



# HP 89400-Series HP-IB Commands Quick Reference

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## HP 89400-Series HP-IB Commands:

### Quick Reference

This Quick Reference lists the common commands and then lists the subsystem commands in alphabetical order. Figure 1 shows the HP 89400-series status registers.

- Syntax descriptions use the following conventions:

{ }	encloses one or more parameters that may be included zero or more times.
	indicates ``or"; one and only one of the items can be chosen.
< >	indicates the name of items that need further definition.
[ ]	indicates the enclosed items are optional.
( ~ )	indicates a valid range of values.

- Add a “?” to make the query form of a command; commands listed with a “?” are query only; commands listed with a “-?” cannot be queried.
- A “.” indicates branching points on the command tree.
- Use “;” to send multiple commands within a single program message. The command parser assumes the second command comes from the same branch as the preceeding command. Use “:” to reset the command parser to the base of the command tree.
- The input defaults to channel 1 and the trace defaults to trace A if the optional [1|2] parameter is not specified.
- To view the HP-IB command which corresponds to a front panel operation, press [ **Local/Setup** ] [ **SCPI cmd echo on** ].
- For more information on a particular command refer to *HP 89400-Series HP-IB Command Reference*.



### Command List

*CAL?	Calibrates analyzer and returns the result
*CLS	Clears the Status Byte
*ESE (0 ~ 255)	Sets or queries bits in the Standard Event Enable register
*ESR?	Reads and clears the Standard Event event register
*IDN?	Returns analyzer's identification string
*OPC	Sets completion of overlapped commands
*OPC?	Queries completion of overlapped commands
*OPT?	Returns analyzer's option configuration
*PCB-? (0 ~ 30)	Sets the pass-control-back address
*PSC (-32767 ~ 32767)	Sets or queries Power-On Status Clear flag
*RST	Executes a device reset
*SRE (0 ~ 255)	Sets or queries bits in the Service Request Enable register
*STB?	Reads Status Byte register
*TRG	Triggers analyzer
*TST?	Performs self test
*WAI	Wait-to-continue command

**ABOR** ABORt  
**ARM** ARM:DElAy (0 ~ 41.94{S})  
 ARM:LEVel (rangé depends on config{V})  
 ARM:REGion ABOVE | BELow  
 ARM:SOURce IMMEDIATE | EXTERNAL  
**CALC** CALCulate[1 | 2 | 3 | 4]:DATA?  
 CALCulate[1 | 2 | 3 | 4]:DATA:HEADer:POINts?  
 CALCulate[1 | 2 | 3 | 4]:FEED < STRING >  
 CALCulate[1 | 2 | 3 | 4]:FORMAt  
 MLINear | MLOGarithmic | PHASe | UPHase | REAL | IMAGinary | GDELay | COMPLex | CONS | IEYE | QEYE | TEYE  
 CALCulate[1 | 2 | 3 | 4]:GDAPerture:APERture (0.0625 ~ 16{PCT})  
 CALCulate[1 | 2 | 3 | 4]:MARKer:BAND:STARt (-3.40282e+38 ~ 3.40282e+38{HZ} | S | SYM)  
 CALCulate[1 | 2 | 3 | 4]:MARKer:BAND:STOP (-3.40282e+38 ~ 3.40282e+38{HZ} | S | SYM)  
 CALCulate[1 | 2 | 3 | 4]:MARKer:COUPled[:STATe] OFF | 0 | ON | 1  
 CALCulate[1 | 2 | 3 | 4]:MARKer:FCOunt OFF | 0 | ON | 1  
 CALCulate[1 | 2 | 3 | 4]:MARKer:FCOunt:RESult?  
 CALCulate[1 | 2 | 3 | 4]:MARKer:FUNCTion OFF | 0 | BPOWer | BRMS | BCN | BCNO  
 CALCulate[1 | 2 | 3 | 4]:MARKer:FUNCTion:DDEMod:RESult?  
 EVRM | MERM | PERM | FERR | ADR | IQOF | DEV | FSRM | EVPK | EVPS | FSPK | FSPS | MEPK | MEPS | PEPK | PEPS



CALCulate[1|2|3|4]:MARKer:FUNCTION:RESult?  
 CALCulate[1|2|3|4]:MARKer:MAXimum  
 CALCulate[1|2|3|4]:MARKer:MAXimum:LEFT  
 CALCulate[1|2|3|4]:MARKer:MAXimum:NEXT  
 CALCulate[1|2|3|4]:MARKer:MAXimum:RIGHT  
 CALCulate[1|2|3|4]:MARKer:MAXimum:TRACK OFF|0|ON|1  
 CALCulate[1|2|3|4]:MARKer:MINimum[:GLOBal]  
 CALCulate[1|2|3|4]:MARKer:OFFSet[:STATe] OFF|0|ON|1  
 CALCulate[1|2|3|4]:MARKer:OFFSet:X (-3.40282e+38 ~ 3.40282e+38[HZ]|S|SYM)  
 CALCulate[1|2|3|4]:MARKer:OFFSet:Y (range depends on config)[see table Units1]  
 CALCulate[1|2|3|4]:MARKer:OFFSet:Z (-3.40282e+38 ~ 3.40282e+38[S])  
 CALCulate[1|2|3|4]:MARKer:OFFSet:ZERO  
 CALCulate[1|2|3|4]:MARKer:POLar:UNIT:POWER DBM|WRMS|W|V  
 CALCulate[1|2|3|4]:MARKer:READout MPHase|RIMaginary  
 CALCulate[1|2|3|4]:MARKer:SEARch:BUFFer[:STATe] OFF|0|ON|1  
 CALCulate[1|2|3|4]:MARKer:SEARch:LEFT  
 CALCulate[1|2|3|4]:MARKer:SEARch:OFFSet  
 CALCulate[1|2|3|4]:MARKer:SEARch:RIGHT  
 CALCulate[1|2|3|4]:MARKer:SEARch:TARGet (range depends on config)[see table Units1]

CALCulate[1|2|3|4]:MARKer[:STATe] OFF|0|ON|1  
 CALCulate[1|2|3|4]:MARKer:TRACe OFF|0|ON|1  
 CALCulate[1|2|3|4]:MARKer:X[:ABSolute] (range depends on config[HZ|S|SYM])  
 CALCulate[1|2|3|4]:MARKer:X:RELative?  
 CALCulate[1|2|3|4]:MARKer:Y?  
 CALCulate[1|2|3|4]:MARKer:Y:RELative?  
 CALCulate[1|2|3|4]:MARKer:Z[:ABSolute] (0 ~ Buffer Depth)\*  
 CALCulate[1|2|3|4]:MARKer:Z:RELative?  
 CALCulate[1|2|3|4]:MARKer:Z:UNIT S|UNITLESS  
 CALCulate[1|2|3|4]:MATH:CONStant[1|2|3|4|5] (-3.40282e+38 ~ 3.40282e+38)[(-3.40282e+38 ~ 3.40282e+38)]  
 CALCulate[1|2|3|4]:MATH:CONStant[1|2|3|4|5]:IMAG (-3.40282e+38 ~ 3.40282e+38)  
 CALCulate[1|2|3|4]:MATH:CONStant[1|2|3|4|5]:MAG (0 ~ 3.40282e+38)  
 CALCulate[1|2|3|4]:MATH:CONStant[1|2|3|4|5]:PHASe (-3.40282e+38 ~ 3.40282e+38[DEG|RAD])  
 CALCulate[1|2|3|4]:MATH:CONStant[1|2|3|4|5]:REAL (-3.40282e+38 ~ 3.40282e+38)  
 CALCulate[1|2|3|4]:MATH:CONStant[1|2|3|4|5]:STEP (-3.40282e+38 ~ 3.40282e+38)  
 CALCulate[1|2|3|4]:MATH[:EXPRession[1|2|...|6]] <EXPR>  
 CALCulate[1|2|3|4]:MATH:SELEct F1|F2|F3|F4|F5|F6  
 CALCulate[1|2|3|4]:MATH:STATe OFF|0|ON|1  
 CALCulate[1|2|3|4]:STATe OFF|0|ON|1



CALCulate[1|2|3|4]:UNIT:AM

AM|AM2|PCT|DBAMRMS2|DBAMPK2|AMRMS|AMPK|AMRMS2|AMPK2|DBAMRMS2/HZ|DBAMPK2/HZ  
|AMRMS/RTHZ|AMPK/RTHZ|AMRMS2/HZ|AMPK2/HZ

CALCulate[1|2|3|4]:UNIT:ANGLE

DEG|RAD|DBRADRMS2|DBRADPK2|RADRMS|RADPK|RADRMS2|RADPK2|RAD2|DBRADRMS2/HZ|DBRADPK2/HZ  
|RADRMS/RTHZ|RADPK/RTHZ|RADRMS2/HZ|RADPK2/HZ

CALCulate[1|2|3|4]:UNIT:FREQUENCY

HZ|DBHZRMS2|DBHZPK2|HZRMS|HZPK|HZRMS2|HZPK2|HZ2|DBHZRMS2/HZ|DBHZPK2/HZ|HZRMS/RTHZ  
|HZPK/RTHZ|HZRMS2/HZ|HZPK2/HZ

CALCulate[1|2|3|4]:UNIT:POWER

DBVRMS|DBVPK|DBV|V|VPK|VRMS|DBM|V2|VPK2|VRMS2|WRMS|W|V/RTHZ|VRMS/RTHZ|V2/HZ|VPK/RTHZ  
|VPK2/HZ|VRMS2/HZ|DBVRMS/RTHZ|DBV/RTHZ|DBVPK/RTHZ|DBM/HZ|WRMS/HZ|W/HZ|DB|UNITLESS|PCT

CALCulate[1|2|3|4]:UNIT:TIME S

CALCulate[1|2|3|4]:UPHase:REFERENCE (0 ~ 3.40282e+38(HZ|S|SYM))

CALCulate[1|2|3|4]:UPHase:OFFSET (range depends on config(DEG|RAD))

CALCulate[1|2|3|4]:X:UNIT:FREQUENCY HZ

CALCulate[1|2|3|4]:X:UNIT:TIME S|SYM

CAL

CALibration:AUTO OFF|0|ON|1|ONCE

CALibration:ZERO:AUTO OFF|0|ON|1|ONCE



**CONT** CONTINUE

**DISP** DISPLAY:ANNOTATION[:ALL] OFF | 0 | ON | 1  
DISPLAY:BRIGhTNESS (20 ~ 100[PCT])  
DISPLAY:CMAP:COLor[1 | 2 | ... | 256]:HSL (0 ~ 1),(0 ~ 1),(0 ~ 1)  
DISPLAY:CMAP:DEFault  
DISPLAY:ENABle OFF | 0 | ON | 1  
DISPLAY:FORMat SINGLE | TWO | FOUR | QUAD  
DISPLAY:MFUNction OFF | 0 | ON | 1  
DISPLAY:PROGram[:MODE] OFF | 0 | FULL | UPPer | LOWer  
DISPLAY:TCAPture:ENVELOpe OFF | 0 | ON | 1  
DISPLAY:WINDow[1 | 2 | 3 | 4]:ACTive OFF | 0 | ON | 1 | ONCE  
DISPLAY:WINDow[1 | 2 | 3 | 4]:SPECtrogram:COLors (2 ~ 64)  
DISPLAY:WINDow[1 | 2 | 3 | 4]:SPECtrogram:ENHance (0 ~ 100[PCT])  
DISPLAY:WINDow[1 | 2 | 3 | 4]:SPECtrogram:MAP COLor | RCOLor | GREY | RGRey | MAP1 | MAP2  
DISPLAY:WINDow[1 | 2 | 3 | 4]:SPECtrogram[:STATe] OFF | 0 | ON | 1  
DISPLAY:WINDow[1 | 2 | 3 | 4]:SPECtrogram:THReshold (0 ~ 100[PCT])  
DISPLAY:WINDow[1 | 2 | 3 | 4]:TRACe:BUFFer (0 ~ Buffer Depth)\*  
DISPLAY:WINDow[1 | 2 | 3 | 4]:TRACe:DCARrier OFF | 0 | ON | 1  
DISPLAY:WINDow[1 | 2 | 3 | 4]:TRACe:EYE:COUNT (0.1 ~ 40)

DISPlay[:WINDow[1|2|3|4]]:TRACe:GRATICule:GRID[:STATe] OFF|0|ON|1  
 DISPlay[:WINDow[1|2|3|4]]:TRACe:INDicator CROSS|CIRClE  
 DISPlay[:WINDow[1|2|3|4]]:TRACe:INDicator:SIZE (0.1 ~ 50{PCT})  
 DISPlay[:WINDow[1|2|3|4]]:TRACe:INFO <STRING >  
 DISPlay[:WINDow[1|2|3|4]]:TRACe:LABel?  
 DISPlay[:WINDow[1|2|3|4]]:TRACe:LABel:AUTO OFF|0|ON|1  
 DISPlay[:WINDow[1|2|3|4]]:TRACe:LABel:USER <STRING >  
 DISPlay[:WINDow[1|2|3|4]]:TRACe[:STATe] OFF|0|ON|1  
 DISPlay[:WINDow[1|2|3|4]]:TRACe:SYMBol DOTS|BARS|OFF|0  
 DISPlay[:WINDow[1|2|3|4]]:TRACe:SYMBol:FORMat BIN|HEX  
 DISPlay[:WINDow[1|2|3|4]]:TRACe:X[:SCALe]:AUTO OFF|0|ON|1|ONCE  
 DISPlay[:WINDow[1|2|3|4]]:TRACe:X[:SCALe]:LEFT (range depends on config{HZ|S|SYM})  
 DISPlay[:WINDow[1|2|3|4]]:TRACe:X[:SCALe]:RIGHT (range depends on config{HZ|S|SYM})  
 DISPlay[:WINDow[1|2|3|4]]:TRACe:X[:SCALe]:RLEVel (range depends on config){see table Units1})  
 DISPlay[:WINDow[1|2|3|4]]:TRACe:X[:SCALe]:SPACing LINear|LOGarithmic  
 DISPlay[:WINDow[1|2|3|4]]:TRACe:Y:RLINe OFF|0|ON|1  
 DISPlay[:WINDow[1|2|3|4]]:TRACe:Y[:SCALe]:AUTO OFF|0|ONCE  
 DISPlay[:WINDow[1|2|3|4]]:TRACe:Y[:SCALe]:PDIVision (range depends on config){see table Units2})  
 DISPlay[:WINDow[1|2|3|4]]:TRACe:Y[:SCALe]:RLEVel (range depends on config){see table Units1})

DISPlay[:WINDow[1|2|3|4]]:TRACe:Y[:SCALe]:RLEVel:AUTO OFF|0|ON|1  
 DISPlay[:WINDow[1|2|3|4]]:TRACe:Y[:SCALe]:RPOSition (0 ~ 100[PCT])  
 DISPlay[:WINDow[1|2|3|4]]:WATERfall:AZIMuth (-99 ~ 99[PIXELS])  
 DISPlay[:WINDow[1|2|3|4]]:WATERfall:BLINe[:STATe] OFF|0|ON|1  
 DISPlay[:WINDow[1|2|3|4]]:WATERfall:ELEVation (0 ~ Buffer Depth[PIXELS])\*  
 DISPlay[:WINDow[1|2|3|4]]:WATERfall:HEIGHt (0 ~ Buffer Depth[PIXELS])\*  
 DISPlay[:WINDow[1|2|3|4]]:WATERfall:HLINe[:STATe] OFF|0|ON|1  
 DISPlay[:WINDow[1|2|3|4]]:WATERfall[:STATe] OFF|0|ON|1  
 DISPlay[:WINDow[1|2|3|4]]:WATERfall:THReshold (0 ~ 100[PCT])

**FORM** FORMat[:DATA] Ascii|REAL,{3 ~ 64}

**HCOP** HCOPy:ABORt  
 HCOPy:DATA?  
 HCOPy:DEStination <STRING>  
 HCOPy:DEVice:CMAP:DEfault  
 HCOPy:DEVice:COLor OFF|0|ON|1  
 HCOPy:DEVice:LANGuage PCL|HPGL|PHPGI|TIFF  
 HCOPy:DEVice:RESolution (0 ~ 600)  
 HCOPy:DEVice:SPEed (0 ~ 100)  
 HCOPy[:IMMediate]



HCOPY:ITEM:ALL[:IMMEDIATE]  
HCOPY:ITEM:ANNOtation:COLor (0 ~ 16)  
HCOPY:ITEM:FFEed:STATe OFF | 0 | ON | 1  
HCOPY:ITEM:TDSTamp:CFORmat HR12 | HR24  
HCOPY:ITEM:TDSTamp:FORMat FORMat1 | FORMat2 | FORMat3 | FORMat4 | FORMat5 | FORMat6  
HCOPY:ITEM:TDSTamp:STATe OFF | 0 | ON | 1  
HCOPY:ITEM[:WINDow[1 | 2 | 3 | 4]]:TRACe:COLor (0 ~ 16)  
HCOPY:ITEM[:WINDow[1 | 2 | 3 | 4]]:TRACe:GRATICule:COLor (0 ~ 16)  
HCOPY:ITEM[:WINDow[1 | 2 | 3 | 4]]:TRACe:GRATICule[:IMMEDIATE]  
HCOPY:ITEM[:WINDow[1 | 2 | 3 | 4]]:TRACe[:IMMEDIATE]  
HCOPY:ITEM[:WINDow[1 | 2 | 3 | 4]]:TRACe:LTYPe  
    STYLE0 | DOTTed | DASHed | STYLE1 | STYLE2 | STYLE3 | STYLE4 | STYLE5 | STYLE6 | SOLid  
HCOPY:ITEM[:WINDow[1 | 2 | 3 | 4]]:TRACe:MARKer:COLor (0 ~ 16)  
HCOPY:ITEM[:WINDow[1 | 2 | 3 | 4]]:TRACe:MARKer[:IMMEDIATE]  
HCOPY:ITEM[:WINDow[1 | 2 | 3 | 4]]:TRACe:MARKer:OFFSet[:IMMEDIATE]  
HCOPY:PAGE:DIMensions:AUTO OFF | 0 | ON | 1  
HCOPY:PAGE:DIMensions:USER:LLEFt (-32767 ~ 32767),(-32767 ~ 32767)  
HCOPY:PAGE:DIMensions:USER:URIGHt (-32767 ~ 32767),(-32767 ~ 32767)  
HCOPY:PLOT:ADDRess (0 ~ 30)

HCOPY:PRINT:ADDRESS (0 ~ 30)  
**INIT** INITiate:CONTInuous OFF | 0 | ON | 1  
INITiate:IMMediate)  
**INP** INPut{1 | 2}:COUPling AC | DC  
INPut{1 | 2}:FILTer[:LPASs][:STATe] OFF | 0 | ON | 1  
INPut{1 | 2}:IMPedance (50 ~ 1e+06[OHM])  
INPut{1 | 2}[:STATe] OFF | 0 | ON | 1  
**INST** INSTrument:NSElect (1 ~ 5)  
INSTrument[:SElect] SCALar | DEMod | ADEMod | DDEMod | VECTor | VDEMod  
**MEM** MEMory:DELete[:NAME]-? RDISK | D1 | D2 | D3 | D4 | D5 | D6 | DREG  
MEMory:MALLocate:APPLication (0 ~ 3.40282e+38)  
MEMory:MALLocate:MEASurement:DEFault  
MEMory:MALLocate:MEASurement:FPOints (51 ~ 3201)  
MEMory:MALLocate:MEASurement:MSSRate (16 ~ 100)  
MEMory:MALLocate:MEASurement:MTEmp (0 ~ 100)  
MEMory:MALLocate:MEASurement:TPOints (64 ~ 4096)  
MEMory:MALLocate:PROGram (0 ~ 3.40282e+38)



MMEM MMEMory:COpy-? <FILENAME> , <MSUS> [, <FILENAME> ], <MSUS> ]  
MMEMory:DATA <FILENAME> , <USER >  
MMEMory:DELeTe-? <FILENAME> [, <MSUS> ]  
MMEMory:FSYSteM? LIF | DOS  
MMEMory:INITialize-? [ <MSUS> ][, LIF | DOS][, (0 ~ 7.00006e+06)][, (0 ~ 256)]  
MMEMory:LOAD:APPLIcation-? <FILENAME> [, <MSUS> ]  
MMEMory:LOAD:CONTInue  
MMEMory:LOAD:CONTInue?  
MMEMory:LOAD:MATH-? <FILENAME> [, <MSUS> ]  
MMEMory:LOAD:PROGram-? <FILENAME> [, <MSUS> ]  
MMEMory:LOAD:STATe-? (1 ~ 1), <FILENAME> [, <MSUS> ]  
MMEMory:LOAD:TCAPture-? <FILENAME> [, <MSUS> ]  
MMEMory:LOAD:TRACe-? D1 | D2 | D3 | D4 | D5 | D6, <FILENAME> [, <MSUS> ]  
MMEMory:LOAD:TRACe:BUFFer-? D1 | D2 | D3 | D4 | D5 | D6, <FILENAME> [, <MSUS> ]  
MMEMory:MOVE-? <FILENAME> , <MSUS> [, <FILENAME> ], <MSUS> ]  
MMEMory:MSIS <MSUS >  
MMEMory:NAME <FILENAME >  
MMEMory:STORe:CONTInue  
MMEMory:STORe:CONTInue?

MMEemory:STORe:MATH-? <FILENAME>[, <MSUS>]  
MMEemory:STORe:PROGrama-? <FILENAME>[, <MSUS>]  
MMEemory:STORe:STATe-? (1 ~ 1), <FILENAME>[, <MSUS>]  
MMEemory:STORe:TCAPture-? <FILENAME>[, <MSUS>]  
MMEemory:STORe:TRACe-? TRACe1 | TRACe2 | TRACe3 | TRACe4, <FILENAME>[, <MSUS>]  
MMEemory:STORe:TRACe:BUFFer-? TRACe1 | TRACe2 | TRACe3 | TRACe4, <FILENAME>[, <MSUS>]  
**OUTP** OUTPut:FiLTeR[:LPASs][:STATe] OFF | 0 | ON | 1  
OUTPut:IMPedance (50 ~ 75[OHM])  
OUTPut[:STATe] OFF | 0 | ON | 1  
**PAUS** PAUSe  
**PROG** PROGrama:EXPLicit:DEFine PROGrama1, <PROGRAM >  
PROGrama[:SELected]:DEFine <PROGRAM >  
PROGrama[:SELected]:DELeTe:ALL  
PROGrama[:SELected]:DELeTe[:SELected]  
PROGrama[:SELected]:MALLocate (1200 ~ 500000)  
PROGrama[:SELected]:NAME PROGrama1  
PROGrama[:SELected]:NUMBer <STRING >, <BLOCK >  
PROGrama[:SELected]:STATe STOP | PAUSe | RUN | CONTINUE  
PROGrama[:SELected]:STRing <STRING >, <STRING >



**ROUT** ROUTe:RECEiver RF2 | RF1 | IF | INPut | EXTernal | COMBine

**SCR** SCReen:CONTents TRACe | MSTate | ISTate | MMEMy | MEMory | OPTions | TCAPture

**SENS** [SENSe:]AVERAge:COUNt (1 ~ 99999)  
[SENSe:]AVERAge:COUNt:INTermediate?  
[SENSe:]AVERAge:IREsult:RATE (1 ~ 99999)  
[SENSe:]AVERAge:IREsult[:STATe] OFF | 0 | ON | 1  
[SENSe:]AVERAge[:STATe] OFF | 0 | ON | 1  
[SENSe:]AVERAge:TCONtrol EXPonential | NORMal | REPeat  
[SENSe:]AVERAge:TYPE MAX | RMS | COMPLex

[SENSe:]BANDwidth:MODE:ARBItrary OFF | 0 | ON | 1  
[SENSe:]BANDwidth[:RESolution] (range depends on config[HZ])  
[SENSe:]BANDwidth[:RESolution]:AUTO OFF | 0 | ON | 1  
[SENSe:]BANDwidth[:RESolution]:AUTO:OFFSet OFF | 0 | ON | 1

[SENSe:]CORRection[1 | 2]:EDELay[:TIME] (range depends on config[S])  
[SENSe:]CORRection[1 | 2]:EXTernal[:STATe] OFF | 0 | ON | 1  
[SENSe:]CORRection[1 | 2]:FILTer:XTIME:STATe OFF | 0 | ON | 1  
[SENSe:]CORRection[1 | 2]:IMPedance[:INPut][:MAGNitude] (0.001 ~ 1e+10[OHM])



[SENSe:]CORRection[1 | 2]:LOSS[:INPut]:MAGNitude (range depends on config)

[SENSe:]DATA TCAP1 | TCAP2, < DEF\_BLOCK >

[SENSe:]DATA:HEADer:POINts? TCAP1 | TCAP2

[SENSe:]DDEMod:CLOCK (range depends on config[SYM])

[SENSe:]DDEMod:DVBQam:NState (16 ~ 64)

[SENSe:]DDEMod:FILTer:ALPHa (range depends on config)

[SENSe:]DDEMod:FILTer:MEASurement OFF | 0 | RECTangular | RCOSine | RRCosine | GAUSSian | USER | LPASs

[SENSe:]DDEMod:FILTer:MEASurement:USER:FEED < STRING >

[SENSe:]DDEMod:FILTer:REFerence OFF | 0 | RECTangular | RCOSine | RRCosine | GAUSSian | USER | LPASs

[SENSe:]DDEMod:FILTer:REFerence:USER:FEED < STRING >

[SENSe:]DDEMod:FORMat QPSK | PSK | QAM | MSK | FSK | DVBQam | VSB

[SENSe:]DDEMod:FREQuency:MIRROr OFF | 0 | ON | 1

[SENSe:]DDEMod:FSK:NState (2 ~ 4)

[SENSe:]DDEMod:MSK:FORMat TYPe1 | TYPe2

[SENSe:]DDEMod:NORMalize OFF | 0 | ON | 1

[SENSe:]DDEMod:PRATe (range depends on config)

[SENSe:]DDEMod:PRESet-? NADC | PDC | GSM | PHP | DECT | CDPD | TETRa



[SENSe:]DDEMod:PSK:NState (2 ~ 8)  
[SENSe:]DDEMod:QAM:NState (16 ~ 256)  
[SENSe:]DDEMod:QPSK:FORMat NORMal | DIFFerential | DPI4  
[SENSe:]DDEMod:SEARch:PULSe:StAtE OFF | 0 | ON | 1  
[SENSe:]DDEMod:SEARch:SYNC:OFFSet (range depends on config[SYM])  
[SENSe:]DDEMod:SEARch:SYNC:PATtern < STRING >  
[SENSe:]DDEMod:SEARch:SYNC:StAtE OFF | 0 | ON | 1  
[SENSe:]DDEMod:SEARch:TIME (range depends on config[S | SYM])  
[SENSe:]DDEMod:SRATe (range depends on config[HZ])  
[SENSe:]DDEMod:TIME (range depends on config[SYM])  
[SENSe:]DDEMod:VSB:NState (8 ~ 16)

[SENSe:]DEMod[1 | 2] OFF | 0 | AM | PM | FM | BASeband  
[SENSe:]DEMod[1 | 2]:CARRier:AUTO OFF | 0 | ON | 1  
[SENSe:]DEMod[1 | 2]:CARRier:AUTO:PM PAFReq | PHASe  
[SENSe:]DEMod[1 | 2]:CARRier:FREQ?

[SENSe:]DETEctor:FUNcTION SIGNAL | SAMPlE | POSitive

[SENSe:]FEED < STRING >

[SENSe:]FREQuency:BASeband OFF | 0 | ON | 1

[SENSe:]FREQuency:CENTer (range depends on config(HZ))

[SENSe:]FREQuency:CENTer:TRACk INP1 | INP2 | OFF | 0

[SENSe:]FREQuency:EXTernal:BA NDwidth (range depends on config(HZ))

[SENSe:]FREQuency:EXTernal:CENTer (range depends on config(HZ))

[SENSe:]FREQuency:EXTernal:COMMunicate OFF | 0 | ON | 1

[SENSe:]FREQuency:EXTernal:COMMunicate:ADDReSS (0 ~ 30)

[SENSe:]FREQuency:EXTernal:MAXimum (range depends on config(HZ))

[SENSe:]FREQuency:EXTernal:MINimum (range depends on config(HZ))

[SENSe:]FREQuency:EXTernal:MIRRor OFF | 0 | ON | 1

[SENSe:]FREQuency:MANual (range depends on config(HZ))

[SENSe:]FREQuency:SPAN (range depends on config(HZ))

[SENSe:]FREQuency:SPAN:FULL

[SENSe:]FREQuency:SPAN:PC HIRp EXACT | NEARest

[SENSe:]FREQuency:SPAN:WIDE OFF | 0 | ON | 1

[SENSe:]FREQuency:STARt (range depends on config(HZ))

[SENSe:]FREQuency:STEP:AUTO OFF | 0 | ON | 1

[SENSe:]FREQUency:STEP[:INCRement] (range depends on config(HZ))

[SENSe:]FREQUency:STOP (range depends on config(HZ))

[SENSe:]SWEep[1 | 2]:MODE AUTO | MANUal

[SENSe:]SWEep[1 | 2]:OVERlap (0 ~ 99.99(PCT))

[SENSe:]SWEep[1 | 2]:POINts (51 ~ (range depends on config))

[SENSe:]SWEep[1 | 2]:TIME:DELay (range depends on config(S))

[SENSe:]SWEep[1 | 2]:TIME:GATE:DELay (range depends on config(S))

[SENSe:]SWEep[1 | 2]:TIME:GATE:DELay:STEP[:INCRement] (range depends on config(S))

[SENSe:]SWEep[1 | 2]:TIME:GATE:SPAN (range depends on config(S))

[SENSe:]SWEep[1 | 2]:TIME:GATE:STATe OFF | 0 | ON | 1

[SENSe:]SWEep[1 | 2]:TIME:OVERlap (0 ~ 99.99(PCT))

[SENSe:]SWEep[1 | 2]:TIME:RESolution:AUTO OFF | 0 | ON | 1

[SENSe:]SWEep[1 | 2]:TIME:SPAN (range depends on config(S))

[SENSe:]TCAPture[1 | 2]:ABORt

[SENSe:]TCAPture[1 | 2]:DIRection FORWard | REVerse

[SENSe:]TCAPture[1 | 2][:IMMediate]

[SENSe:]TCAPture[1 | 2]:LENGth (range depends on config(S) | POINTS | RECORDS)

[SENSe:]TCAPture[1 | 2]:RANGe (1e-20 ~ 1e+20)  
 [SENSe:]TCAPture[1 | 2]:STARt (range depends on config[S | POINTS | RECORDS])  
 [SENSe:]TCAPture[1 | 2]:STOP (range depends on config[S | POINTS | RECORDS])

[SENSe:]VOLTage[1 | 2]:[DC]:RANGe:AUTO OFF | 0 | ON | 1 | ONCE  
 [SENSe:]VOLTage[1 | 2]:[DC]:RANGe:AUTO:DIRection UP | EITHER  
 [SENSe:]VOLTage[1 | 2]:[DC]:RANGe:UNIT:VOLTage DBM | DBV | DBVRMS | DBVPK | V | VPK | VRMS | W | WRMS  
 [SENSe:]VOLTage[1 | 2]:[DC]:RANGe:[UPPer] (range depends on config[DBM | DBV | DBVRMS | DBVPK | V | VPK | VRMS | W | WRMS])  
 [SENSe:]VOLTage[1 | 2]:PROTection:CLEar

[SENSe:]WINDow:GATE UNIFORM | FLATtop | HANNing | GTOp  
 [SENSe:]WINDow:GATE:COUPLing OFF | 0 | ON | 1  
 [SENSe:]WINDow[:TYPE] UNIFORM | FLATtop | HANNing | GTOp

**SOUR** SOURce:AM:STATe OFF | 0 | ON | 1  
 SOURce:FREQuency[:CW] (range depends on config[HZ])  
 SOURce:FREQuency:OFFSet (range depends on config[HZ])  
 SOURce:FUNCTion[:SHAPE] SINusoid | USER | RANDom | PCHirp  
 SOURce:FUNCTion:USER:FEED <STRING >  
 SOURce:IFINput:STATe OFF | 0 | ON | 1

SOURce:RF OFF | 0 | ON | 1  
SOURce:USER:REPeat OFF | 0 | ON | 1  
SOURce:VOLTage[:LEVel][:IMMediate][:AMPLitude] (range depends on  
config[DBM | DBV | DBVRMS | DBVPK | V | VPK | VRMS | W | WRMS])  
SOURce:VOLTage[:LEVel][:IMMediate]:OFFSet (range depends on config[V])  
SOURce:VOLTage[:LEVel]:UNIT:VOLTage DBM | DBV | DBVRMS | DBVPK | V | VPK | VRMS | W | WRMS  
SOURce:VOLTage:PROTection:CLEar

**STAT**

STATus:DEvice:CONDition?  
STATus:DEvice:ENABle (0 ~ 32767)  
STATus:DEvice:EVENT?  
STATus:DEvice:NTRansition (0 ~ 32767)  
STATus:DEvice:PTRansition (0 ~ 32767)  
STATus:OPERation:CONDition?  
STATus:OPERation:ENABle (0 ~ 32767)  
STATus:OPERation:EVENT?  
STATus:OPERation:NTRansition (0 ~ 65535)  
STATus:OPERation:PTRansition (0 ~ 32767)  
STATus:PRESet  
STATus:QUEStionable:CONDition?

STATus:QUESTIONable:ENABLE (0 ~ 65535)  
STATus:QUESTIONable[:EVENT]?  
STATus:QUESTIONable:FREQuency:CONDition?  
STATus:QUESTIONable:FREQuency:ENABLE (0 ~ 32767)  
STATus:QUESTIONable:FREQuency[:EVENT]?  
STATus:QUESTIONable:FREQuency:NTRansition (0 ~ 32767)  
STATus:QUESTIONable:FREQuency:PTRansition (0 ~ 32767)  
STATus:QUESTIONable:MODulation:CONDition?  
STATus:QUESTIONable:MODulation:ENABLE (0 ~ 32767)  
STATus:QUESTIONable:MODulation[:EVENT]?  
STATus:QUESTIONable:MODulation:NTRansition (0 ~ 32767)  
STATus:QUESTIONable:MODulation:PTRansition (0 ~ 32767)  
STATus:QUESTIONable:NTRansition (0 ~ 32767)  
STATus:QUESTIONable:PTRansition (0 ~ 32767)  
STATus:QUESTIONable:VOLTage:CONDition?  
STATus:QUESTIONable:VOLTage:ENABLE (0 ~ 32767)  
STATus:QUESTIONable:VOLTage[:EVENT]?  
STATus:QUESTIONable:VOLTage:NTRansition (0 ~ 32767)  
STATus:QUESTIONable:VOLTage:PTRansition (0 ~ 32767)

STATus:USER:ENABle (0 ~ 32767)  
 STATus:USER[:EVENT]?  
 STATus:USER:PULSe-? (0 ~ 65535)  
**SYST** SYSTem:BEEPer:STATe OFF|0|ON|1  
 SYSTem:COMMunicate[1|2]:GPIB:ADDRes (0 ~ 33)  
 SYSTem:COMMunicate[1|2]:LAN:EADdress?  
 SYSTem:COMMunicate[1|2]:LAN:IPADdress <STRING >  
 SYSTem:COMMunicate[1|2]:LAN:PORT BNC|AUI  
 SYSTem:COMMunicate[1|2]:LAN:ROUte:GATeway <STRING >  
 SYSTem:COMMunicate[1|2]:LAN:ROUte:SMASK <STRING >  
 SYSTem:COMMunicate[1|2]:LAN:STATe OFF|0|ON|1  
 SYSTem:COMMunicate[1|2]:LAN:XWINDow:HOSTname <STRING >  
 SYSTem:COMMunicate[1|2]:LAN:XWINDow:RATE (0 ~ 60(HZ))  
 SYSTem:COMMunicate[1|2]:LAN:XWINDow[:STATe] OFF|0|ON|1  
 SYSTem:COMMunicate[1|2]:SERial:CONTRol:DTR IBFull|OFF|0  
 SYSTem:COMMunicate[1|2]:SERial[:RECEive]:BAUD (75 ~ 19200)  
 SYSTem:COMMunicate[1|2]:SERial[:RECEive]:PACE XON|NONE  
 SYSTem:COMMunicate[1|2]:SERial[:RECEive]:PARity[:TYPE] EVEN|ODD|NONE  
 SYSTem:DATE (1980 ~ 2100),(1 ~ 12),(1 ~ 31)



SYSTem:ERRor?  
 SYSTem:GPIB:ECHO OFF | 0 | ON | 1  
 SYSTem:KEY (0 ~ 511)  
 SYSTem:KLOCK OFF | 0 | ON | 1  
 SYSTem:PRESet  
 SYSTem:TIME (0 ~ 23),(0 ~ 59),(0 ~ 59)

**TRAC** TRACe:BUFFer:COpy-? D1 | D2 | D3 | D4 | D5 | D6, TRACe1 | TRACe2 | TRACe3 | TRACe4 | CAL1 | CAL2  
 TRACe:COpy-? D1 | D2 | D3 | D4 | D5 | D6, TRACe1 | TRACe2 | TRACe3 | TRACe4 | CAL1 | CAL2  
 TRACe[:DATA] D1 | D2 | D3 | D4 | D5 | D6, <DEF\_BLOCK>  
 TRACe[:DATA]:HEADer:POINts? D1 | D2 | D3 | D4 | D5 | D6  
 TRACe:X[:DATA]? D1 | D2 | D3 | D4 | D5 | D6 | TRACe1 | TRACe2 | TRACe3 | TRACe4  
 TRACe:X:UNIT? D1 | D2 | D3 | D4 | D5 | D6 | TRACe1 | TRACe2 | TRACe3 | TRACe4

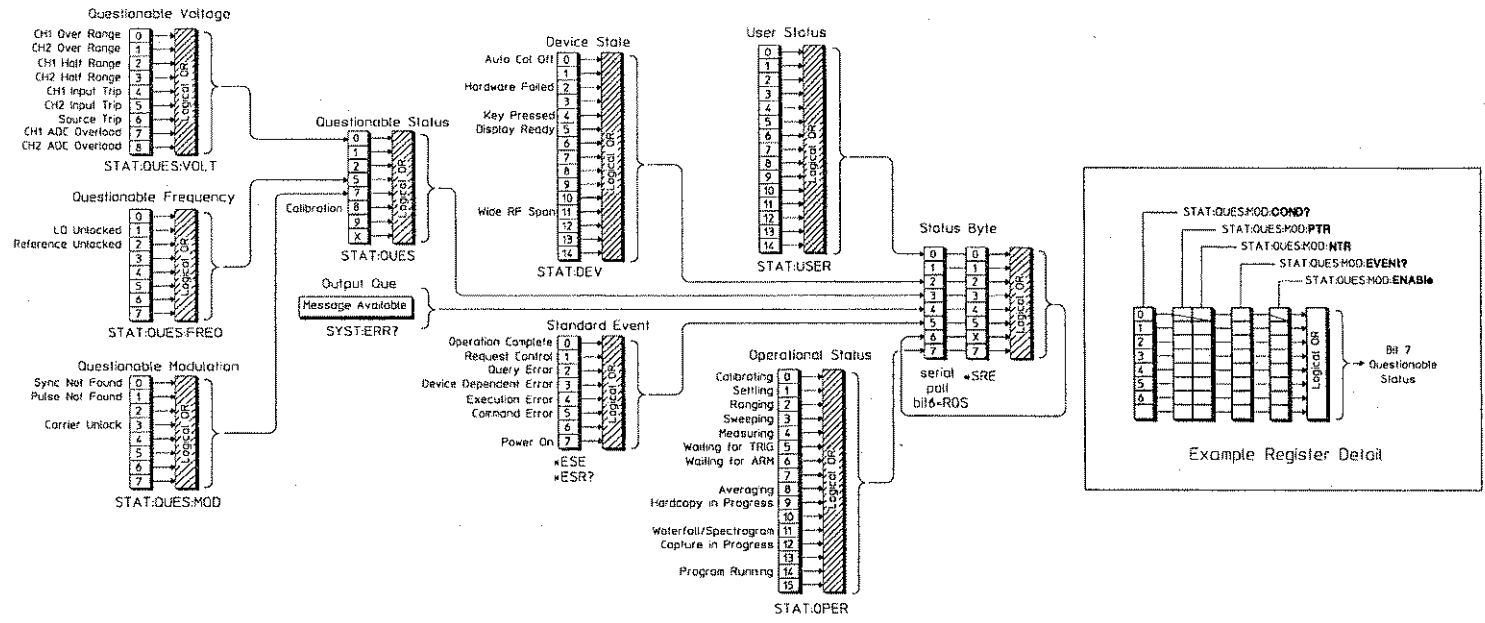
**TRIG** TRIGger:HOLDoff:DELay (0 ~ 41.94[S])  
 TRIGger:HOLDoff:STATe OFF | 0 | ON | 1  
 TRIGger:LEVel (range depends on config[DBM | DBV | DBVRMS | DBVPK | V | VPK | VRMS | W | WRMS])  
 TRIGger:SLOPe POSitive | NEGative  
 TRIGger:SOURce BUS | EXTeRnal | IF | IF1 | IF2 | IMMEDIATE | INTeRnal1 | INTeRnal2 | OUTPut

### Units1

am	dBampk2/Hz	dBradrms2/Hz	Hzpk2	radpk2	Vpk
am2	dBamrms2	dBV	Hzpk2/Hz	radpk2/Hz	Vpk/rtHz
ampk	dBamrms2/Hz	dBV/rtHz	Hzrms	radrms	Vpk2
ampk/rtHz	dBHzpk2	dBVpk	Hzrms/rtHz	radrms/rtHz	Vpk2/Hz
ampk2	dBHzpk2/Hz	dBVpk/rtHz	Hzrms2	radrms2	Vrms
ampk2/Hz	dBHzrms2	dBVrms	Hzrms2/Hz	radrms2/Hz	Vrms/rtHz
amrms	dBHzrms2/Hz	dBVrms/rtHz	MHz	s	Vrms2
amrms/rtHz	dBm	deg	pct	unitless	Vrms2/Hz
amrms2	dBm/Hz	Hz	rad	V	W
amrms2/Hz	dBradpk2	Hz2	rad2	V/rtHz	W/Hz
dB	dBradpk2/Hz	Hzpk	radpk	V2	Wrms
dBampk2	dBradrms2	Hzpk/rtHz	radpk/rtHz	V2/Hz	Wrms/Hz

### Units2

am	amrms2	Hzpk2	rad	radrms2	Vpk
am2	amrms2/Hz	Hzpk2/Hz	rad2	radrms2/Hz	Vpk/rtHz
ampk	dB	Hzrms	radpk	S	Vpk2
ampk/rtHz	deg	Hzrms/rtHz	radpk/rtHz	unitless	Vpk2/Hz
ampk2	Hz	Hzrms2	radpk2	V	Vrms
ampk2/Hz	Hz2	Hzrms2/Hz	radpk2/Hz	V/rtHz	Vrms/rtHz
amrms	Hzpk	MHz	radrms	V2	Vrms2
amrms/rtHz	Hzpk/rtHz	pct	radrms/rtHz	V2/Hz	Vrms2/Hz



## Parameter Definitions:

**<BLOCK> or <DEF\_BLOCK>**

If you are sending binary data using indefinite length syntax,

<BLOCK> takes the following form:

<BLOCK> ::= #0<data\_byte>[,<data\_byte>] . . . <LF><^END>

<data\_byte> ::= unsigned 8-bit data

<LF> ::= line feed character, ASCII decimal 10

<^END> ::= HP-IB END message (EOI set true)

If you are sending binary data using definite length syntax,

<BLOCK> takes the following form:

<BLOCK> ::= #<byte><length\_bytes><data\_byte>[<data\_byte>] . . .

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

<length\_bytes> ::= number of data bytes to follow (ASCII encoded)

<data\_byte> ::= unsigned 8-bit data

If you are sending ASCII data, <BLOCK> takes the following form:

<BLOCK> ::= NRf[,NRf] . . . <LF>

**<FILENAME>** takes the following form:

**<FILENAME>** ::= '[MSUS:]filename'

where MSUS: (mass storage unit specifier) is replaced with:

RAM: which selects volatile RAM.

NVRAM: which selects non-volatile RAM.

INT: which selects the internal disk drive.

EXT[,<select\_code>[,<unit\_number>]]: selects external disk drive.

**<STRING>** is an ASCII string

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