

PROGram

The commands in this subsystem are only available when the HP Instrument BASIC option is installed (Option 1C2). The commands in the PROGram subsystem allow you to generate and control HP Instrument BASIC programs in the analyzer.

The commands grouped under the SELEcted mnemonic operate on the active program buffer. Since SELEcted is an implied mnemonic, you can omit it from the PROGram commands. See “Implied Mnemonics” in chapter 2 of the *HP-IB Programmer's Guide* for more information.

The command under the EXPLicit mnemonic operates on any one of the analyzer's five program buffers—not just the active program buffer.

PROGram:EDIT:ENABLE**command/query**

Disables the HP Instrument BASIC editor.

Command Syntax: PROGram:EDIT:ENABle OFF|0|ON|1

Example Statements: OUTPUT 711;"prog:edit:enab 1"
 OUTPUT 711;"PROG:EDIT:ENABLE OFF"

Query Syntax: PROGram:EDIT:ENABle?

Return Format: Integer

Attribute Summary: Option: 1C2 HP Instrument BASIC
 Synchronization Required: no
 Preset State: not affected by Preset
 SCPI Compliance: instrument-specific

Description:

This command disables and enables the HP Instrument BASIC edit menus. The edit menus are enabled when the analyzer is turned on.

To prevent access to the edit menus, send the PROG:EDIT:ENAB OFF command. The [EDIT] softkey is ghosted on the front panel display. An execution error is generated if the [EDIT] softkey is pressed while it is disabled. The message "The HP Instrument BASIC editor has been disabled." is displayed.

To enable the HP Instrument BASIC editor, send PROG:EDIT:ENAB ON.

PROGram:EXPLicit:LABel

command/query

Loads a softkey label for the specified HP Instrument BASIC program.

Command Syntax: PROGram:EXPLicit:LABel PROGAm1|PROGAm2|PROGAm3|
 PROGAm4|PROGAm5, '<STRING>'

<STRING> ::= maximum of 18 ASCII characters
 (2 lines of 9 characters)

Example Statements: OUTPUT 711;":Program:Expl:label Prog1,' START TEST' "
 OUTPUT 711;"PROG:EXPL:LAB PROG5,' PRINT REPORT' "

Query Syntax: PROGram:EXPLicit:LABel?

Return Format: "<STRING>"

Attribute Summary: Option: 1C2 HP Instrument BASIC
 Synchronization Required: no
 Preset State: not applicable
 SCPI Compliance: instrument-specific

Description:

This command allows you to customize the front panel softkey labels for HP Instrument BASIC programs.

PROG[:SELected]:DEFine**command/query**

Loads an HP Instrument BASIC program from an external controller into the active program buffer.

Command Syntax: PROG[:SELected]:DEFine <PROGRAM>

<PROGRAM> ::= <BLOCK>

<BLOCK> ::= #<byte>[<length_bytes>]<data_bytes>

<byte> ::= one byte specifying the number of length bytes
to follow (ASCII-encoded)

<data_bytes> ::= the bytes that define an HP Instrument BASIC program

Example Statements:

Indefinite Block OUTPUT 711;":PROG:DEF #0";
 OUTPUT 711;"10 PRINT ""HELLO WORLD""&CHR\$(10);
 OUTPUT 711;"20 END"&CHR\$(10);
 OUTPUT 711;CHR\$(10) END

Definite Block OUTPUT 711;":PROG:DEF #230";
 OUTPUT 711;"10 PRINT ""HELLO WORLD""&CHR\$(10);
 OUTPUT 711;"20 END"&CHR\$(10);

Query Syntax: PROG[:SELected]:DEFine?

Return Format: definite length <BLOCK>

Attribute Summary: Option: 1C2 HP Instrument BASIC
 Synchronization Required: no
 Preset State: not applicable
 SCPI Compliance: confirmed

Description:

This command transfers a program between the analyzer and your controller. This allows you to develop a program on your controller and then load it into the analyzer.

Use the PROG[:SEL]:NAME to select the active program buffer.

When you transfer a program to the analyzer, you can use either the definite or the indefinite length block syntax. The *simplest* way to load an HP Instrument BASIC program into the analyzer is to send this command followed by #0, followed by all the characters making up the program (including line numbers and line feeds at the end of each program statement). Terminate the entire command with line feed character (ASCII decimal 10) and < ^END> (the HP-IB END message, EOI set true).

When the analyzer returns the program to your controller, it always uses the definite length block syntax. See "HP-IB Message Syntax" in the *HP-IB Programmer's Guide* for more information.

PROGram[:SElected]:DElete:ALL

command

Deletes all HP Instrument BASIC programs stored in the analyzer.

Command Syntax: PROGram[:SElected]:DElete:ALL

Example Statements: OUTPUT 711;":prog:delete:all"
 OUTPUT 711;"Prog:Selected:Del:All"

Attribute Summary: Option: 1C2 HP Instrument BASIC
 Synchronization Required: no
 Preset State: not applicable
 SCPI Compliance: confirmed

Description:

In addition to deleting the active program, this command deletes *all* of the resident HP Instrument BASIC programs. Program variables—both those in COM and those not in COM are deleted as well.

This is equivalent to a “Scratch A” operation.

PROGram[:SElected]:DElete[:SElected]**command**

Deletes the active HP Instrument BASIC program.

Command Syntax: PROGram[:SElected]:DElete[:SElected]

Example Statements: OUTPUT 711;"PROG:SEL:DELETE:SEL"
 OUTPUT 711;"program:del"

Attribute Summary: Option: 1C2 HP Instrument BASIC
 Synchronization Required: no
 Preset State: not applicable
 SCPI Compliance: confirmed

Description:

In addition to deleting the active program, this command deletes all of the program variables—both those in COM and those not in COM. Specify the active program with the PROG:NAME command.

This is equivalent to a “Scratch A” operation.

PROGram[:SElected]:LABel

command/query

Loads a softkey label for the active HP Instrument BASIC program.

Command Syntax: PROGram[:SElected]:LABel '<STRING>'

 <STRING> ::= maximum of 18 ASCII characters
 (2 lines of 9 characters)

Example Statements: OUTPUT 711;":Program:label ' START TEST'"
 OUTPUT 711;"PROG:SEL:LAB ' PRINT REPORT'"

Query Syntax: PROGram[:SElected]:LABel?

Return Format: "<STRING>"

Attribute Summary: Option: 1C2 HP Instrument BASIC
 Synchronization Required: no
 Preset State: not applicable
 SCPI Compliance: instrument-specific

Description:

This command allows you to customize the front panel softkey labels for HP Instrument BASIC programs.

Specify the active program with the PROG:NAME command.

PROGram[:SElected]:MAlLocate**command/query**

Allocates memory space for HP Instrument BASIC programs.

Command Syntax: PROGram[:SElected]:MAlLocate (<number>|<bound>|DEFault)

<number> ::= a real number (NRf data)
 limits: 1200:500000

<bound> ::= MAX|MIN

Example Statements: OUTPUT 711;":Prog:Mallocate 416211"
 OUTPUT 711;"PROG:SELECTED:MALL 187046"

Query Syntax: PROGram[:SElected]:MAlLocate?

Return Format: Integer

Attribute Summary: Option: 1C2 HP Instrument BASIC
 Synchronization Required: no
 Preset State: not affected by Preset
 SCPI Compliance: confirmed

Description:

If you send PROG:MALL DEF, the analyzer resizes the stack space to fit the current active program. In some cases, the analyzer may allocate more memory than the HP Instrument BASIC program needs.

Note

You need to allocate more memory if you encounter the message, "ERROR 2 Memory overflow" while your program is running.

PROGram[:SElected]:NAME

command/query

Selects an HP Instrument BASIC program.

Command Syntax: PROGram[:SElected]:NAME PROGram1|PROGram2|PROGram3|
 PROGram4|PROGram5

Example Statements: OUTPUT 711;"prog:selected:name PROGRAM4"
 OUTPUT 711;"Program:Name PROGRAM1"

Query Syntax: PROGram[:SElected]:NAME?

Return Format: PROG1|PROG2|PROG3|PROG4|PROG5

Attribute Summary: Option: 1C2 HP Instrument BASIC
 Synchronization Required: no
 Preset State: not affected by Preset
 SCPI Compliance: confirmed

Description:

Use this command to designate an HP Instrument BASIC program buffer as the “active” program buffer.

For example, use this command to select a program buffer when you load an HP Instrument BASIC program into the analyzer with the PROG:DEF command.

PROGram[:SElected]:NUMBer**command/query**

Loads a new value for the specified numeric variable in the active HP Instrument BASIC program.

Command Syntax: PROGram[:SElected]:NUMBer '<VARIABLE>', <BLOCK>

<VARIABLE> ::= name of a numeric variable

When data is ASCII-encoded (FORMat ASC), <BLOCK> takes the following form:

<BLOCK> ::= <number>[,<number>] . . .

<number> ::= a real number
(NRf data)
limits: - 9.9e37:9.9e37

When data is binary-encoded (FORMat REAL), <BLOCK> takes the following form:

<BLOCK> ::= #<byte>[<length_bytes>]<number>[,<number>] . . .

<byte> ::= number of length bytes to follow (ASCII encoded)

<length_bytes> ::= number of data bytes to follow (ASCII encoded)

<number> ::= a real number (32- or 64-bit binary floating point)

Example Statements: OUTPUT 711;"program:sel:numb 'Address',11"
 OUTPUT 711;"PROG:NUMB 'Scode',7"

Query Syntax: PROGram[:SElected]:NUMBer?

Return Format: definite length <BLOCK>

Attribute Summary: Option: 1C2 HP Instrument BASIC
 Synchronization Required: no
 Preset State: not applicable
 SCPI Compliance: confirmed

Description:

When you load an array with this command, values in the <BLOCK> parameter are loaded into the 1st through nth elements of the array (where n is number of values in the block).

The analyzer uses the format specified by the FORMat[:DATA] command for query responses. The analyzer generates an error if the specified variable is not defined in the active program. Use the PROG:NAME command to specify the active program.

Use the PROG:STR command to load string variables.

PROGram[:SElected]:STATE

command/query

Selects the state of the active HP Instrument BASIC program.

Command Syntax: PROGram[:SElected]:STATE STOP|PAUSE|RUN|CONTINUE

Example Statements: OUTPUT 711;":PROG:STATE CONTINUE"
 OUTPUT 711;"prog:selected:stat RUN"

Query Syntax: PROGram[:SElected]:STATE?

Return Format: STOP|PAUS|RUN|CONT

Attribute Summary: Option: 1C2 HP Instrument BASIC
 Synchronization Required: no
 Preset State: not affected by Preset
 SCPI Compliance: confirmed

Description:

This command allows you to run, pause, stop or continue the active HP Instrument BASIC program.

The analyzer generates an error message, "Settings conflict; Invalid program state change requested," if you send RUN or CONT while a program is running. It also generates the error if you send CONT while a program is stopped.

Use the PROG:NAME command to select the active program.

PROGram[:SElected]:STRing**command/query**

Loads a new value for the specified string variable for the active HP Instrument BASIC program.

Command Syntax: PROGram[:SElected]:STRING '<VARIABLE>', '<STRING>'

<VARIABLE> ::= name of string variable
 (mandatory \$ at the end of the name)

<STRING> ::= ASCII characters - 0 through 255
 maximum number of characters: 32766

Example Statements: OUTPUT 711;"PROGRAM:SEL:STR 'A\$', 'Done' "
 OUTPUT 711;"prog:str 'Message\$', 'Measuring' "

Query Syntax: PROGram[:SElected]:STRing?

Return Format: <STRING>

Attribute Summary: Option: 1C2 HP Instrument BASIC
 Synchronization Required: no
 Preset State: not applicable
 SCPI Compliance: confirmed

Description:

This command sets or queries the contents of a string variable in the active HP Instrument BASIC program. Use the PROG:NAME to designate the active program.

Use the PROG[:SEL]:NUMB command to load or query numeric variables.

