interface Functions

The interface functions that the Test Set implements are listed in Table 5.

Table 5 Test Set IEEE 488.1 Interface Function Capabilities

Function	Capability
Talker	T6: No Talk Only Mode
Extended Talker	T0: No Extended Talker Capability
Listener	L4: No Listen Only Mode
Extended Listener	LE0: No Extended Listener Capability
Source Handshake	SH1: Complete Capability
Acceptor Handshake	AH1: Complete Capability
Remote/Local	RL1: Complete Capability
Service Request	SR1: Complete Capability
Parallel Poll	PP0: No Parallel Poll Capability
Device Clear	DC1: Complete Capability
Device Trigger	DT1: Complete Capability
Controller	C1: System Controller C3: Send REN C4: Respond to SRQ C11: No Pass Control to Self, No Parallel Poll
Drivers	E2: Tri-State Drivers

Interface Messages

The remote interface message capabilities of the Test Set and the associated IEEE 488.1 messages and control lines are listed in **Table 6**.

Table 6 Test Set IEEE 488.1 Interface Message Capability

Message Type	Implemented	Response	IEEE 488.1 Message
Data	Yes	All front-panel functions, except as listed in "Non-Programmable Front-Panel Functions" in the *Agilent 8920B Programmer's Guide*, are programmable. The Test Set can send status byte, message and setting information. All measurement results (except dashed - - - - displays) and error messages are available through the bus.	DAB END MTA MLA OTA
Remote	Yes	Remote programming mode is entered when the Remote Enable (REN)bus control line is true and the Test Set is addressed to listen. The "R" annunciator will appear in the upper right corner of the display screen when the Test Set is in remote mode. All front panel keys are disabled (except for the LOCAL key, POWER switch, Volume control and Squelch control).When the Test Set enters remote mode the output signals and internal settings remain unchanged, except that triggering is reset to the state it was last set to in remote mode (Refer to "Triggering Measurements" in the *Agilent 8920B Programmer's Guide*.)	REN MLA
Local	Yes	The Test Set returns to local operation (full front-panel control) when either the Go To Local (GTL) bus command is received, the front panel LOCAL key is pressed or the REN line goes false. When the Test Set returns to local mode the output signals and internal settings remain unchanged, except that triggering is reset to TRIG:MODE:SETT FULL:RETR REP.The LOCAL key will not function if the Test Set is in the local lockout mode.	GTL MLA
Local Lockout	Yes	Disables all front panel keys including the LOCAL key. Only the System Controller or the POWER switch can return the Test Set to local mode (front panel control).	LLO
Clear Lockout/ Set Local	Yes	The Test Set returns to local mode (front panel control) and local lockout is cleared when the REN bus control line goes false. When the Test Set returns to local mode the output signals and internal settings remain unchanged, except that triggering is set to TRIG:MODE:SETT FULL:RETR REP.	REN
Service Request	Yes	The Test Set sets the Service Request (SRQ) bus line true if any of the enabled conditions in the Status Byte Register, as defined by the Service Request Enable Register, are true.	SRQ

Table 6 Test Set IEEE 488.1 Interface Message Capability (Continued)

Message Type	Implemented	Response	IEEE 488.1 Message
Status Byte	Yes	The Test Set responds to a Serial Poll Enable (SPE) bus command by sending an 8-bit status byte when addressed to talk. Bit 6 will be true, logic 1, if the Test Set has sent the SRQ message	SPE SPD STB MTA
Status Bit	No	The Test Set does not have the capability to respond to a Parallel Poll.	PPE PPD PPU PPC IDY
Clear	Yes	Clears the Input Buffer and Output Queue, clears any commands in process, puts the Test Set into the Operation Complete idle state and prepares the Test Set to receive new commands. The Device Clear (DCL) or Selected Device Clear(SDC) bus commands do not change any settings or stored data (except as noted previously), interrupt front panel I/O, interrupt any Test Set operation in progress (except as noted previously), or change the contents of the Status Byte Register (other than clearing the MAV bit as a consequence of clearing the Output Queue). The Test Set responds equally to DCL or SDC bus commands.	DCL SDC MLA
Trigger	Yes	If in remote programming mode and addressed to listen, the Test Set makes a triggered measurement following the trigger conditions currently in effect in the instrument. The Test Set responds equally to the Group Execute Trigger (GET) bus command or the *TRG Common Command.	GET MLA
Take Control	Yes	The Test Set begins to act as the Active Controller on the bus.	TCT MTA
Abort	Yes	The Test Set stops talking and listening	IFC

Conformance to the IEEE 488.1-1987 Standard

For all IEEE 488.1 functions implemented, the Test Set adheres to the rules and procedures as outlined in that Standard.

Conformance to the IEEE 488.2-1987 Standard

For all IEEE 488.2 functions implemented, the Test Set adheres to the rules and procedures as outlined in that Standard with the exception of the *OPC Common Command. Refer to **"*OPC (Operation Complete)" on page 172**.

Extended Addressing

Extended addressing (secondary command) capability is not implemented in the Test Set.

Multiple Addressing

Multiple addressing capability is not implemented in the Test Set.

5

Front-Panel Control Fields to GPIB Command Cross-Reference

This chapter contains an alphabetical list of the fields that appear on the Test Set's various screens and a GPIB example for setting or reading each of those fields. Not all of the command options are shown in the examples. For detailed information about each command's options, see **Chapter 2, "GPIB Command Syntax."**

A

Abort Print

Abort Print is not directly programmable over the GPIB.

Access (annunciator)

GPIB Example

```
“STATus:CALLP:CONDition?”
```

queries the analog call processing condition register. Bit four will be true (BCD 16) when an analog call is in the Access state. Also, the Access annunciator on the CALL CONTROL screen is lit when an analog call is in the Access state.

Access Burst

GPIB Example

```
“DISP DCON;CALLP:DCCH:ABURst: ‘Abbrev’”
```

displays DCCH CALL CONFIGURE screen and sets the access burst type to abbreviated.

AC Level

GPIB Example

```
“DISP AFAN;AFAN:INPUT ‘SSB Demod’;:MEAS:AFR:ACLevel?”
```

displays the AF ANALYZER screen, selects single-sideband demod from the AF Anl In field, then queries the AC Level field.

Active

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’
"CALLP:ACTive"
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, and turns on the forward control channel.

Active (annunciator)

GPIB Example

```
"STATus:CALLP:COND?"
```

queries the analog Call Processing condition register. Bit zero will be true (BCD 1) when the forward channel is turned on. Also, the Active annunciator on the CALL CONTROL screen is lit when the forward control channel is on.

ACP Meas

GPIB Example

```
"DISP ACP;ACPower:MEASurement 'RATIO'"
```

displays the ADJACENT CHANNEL POWER screen and sets the ACP Meas field to Ratio. (This controls the AMPS adjacent channel power measurement.)

Ad Ch Pwr (Adj Lo, Adj Hi, Alt Lo, Alt Hi, Alt2 Hi, Alt2 Lo)

GPIB Example

```
"DISP DME;MEAS:DCCH:MTYP 'Ad Ch Pwr'"
"MEAS:DCCH:ACP:LADJ?"
"MEAS:DCCH:ACP:HADJ?"
"MEAS:DCCH:ACP:LALT?"
"MEAS:DCCH:ACP:HALT?"
"MEAS:DCCH:ACP:L2ALT?"
"MEAS:DCCH:ACP:H2ALT?"
```

displays the DIGITAL MEASUREMENTS screen, selects the adjacent channel power measurement type and queries the power (in dB) of the high and low adjacent channels, the high and low alternate channels, and the high and low second alternate channels.

Addr

See **"Cnfg External Devices" on page 199**.

AF Anl In

GPIB Example

```
"DISP TX;AFAN:INPUT 'FM DEMOD'"
```

displays the TX TEST screen and selects FM Demod in the AF Anl In field.

AF Cnt Gate

GPIB Example

```
"DISP AFAN;AFAN:GTIME .08"
```

displays the AF ANALYZER screen and sets the AF Cnt Gate field to 80 ms.

AF Freq

GPIB Example

```
"DISP AFAN;MEAS:AFR:SELect 'AF Freq';FREQuency?"
```

displays the AF ANALYZER screen, selects the AF Freq measurement, and queries the AF Freq field.

AF Freq

GPIB Example

```
"DISP ACNT;AMODE 'MEAS';MEAS:AFR:FREQuency?"
```

displays the CALL CONTROL screen and queries the AF Freq field.

AFGen1 Freq

GPIB Example

```
"DISP RFGenerator;AFGenerator1:FREQuency 1KHZ"
```

displays the RF GENERATOR screen and sets the AFGen1 Freq field to 1.000 kHz.

AFGen1 Lvl

GPIB Example

```
"DISP TX;AFGenerator1:OUTPut 50MV"
```

displays the TX TEST screen and sets the AFGen1 Lvl field to 50 mV.

AFGen1 To

GPIB Example

```
“DISP RFGenerator;AFGenerator1:DESTination ‘AM’”
```

displays the RF GENERATOR screen and sets the AFGen1 To field to AM.

AFGen2 To

GPIB Example

```
“DISP RFGenerator;AFGenerator2:DESTination ‘AM’”
```

displays the RF GENERATOR screen and sets the AFGen2 To field to AM.

AFGen2 Freq

GPIB Example

```
“DISP RFGenerator;AFGenerator2:FREQuency 1KHZ”
```

displays the RF GENERATOR screen and sets the AFGen2 Freq field to 1.000 kHz.

A_KEY

GPIB Examples

```
“DISP ACNT;CALLP:CSYS ‘AMPS’
"DISP AUTH;CALLP:AUTH ‘On’”
“CALLP:AMPS:AUTH:AKEY '12345678901234567890'"
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to AMPS, displays the AUTHENTICATION screen, turns on authentication, and enters the first 20 digits of the authentication key into the A_KEY field (the last six digits are automatically generated). If the system type is set to DCCH, the first 20 digits of the A-key are entered in the A_KEY field and the last six digits are automatically generated and entered in the CHECKSUM field.

```
“DISP ACNT;CALLP:CSYS ‘DCCH’
"DISP AUTH;CALLP:AUTH ‘On’”
“CALLP:DCCH:AUTH:AKEY:GEN"
```

generates a new authentication key and checksum.

All Chans?

See **“Seqn Order of Tests” on page 248**.

AM Depth

GPIB Example

```
“DISP AFAN;AFAN:INPut ‘AM DEMOD’;:MEAS:AFR:AM?”
```

displays the AF ANALYZER screen, selects AM Demod in the AF Anl In field, and queries the AM Depth field.

Amplitude

GPIB Example

```
“DISP RX;RFGenerator:AMPLitude -40”
“DISP ACNT;RFGenerator:AMPLitude -40”
```

sets the Amplitude field to –40 dBm.

Arm

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“DISP DME;CALLP:DCCH:WER:ARM”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, displays the DCCH CALL CONFIGURE screen, and arms the DCCH WER measurement.

Arm Meas

GPIB Example

```
“DISP DEC;DEC:ARM”
```

displays the SIGNALLING DECODER screen and arms all active signaling decoder measurements.

Atten Hold

GPIB Examples

```
“DISP RX;RFG:ATT ‘ON’”
```

displays the RX TEST screen and sets the Atten Hold field to On.

```
“DISP RFG:RFG:ATT ‘ON’”
```

displays the RF GENERATOR screen and sets the Atten Hold field to On.

Antenna In

GPIB Example

```
“DISP CONF;CONF:OFLevel:ANTenna -3”
```

sets the RF level offset for the ANT IN port to –3 dB.

Audio In Lo

GPIB Example

```
“DISP AFAN;AFANalyzer:AIN ‘FLOAT’”
```

displays the AF ANALYZER screen and sets the Audio In Lo field to Float.

Audio Out

GPIB Example

```
“DISP RFG;RFGenerator:MODulation:AOUT ‘DC’”
```

displays the RF GENERATOR screen and sets the Audio Out field to DC.

Authent

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘AMPS’
“DISP AUTH;CALLP:AMPS:AUTH ‘On’”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to AMPS, displays the AUTHENTICATION screen and turns the authentication on.

Auto/Norm

GPIB Example

```
"DISP OSC;OSC:TRIGger:TYPE ‘NORM’”
```

displays the OSCILLOSCOPE screen and sets the trigger type field to Norm (Controls, Trigger, Auto/Norm field).

Autostart Test Procedure on Power-Up:

GPIB Example

```
“TEST:PROC:AUTO ‘OFF’”
```

turns the program autostart function off for the TESTS (Execution Conditions) screen.

Avg Power (Average Power, Max ABS)

GPIB Example

```
“DISP DME;MEAS:DCCH:MTYP ‘Avg Power’”
“MEAS:DCCH:ACP:APOW?”
“MEAS:DCCH:ACP:MABS?”
```

displays the DIGITAL MEASUREMENTS screen, selects and queries the average power and max abs measurement. See “Measuring Average Power” in the *Agilent 83206A User’s Guide* for more information about the max abs measurement.

B

Band

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“CALLP:DCCH:VTYP:BAND ‘Cellular’”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to AMPS, sets the post-handoff channel band assignment of the traffic channel to the cellular band.

BAND (Neighbor List)

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“DISP DCON;CALLP:DCCH:NEIG:NUMB 1”
“CALLP:DCCH:NEIG:CHAN1:BAND ‘Cellular’”
```

accesses call processing by displaying the CALL CONTROL screen and sets the system type to DCCH, displays the DCCH CALL CONFIGURE screen and sets the number of neighbor channels to be evaluated to 1, then selects the cellular band for neighbor channel 1. This command is valid only for the DCCH system type.

To set the channel number for neighbor channels, see **“Channel” on page 198**.

To set the number of neighbor channels to be evaluated, see **“# Neighbors” on page 268**.

Base Freq (User Defined)

GPIB Example

```
“DISP CONF;CONF RFDM ‘CHAN’”
“CONF RFCS ‘USER-DEF’;UDBF 870MHZ”
```

displays the CONFIGURE screen, sets the RF display to channel, sets the RF channel standard to user-defined, and sets the user-defined base frequency to 870 MHz.

Beeper

GPIB Example

```
"CONF:BEEPer 'QUIET'"
```

sets the Beeper field (CONFIGURE screen) to Quiet.

B/I Delay (FOCC)

GPIB Example

```
"DISP AFG2;AFG2:MODE 'AMPS-TACS'"
"AFG2:AMPS:BUSY 'WS Delay'"
"AFG2:AMPS:BUSY:DEL 18"
```

displays the SIGNALING ENCODER (AF GENERATOR 2) screen sets the signaling mode to AMPS, sets the busy/idle status to word sync delay, and sets the busy/idle delay to 18 bits.

Bits Read

GPIB Example

```
"DISP DME;MEAS:DCCH:BER:MODE 'Single'"
"MEAS:DCCH:BER:ARM"
"MEAS:DCCH:BER:BRE?"
```

displays th DIGITAL MEASUREMENTS screen, sets the bit error rate measurement mode to single, arms the measurement, then reads the number of bits read for the BER measurement.

Bursts

GPIB Example

```
"DISP AFG2;AFG2:SEND:MODE 'Burst'"
"AFG2:BURS 2"
```

displays the SIGNALING ENCODER (AF GENERATOR 2) screen and sets the output mode to bursted, and sets the number of message bursts to 2.

Busy/Idle (FOCC)

GPIB Example

```
"DISP AFG2;AFG2:MODE 'AMPS-TACS'"
"AFG2:AMPS:BUSY 'Busy'"
```

displays the SIGNALING ENCODER (AF GENERATOR 2) screen sets the signaling mode to AMPS, and sets the busy/idle status of the forward control channel information to busy.

C

Calling Name

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“DISP DCC2;CALLP:DCCH:CID:CNAM?”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, displays the DCCH CALL CONFIGURE II screen, and queries caller identification caller name.

Calling Name

See **“Cnfg External Devices” on page 199**.

Calling Num

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“DISP DCC2;CALLP:DCCH:CID:CNUM?”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, displays the DCCH CALL CONFIGURE II screen, and queries caller identification caller number.

Carrier Ref

GPIB Example

```
“DISP ACP;ACPower:RMODulation ‘Mod’“
```

displays the ADJACENT CHANNEL POWER screen and selects Mod in the Carrier Ref field.

CC Order

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
"DISP AUTH;CALLP:DCCH:AUTH:ONOFF 'On'”
“DISP ACNT;CALLP:DCCH:CCTY ‘Dig’”
“CALLP:DCCH:CCOR ‘SSD Upd’"
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, displays the AUTHENTICATION screen and turns on authentication, returns to the CALL CONTROL screen, sets the control channel type to digital, and orders a shared secret data update. Use this command when not in the connected state.

See **Chapter 6, “Which Control Order Command Should I Use?,”** for more informaton about control orders.

Center Freq

GPIB Example

```
"DISP SAN;SANalyzer:CFRequency 4MHZ"
```

displays the SPECTRUM ANALYZER screen and sets the Center Freq field to 4 MHz.

Chan#

See **“Freq Channel Information” on page 211**.

Chan:

GPIB Examples

```
“DISP ACNT;CALLP:CSYS ‘AMPS’”
"CALLP:AMPS:VCHannel 215"
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to AMPS, then sets the post-handoff AMPS voice channel assignment to 215.

```
“DISP ACNT;CALLP:CSYS ‘DAMPS’”
“CALLP:DAMPS:AVCH:VCH 2”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DAMPS, then sets the post-handoff DAMPS voice channel assignment to 2.

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“CALLP:DCCH:DTC:TCH 2”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, then sets the post-handoff DCCH traffic channel to 2.

Channel (Neighbor List)

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“DISP DCON;CALLP:DCCH:NEIG:NUMB 1”
“CALLP:DCCH:NEIG:CHAN1 222”
```

accesses call processing by displaying the CALL CONTROL screen and sets the system type to DCCH, displays the DCCH CALL CONFIGURE screen and sets the number of neighbor channels to be evaluated to 1, then sets neighbor channel 1 to 222.

To set the band for neighbor channels, see **“BAND (Neighbor List)” on page 193** (DCCH system type only).

To set the number of neighbor channels to be evaluated, see **“# Neighbors” on page 268**.

Channel

GPIB Example

```
“DISP DEC;DEC:MODE ‘NAMP-NTAC’”
“DEC:NAMP:CHAN ‘VOICE’”
```

accesses the NAMPS signaling decoder and selects reverse voice channel data to decode.

Channel BW

GPIB Example

```
“DISP ACP;ACPower:CBANdwidth 9KHZ”
```

displays the ADJACENT CHANNEL POWER screen and sets the Channel BW field to 9 MHz.

Chan Space (User Defined)

GPIB Example

```
“DISP CONF;CONF RFDM ‘CHAN’”
“CONF RFCS ‘USER-DEF’”
“CONF:UDCS 30KHZ”
```

displays the CONFIGURE screen, sets the RF display to channel, sets the RF channel standard to user defined, and sets the user-defined channel spacing to 30 kHz.

Check

See **“Spec Pass/Fail Limits” on page 251**

CHECKSUM

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’
"DISP AUTH;CALLP:AUTH ‘On’”
“CALLP:DCCH:AUTH:AKEY:CHECKSUM?"
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to AMPS, displays the AUTHENTICATION screen, turns on authentication, and queries the A-key’s checksum.

When the first 20 digits of the A-key are entered in the A_KEY field and the last six digits are automatically generated and entered in the CHECKSUM field. See **“A_KEY” on page 190**.

Ch Loc:

GPIB Examples

```
“DISP ACNT;CALLP:CSYS ‘NAMPS’”
"CALLP:CSYS ‘NAMPS’;NAMPS:CEXT:SETT ‘LOWER’"
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to NAMPS, and sets the channel location Lower.

```
“DISP ACNT;CALLP:CSYS ‘NAMPS’”
"CALLP:CSYS ‘NAMPS’;NAMPS:CEXT:SETT:ACT?
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to NAMPS, then returns the setting of the channel location.

Ch Offset

GPIB Example

```
"DISP ACP;ACPower:COFFset 200khz"
```

displays the ADJACENT CHANNEL POWER screen and sets the Ch Offset field to 200 kHz.

CMAX

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘AMPS’”
"DISP CCNF;CALLP:CMAX 21"
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to AMPS, and sets the number of access channels (CMAX) to 21.

Cnfg External Devices

GPIB Example

```
“TEST:CONF 1,TEST SET,8920B,704”
```

makes the following settings on the TESTS (External Devices) screen:

- **`Inst#`** to 1
- **`Calling Name`** to TEST SET
- **`Model`** to 8920B
- **`Addr`** to 704
- **`Options`** (blank)

Cntrl Chan

GPIB Example

```
"DISP ACNT;CALLP:CSYS ‘AMPS’”
“CALLP:CCH 333"
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to AMPS, and sets the analog control channel to 333.

Cntl Order

GPIB Example

```
"DISP ACNT;CALLP:CSYS ‘DCCH’”
"DISP AUTH;CALLP:DCCH:AUTH:ONOFF 'Off'”
“DISP ACNT;CALLP:DCCH:CCTY ‘Dig’”
"CALLP:DCCH:CORD ‘Send MWI’"
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, sets the control channel type to digital, and sends the message waiting indicator. Use this command when not in the connected state.

See **Chapter 6, “Which Control Order Command Should I Use?,”** for more informaton about control orders.

Code Location:

GPIB Example

```
“TEST:PROC:LOC ‘Card’”
```

selects a PC card as the location to either save a procedure to or delete a procedure from.

Connect (annunciator)

GPIB Example

```
“STATus:CALLP:CONDition?”
```

queries the analog Call Processing condition register. Bit five will be true (BCD 32) when a call is connected. Also, the Connected annunciator on the CALL CONTROL screen is lit when a call is connected.

Controls

GPIB Example

```
"DISP SAN;SAN:CONTrol 'RF Gen'"
```

displays the SPECTRUM ANALYZER screen and selects RF Gen in the Controls field.

```
"DISP OSC;OSC:CONTrol 'Marker'"
```

displays the OSCILLOSCOPE screen and selects Marker in the Controls field.

Cont/Single

GPIB Example

```
"DISP OSC;OSC:CONTrol 'TRIGGER';TRIGger:MODE 'SINGLE'"
```

displays the OSCILLOSCOPE screen, selects Trigger in the Control field, and selects Single triggering.

Country Code

GPIB Example

```
"DISP ACNT;CALLP:CSYS 'DCCH'"
"DISP DCON;CALLP:DCCH:MCC 310"
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, displays the DCCH CALL CONFIGURE screen and sets the country code to 310.

Current

GPIB Example

```
"DISP AFAN;MEAS:AFRequency:SELect 'CURRENT';CURRent?"
```

displays the AF ANALYZER screen, selects the current measurement, and queries the current measurement.

D

Data (Hex)

GPIB Example

```
“DISP DEC;DEC:MODE ‘AMPS’”
“MEAS:DEC:AMPS:DATA?”
```

accesses the AMPS decoder, and displays the decoded AMPS data.

Data Length

GPIB Example

```
“CONF:SPOR:DATA ‘8 BITS’”
```

selects 8 bits in the Data Length field (I/O CONFIGURE screen).

Data Level

GPIB Example

```
“DISP AFG2;AFG2:MODE ‘AMPS-TACS’”
“AFG2:AMPS:DATA:LEV 8”
```

displays the SIGNALING ENCODER (AF GENERATOR 2) screen, sets the signaling mode to AMPS, and sets the data level to 8 kHz.

Data Rate

GPIB Example

```
“DISP AFG2;AFG2:MODE ‘AMPS-TACS’”
“AFG2:AMPS:DATA:RATE 10”
```

displays the SIGNALING ENCODER (AF GENERATOR 2) screen, sets the signaling mode to AMPS, and sets the data rate of the FOCC and FVC information to 10 kbps.

Data Spec

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘AMPS’”
“DISP CBIT;CALLP:DSP 'STD'”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to AMPS, displays the CALL BIT screen, and sets the data specification (Data Spec) to standard.

Date

GPIB Example

```
“CONF:DATE 010298“
```

sets the Date field (CONFIGURE screen) to January 2, 1998 .

DCCH DVCC

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“DISP DCON;CALLP:DCCH:CDVC 128”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, displays the DCCH CALL CONFIGURE screen, and sets the digital control channel’s DVCC to 128.

See also, **“DVCC” on page 206**

DC Current

GPIB Example

```
“DISP AFAN;MEAS:AFR:SELect ‘Current’;Current?”
```

DC Level

GPIB Example

```
“DISP AFAN;MEAS:AFRequency:SELect ‘DC LEVEL’;DCVolts?”
```

displays the AF ANALYZER screen, selects the current measurement, and queries the current measurement.

De-Emp Gain

GPIB Example

```
“DISP AFAN;AFANalyzer:RANGing ‘HOLD’;DEMPhasis:GAIN ‘10 DB’”
```

displays the AF ANALYZER screen, selects Hold in the Gain Cntl field, and selects 10 dB in the De-Emp Gain field.

De-Emphasis

GPIB Example

```
“DISP AFAN;AFANalyzer:DEMPhasis ‘750 us’”
```

displays the AF ANALYZER screen and selects 750 µs in the De-Emphasis field.

Description

GPIB Example

```
“DISP TEST;TEST:COMM1?;TEST:COMM2?”
```

displays the TESTS (Main Menu) screen and reads the description of the program that is selected with the TEST:PROC:NAME command.

```
“TEST:PARM:STR ‘Parm_name’,10”
```

specifies setting by parameter name rather than by number. See also **“Parm#” on page 231**.

```
“TEST:SEQN? 1”
```

returns the test number, test description, and Y (yes All Chans?) or N (no All Chans?).

```
TEST:SPEC:STRING ‘Spec_name’,10,5,’Both’”
```

specifies limits by specification name rather than by number.

Detector

GPIB Example

```
“DISP AFAN;AFAN:DETector ‘PK-’”
```

displays the AF ANALYZER screen and selects the Pk– detector.

Dig Meas

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“DISP DME;CALLP:DCCH:DMTY ‘DCCH WER’”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, displays the DIGITAL MEASUREMENTS screen, and selects the DCCH WER measurement..

Dig Signal

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DAMPS’”
“DISP DACN;CALLP:DAMPS:DSST ‘Std’”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DAMPS, displays the DAMPS CALL CONFIGURE screen, and selects standard DAMPS protocol.

Disarm

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“DISP DME;CALLP:DCCH:WER:DARM”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, displays the DCCH CALL CONFIGURE screen, and disarms the DCCH WER measurement.

Display

GPIB Examples

```
“DISP ACNT;CALLP:MODE 'DATA'”
```

accesses call processing by displaying the CALL CONTROL screen, and selects data display mode.

```
“DISP ACNT;CALLP:MODE 'MEAS'”
```

accesses call processing by displaying the CALL CONTROL screen, and selects measurement display mode.

Display Word

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘AMPS’”
“DISP CDAT;CALLP:DATA 'RECCW A'”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to AMPS, selects RECCW A as the display word.

Distn

GPIB Example

```
“DISP AFAN;MEAS:AFRequency:SELect ‘DISTN’;DISTortion?”
```

displays the AF ANALYZER screen, selects the Distn measurement, and queries the Distn measurement.

Droop

See “EVM 1, EVM 10 (EVM Peak EVM, Phase Err, Mag Err, Orgin Ofs, Droop, Sync Loc, Max Abs, Frequency Error, TX Power)” on page 208.

DSAT:

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘NAMPS’”
“CALLP:NAMP:DSAT:ACTual?”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to NAMPS, and queries the DSAT setting.

DSAT (FVC)

GPIB Example

```
“DISP AFG2;AFG2:MODE ‘NAMP-NTAC’”
“AFG2:NAMP:DSAT:MESS ‘2556CB’”
```

displays the SIGNALING ENCODER (AF GENERATOR 2) screen, sets the signaling mode to NAMPS, and sets the DSAT sequence.

DSAT/DST (hex)

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘NAMPS’”
“CALLP:NDMM ‘NMeas’”
"CALLP:NAMP:DSAT:MEASurement?"
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to NAMPS, sets the display to show measurements (NMeas), and reads the DSAT measurement.

DTC Burst

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“DISP DCON;CALLP:DCCH:DTCH:DTCB ‘Shorten’”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, displays the DCCH CALL CONFIGURE screen, and selects the shortened burst type.

Duplex Out

GPIB Example

```
“DISP CONF;CONF:OFLevel:DUPLex -3”
```

sets the RF level offset for the DUPLEX OUT port to -3 dB.

DVCC

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“CALLP:DCCH:DTCH:DVCC 2”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, and sets the post-handoff digital traffic channel DVCC to 2.

See also, **“DCCH DVCC” on page 203**

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E

Enter Procedure Filename:

GPIB Example

```
“TEST:PROC:NAME ‘10charctrs’”
```

Enter Description for New Procedure:

GPIB Example

```
“TEST:COMM1 ‘50 characters maximum’”
“TEST:COMM2 ‘50 characters maximum’”
```

ESN

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘AMPS’”
“DISP AUTH;CALLP:AMPS:AUTH ‘On’”
"CALLP:AMPS:AUTH:ESN '12D4E678'"
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to AMPS, displays the AUTHENTICATION screen, turns on authentication, and enters the number 12D4E678 as the electronic serial number.

ESN (dec):

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘AMPS’”
“CALLP:AMOD ‘Data;”
“CALLP:AMPS:RCDD2?”
```

accesses call processing by displaying the CALL CONTROL screen, selects data display mode, sets and queries the electronic serial number (ESN) when a reverse control channel message containing this data has been decoded.

ESN (hex):

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘AMPS’”
“CALLP:AMOD ‘Data;”
“CALLP:AMPS:RCDD3?”
```

accesses call processing by displaying the CALL CONTROL screen, selects data display mode and queries the electronic serial number ESN (hex) when a reverse control channel message containing this data has been decoded.

EVM 1,
EVM 10 (EVM Peak EVM, Phase Err, Mag Err, Orgin Ofs, Droop, Sync Loc, Max Abs, Frequency Error, TX Power)

GPIB Example

```
“DISP DME;MEAS:DCCH:EVMM:EVM?”
“MEAS:DCCH:EVMM:PEVM?”
“MEAS:DCCH:EVMM:PERR?”
“MEAS:DCCH:EVMM:OOFF?”
“MEAS:DCCH:EVMM:DRO?”
“MEAS:DCCH:EVMM:SLOC?”
“MEAS:DCCH:EVMM:MABS?”
“MEAS:DCCH:EVMM:TPOW?”
“MEAS:DCCH:EVMM:FERR?”
```

Exec Execution Conditions

GPIB Example

```
“DISP TEX”
```

displays the TESTS (Execution Conditions) screen.

External Disk Specification

```
“CONF:EDISK ‘:,700,0’”
```

sets the external disk specifier (700=GPIB address, 0=unit number)

External Reference

GPIB Example

```
“CONF:EXTernal:REFerence ‘10.0000 MHZ’”
```

selects 10 MHz in the External Reference field (CONFIGURE screen).

Ext Load R

GPIB Example

```
“DISP RX;AFAN:ELResistor 50’”
```

displays the RX TEST screen and selects 50 ohms in the Ext Load R (external load resistor) field.

Ext TX Key

GPIB Example

```
“DISP TX;RFAN:TKEY ‘ON’”
```

displays the TX TEST screen and selects On in the Ext TX Key field.

F

FF at End

GPIB Example

```
“CONF:PRIN:FFSTart ‘YES’”
```

selects Yes in the FF at Start: field (PRINT CONFIGURE screen).

FF at Start

GPIB Example

```
“CONF:PRIN:FFENd ‘YES’”
```

selects Yes in the FF at End: field (PRINT CONFIGURE screen).

Filler (FOCC)

GPIB Example

```
“DISP AFG2;AFG2:MODE ‘NAMP-NTAC’”
“AFG2:NAMP:FOCC:FILL:DATA1 ‘0000000’”
“AFG2:FOCC:FILL:DATA2 ‘0000000’”
```

displays the SIGNALING ENCODER (AF GENERATOR 2) screen, selects the NAMPS-NTACS mode, and enters data in the FOCC filler fields. Both filler fields must contain seven digits for the forward control channel information to be structured correctly. Do not leave any blank spaces.

Filter 1

GPIB Example

```
“DISP RX;AFAN:FILTER1 ‘C MESSAGE’”
```

displays the RX TEST screen and selects C MESSAGE in the Filter 1 field.

Filter 2

GPIB Example

```
“DISP RX;AFAN:FILTER2 ‘6KHZ BPF’”
```

displays the RX TEST screen and selects 6kHz BPF in the Filter 2 field.

Firmware

GPIB Example

See **“*IDN? (Identification Query)” on page 169**.

The identification query returns the following information about the test set: manufacturer, model number, serial number, and firmware revision.

FM Coupling

GPIB Example

```
“DISP RFG;RFGenerator:FM:COUPling ‘DC’”
```

displays the RF GENERATOR screen and selects DC in the FM Coupling field.

FM Deviation

GPIB Example

```
“DISP RFAN;MEAS:AFRequency:FM?”
```

displays the RF ANALYZER screen and queries the FM Deviation field.

Freq (marker)

Freq
GPIB Example

```
“DISP SAN;:MEASure:SANalyzer:MARKer:FREQuency?“
```

displays the SPECTRUM ANALYZER screen and queries the Marker (Freq) field.

Lvl
GPIB Examples

```
“DISP SAN;:MEAS:SANalyzer:MARKer:LEVel?“
```

displays the SPECTRUM ANALYZER screen and queries the Marker (Lvl) field.

```
“DISP OSC;:MEAS:OSCilloscope:MARKer:LEVel:VOLTs?“
```

displays the OSCILLOSCOPE screen and queries the Marker (Lvl) voltage field.

Time
GPIB Example

```
“DISP OSC;:MEAS:OSCilloscope:MARKer:TIME?“
```

displays the OSCILLOSCOPE screen and queries the Marker (Time) field.

Freq
or
Frq Err

GPIB Example

```
"DISP DEC;DEC:MODE 'DTMF'"
"MEAS:DEC:DTMF:LOW:FREQ:ABS?"
```

accesses the DTMF decoder, and displays the frequency of the low tone in the dual-tone pair.

```
"DISP DEC;DEC:MODE 'DTMF'"
"MEAS:DEC:DTMF:HIGH:FREQ:ERR?"
```

accesses the DTMF decoder, and displays the frequency error of the high tone in the dual-tone pair.

Freq Channel Information

GPIB Example

```
"TEST:FREQ 1,101.1,,99.9,,YES,NO"
```

makes the following settings on the TESTS (Channel Information) screen:

- **`Chan#`** to 1 (this is the number of the channel in this screen's channel information table not the cellular radio channel number.)
- **`RX Freq (MHz)`** to 101.1
- **`RX Chan Info`** (blank, used for CTCSS testing)
- **`TX Freq`** to 99.9
- **`TX Chan Info`** (blank, used for CTCSS testing
- **`Test?`** to YES
- **`Prime?`** to NO

Frequency

GPIB Example

```
"DISP DEC;DEC:MODE 'FGEN'"
"MEAS:DEC:FGEN:FREQ?"
```

accesses the function generator decoder, and displays the decoded signal's frequency.

Frequency Error

See "EVM 1, EVM 10 (EVM Peak EVM, Phase Err, Mag Err, Orgin Ofs, Droop, Sync Loc, Max Abs, Frequency Error, TX Power)" on page 208.

G

Gain Cntl

GPIB Example

```
“DISP AFAN;AFANalyzer:RANGing ‘HOLD’”
```

displays the AF ANALYZER screen and selects Hold in the Gain Cntl field.

Gate Time

GPIB Example

```
“DISP DEC;DEC:MODE ‘DTMF’”
“MEAS:DEC:DTMF:GATE 1”
```

accesses the DTMF decoder, and sets the measurement gate time to 1 second.

(Gen)-(Anl)

GPIB Example

```
“CONF:RFDM ‘FREQ’;OFRequency 50MHZ”
```

selects frequency display mode, and sets a 50 MHz offset in the (Gen)-(Anl) field.

H

Handoff

GPIB Example

```
"DISP ACNT;CALLP:HAND"
```

accesses call processing by displaying the CALL CONTROL screen, and attempts a handoff.

Hi Tone

GPIB Example

```
“DISP DEC;DEC:MODE ‘DTMF’”
“MEAS:DEC:DTMF:HIGH:FREQ:ABS?”
```

accesses the DTMF decoder, and displays the frequency of the high tone of the dual-tone pair.

HP-IB Adrs

GPIB control of this field is not supported

I

IBASIC Echo

GPIB Example

```
“DISP IOC;CONF:SPOR:IBECho ‘ON’”
```

selects On in the IBASIC Echo field (I/O CONFIGURE screen).

IBASIC IBASIC Cntrl

GPIB Example

```
“DISP TIB”
```

displays the TESTS (IBASIC Controller) screen.

IF Filter

GPIB Example

```
“DISP TX;RFANalyzer:IFBW ‘230 khz’”
```

selects the TX TEST screen and selects 230 kHz in the IF Filter field.

If Unit-Under-Test Fails:

GPIB Example

```
“TEST:EXEC:FAIL ‘Continue’”
```

set the test set to continue testing even if the unit-under-test fails to meet the specified passing limits.

Input Att

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘AMPS’”
“DISP CCNF;CALLP:AMPS:CRFA ‘40 dB’:
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to AMPS, displays the CALL CONFIGURE screen, and sets the input attenuation to 40 dB.

Input Atten

GPIB Example

```
“DISP RFAN;RFAN:ATT ‘40 DB’”
```

displays the RF ANALYZER screen and selects 40 dB in the Input Atten field.

Input Data

This field, found on the RADIO INTERFACE screen has no equivalent GPIB command.

Input Gain

GPIB Example

```
“DISP AFAN;AFANalyzer:GAIN ‘0 DB’”
```

displays the AF ANALYZER screen and selects 0 dB in the Input Gain field.

Input Level

GPIB Example

```
“DISP TX;AFAN:INPUT ‘AM Demod’”
“DISP DEC;DEC:MODE ‘AMPS-TACS’”
“DEC:LEVEL:AM 30”
```

displays the TX TEST screen sets the AF analyzer input to AM demodulation, then displays the AMPS decoder screen and sets the input level to 30% AM.

Input Port

GPIB Example

```
“DISP RFAN;RFAN:INPut ‘ANT’”
```

displays the RF ANALYZER screen and selects the ANT IN input port.

Interrupt 1

GPIB Example

```
”DISP RINT:INT1 ‘ARM’”
“DISP RINT:INT1‘DISARM’”
```

displays the RADIO INTERFACE screen and arms or disarms the Interrupt 1 pin.

Interrupt 2

GPIB Example

```
"DISP RINT:INT2 'ARM'"
"DISP RINT:INT2'DISARM'"
```

displays the RADIO INTERFACE screen and arms or disarms the Interrupt 2 pin on the RADIO INTERFACE connector and bit 14 of the Hardware 1 status register.

Inst Echo

GPIB Example

```
"DISP CONF;CONF:SPOR:IECHo 'ON'"
```

selects On in the Inst Echo field (I/O CONFIGURE screen).

Intensity

GPIB Example

```
"DISP CONF;CONF:INTensity 4"
```

selects 4 in the Intensity field (CONFIGURE screen).

Internal

GPIB Example

```
"DISP OSC:OSC:CONTrol 'TRIGGER';TRIGger:SOURce 'INTERNAL'"
```

displays the OSCILLOSCOPE screen, selects Trigger in the Controls field, and selects Internal for the trigger source.

I/O Config

GPIB Example

```
"DISP RINT:PAR:CONF 00FF" )
```

displays the RADIO INTERFACE screen and designates D0 through D7 as inputs and D8 through D15 as outputs..

L

LAST CALIB

GPIB Example

```
“DISP CONF;CONF:CALD?“
```

displays the CONFIGURE screen, and queries the value entered in the LAST CALIB field. The date is not automatically updated when the Test Set is caibrated. The user must enter the date using the CONF:CALD ‘<string>’ command.

Level (div)

GPIB Example

```
“DISP OSC;OSC:CONTrol ‘TRIGGER’;TRIGger:LEVel 1“
```

displays the OSCILLOSCOPE screen, selects Trigger in the Controls field, and sets the Level (div) field to 1 division.

Library

GPIB Example

```
“DISP TEST;TEST:LIBR?”
```

displays the TESTS (Main Menu) screen and the library information for the file chosen with the TEST:PROC:NAME command.

Lines/Page

GPIB Example

```
“CONF:PRIN:LINE 100”
```

sets the number of lines printed per page to 100.

Loopback BER

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“MEAS:DCCH:DMTYP ‘BER’”
“MEAS:DCCH:BER:ARM”
“MEAS:DCCH:BER:VAL?”
```

accesses call processing by displaying the CALL CONTROL screen and sets the system type to DCCH, then displays the DIGITAL MEASUREMENTS screen, selects the bit error rate (BER) measurement, arms the measurement, then reads the measured bit error value.

Loopback WER

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“MEAS:DCCH:DMTYP ‘DTC WER’”
“DISP DME;MEAS:DCCH:WER:DTCT ‘SPEECH’”
“MEAS:DCCH:WER:ARM”
“MEAS:DCCH:WER:VAL?”
```

accesses call processing by displaying the CALL CONTROL screen and sets the system type to DCCH, then displays the DIGITAL MEASUREMENTS screen, selects the digital traffic channel word error rate (DTC WER) measurement, selects speech measurement mode (WER Type: Speech), arms the measurement, then reads the measured WER value.

Lo Tone

GPIB Example

```
“DISP DEC;DEC:MODE ‘DTMF’”
“MEAS:DEC:DTMF:LOW:FREQ:ABS?”
```

accesses the DTMF decoder, and displays the frequency of the low tone of the dual-tone pair.

Lower ACP Level
Lower ACP Ratio

GPIB Example

```
“DISP ACP;ACPower:MEASurement ‘RATIO’“
“MEAS:ACP:LRATIO?”
```

displays the ADJACENT CHANNEL POWER screen and queries the Lower ACP Ratio measurement field.

Lower Limit

See **“Spec Pass/Fail Limits” on page 251**

Lvl (marker)

GPIB Example

```
"DISP AFAN;AFAN:INP 'AM Demod'"
"MEAS:OSC:MARK:LEV:AM?"
```

sets the AF analyzer's input to AM demomdulation, the displays instantaneous AM depth of modulation at the oscilloscope's level marker.

```
"MEAS:SAN:MARK:LEV?"
```

displays the RF level at the spectrum analyzer's level marker.

M

Mag Err

See “EVM 1, EVM 10 (EVM Peak EVM, Phase Err, Mag Err, Orgin Ofs, Droop, Sync Loc, Max Abs, Frequency Error, TX Power)” on page 208.

Marker

Freq
GPIB Example

```
“DISP SAN;:MEASure:SANalyzer:MARKer:FREQuency?“
```

displays the SPECTRUM ANALYZER screen and queries the Marker (Freq) field.

Lvl
GPIB Example

```
“DISP SAN;:MEAS:SANalyzer:MARKer:LEVel?“
```

displays the SPECTRUM ANALYZER screen and queries the Marker (Lvl) field.

```
“DISP OSC;:MEAS:OSCilloscope:MARKer:LEVel:VOLTs?“
```

displays the OSCILLOSCOPE screen and queries the Marker (Lvl) voltage field.

Time
GPIB Example

```
“DISP OSC;:MEAS:OSCilloscope:MARKer:TIME?“
```

displays the OSCILLOSCOPE screen and queries the Marker (Time) field.

Marker To:

GPIB Example

```
“DISP OSC;OSCilloscope:MARKer:CONTrol ‘MARKER’;MARKer:NPEak“
```

displays the OSCILLOSCOPE screen, selects Marker in the Controls field, and selects the Marker To (Peak-) field.

Marker To:

Center Freq
GPIB Example

```
“DISP SAN;SANalyzer:CONTrol ‘MARKER’;MARKer:CFRequency”
```

displays the SPECTRUM ANALYZER screen, selects Marker in the Controls field, and selects the Marker To (Center Freq) field.

Next Peak
GPIB Example

```
“DISP SAN;SANalyzer:CONTrol ‘MARKER’;MARKer:NPEak“
```

displays the SPECTRUM ANALYZER screen, selects Marker in the Controls field, and selects the Marker To (Next Peak) field.

Peak
GPIB Example

```
“DISP SAN;SANalyzer:CONTrol ‘MARKER’;MARKer:PEAK“
```

displays the SPECTRUM ANALYZER screen, selects Marker in the Controls field, and selects the Marker To (Peak) field.

Ref Level
GPIB Example (SA screen)

```
“DISP SAN;SANalyzer:CONTrol ‘MARKER’;MARKer:RLEVel“
```

displays the SPECTRUM ANALYZER screen, selects Marker in the Controls field, and selects the Marker To (Ref Level) field.

Max Abs

See “EVM 1, EVM 10 (EVM Peak EVM, Phase Err, Mag Err, Orgin Ofs, Droop, Sync Loc, Max Abs, Frequency Error, TX Power)” on page 208.

See also **“Avg Power (Average Power, Max ABS)” on page 192**.

Measure

GPIB Example

```
“DISP DEC;DEC:MODE ‘NAMP-NTAC’”
“DEC:NAMP:CHAN ‘Voice’”
“DEC:NAMP:RVC ‘DSAT’”
```

displays the NAMPS decoder screen and sets the decoded data type to reverse voice channel, DSAT data.

Message (FOCC)

GPIB Example

```
“DISP AFG2;AFG2:MODE ‘NAMP-NTAC’”
“AFG2:NAMP:FOCC:MESS:DATA1 ‘0000000’”
“AFG2:NAMP:FOCC:MESS:DATA2 ‘0000000’”
```

displays the SIGNALING ENCODER (AF GENERATOR 2) screen, selects the NAMPS-NTACS mode, and enters data in the FOCC message fields. Both message fields must contain seven digits for the forward control channel information to be structured correctly. Do not leave any blank spaces. Message stream A and B must have the same number of lines.

Message (FVC)

GPIB Example

```
“DISP AFG2;AFG2:MODE ‘AMPS-TACS’”
“AFG2:AMPS:FVC:MESS ‘0000000’”
```

displays the SIGNALING ENCODER (AF GENERATOR 2) screen, selects the AMPS-TACS mode, and enters data in the FVC message field. Do not leave any blank spaces.

Message/DST

GPIB Examples

```
“DISP AFG2;AFG2:MODE ‘NAMP-NTAC’”
“AFG2:NAMP:FVC:SEND‘Message’”
```

displays the SIGNALING ENCODER (AF GENERATOR 2) screen, selects the NAMPS-NTACS mode, and sets the encoder to send message data.

```
“DISP AFG2;AFG2:MODE ‘NAMP-NTAC’”
“AFG2:NAMP:FVC:SEND‘DST’”
```

displays the SIGNALING ENCODER (AF GENERATOR 2) screen, selects the NAMPS-NTACS mode, and sets the encoder to the DST sequence. The sequence is the inverse of the sequence entered in the DSAT field, and is automatically determined by the encoder.

Mic Pre-Emp

GPIB Example

```
“DISP RFG;RFG:MODulation:EXTernal:PEMPhasis ‘ON’”
```

displays the RF GENERATOR field and selects On in the Mic Pre-Emp field .

Min Inp Lvl

GPIB Example

```
"DISP RFAN;RFANalyzer:PMEasurement:MILevel '0.0 dBm'"
```

displays the RF ANALYZER screen and sets the Minimum Input Level to 0.0 dBm.

Mode

GPIB Example

```
"DISP IOC;CONF:BMODe 'Control'"
```

displays the I/O CONFIGURE screen and sets the field Mode to Control.

Model

GPIB Example

```
"CONF:PRIN:PRIN 'ThinkJet'"
```

selects an HP® ThinkJet printer for the printing device.

Model

See **"Cnfg External Devices" on page 199**.

Mod In To

GPIB Example

```
"DISP RFG;RFG:MODulation:EXTernal:DESTination 'AM (/VPK)'"
```

displays the RF GENERATOR screen and selects AM (/Vpk) in the Mod In To field.

MS Capab

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“DISP DCC2;CALLP:MSC ‘Cellular’”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, displays the DCCH CALL CONFIGURE II screen and selects standard cellular protocol.

MS Id

GPIB Examples

```
“DISP ACNT;CALLP:PNUM ‘2222222222’”
```

accesses call processing by displaying the CALL CONTROL screen, and enters 2222222222 as the phone number.

```
“DISP ACNT;CALLP:MIN ‘000000000’”
```

accesses call processing by displaying the CALL CONTROL screen, and enters 000000000 as the mobile identification number.

N

Name Size

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“DISP DCC2;CALLP:CID:NSIZ 25’”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, displays the DCCH CALL CONFIGURE II screen, and sets the number of calling name characters to be sent to 25.

No Pk/Avg

GPIB Example

```
“DISP SAN;SANalyzer:CONTrol ‘AUXILIARY’;TRACE:MHOLD ‘NO PK/AVG’”
```

displays the SPECTRUM ANALYZER screen, selects Auxiliary in the Controls field, and selects the No Pk/Avg field.

Normalize

GPIB Example

```
“DISP SAN;SAN:TRAC:NORM ‘A-Only’”
```

displays the SPECTRUM ANALYZER screen and displays a continuously updated display (normal operation).

Notch Freq

GPIB Example

```
“DISP AFAN;AFAN:NOTCh:FREQuency 2KHZ”
```

displays the AF ANALYZER screen and enters 2.0000 kHz in the Notch Freq field.

Notch Gain

GPIB Example

```
“DISP AFAN;AFAN:RANGing ‘HOLD’;NOTCh:GAIN ‘10 DB’”
```

displays the AF ANALYZER screen, selects Hold in the Gain Cntl field, and enters 10 dB in the Notch Gain field.

Notch Coupl

GPIB Example

```
"DISP CONF;CONF:NOTChmode 'NONE'"
```

displays the CONFIGURE screen and selects None in the Notch Coupl field.

Num Fax

GPIB Example

```
"DISP ACNT;CALLP:CSYS 'DCCH'"
"DISP DCC2;CALLP:MWI:NFAX?"
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, displays the DCCH CALL CONFIGURE II screen and queries the message waiting indicator for number of fax messages that are waiting for the mobile to respond to.

Num of Bits

GPIB Example

```
"DISP DEC;DEC:MODE 'NAMP-NTAC'"
"DEC:NAMP:CHAN 'Cntl'"
"DEC:NAMP:NBIT?"
```

displays the NAMPS decoder screen, selects the reverse control channel and queries the total number of bits displayed. This number depends on the data rate of the decoded signal, the gate time of the decoder, and the size of the decoder's data buffer.

Num SMS

GPIB Example

```
"DISP ACNT;CALLP:CSYS 'DCCH'"
"DISP DCC2;CALLP:MWI:NSMS?"
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, displays the DCCH CALL CONFIGURE II screen and queries the message waiting indicator for number of short message service (SMS) messages that are waiting for the mobile to respond to.

Num Voice

GPIB Example

```
"DISP ACNT;CALLP:CSYS 'DCCH'"
"DISP DCC2;CALLP:MWI:NVO?"
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, displays the DCCH CALL CONFIGURE II screen and queries the message waiting indicator for number of voice messages that are waiting for the mobile to respond to.

O

Offset Freq

GPIB Example

```
“DISP SAN;SAN:TGEN:OFR? “
```

displays the SPECTRUM ANALYZER screen and queries the frequency offset value.

Off Time

GPIB Examples

```
“DISP DEC;DEC:MODE ‘DTMF’”
“MEAS:DEC:DTMF:TIME:OFF?”
```

accesses the DTMF decoder, and displays the time each tone pair is off prior to receiving the next tone.

```
“DISP AFG2;AFG2:MODE ‘DTMF’”
“AFG2:DTMF:OFFT 50”
```

accesses the DTMF decoder, and sets the time each tone pair is off to 50 ms prior to receiving the next tone.

On Time

GPIB Examples

```
“DISP DEC;DEC:MODE ‘DTMF’”
“MEAS:DEC:DTMF:TIME:ON?”
```

accesses the DTMF decoder, and displays the time each tone pair is on prior to receiving the next tone.

```
“DISP AFG2;AFG2:MODE ‘DTMF’”
“AFG2:DTMF:ONT”
```

accesses the DTMF decoder, and sets the time each tone pair is on to 50 ms prior to receiving the next tone.

Options

See **“Cnfg External Devices” on page 199**.

Order

GPIB Examples

```
"DISP ACNT;CALLP:CSYS ‘DCCH’”
"DISP AUTH;CALLP:DCCH:AUTH:ONOFF 'Off'”
“DISP ACNT;CALLP:DCCH:VTYP ‘DTC’”
"CALLP:DCCH:DTCH:ORD ‘Send MWI’"
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, sets the control traffic channel assignment to a digital traffic channel, and sends the message waiting indicator. Use this command when a call is connected.

```
“DISP ACNT;CALLP:CSYS ‘AMPS’”
"CALLP:ORD 'CHNG PL 0'"
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to AMPS, and sends an order to change power level.

See **Chapter 6, “Which Control Order Command Should I Use?,”** for more informaton about control orders.

Orgin Ofs

See “EVM 1, EVM 10 (EVM Peak EVM, Phase Err, Mag Err, Orgin Ofs, Droop, Sync Loc, Max Abs, Frequency Error, TX Power)” on page 208.

Output Data

GPIB Example

```
”DISP RINT:PAR:OUTPUT:DATA FFFF”
```

displays the RADIO INTERFACE screen and sets the data to be output on the parallel data lines.

Output Heading:

GPIB Example

```
“TEST:EXEC:HEAD1 ‘50 characters maximum’”
“TEST:EXEC:HEAD2 ‘50 characters maximum’”
```

enters a two line heading for a test results printout (and the top of the results displayed on the CRT).

Output Port

GPIB Example

```
"DISP RFG;RFG:OUTP 'Dupl'"
```

displays the CONFIGURE screen and selects the DUPLEX OUT port.

Output Results For:

GPIB Example

```
"TEST:EXEC:RES 'Failures'"
```

records only those test results that fail to meet the specified limits.

Output Results To:

GPIB Example

```
"TEST:EXEC:RES 'Printer'"
```

outputs test results to a printer in addition to displaying the results on the CRT.

P

Page

GPIB Example

```
“DISP ACNT;CALLP:PAGE”
```

displays the CALL CONTROL screen and selects the Page field.

Page (annunciator)

GPIB Example

```
“STATus:CALLP:CONDITion?”
```

queries the analog Call Processing condition register. Bit 3 will be true (BCD 8) when an analog call is in the paging state. Also, the Page annunciator on the CALL CONTROL screen is lit when an analog call is in the paging state.

Parallel Data In

GPIB Example

```
”DISP RINT:PAR:INP:DATA?”
```

displays the RADIO INTERFACE screen and displays the value on the parallel data pins when the Parallel Data In field is selected. The data appears in bitwise fashion with the 16 bits organized from MSB to LSB.

Parity

GPIB Example

```
“DISP IOC;CONF:SPOR:PARity ‘ODD’”
```

selects Odd in the Parity field (I/O CONFIGURE screen).

Parm Test Parameters

GPIB Example

```
"DISP TPAR"
```

displays the TESTS (Test Parameters) screen.

Parm#

GPIB Example

```
"TEST:PARM:NUMB 1,10"
```

sets parameter 1's value to 10. See also, **"Description" on page 204**.

Pass Word:

There is no GPIB command for this function.

PCS Mode

GPIB Example

```
"DISP ACNT;CALLP:CSYS 'DCCH'"
"CALLP:DCCH:PCS:MODE 'On'"
```

displays the CALL CONTROL screen, selects the DCCH system type, and turns PCS mode on. Power to the Test Set must be cycled after this command is acted on.

PCS RF I/O

GPIB Example

```
"DISP ACNT;CALLP:CSYS 'DCCH'"
"CALLP:DCCH:PCS:MODE 'On'"
"CALLP:DCCH:PCS:RFOF -3"
```

displays the CALL CONTROL screen, selects the DCCH system type, and turns PCS mode on, and sets the RF level offset for the PCS interface's RF output to –3 dB. Power to the Test Set must be cycled after sending this command.

PCS Source

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“CALLP:DCCH:PCS:MODE ‘On’”
“CALLP:DCCH:PCS:PORT ‘IN_OUT’”
```

displays the CALL CONTROL screen, selects the DCCH system type, turns PCS mode on, and selects the PCS Interface’s RF IN/OUT port. Power to the Test Set must be cycled after this command is acted on.

Peak EVm

See “EVM 1, EVM 10 (EVM Peak EVM, Phase Err, Mag Err, Orgin Ofs, Droop, Sync Loc, Max Abs, Frequency Error, TX Power)” on page 208.

Phase Err

See “EVM 1, EVM 10 (EVM Peak EVM, Phase Err, Mag Err, Orgin Ofs, Droop, Sync Loc, Max Abs, Frequency Error, TX Power)” on page 208.

Phone Num:

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘AMPS’”
“CALLP:AMOD ‘Data;”
“CALLP:AMPS:RCDD1?”
```

displays the CALL CONTROL screen, selects data display mode, and queries the phone number returned from the mobile.

Pk Det To

GPIB Example

```
“DISP AFAN;AFAN:DETector:PKLocation ‘DE-EMP’“
```

displays the AF ANALYZER screen and selects De-Emp in the Pk Det To field.

Polarity

GPIB Example

```
“DISP DEC;DEC:MODE ‘NAMP-NTAC’”
“DEC:POL ‘Norm’”
```

displays the NAMPS decoder screen and sets normal polarity (positive peak=logical high=1, negative peak=logical low =0).

Port /Sweep

GPIB Example

```
“DISP SAN;SANalyzer:TGENenerator:DESTination ‘RF Out’;SWEEP ‘Norm’“
```

displays the SPECTRUM ANALYZER screen, selects RF Out as the connector, and selects Norm in the Port/Sweep field.

Position

GPIB Example

```
“DISP OSC;OSC:CONT ‘MARKER’;MARK:POS 5“
```

displays the OSCILLOSCOPE screen, selects Marker in the Controls field, and positions the marker at the fifth scale division from the left side of the screen.

Position

GPIB Example

```
“DISP SAN;SANalyzer:CONTrol ‘MARKER’;MARKer:POSition 5“
```

displays the SPECTRUM ANALYZER screen, selects Marker in the Controls field, and selects 5 in the Position field.

Power Meter

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“DISP DCON;CALLP:ZPOW”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, displays the DCCH CALL CONFIGURE screen, then zeros the test set’s power meter.

Pre-Emp

GPIB Example

```
“DISP AFG2;AFG2:PEMP ‘On’”
```

accesses the ENCODER screen and enables the 750 ms pre-emphasis network. (‘Off’ bypasses this network.)

Pres Type

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“DISP DCC2;CALLP:CID:PTYP ‘Pres OK’”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, displays the DCCH CALL CONFIGURE II screen, and sets the caller ID presentation type to send both calling name and calling number.

- Pres OK - both the Calling Name and Calling Number are sent.
- Pres Res - only the Calling Number is sent.
- Not Avail - neither the Calling Name or Calling Number are sent.

Prime?

See **“Freq Channel Information” on page 211**.

Print Printer Setup

GPIB Example

```
“DISP TPR”
```

displays the TESTS (Printer Setup) screen.

Printer Address

GPIB Example

```
“CONF:PRIN:PORT ’HPIB’”
“CONF:PRIN:ADDR 1”
```

selects the GPIB printer port and sets the GPIB[1] printer’s address to 1.

Print Data Destination

This field will be used in the future to select a data format. At this time the only selection is Printer. No command is necessary for this choice.

1. GPIB was formerly called HP-IB for Hewlett-Packard instruments. Some labels on the instrument may still reflect the former HP® name.

Printer Port:

GPIB Example

```
"DISP PCON;CONF:PRIN:PORT 'HPIB'"
```

displays the PRINT CONFIGURE screen and selects Agilent in the Printer Port: field.

Print Title

GPIB Example

```
"DISP PCON;CONF:PRIN:TITLe 'TEST PRINTOUT'"
```

displays the PRINT CONFIGURE screen and enters the text string TEST PRINTOUT in the Print Title: field.

Procedure Library:

There is no GPIB command for this function.

Proc Save/Delete Procedure

GPIB Example

```
"DISP TMAK"
```

displays the TESTS (Save/Delete Procedure) screen.

Program

There is no GPIB command for this function.

PSID/RSID

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“DISP DCON;CALLP:SYST:NUMB 1”
‘CALLP:SYS:PUBL ‘On’”
“CALLP:SID1 ‘PSID’”
“CALLP:SID1:NUMB 5”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, displays the DCCH CALL CONFIGURE screen, sets the number of systems to 1, enables public system operation, and sets the system ID to public system 5.

See also **“# Systems” on page 268**, **“Public Sys” on page 236**, and **“SOC” on page 251**.

Public Sys

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“DISP DCON;CALLP:SYST:PUBL ‘On’”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, displays the DCCH CALL CONFIGURE screen, and enables public system operation.

See also **“# Systems” on page 268**, **“PSID/RSID” on page 236**, and **“SOC” on page 251**.

Pwr Gain

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DAMPS’”
“DISP DME;CALLP:GMOD ‘AUTO’”
“CALLP:AGAIN?”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DAMPS, displays the DIGITAL MEASUREMENTS screen, sets the gain mode to automatic, then queries the automatic gain setting.

Pwr Lvl:

GPIB Examples

```
“DISP ACNT;CALLP:AVC:VMAC 3”
```

displays the CALL CONTROL screen and enters 3 in the Pwr Lvl field for the analog voice channel.

```
“DISP ACNT;CALLP:DTCH:DMAC 3”
```

displays the CALL CONTROL screen and enters 3 in the Pwr Lvl field for the digital traffic channel.

R

RAND_A

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘AMPS’”
“DISP AUTH;CALLP:AUTH:ONOFF ‘On’”
“CALLP:AMPS:AUTH:RAND:A ‘4F5A’”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to AMPS, displays the AUTHENTICATION screen and turns authentication on, then enters 4F5A as RAND_A.

RAND_B

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘AMPS’”
“DISP AUTH;CALLP:AUTH:ONOFF ‘On’”
“CALLP:AMPS:AUTH:RAND:B ‘4F5A’”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to AMPS, displays the AUTHENTICATION screen and turns authentication on, then enters 4F5A as RAND_B.

RANDSSD_1

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘AMPS’”
“DISP AUTH;CALLP:AUTH:ONOFF ‘On’”
“CALLP:AMPS:AUTH:RAND:SSD1 ‘4F5A26’”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to AMPS, displays the AUTHENTICATION screen and turns authentication on, then enters 4F5A26 as RANDSSD_1.

RANDSSD_2

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘AMPS’”
“DISP AUTH;CALLP:AUTH:ONOFF ‘On’”
“CALLP:AMPS:AUTH:RAND:SSD2 ‘4F5A55’”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to AMPS, displays the AUTHENTICATION screen and turns authentication on, then enters 4F5A55 as RANDSSD_2.

RANDSSD_3

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘AMPS’”
“DISP AUTH;CALLP:AUTH:ONOFF ‘On’”
“CALLP:AMPS:AUTH:RAND:SSD3 ‘4F’”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to AMPS, displays the AUTHENTICATION screen and turns authentication on, then enters 4F as RANDSSD_3.

RAND_U

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘AMPS’”
“DISP AUTH;CALLP:AUTH:ONOFF ‘On’”
“CALLP:AMPS:AUTH:RAND:U ‘4F5A26’”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to AMPS, displays the AUTHENTICATION screen and turns authentication on, then enters 4F5A26 as RAND_U.

Range Hold

GPIB Example

```
“DISP CONF;CONF:OPER ‘Auto’”
```

displays the CONFIGURE screen and selects autoranging and autotuning. ‘Hold’ disables autoranging and autotuning.

For more information see the Range Hold field description in the *User’s Guide*.

Rcv Pace

GPIB Example

```
“DISP IOC;CONF:SPOR:RPACe ‘NONE’”
```

displays the I/O CONFIGURE screen and selects None in the Rcv Pace field.

RECC Data (Hex)

GPIB Example

```
“DISP DEC;DEC:MODE ‘NAMPS’”
“MEAS:DEC:NAMP:RECC?”
```

accesses the NAMPS decoder, and displays the decoded NAMPS data.

Ref Level

GPIB Example

```
"DISP SAN;SANalyzer:CONTrol ‘MAIN’;RLEVel 10 DBM"
```

displays the SPECTRUM ANALYZER screen, selects Main in the Controls field, and enters 10.0 dBm in the Ref Level field.

Reg Conf

GPIB Examples

```
“DISP ACNT;CALLP:CSYS ‘AMPS’”
“DISP CCNF;CALLP:REGC”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to AMPS, displays the CALL CONFIGURE screen, then sends a registration confirmation to the mobile.

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“DISP DCON;CALLP:REGC”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, displays the DCCH CALL CONFIGURE screen, and then sends a registration confirmation to the mobile.

Register

GPIB Example

```
“DISP ACNT;CALLP:REGister”
```

displays the CALL CONTROL screen and selects the Register field.

Register (annunciator)

GPIB Example

```
“STATus:CALLP:CONDITion?”
```

queries the analog Call Processing condition register. Bit 1 will be true (BCD 2) when an analog call is in the registration state. Also, the Register annunciator on the CALL CONTROL screen is lit when an analog call is in the registration state.

Release

GPIB Example

```
“DISP ACNT;CALLP:REL”
```

displays the CALL CONTROL screen and releases the call that is currently connected.

Res BW

GPIB Example

```
“DISP ACP;ACPower:RBW ‘1 KHZ’”
```

displays the ADJACENT CHANNEL POWER screen and selects 1 kHz’ in the Res BW field.

Reset

GPIB Example

```
“DISP OSC;OSC:TRIGger:RESet”
```

displays the OSCILLOSCOPE screen and selects the Reset field.

RF Channel

GPIB Example

```
“CONF:RFDM ‘Chan’”
“DISP RFAN;RFAN:RFCHannel 283”
```

sets the RF display mode to channel, then displays the RF ANALYZER screen and selects channel 283.

RF Chan Std

GPIB Example

```
“DISP CONF;CONF:RFCS ‘MS AMPS“
```

displays the CONFIGURE screen and select MS AMPS as the RF channel standard.

RF Cnt Gate

GPIB Example

```
“DISP RFAN;RFANalyzer:GTIMe 200MS“
```

displays the RF ANALYZER screen and enters 200.0 ms in the RF Cnt Gate field

RF Display

GPIB Example

```
“DISP CONF;CONF:RFDM ‘FREQ’“
```

displays the CONFIGURE screen and selects frequency tuning (alternate choice is ‘Chan’ (channel tuning)).

RF Gen Freq

GPIB Example

```
“CONF:RFDM ‘FREQ’;:DISP RFG;RFGenerator:FREQuency 870MHz“
```

selects frequency display mode (CONFIGURE screen), displays the RF GENERATOR screen, and enters 870.000000 MHz as the RF generator frequency.

RF Gen Volts

GPIB Example

```
“DISP CONF;CONF:RFIMpedance ‘EMF’“
```

selects emf in the RFGen Volts field.

RF In/Ant

GPIB Example

```
"DISP SAN:CONTrol 'MAIN';INPut 'RF In'"
```

displays the SPECTRUM ANALYZER screen, selects Main in the Controls field, and selects RF In in the Controls subfield.

RF In/Out

GPIB Example

```
"DISP CONF:RFIN -20DB"
"CONF:OFL:MODE 'On'"
```

displays the CONFIGURE screen, and sets the path loss from the RF IN/OUT connector to the mobile to –20 dB.

RF Level Offset

GPIB Example

```
"DISP CONF;CONF:OFLevel:MODE 'ON'"
```

displays the CONFIGURE screen and selects On in the RF Level Offset field.

RF Offset

GPIB Example

```
"DISP CONF;CONF:RFDM 'FREQ';OMODe 'ON'"
```

displays the CONFIGURE screen, selects Freq in the RF Display field, and selects On in the RF Offset field.

RF Path

GPIB Example

```
"DGG:PATH 'Bypass'"
```

sets the RF Path to bypass the RF generator's IQ modulator, outputting a CW signal. 'IQ' would switch the path through the IQ modulator.

Run Test

GPIB Example

```
"DISP TEST;TEST:PROC:RUNT"
```

displays the TESTS (Main Menu) screen, and initiates the test selected with the TEST:PROC:NAME command.

RX Chan Info

See **"Freq Channel Information" on page 211**.

RX Freq (MHz)

See **"Freq Channel Information" on page 211**.

RX/TX Cntl

GPIB Example

```
"DISP CONF;CONF:ARTSwitching 'MANUAL'"
```

displays the CONFIGURE screen and selects Manual in the RX/TX Cntl field

S

SAT:

GPIB Examples

```
"DISP ACNT;CALLP:CSYS ‘AMPS’”
“CALLP:SAT '5970HZ'"
```

displays the CALL CONTROL screen, sets the system type to AMPS, and sets the supervisory audio tone (SAT) to 5970 Hz.

```
"DISP ACNT;CALLP:CSYS ‘DCCH’”
“CALLP:DCCH:AVCH:SAT '5970HZ'"
```

displays the CALL CONTROL screen, sets the system type to DCCH, and sets the analog voice channel’s supervisory audio tone (SAT) to 5970 Hz.

SAT Freq

GPIB Example

```
“DISP AFG2;AFG2:MODE ‘AMPS-TACS’”
“AFG2:AMPS:SAT:FREQ 6KHZ”
```

displays the SIGNALING ENCODER (AF GENERATOR 2) screen, selects the AMPS-TACS mode, and sets the supervisory audio tone’s frequency.

SAT Level

GPIB Example

```
“DISP AFG2;AFG2:MODE ‘AMPS-TACS’”
“AFG2:AMPS:SAT:LEV 2”
```

displays the SIGNALING ENCODER (AF GENERATOR 2) screen, selects the AMPS-TACS mode, and sets the supervisory audio tone’s level. The unit of measure depends on the AFGen2 To setting (AFG2:DEST).

Sat Tol

GPIB Examples

```
"DISP ACNT;CALLP:CSYS ‘AMPS’
“DISP CCNF;CALLP:STOLerance ‘Narrow’"
```

displays CALL CONTROL screen, then the CALL CONFIGURE screen, and then selects narrow SAT tolerance.

```
"DISP ACNT;CALLP:CSYS ‘DAMPS’
“DISP DACN;CALLP:DAMPS:STOLerance ‘Narrow’"
```

displays CALL CONTROL screen, then the DAMPS CALL CONFIGURE screen, and then selects narrow SAT tolerance.

Save/Recall

GPIB Example

```
"DISP IOC;CONF:SRLocation ‘CARD’"
```

displays the I/O CONFIGURE screen and selects Card in the Save/Recall field.

SCM:

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘AMPS’”
“CALLP:AMOD ‘Data;”
“CALLP:AMPS:RCDD4?”
```

displays the CALL CONTROL screen, selects data display mode, and queries the station class mark (SCM).

Scope To

GPIB Example

```
“DISP AFAN;AFAN:SMPoint ‘INPUT’“
```

displays the AF ANALYZER screen and selects Input in the Scope To field.

Screen Ind

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“CALLP:DCCH:CID:SIND ‘Not Scrn’”
```

displays the CALL CONTROL screen, selects the DCCH system type, and selects not screened screening for caller ID screening. (Other choices are Ver&Pass, Ver&Fail, Nwrk Prov.)

Select Procedure Filename
Select Procedure Location

GPIB Example

```
“DISP TEST;TEST:PROC:LOC ‘ROM’”
“TEST:PROC:NAME ‘IB_UTIL’”
```

displays the TESTS (Main Menu) screen, and selects the IBASIC utilities program from the Test Set’s ROM. The program is initiated using the TEST:PROC:RUNT command.

Send

GPIB Example

```
“DISP AFG2;AFG2:SEND”
```

displays the SIGNALING ENCODER (AF GENERATOR 2) screen, and causes the FVC or FOCC message to be output.

Send Data

GPIB Example

```
”DISP RINT:PAR:OUT:DATA”
```

displays the RADIO INTERFACE screen and clocks the data in the Output Data field to the parallel data pins. It also outputs a pulse on the Strobe pin.

Send DSAT

GPIB Example

```
“DISP AFG2;AFG2:MODE ‘NAMP-NTAC’”
“AFG2:NAMPS:DSAT:SEND”
```

displays the SIGNALING ENCODER (AF GENERATOR 2) screen, selects the NAMPS-NTACS mode, and sends the DSAT.

Send Filler

GPIB Example

```
“DISP AFG2;AFG2:MODE ‘NAMP-NTAC’”
“AFG2:NAMPS:FOCC:FILL:SEND”
```

displays the SIGNALING ENCODER (AF GENERATOR 2) screen, selects the NAMPS-NTACS mode, and sends the filler data for message streams A and B.

Send Mode

GPIB Example

```
“DISP AFG2;AFG2:SEND:MODE ‘Cont’”
```

displays the SIGNALING ENCODER (AF GENERATOR 2) screen and causes the message to be output continuously until the :STOP command is sent. Other send mode choices are Single, Burst, and Step (step is not used in AMPS-TACS mode).

Send Word

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘AMPS’”
“DISP CBIT;CALLP:SWORd“
```

displays the CALL CONTROL screen and selects the AMPS system type, then displays CALL BIT screen and sends the word specified with the CALLP:MESS command to the mobile.

See **“Set Message” on page 249**.

Sensitivity

GPIB Example

```
“DISP RFAN;RFAN:SENSitivity ‘HIGH’“
```

displays the RF ANALYZER screen and selects High in the Sensitivity field.

Sensitivity

GPIB Example

```
“DISP SAN;SANalyzer:CONTrol ‘AUXILIARY’;:RFAN:SENSitivity ‘HIGH’”
```

displays the SPECTRUM ANALYZER screen, selects Auxiliary in the Controls field, and selects High in the Sensitivity field.

Seqn Order of Tests

GPIB Example

```
“TEST:SEQN:NUMB 3 ’1,Y,3,N,7,Y’”
```

sets the number and the order of tests (steps):
for test 1, tests all channels (Y=yes All Chans?),
for test 3 does not testall channels (N=no All Chans?),
and for test 7, tests all channels (Y=yes All Chans?).

Serial Baud

GPIB Example

```
“DISP IOC;CONF:SPORt:BAUD ‘9600’”
```

displays the I/O CONFIGURE screen and selects 9600 in the Serial Baud field.

Serial In

GPIB Example

```
“DISP IOC;CONF:SPORt:SINput ‘INST’”
```

displays the I/O CONFIGURE screen and selects Inst in the Serial In field.

Serial No.

GPIB Example

See **“*IDN? (Identification Query)” on page 169**.

The identification query returns the following information about the test set: manufacturer, model number, serial number, and firmware revision.

Set Message

GPIB Example

```
"DISP ACNT;CALLP:CSYS ‘AMPS’”
“DISP CBIT;CALLP:MESS 'SPC WORD1'"
```

displays the CALL CONTROL screen and selects the AMPS system type, then displays the CALL BIT screen and selects SPC WORD1.

Settling

GPIB Example

```
“DISP AFAN;AFAN:DETector:SETTling ‘FAST’“
```

displays the AF ANALYZER screen and selects Fast in the Settling field.

SID

GPIB Example

```
"DISP ACNT;CALLP:SID 231"
```

displays the CALL CONTROL screen and enters 231 in the SID field.

SINAD

GPIB Example

```
“DISP RX;MEAS:AFR:SELect ‘SINAD’;SINAD?“
```

displays the RX TEST screen, displays the SINAD field and queries the SINAD measurement.

Sine Units

GPIB Example

```
“DISP AFG2;AFG2:MODE ‘Func Gen’”
“AFG2:DEST ‘Audio Out’”
“AFG2:FGEN:SUN ‘RMS’”
```

accesses the function generator encoder, sets AFGen2 To to Audio Out, and sets the encoder’s signal ouput to rms units.

Single/Cont

GPIB Example

```
“DEC:ARM:MODE‘Cont’”
```

selects continuous measurement triggering for the signaling decoder.

Slot

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DAMPS’”
“CALLP:VTYP ‘DTC’”
“CALLP:DAMPS:DTC:SLOT 6”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DAMPS, sets the traffic channel type to DTC, then assigns slot 6 to the DTC.

SMS Contents

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“DISP DCON;CALLP:DCCH:SMS:TYPE ‘Cust’”
“CALLP:DCCH:SMS:CONT ‘BE BACK 10:30’”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, displays the DCCH CALL CONFIGURE screen, sets the short message service (SMS) type to custom, and enters a message (up to 96 characters) to be sent when a send SMS order is given.

See also **“SMS Size” on page 250** and **“SMS Type” on page 251**.

SMS Size

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“DISP DCON;CALLP:DCCH:SMS:SMSS 96”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, displays the DCCH CALL CONFIGURE screen and specifies 96 characters of the short message contents to be sent when a send SMS order is given.

See also **“SMS Contents” on page 250** and **“SMS Type” on page 251**.

SMS Type

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“DISP DCON;CALLP:DCCH:SMS:TYPE ‘Cust’”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, displays the DCCH CALL CONFIGURE screen and sets the short message type to custom.

See also **“SMS Size” on page 250** and **“SMS Contents” on page 250**.

SOC

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“DISP DCON;CALLP:DCCH:SYST:PUBL ‘Off’”
“CALLP:DCCH:SYST:SOC 0”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, displays the DCCH CALL CONFIGURE screen, selects a non-public system, and sets the system operating code to 0.

See also **“# Systems” on page 268**, **“PSID/RSID” on page 236**, and **“Public Sys” on page 236**.

Spec Pass/Fail Limits

GPIB Example

```
“TEST:SPEC:NUMB 1,10,5,’Both’”
```

sets the upper limit of specification 1 to 10 and the lower limit to 5, and causes the measurement to use both the upper and lower limits to determe a pass or fail status. See also, **“Description” on page 204**.

SNR

GPIB Example

```
“DISP RX;MEAS:AFR:SELect ‘SNR’;SNR?“
```

displays the RX TEST screen, displays the SNR field and queries the SNR measurement.

Span

GPIB Example

```
"DISP SAN;SANalyzer:CONTrol 'MAIN';SPAN 300KHZ"
```

displays the SPECTRUM ANALYZER screen, selects Main in the Controls field, and enters 300 kHz in the Span field.

Speaker ALC

GPIB Example

```
"DISP AFAN;AFAN:SPEaker:MODE 'ON'"
```

displays the AF ANALYZER screen and selects On in the Speaker ALC field.

Speaker Vol

GPIB Example

```
"DISP AFAN;AFAN:SPEaker:VOLume 'OFF'"
```

displays the AF ANALYZER screen and selects Off in the Speaker Vol field.

Squelch

GPIB Example

```
"DISP RFAN;RFAN:SQUelch 'OPEN'"
```

displays the RF ANALYZER screen and selects Open in the Squelch field.

Standard

GPIB Example

```
"DISP AFG2;AFG2:MODE 'AMPS-TACS'"
"AFG2:AMPS:STAN 'JTACS'"
```

displays the SIGNALING ENCODER (AF GENERATOR 2) screen, selects the AMPS-TACS mode, and sets the signaling standard to JTACS.

Step#

"Seqn Order of Tests" on page 248.

Stop

GPIB Example

```
"DISP AFG2;AFG2:STOP"
```

displays the SIGNALING ENCODER (AF GENERATOR 2) screen, and stops the message that is being output.

Stop DSAT

GPIB Example

```
"DISP AFG2;AFG2:MODE 'NAMP-NTAC'"
"AFG2:NAMPS:DSAT:STOP"
```

displays the SIGNALING ENCODER (AF GENERATOR 2) screen, selects the NAMPS-NTACS mode, and stops sending the DSAT.

Stop Filler

GPIB Example

```
"DISP AFG2;AFG2:MODE 'NAMP-NTAC'"
"AFG2:NAMPS:FOCC:FILL:STOP"
```

displays the SIGNALING ENCODER (AF GENERATOR 2) screen, selects the NAMPS-NTACS mode, and stops the filler data for message streams A and B.

Stop Length

GPIB Example

```
"DISP IOC;CONF:SPORt:STOP '1 BIT'"
```

displays the I/O CONFIGURE screen and selects 1 Bit in the Stop Length field.

Stop Meas

GPIB Example

```
"DEC:STOP"
```

aborts the signaling decoder's measurement in progress.

Strobe Pol

GPIB Example

```
"DISP RINT:PAR:STR 'HIGH'"
"DISP RINT:PAR:STR 'LOW'"
```

displays the RADIO INTERFACE screen and sets the polarity of the pulse on the Strobe pin. This pulse occurs when the **Send Data** field is selected.

Sym

GPIB Example

```
"DISP DEC;DEC:MODE 'DTMF'"
"MEAS:DEC:DTMF:SYMB?"
```

accesses the DTMF decoder, and displays the encoder's symbols assigned for each tone pair as each tone pair is analyzed.

Symbol Frequencies (Hz)

GPIB Example

```
"DISP AFG2;AFG2:MODE 'DTMF'"
"AFG2:DTMF:FREQ:COL 1,1209.0"
"AFG2:DTMF:FREQ:RO 2,697.0"
```

accesses the DTMF decoder, and sets the frequency of column 1 to 1209.0 Hz, and row 1 to 697.0 Hz. Default colum/row frequencies are automatically entered when the radio standard is entered (:AFG2:DTMF:STAND 'Bell').

System Type

GPIB Example

```
"DISP ACNT;CALLP:CSYS 'AMPS'"
```

displays the CALL CONTROL screen and selects the AMPS system type.

T

Temperature

GPIB Example

```
"DISP ACNT;CALLP:CSYS 'DCCH'"
"CALLP:DCCH:PCS:MODE 'On'"
"DISP DCC2;CALLP:DCCH:PCS:TEMP:COMP"
"STAT:OPER:COND?"
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, turns on PCS mode, displays the DCCH CALL CONFIGURE II screen, and performs temperature compensation and waits until the temperature compensation has completed (about 10 to 15 seconds).

Test?

See **"Freq Channel Information" on page 211**.

Test Name

GPIB Example

```
"TEST:SEQN? 1"
```

returns the test number, test name, and Y (yes All Chans?) or N (no All Chans?).

Test Procedure Run Mode:

GPIB Example

```
"TEST:EXEC:RUN 'Continuous'"
```

runs the tests one after another without stopping, unless the operator must interact with the test set or unit-under-test (change channels, audio levels, cabling, and so forth).

Time

GPIB Example

```
"DISP CONF;CONF:TIME?"
```

displays the CONFIGURE screen and queries the Time field.

Time (marker)

GPIB Example

```
“MEAS:OSC:MARK:TIME?”
```

displays time elapsed fromt he trigger point to the current time at the oscilloscope’s time marker.

Time/div

GPIB Example

```
“DISP OSC;OSCilloscope:CONTrol ‘MAIN’;SCALe:TIME ‘1 ms’”
```

displays the OSCILLOSCOPE screen, selects Main in the Controls field, and selects 1 ms in the Time/div field.

To Screen

These are the GPIB syntax commands to display a screen. Some of the screens in the following lists are not diplayed in the To Screen field (such as the CONFIGURE, SERVICE, and the TESTS screens).

Analog

- `AD CH PWR - DISP ACPower`
- `AF ANL - DISP AFANalyzer`
- `DECODER - DISP DECoder`
- `DUPLEX - DISP DUPLex`
- `ENCODER - DISP AFG2` *or* `DISP ENCoder`
- `RF ANL - DISP RFANalyzer`
- `RF GEN - DISP RFGen`
- `RX TEST - DISP RX`
- `SCOPE - DISP OSCilloscope`
- `SPEC ANL - DISP SANalyzer`
- `TX TEST - DISP TX`

Configuration

- `CONFIGURE - DISP CONFigure`
- `IO CONFIG - DISP IOConfigure`
- `PRNT CNFG - DISP PCONfigure`
- `RADIO INT - DISP RINTerface`
- See also Call Control, TESTS (External Devices), TESTS (Printer Setup)

Call Control

- `CALL CNTL - DISP ACNTrol`
  - `ANLG MEAS - DISP CMEasure`
  - `AUTHEN - DISP AUTHentication`
  - `CALL BIT - DISP CBIT`
  - `CALL CNFG (AMPS, NAMPS, TACS, JTACS) - DISP CCNFigure`
  - `CALL CNFG (DAMPS) - DISP DACNfigure`
  - `CALL CNFG (DCCH) - DISP DCONfigure`
  - `CALL CFG2 (DCCH) - DISP DCC2`
  - `CALL DATA - DISP CDATa`
  - `DIG MEAS - DISP DMEasure`

To Screen (continued)

TDMA

- TDMA TEST - This screen is only accessible when an Agilent 83204A or 83201B TDMA Cellular Adapter is connected.

  Use the CALL CONTROL screens when using the Agilent 83206A TDMA Cellular Adapter for TDMA mobile measurements.

- PDC TEST - This screen is only accessible when an Agilent 83201B TDMA Cellular Adapter is connected. PDC is not available when using the Agilent 83206A TDMA Cellular Adapter.
- PHP TEST - This screen is only accessible when an Agilent 83201B TDMA Cellular Adapter is connected. PHP is not available when using the Agilent 83206A TDMA Cellular Adapter.

Other

- **TESTS** - DISP TESTs
  - **TESTS (Channel Information)** - DISP TFReq
  - **TESTS (Execution Conditions)** - DISP TEXec
  - **TESTS (External Devices)** - DISP TCONfigure
  - **TESTS HELP** - DISP THLP
  - **TESTS (IBASIC Controller)** - DISP TIBasic
  - **TESTS (Order of Tests)** - DISP TSEQn
  - **TESTS (Pass/Fail Limits)** - DISP TSLimits
  - **TESTS (Printer Setup)** - DISP TPRint
  - **TESTS (Save/Delete Procedure)** - DISP TMAKe
  - **TESTS (Test Parameters)** - DISP TPARm
- **HELP** - DISP HELP
- **MESSAGE** - DISP MESSages
- **SERVICE** - DISP SERVice

Total RAM

GPIB Example

```
"SPEC:RAMFORIBASIC?"
```

queries the approximate amount of RAM available for IBASIC programs.

Traffic Chan

GPIB Example

```
"DISP ACNT;CALLP:CSYS 'DCCH'"
"CALLP:DCCH:DTCH:TCH 799"
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, then sets the digital traffic channel to 799.

Trig-Delay

GPIB Example

```
“DISP OSC;OSCilloscope:CONTrol ‘TRIGGER’;TRIGger:DELay 1MS“
```

displays the OSCILLOSCOPE screen, selects Trigger in the Controls field, and enters 1.000 ms in the Trig-Delay field.

Trig Level

The Agilent 8920B automatically selects the trigger level.

Trig Pattern (bin)

GPIB Example

```
“DISP DEC;DEC:MODE ‘NAMPS’”
“DEC:NAMP:TRIG:PATT ‘10.11’”
```

accesses the NAMPS decoder, and sets a trigger pattern to filter displayed information.

Trig Type

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“DISP DME;DGAN:TRIG:TYPE ‘2X Frame’”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, displays the DIGITAL MEASUREMENTS screen, and sets the trigger type to 2 times frame clock.

Tune Freq

GPIB Example

```
“CONF:RFDM ‘FREQ’;:DISP TX;RFANalyzer:FREQuency 825MHZ”
```

selects Freq in the RF Display field (CONFIGURE screen), displays the TX TEST screen, and enters 825.000000 MHz in the Tune Freq field.

Tune Mode

GPIB Example

```
“CONF:RFDM ‘FREQ’;:DISP TX;RFANalyzer:TMODe ‘Auto’”
```

selects Freq in the RF Display field (CONFIGURE screen), displays the TX TEST screen, and selects Auto in the Tune Mode field.

TX Chan Info

See **“Freq Channel Information” on page 211**.

TX Freq Error

GPIB Example

```
“CONF:RFDM ‘FREQ’;:DISP TX;
RFANalyzer:TMODe ‘Manual’;:MEAS:RFRequency:FREQuency:ERRor?”
```

selects Freq in the RF Display field (CONFIGURE screen), displays the TX TEST screen, selects Manual in the Tune Mode field, and queries the TX Freq Error measurement results.

TX Freq (MHz)

See **“Freq Channel Information” on page 211**.

TX Frequency

GPIB Example

```
“CONF:RFDM ‘FREQ’;:DISP TX;
RFANalyzer:TMODe ‘Auto’;:MEAS:RFRequency:FREQuency:ABSolute?”
```

selects Freq in the RF Display field (CONFIGURE screen), displays the TX TEST screen, selects Auto in the Tune Mode field, and queries the TX Frequency measurement results.

TX Power

GPIB Example

```
"DISP TX;MEAS:RFRequency:POWer?"
```

displays the TX TEST screen and queries the TX Power field measurement results.

TX Power (Avg)

GPIB Example

```
"DISP ACNT;MEAS:RFRequency:POWer?"
```

displays the CALL CONTROL screen and queries the TX Power field measurement results when a PCS Interface is configured and enabled in the system.

TX Power

See "EVM 1, EVM 10 (EVM Peak EVM, Phase Err, Mag Err, Orgin Ofs, Droop, Sync Loc, Max Abs, Frequency Error, TX Power)" on page 208.

TX Pwr Meas

GPIB Example

```
"DISP TX;RFAN:PMEasurement:DETector 'Sample'"
```

displays the TX TEST screen and selects Sample in the TX Pwr Meas field.

TX Pwr Zero

GPIB Example

```
"DISP TX;RFAN:PMEasurement:ZERO"
```

displays the TX TEST screen and selects the TX Pwr Zero field.

TX-RX Offst (User Defined)

GPIB Example

```
"DISP CONF;CONF:RFDM 'CHAN';RFCStandard 'USER-DEF';UDOF 50MHZ"
```

selects channel display mode, selects the user-defined channel standard, and sets a user-defined 50 MHz transmitter-receiver offset .

Twist

GPIB Example

```
“DISP AFG2;AFG2:MODE ‘DTMF’”
“AFG2:DTMF:TWIS 2.5”
```

accesses the DTMF encoder, and sets twist to 2.5 dB. Twist is the ratio of amplitudes (in dB) between the high frequency and low frequency tone in each DTMF pair. A positive value indicates a higher amplitude for the high frequency tones. A negative value indicates a higher amplitude for the low frequency tones. See the *Agilent 8920B User’s Guide* for information about interactions between twist and pre-emphasis.

Type

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“CALLP:DCCH:DTCH:VTYP ‘DTC’”
```

accesses call processing by displaying the CALL CONTROL screen, sets the system type to DCCH, then sets the traffic channel assignment to a digital traffic channel.

U

Units

There is no equivalent GPIB command for this function.

Upper ACP Level
Upper ACP Ratio

GPIB Example

```
“DISP ACP;ACPower:MEASurement ‘RATIO’“
“MEAS:ACP:LRATIO?”
```

displays the ADJACENT CHANNEL POWER screen and queries the Lower ACP Ratio measurement field.

Upper Limit

See **“Spec Pass/Fail Limits” on page 251**

User Def Base Freq

GPIB Example

```
“DISP CONF;CONF:RFDM ‘CHAN’”
“CONF:RFCS ‘USER-DEF’”
“CONF:UDBF 810MHZ“
```

displays the CONFIGURE screen, sets the RF display to channel, sets the RF channel standard to user-defined, and sets the user-defined base frequency to 810 MHz.

V

Value

GPIB Example

```
“TEST:PARM:NUMB 1,10”
```

sets parameter 1’s value to 10. See also, **“Description” on page 204**.

VC Order

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“CALLP:DTCH:VTYP ‘DTC’”
“DISP AUTH;CALLP:DCCH:AUTH:ONOFF ‘On’”
“CALLP:AUTH:VCOR ‘Send SMS’”
```

accesses call processing by displaying the CALL CONTROL screen and sets the system type to DCCH, sets the traffic channel assignment to a digital traffic channel (DTC), displays the AUTHENTICATION screen and turns on authentication, then sends an SMS order. Use this command when a call is connected.

See **Chapter 6, “Which Control Order Command Should I Use?,”** for more informaton about control orders.

Vert/div

GPIB Example

```
“AFAN:INP ‘FM Demod’;
:DISP OSC;OSCilloscope:CONTrol ‘MAIN’;SCALe:VERTical:FM ‘1 KHZ’”
```

selects FM Demod in the AF Anl In field (AF ANALYZER screen), displays the OSCILLOSCOPE screen, selects Main in the Controls field, and selects 1 kHz in the Vert/div field.

Vert Offset

GPIB Example

```
"DISP OSC;OSCilloscope:CONTrol 'MAIN';SCALe:VERTical:OFFSet 1"
```

displays the OSCILLOSCOPE screen, selects Main in the Controls field, and enters 1.00 in the Vert Offset field.

Voc

GPIB Example

```
"DISP ACNT;CALLP:CSYS 'DCCH'"
"CALLP:DTCH:VTYP 'DTC'"
"CALLP:VOC 'VSELP'"
```

accesses call processing by displaying the CALL CONTROL screen and sets the system type to DCCH, sets the traffic channel assignment to a digital traffic channel (DTC), and sets the vocoder type to VSELP.

W

Waveform

GPIB Example

```
“DISP AFG2;AFG2:MODE ‘Func Gen’”
“AFG2:FGEN:WAVE ‘Sine’”
```

accesses the function generator encoder, and sets the waveform type of AF generator 2 to a sinewave. Other waveforms available are: square, triangle, ramp (+ or -), dc (+ or -), universal noise, Gaussian noise.

WER Type

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“MEAS:DCCH:DMTYP ‘DTC WER’”
“DISP DME;MEAS:DCCH:WER:DTCT ‘SPEECH’”
```

accesses call processing by displaying the CALL CONTROL screen and sets the system type to DCCH, then displays the DIGITAL MEASUREMENTS screen, selects the digital traffic channel word error rate (DTC WER) measurement, and sets the measurement mode to speech.

WER Words

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“CALLP:DCCH:DMTY ‘DTC WER’
“DISP DME;MEAS:DCCH:WER:MWORD 100”
```

accesses call processing by displaying the CALL CONTROL screen and sets the system type to DCCH, then displays the DIGITAL MEASUREMENTS screen, sets the maximum number of words to 100.

Words Read

GPIB Example

```
“DISP ACNT;CALLP:CSYS ‘DCCH’”
“MEAS:DCCH:DMTYP ‘DTC WER’”
“DISP DME;MEAS:DCCH:WER:DTCT ‘SPEECH’”
“MEAS:DCCH:WER:ARM”
“MEAS:DCCH:WER:WRE?”
```

accesses call processing by displaying the CALL CONTROL screen and sets the system type to DCCH, then displays the DIGITAL MEASUREMENTS screen, selects the digital traffic channel word error rate (DTC WER) measurement, selects speech measurement mode (WER Type: Speech), arms the measurement, then reads the number or words read for the WER measurement.

X

Xmt Pace

GPIB Example

```
“DISP IOC;CONF:SPOR:XPACe ‘NONE’”
```

displays the I/O CONFIGURE screen and selects None in the Xmt Pace field.

Numerals or Symbols

1 of N

GPIB Example

```
"DISP AUTH;CALLP:AMPS:AUTH:OON 2"
```

displays the AUTHENTICATION screen and enters 2 in the 1 of N field.

Neighbors

GPIB Example

```
"DISP ACNT;CALLP:CSYS 'DCCH'"
"DISP DACN;CALLP:DAMPS:NEIG:NUMB 2"
```

accesses call processing by displaying the CALL CONTROL screen and sets the system type to DCCH, and sets the number of neighbor channels to be evaluated to 2.

To set the band for neighbor channels see **"BAND (Neighbor List)" on page 193** (DCCH system type only).

To set the channel for neighbor channels see **"Channel" on page 198**.

Systems

GPIB Example

```
"DISP ACNT;CALLP:CSYS 'DCCH'"
"DISP DCON;CALLP:DCCH:SYST:NUMB 1"
```

accesses call processing by displaying the CALL CONTROL screen and sets the system type to DCCH, displays the DCCH CALL CONFIGURE screen and sets the number of systems to be evaluated to 1.

See also **"PSID/RSID" on page 236**, **"Public Sys" on page 236**, and **"SOC" on page 251**.

% BIT ERROR

GPIB Example

```
"DISP ACNT;CALLP:CSYS 'DCCH'"
"DISP DCON;CALLP:DCCH:DTCE 1"
```

accesses call processing by displaying the CALL CONTROL screen and sets the system type to DCCH, displays the DCCH CALL CONFIGURE screen and sets the number inserted bit errors to 1%.

6

Which Control Order Command Should I Use?

This chapter contains a matrix of the conditions for which each control command is used.

Table 7

Control Command to Use	Orders Available	Call Connected?	Authentication	Channel Type	Field Name
CALLP:ORD	Chng PL 0 Chng PL 1 Chng PL 2 Chng PL 3 Chng PL 4 Chng PL 5 Chng PL 6 Chng PL7 Mainten Alert	No	Off	ACC	Order
CALLP:NAMPS:NORD	Chng PL 0 Chng PL 1 Chng PL 2 Chng PL 3 Chng PL 4 Chng PL 5 Chng PL 6 Chng PL7 Mainten Alert		Off	Narrow	Order
CALLP:DCCH:AVCH:ORD CALLP:DAMPS:AVCH:ORD	Chng PL 0 Chng PL 1 Chng PL 2 Chng PL 3 Chng PL 4 Chng PL 5 Chng PL 6 Chng PL7 Mainten Alert	Yes/No		AVC	Order
CALLP:DCCH:DTCH:ORD CALLP:DAMPS:DTCH:ORD	Chng PL 0 Chng PL 1 Chng PL 2 Chng PL 3 Chng PL 4 Chng PL 5 Chng PL 6 Chng PL7 Chng PL 8 Chng PL 9 Chng PL10 Send MWI Send SMS	Yes	Off	DTC	Order

Table 7

Control Command to Use	Orders Available	Call Connected?	Authentication	Channel Type	Field Name
CALLP:DCCH:CORD	Send MWI Send SMS	No	Off	DCCH	Cntl Order
CALLP:AMPS:AUTH:CCOR CALLP:DCCH:AUTH:CCOR	SSD Upd Uniq Ch Send MWI[a] Send SMS[a]	No	On	DCCH	CC Order
CALLP:AMPS:AUTH:VCOR CALLP:DCCH:AUTH:VCOR	Chng PL 0 Chng PL 1 Chng PL 2 Chng PL 3 Chng PL 4 Chng PL 5 Chng PL 6 Chng PL7 Mainten Alert SSD Upd Uniq Ch	Yes	On	AVC	VC Order
CALLP:DCCH:AUTH:DTCO	Chng PL 0 Chng PL 1 Chng PL 2 Chng PL 3 Chng PL 4 Chng PL 5 Chng PL 6 Chng PL7 Chng PL 8 Chng PL 9 Chng PL10 Mainten Alert SSD Upd Uniq Ch	Yes	On	DTC	VC Order

a. Digital control channel (DCCH) only (not available over GPIB)

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