Agilent Technologies 8960 Series 10 E5515B,C Wireless Communications Test Set
Agilent Technologies E1961A AMPS/136 Mobile Test Application

GPIB Command Syntax

Test Application Revision A.04

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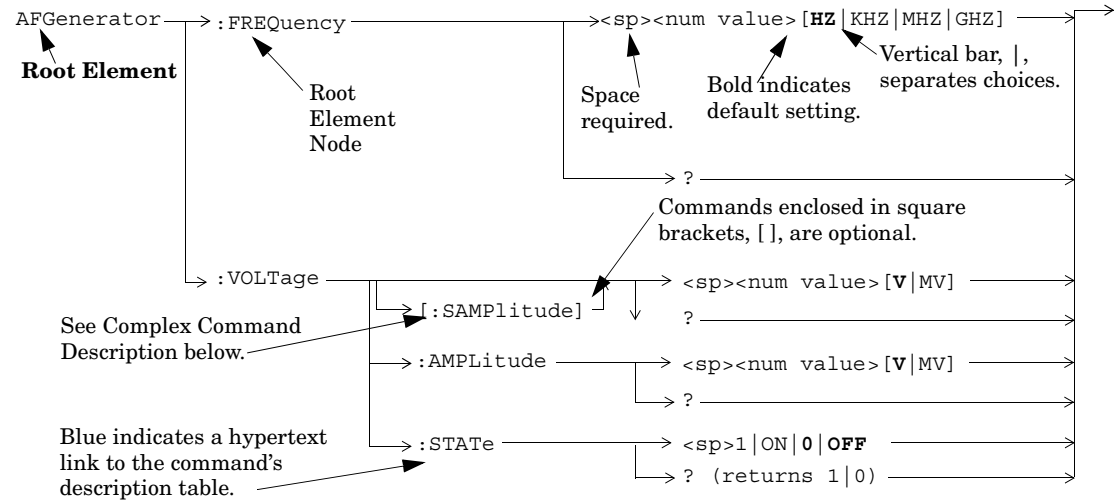
Diagram Conventions

Description



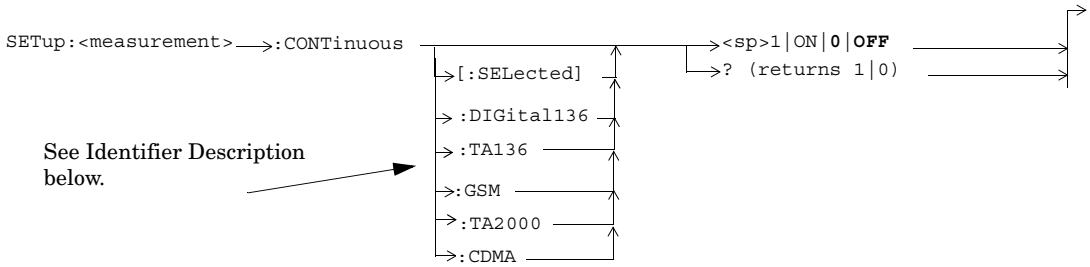

SETup:<measurement>
:CONTinuous
[:SELected]
:DIGital136
:TA136
:GSM
:TA2000
:CDMA
<sp>1|ON|0|OFF
? (returns 1|0)
See Identifier Description below.

Diagram Description

Statement elements are connected by lines. Each line can be followed in only one direction, as indicated by the arrow at the end of the line. Any combination of statement elements that can be generated by starting at the **Root Element** and following the line the **direction of the arrow** is syntactically correct. The drawings show the proper use of spaces. Where spaces are required they are indicated by **<sp>**, otherwise no spaces are allowed between statement elements.

Complex Command Description

A complex command sets the state of the parameter to ON, and is used to set a value for that parameter. These parameters; amplitude, frequency, gain, number, time, and value can be used as a complex command. Refer to the specific command for the parameter that applies.

Identifier Description

Some test applications are able to test more than one radio format. There may be commands/queries that are shared by more than one radio format in the some of these test applications. Identifiers are used to specify the radio format for the command/query. The command/query is sent to the active radio format if you don't use an identifier. An identifier must be used when sending commands to the inactive radio format.

Developing Code

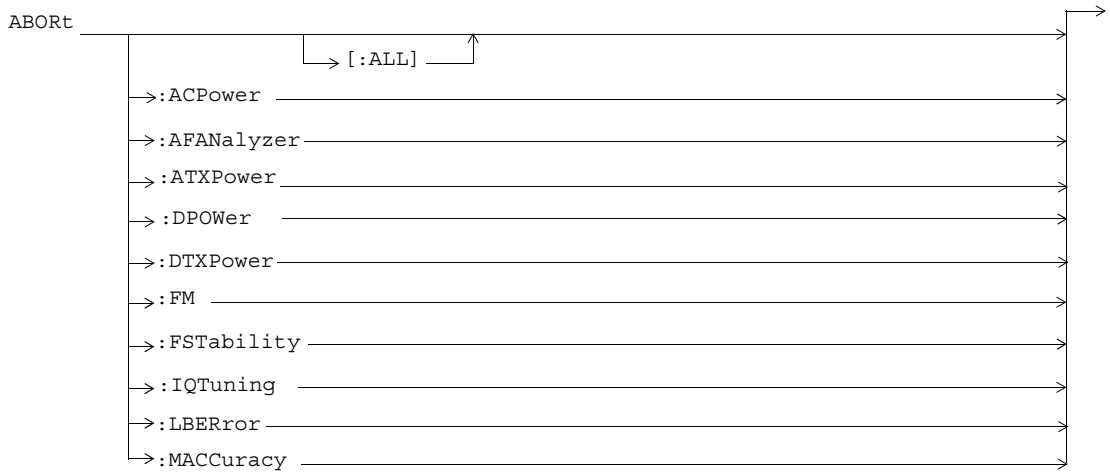
It is recommended that you set the Test Set's operating environment to debug. To set the Test Set debug mode to "ON" use the following syntax:

```
SYSTem:COMMunicate:GPIB:DEBug ON
```

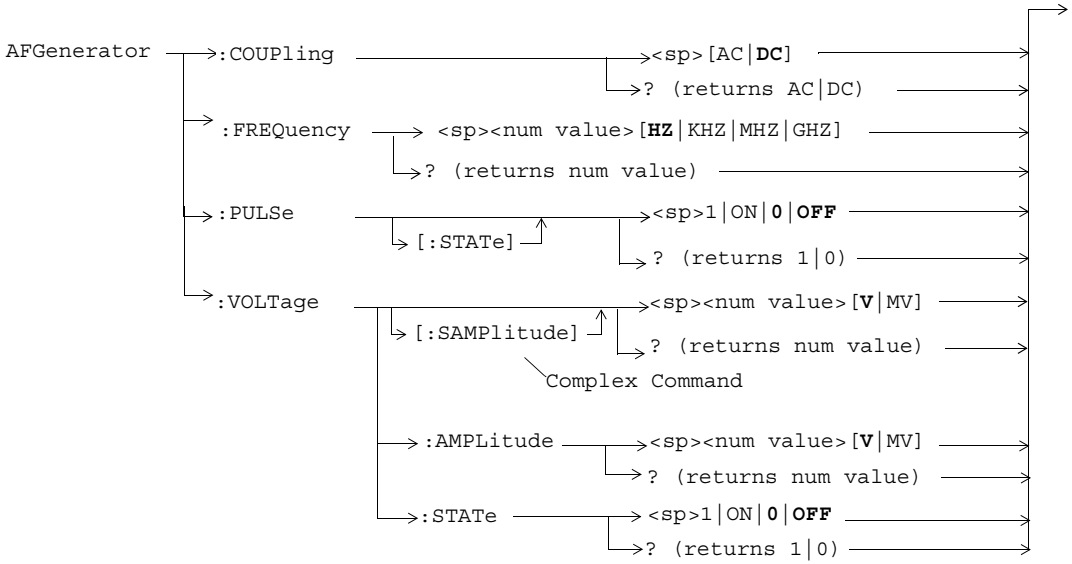
Units-of-Measure

Amplitude (linear)	V
Frequency	Hz
Power (logarithmic)	dBm
Time	s

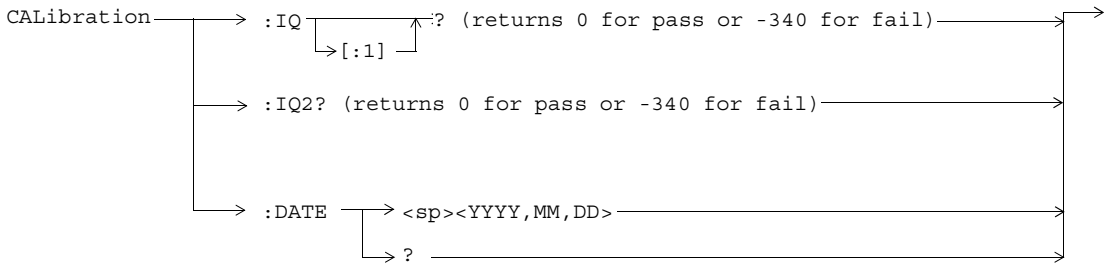
ABORt


ABORt
[:ALL]
:ACPower
:AFANalyzer
:ATXPower
:DPOWer
:DTXPower
:FM
:FSTability
:IQTuning
:LBERror
:MACCuracy

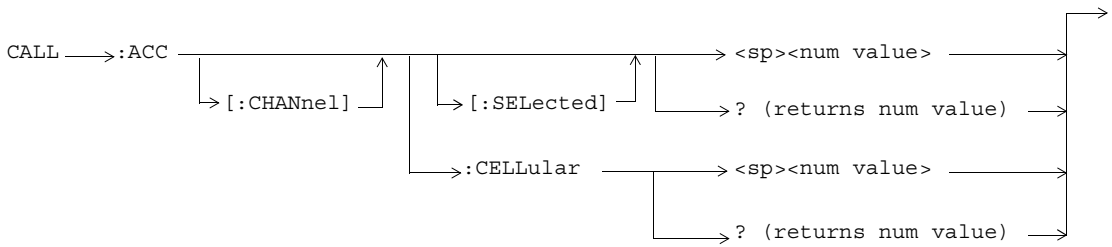
AFGenerator



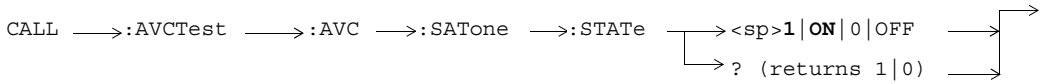
CALibration



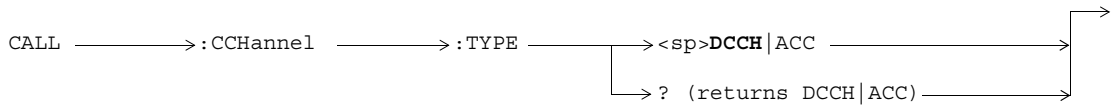
CALL:ACC


CALL
:ACC
[:CHANnel]
[:SELected]
<sp><num value>
? (returns num value)
:CELLular
<sp><num value>
? (returns num value)

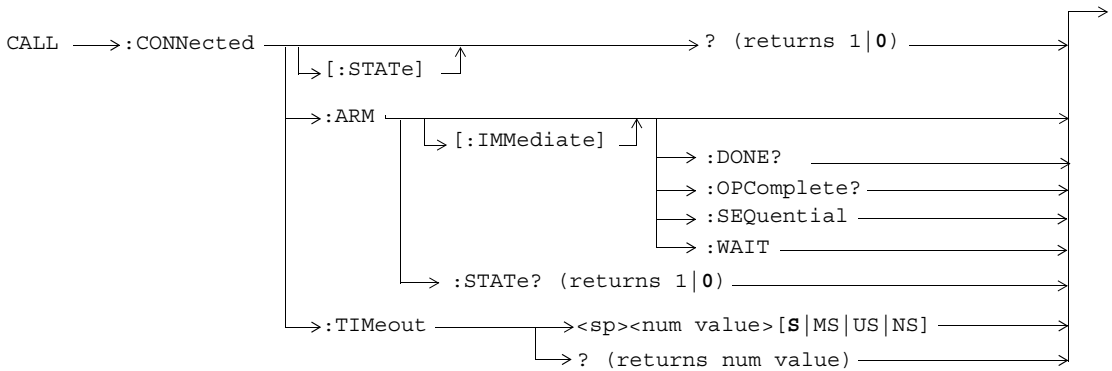
CALL:AVCTest



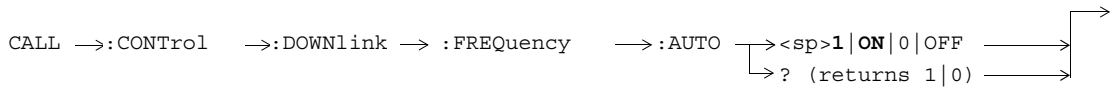
CALL:CCHannel



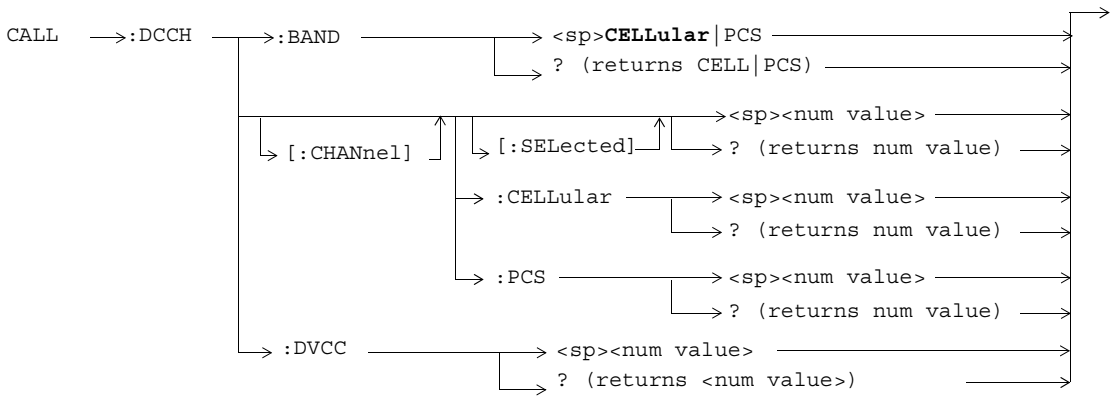
CALL:CONNected



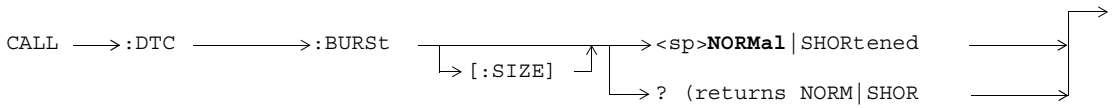
CALL:CONTrol:DOWNlink:FREQuency:AUTO



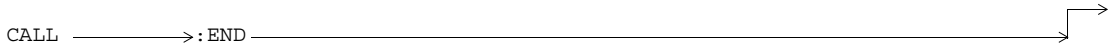
CALL:DCCH


CALL
:DCCH
:BAND
<sp>CELLular|PCS
? (returns CELL|PCS)
[:CHANnel]
[:SELected]
<sp><num value>
? (returns num value)
:CELLular
<sp><num value>
? (returns num value)
:PCS
<sp><num value>
? (returns num value)
:DVCC
<sp><num value>
? (returns <num value>)

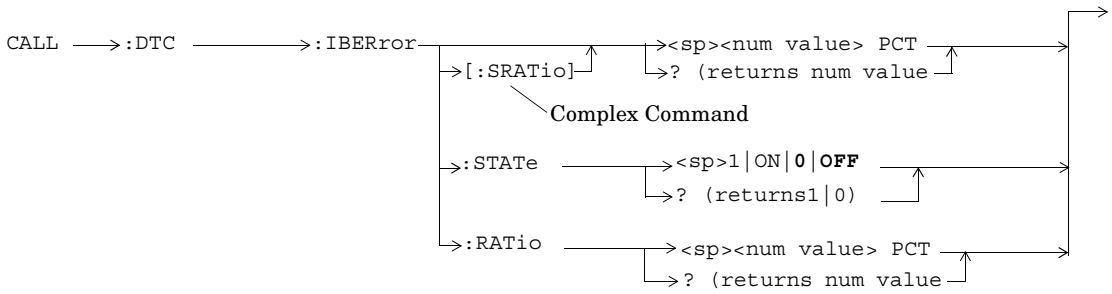
CALL:DTC:BURSt



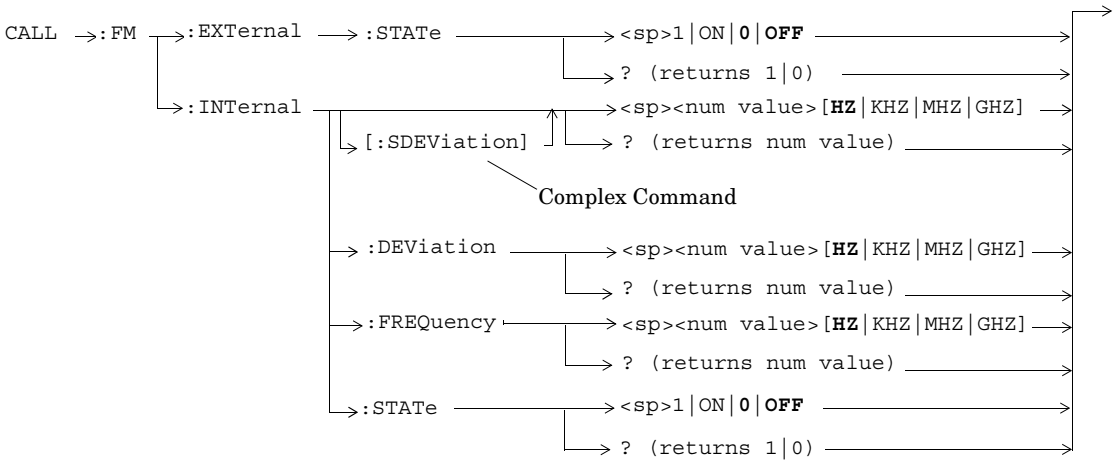
CALL:END



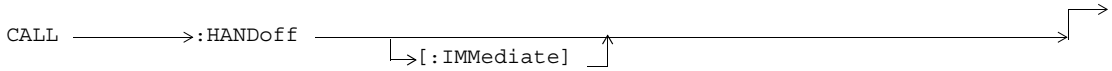
CALL:DTC:IBERror



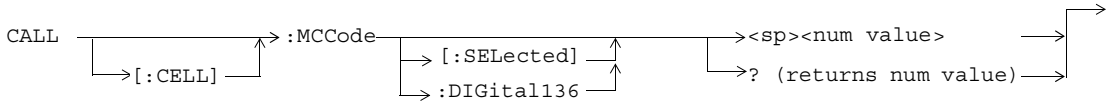
CALL:FM


CALL
:FM
:EXTernal
:STATe
<sp>1|ON|0|OFF
? (returns 1|0)
:INTernal
<sp><num value>[HZ|KHZ|MHZ|GHZ]
[:SDEViation]
? (returns num value)
Complex Command
:DEViation
<sp><num value>[HZ|KHZ|MHZ|GHZ]
? (returns num value)
:FREQuency
<sp><num value>[HZ|KHZ|MHZ|GHZ]
? (returns num value)
:STATe
<sp>1|ON|0|OFF
? (returns 1|0)

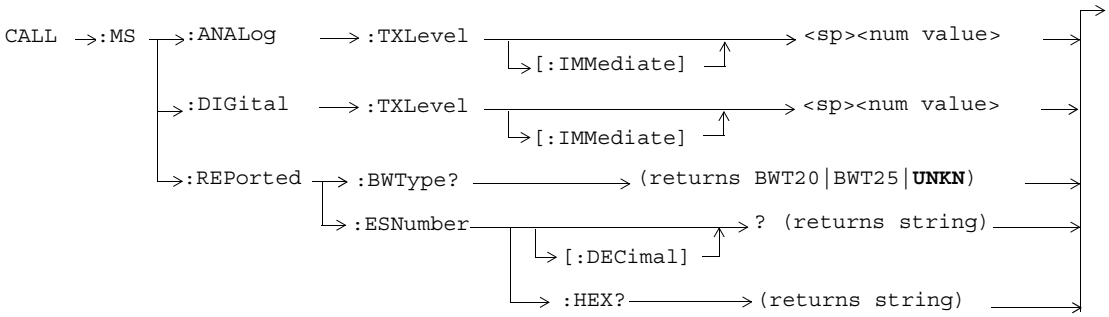
CALL:HANDoff

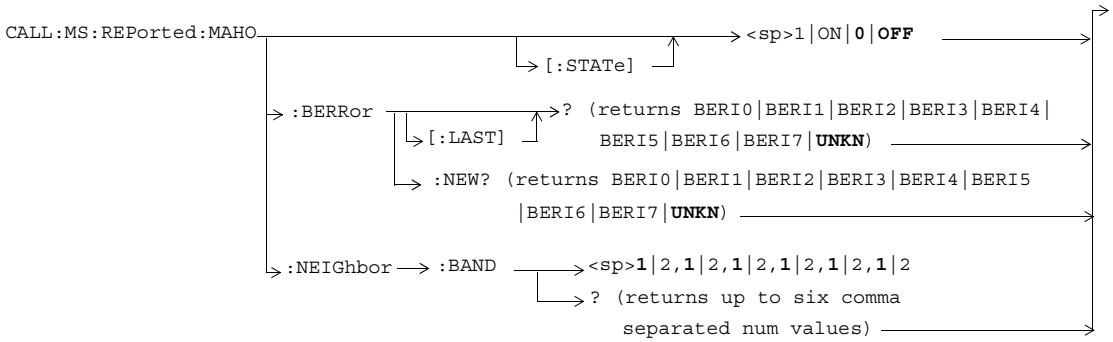


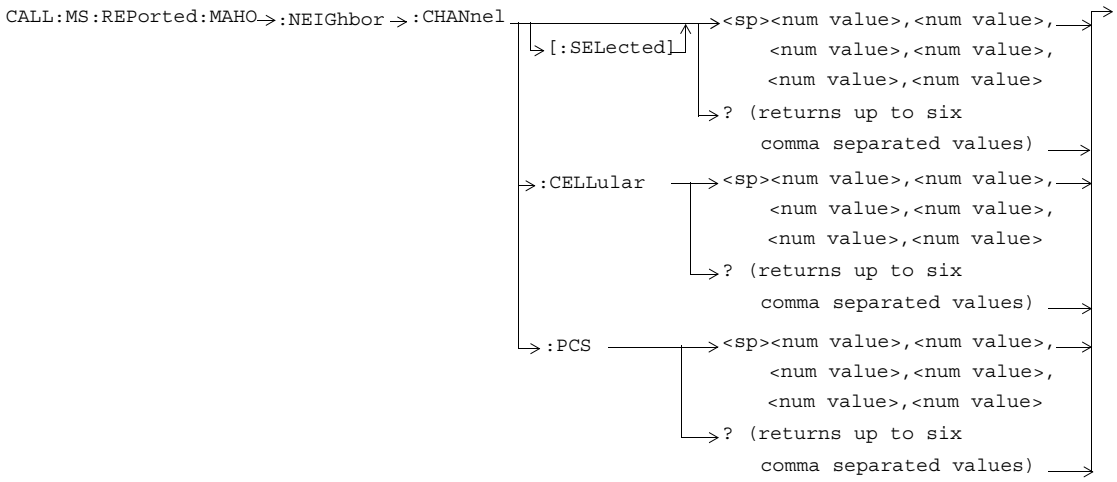
CALL:MCCode

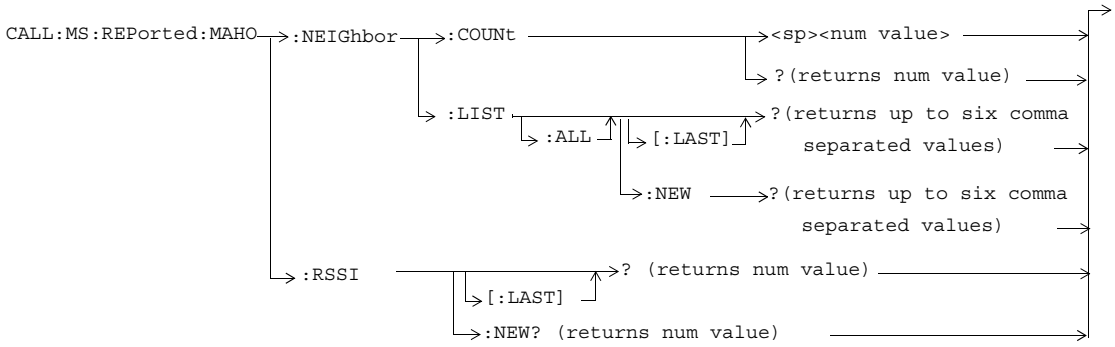

CALL
[:CELL]
:MCCode
[:SELected]
:DIGital136
<sp><num value>
? (returns num value)

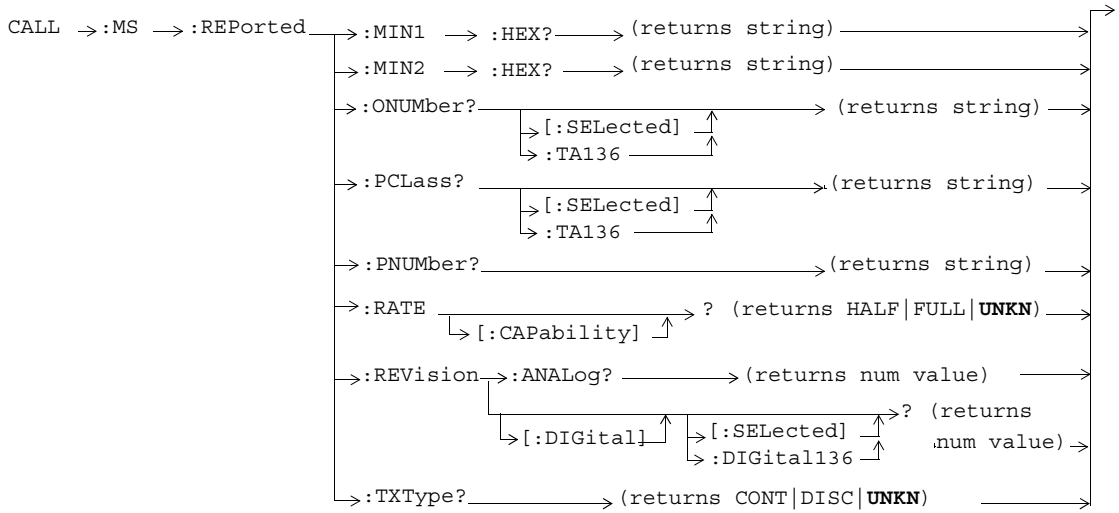
CALL:MS


CALL
:MS
:ANALog
:TXLevel
[:IMMediate]
<sp><num value>
:DIGital
:TXLevel
[:IMMediate]
<sp><num value>
:REPorted
:BWType?
(returns BWT20|BWT25|UNKN)
:ESNumber
? (returns string)
[:DECimal]
:HEX?
(returns string)


CALL:MS:REPorted:MAHO
[:STATe]
<sp>1|ON|0|OFF
:BERRor
[:LAST]
? (returns BERI0|BERI1|BERI2|BERI3|BERI4|
BERI5|BERI6|BERI7|UNKN)
:NEW? (returns BERI0|BERI1|BERI2|BERI3|BERI4|BERI5
|BERI6|BERI7|UNKN)
:NEIGhbor
:BAND
<sp>1|2,1|2,1|2,1|2,1|2,1|2
? (returns up to six comma
separated num values)

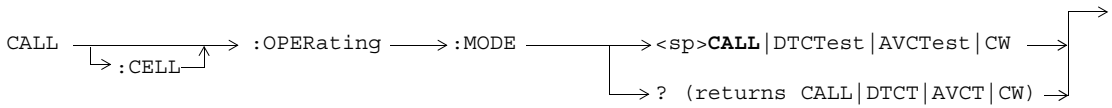

CALL:MS:REPorted:MAHO
:NEIGhbor
:CHANnel
[:SELected]
<sp><num value>,<num value>,
<num value>,<num value>,
<num value>,<num value>
? (returns up to six
comma separated values)
:CELLular
<sp><num value>,<num value>,
<num value>,<num value>,
<num value>,<num value>
? (returns up to six
comma separated values)
:PCS
<sp><num value>,<num value>,
<num value>,<num value>,
<num value>,<num value>
? (returns up to six
comma separated values)


CALL:MS:REPorted:MAHO
:NEIGhbor
:COUNt
<sp><num value>
?(returns num value)
:LIST
?(returns up to six comma separated values)
:ALL
[:LAST]
:NEW
?(returns up to six comma separated values)
:RSSI
? (returns num value)
[:LAST]
:NEW? (returns num value)

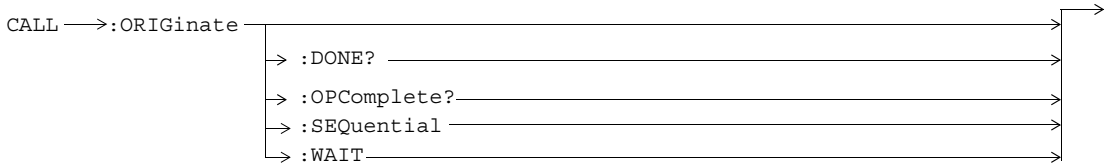


(Not supported in the first release of this mobile test application.)

CALL:OPERating

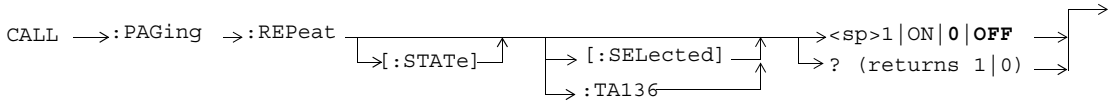


CALL:ORIGinate

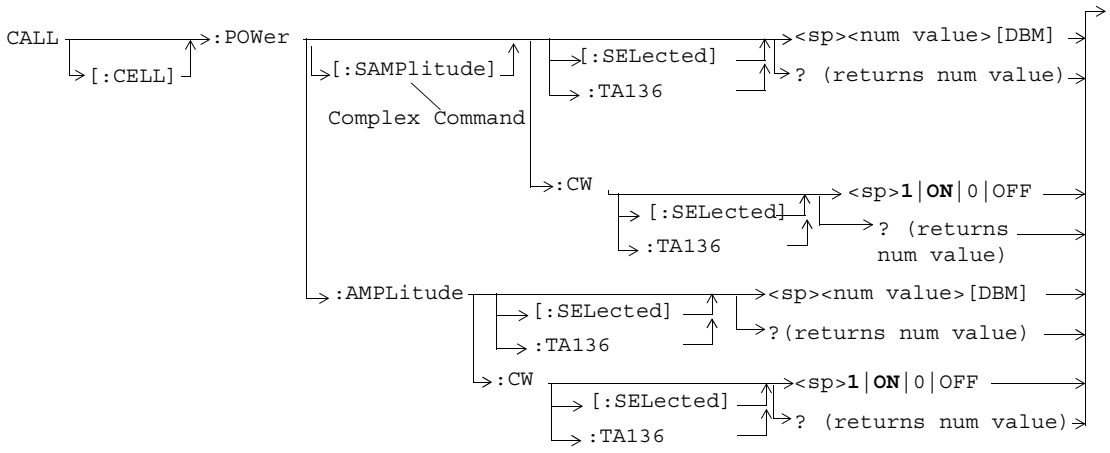


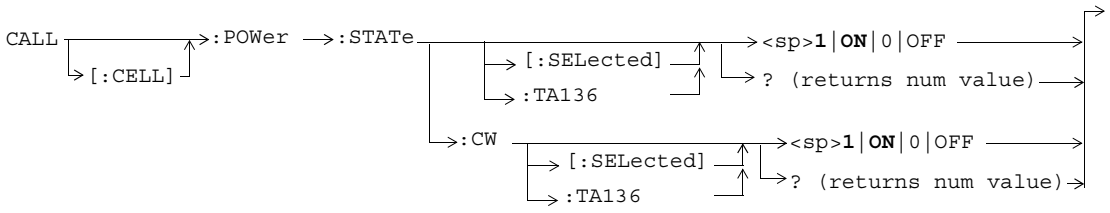
CALL:PAGing:PNUMber

CALL:PAGing:REPeat

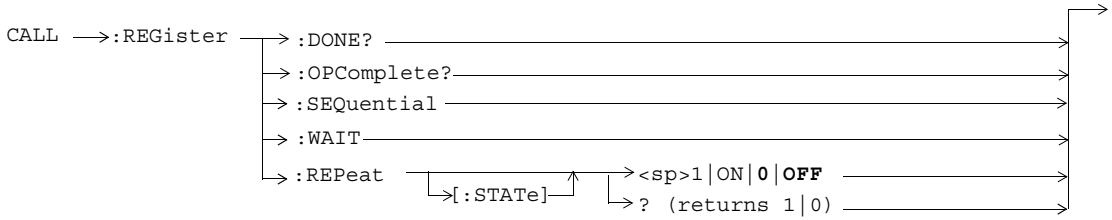


CALL:POWer

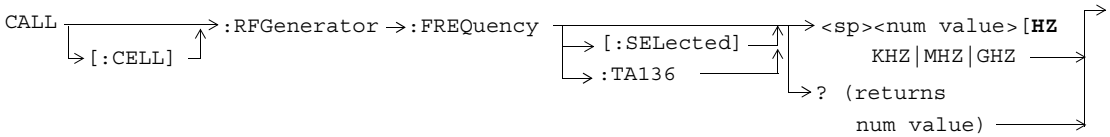

CALL
:POWer
[:CELL]
[:SAMPlitude]
Complex Command
[:SELected]
:TA136
<sp><num value>[DBM]
? (returns num value)
:CW
[:SELected]
:TA136
<sp>1|ON|0|OFF
? (returns num value)
:AMPLitude
[:SELected]
:TA136
<sp><num value>[DBM]
?(returns num value)
:CW
[:SELected]
:TA136
<sp>1|ON|0|OFF
? (returns num value)


CALL
[:CELL]
:POWer
:STATe
[:SELected]
:TA136
<sp>1|ON|0|OFF
? (returns num value)
:CW
[:SELected]
:TA136
<sp>1|ON|0|OFF
? (returns num value)

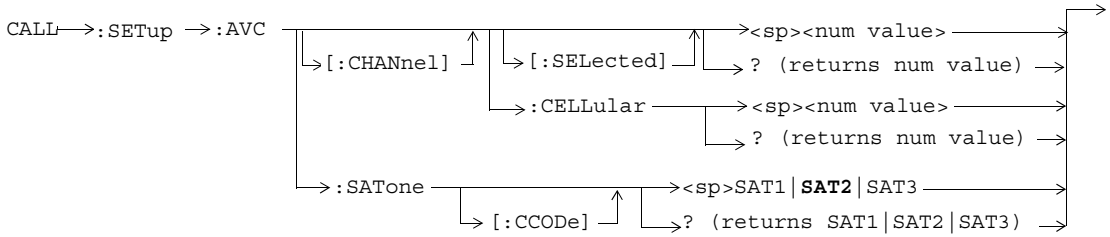
CALL:REGister

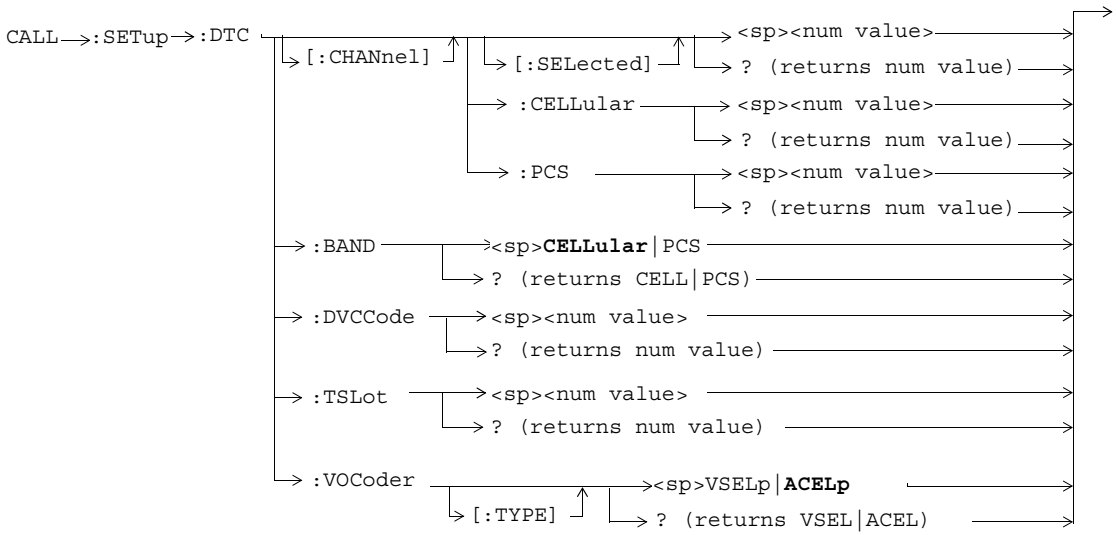


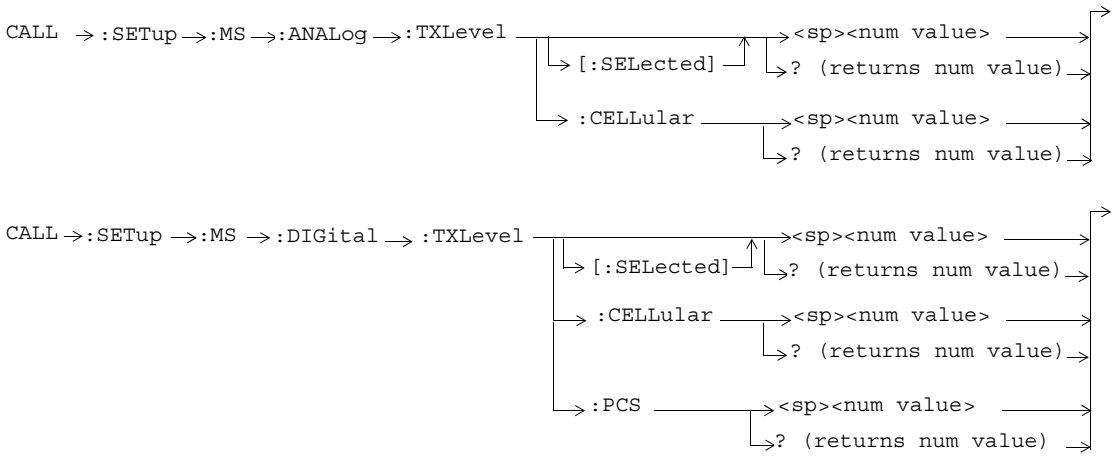
CALL:RFGenerator



CALL:SETup


CALL
:SETup
:AVC
[:CHANnel]
[:SELected]
<sp><num value>
? (returns num value)
:CELLular
<sp><num value>
? (returns num value)
:SATone
[:CCODe]
<sp>SAT1|SAT2|SAT3
? (returns SAT1|SAT2|SAT3)

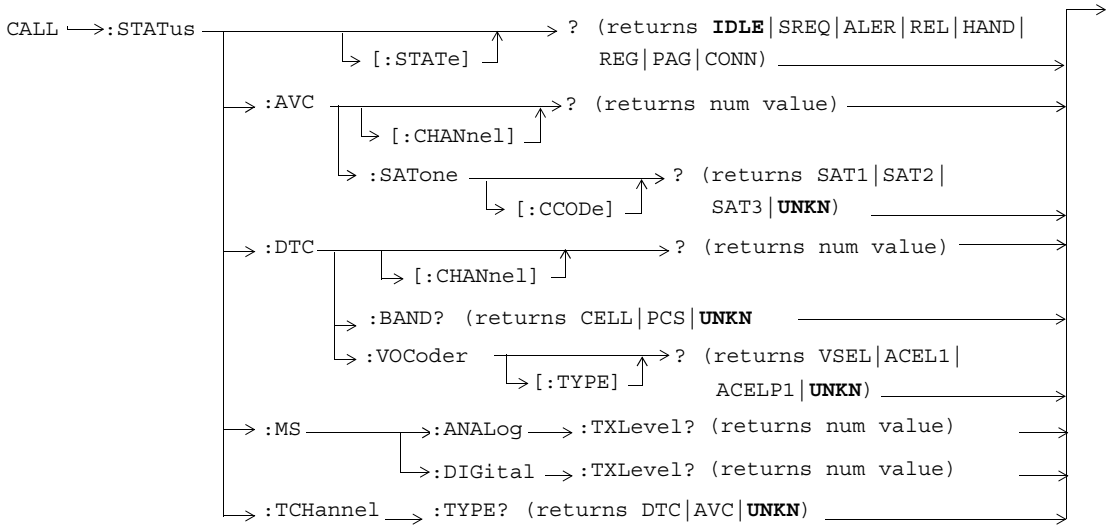

CALL
:SETup
:DTC
[:CHANnel]
[:SELected]
<sp><num value>
? (returns num value)
:CELLular
<sp><num value>
? (returns num value)
:PCS
<sp><num value>
? (returns num value)
:BAND
<sp>CELLular|PCS
? (returns CELL|PCS)
:DVCCode
<sp><num value>
? (returns num value)
:TSLot
<sp><num value>
? (returns num value)
:VOCoder
[:TYPE]
<sp>VSELp|ACELp
? (returns VSEL|ACEL)


CALL
:SETup
:MS
:ANALog
:TXLevel
[:SELected]
<sp><num value>
? (returns num value)
:CELLular
<sp><num value>
? (returns num value)
CALL
:SETup
:MS
:DIGital
:TXLevel
[:SELected]
<sp><num value>
? (returns num value)
:CELLular
<sp><num value>
? (returns num value)
:PCS
<sp><num value>
? (returns num value)

CALL:SID

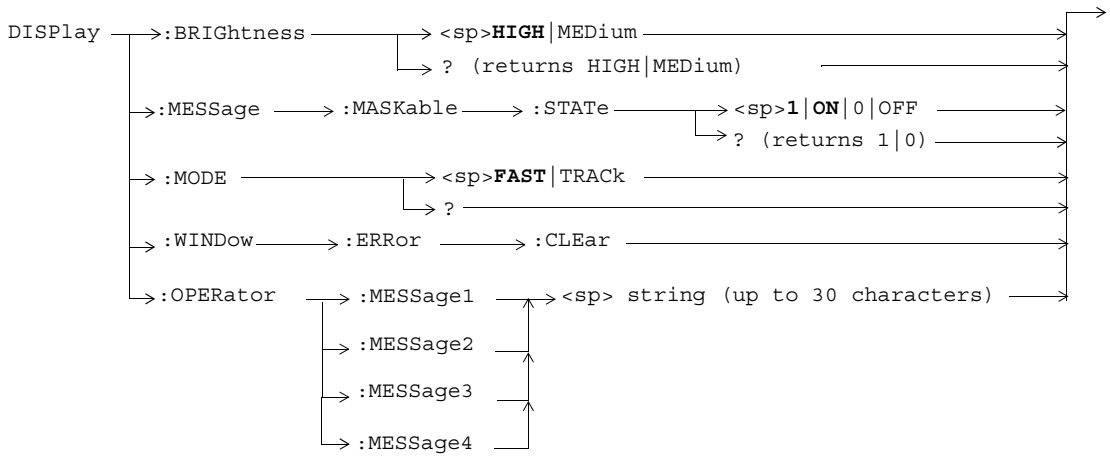
CALL:SOCode

CALL:STATus

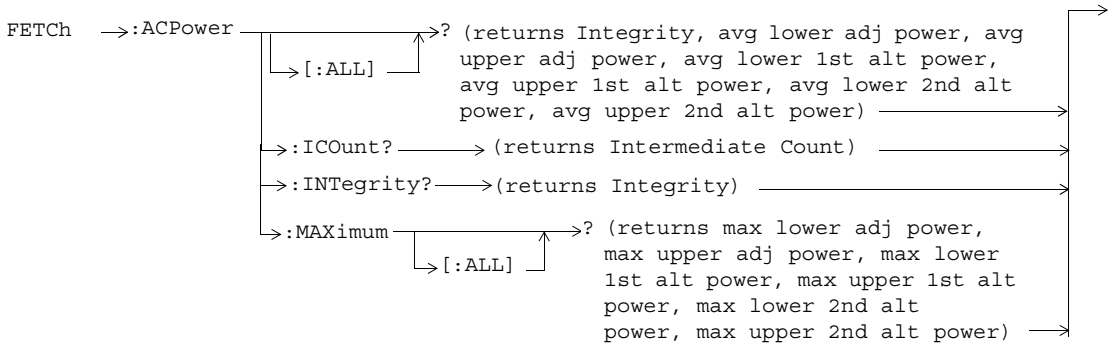

CALL
:STATus
[:STATe]
? (returns IDLE|SREQ|ALER|REL|HAND|
REG|PAG|CONN)
:AVC
[:CHANnel]
? (returns num value)
:SATone
[:CCODe]
? (returns SAT1|SAT2|
SAT3|UNKN)
:DTC
[:CHANnel]
? (returns num value)
:BAND? (returns CELL|PCS|UNKN
:VOCoder
[:TYPE]
? (returns VSEL|ACEL1|
ACELP1|UNKN)
:MS
:ANALog
:TXLevel? (returns num value)
:DIGital
:TXLevel? (returns num value)
:TCHannel
:TYPE? (returns DTC|AVC|UNKN)

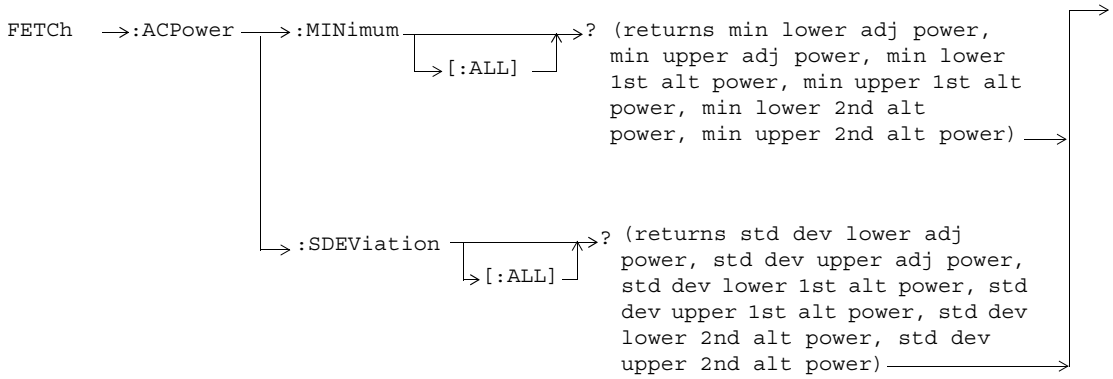
CALL:TCHannel

DISPlay

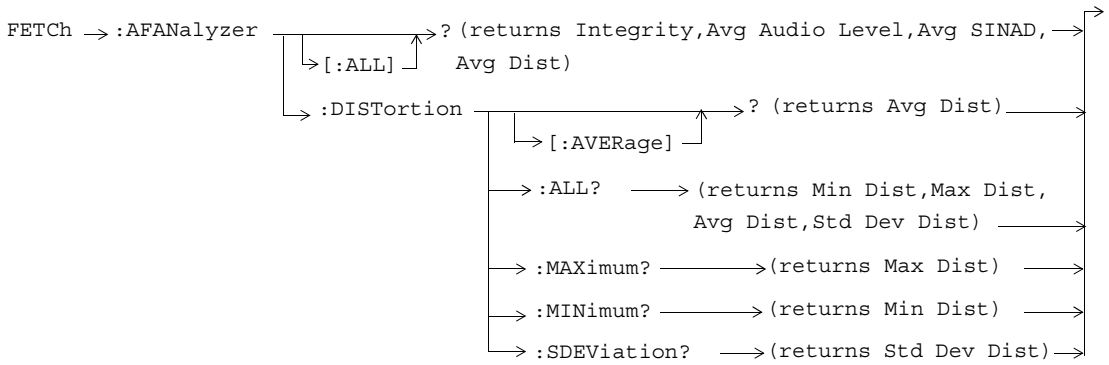

DISPlay
:BRIGhtness
<sp>HIGH|MEDium
? (returns HIGH|MEDium)
:MESSage
:MASKable
:STATe
<sp>1|ON|0|OFF
? (returns 1|0)
:MODE
<sp>FAST|TRACk
?
:WINDow
:ERRor
:CLEar
:OPERator
:MESSage1
:MESSage2
:MESSage3
:MESSage4
<sp> string (up to 30 characters)

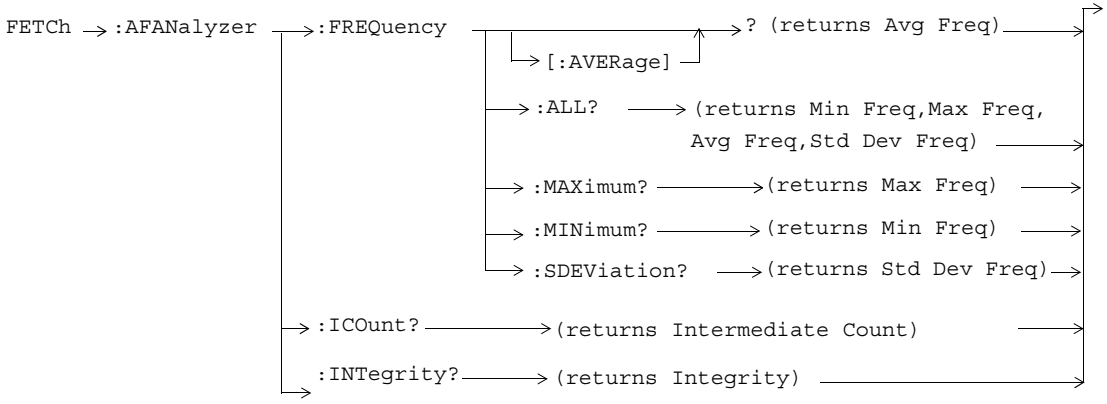
FETCh:ACPower

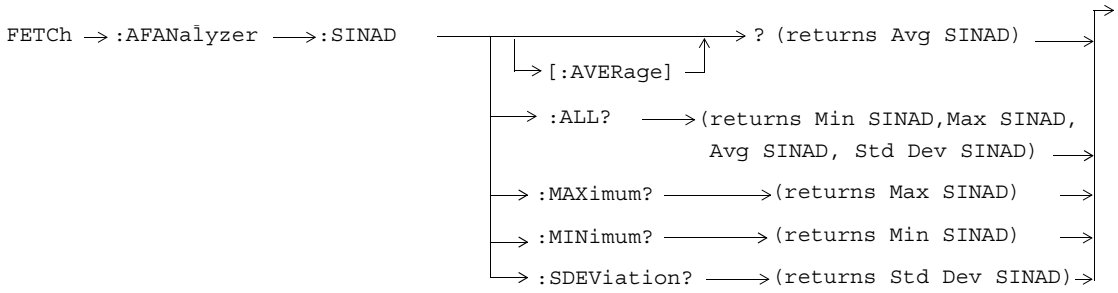


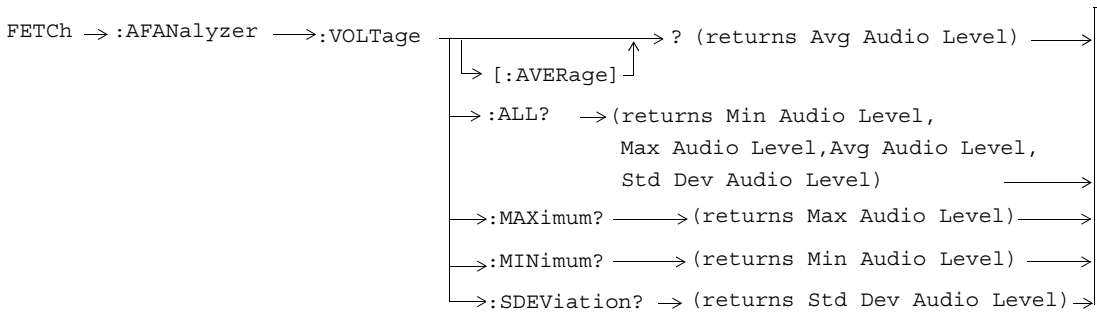

FETCh
:ACPower
:MINimum
[:ALL]
? (returns min lower adj power, min upper adj power, min lower 1st alt power, min upper 1st alt power, min lower 2nd alt power, min upper 2nd alt power)
:SDEViation
[:ALL]
? (returns std dev lower adj power, std dev upper adj power, std dev lower 1st alt power, std dev upper 1st alt power, std dev lower 2nd alt power, std dev upper 2nd alt power)

FETCh:AFANalyzer

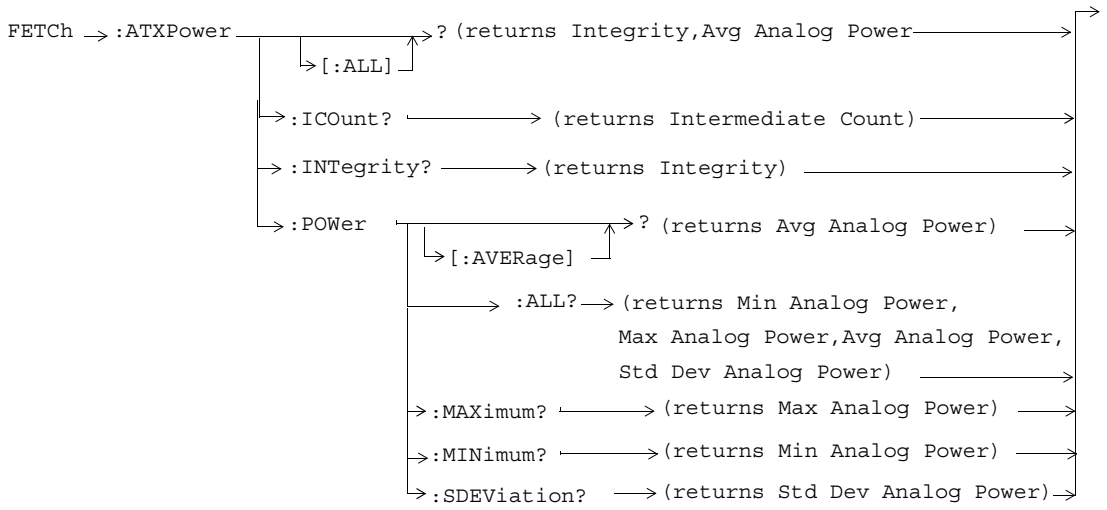



FETCh
:AFANalyzer
:FREQuency
[:AVERage]
? (returns Avg Freq)
:ALL?
(returns Min Freq,Max Freq,
Avg Freq,Std Dev Freq)
:MAXimum?
(returns Max Freq)
:MINimum?
(returns Min Freq)
:SDEViation?
(returns Std Dev Freq)
:ICOunt?
(returns Intermediate Count)
:INTegrity?
(returns Integrity)

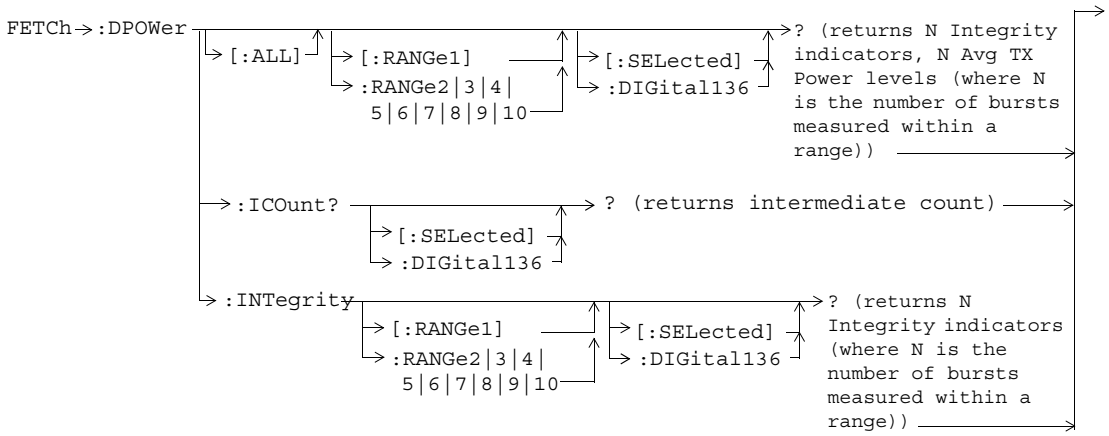

FETCh
:AFANalyzer
:SINAD
? (returns Avg SINAD)
[:AVERage]
:ALL?
(returns Min SINAD,Max SINAD,
Avg SINAD, Std Dev SINAD)
:MAXimum?
(returns Max SINAD)
:MINimum?
(returns Min SINAD)
:SDEViation?
(returns Std Dev SINAD)

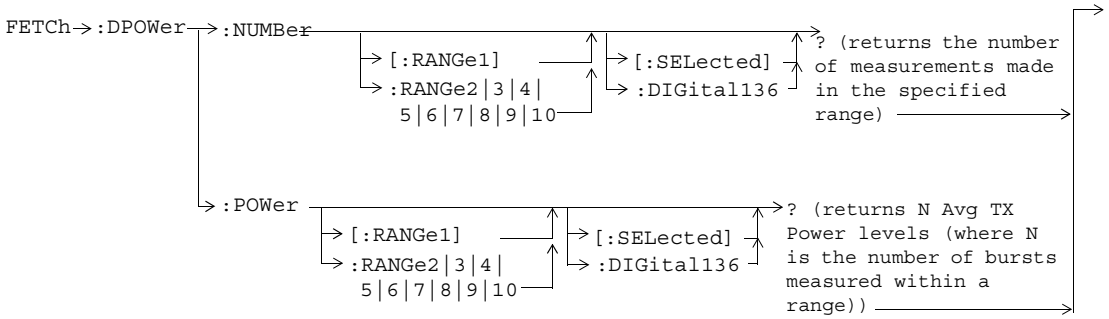

FETCh
:AFANalyzer
:VOLTage
? (returns Avg Audio Level)
[:AVERage]
:ALL?
(returns Min Audio Level,
Max Audio Level,Avg Audio Level,
Std Dev Audio Level)
:MAXimum?
(returns Max Audio Level)
:MINimum?
(returns Min Audio Level)
:SDEViation?
(returns Std Dev Audio Level)

FETCh:ATXPower

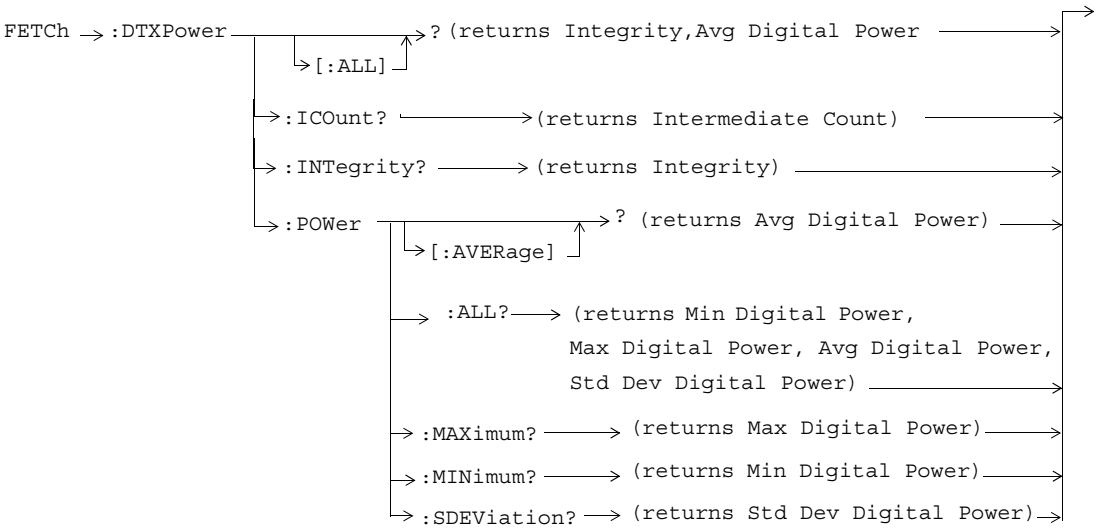


FETCh:DPOWer

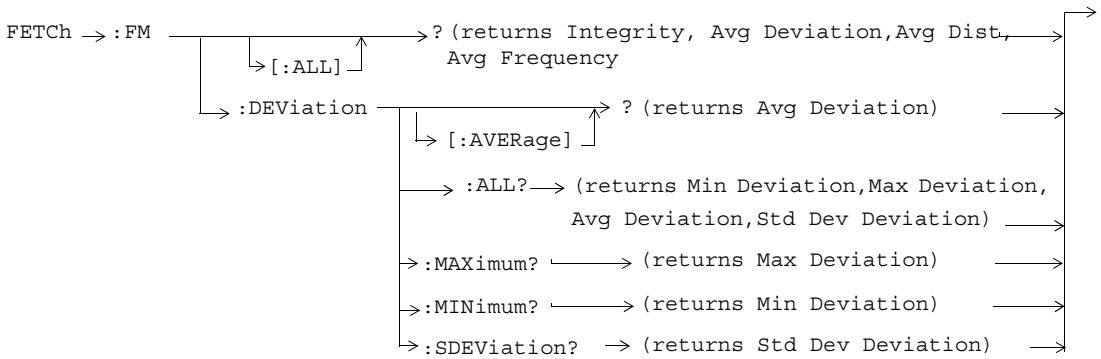


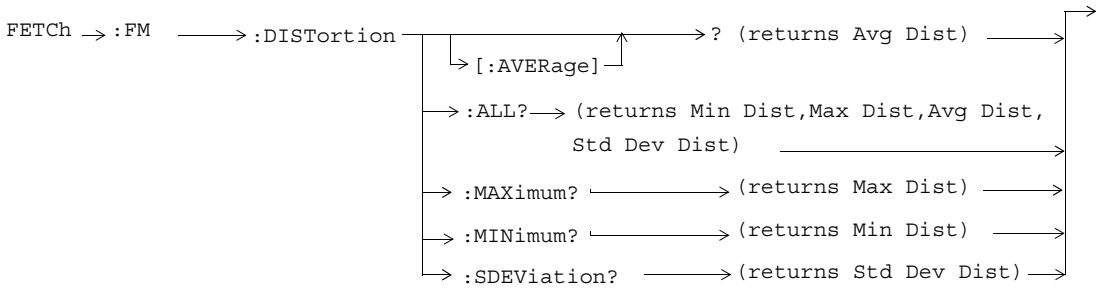

FETCh
:DPOWer
:NUMBer
[:RANGe1]
:RANGe2|3|4|
5|6|7|8|9|10
[:SELected]
:DIGital136
? (returns the number
of measurements made
in the specified
range)
:POWer
[:RANGe1]
:RANGe2|3|4|
5|6|7|8|9|10
[:SELected]
:DIGital136
? (returns N Avg TX
Power levels (where N
is the number of bursts
measured within a
range))

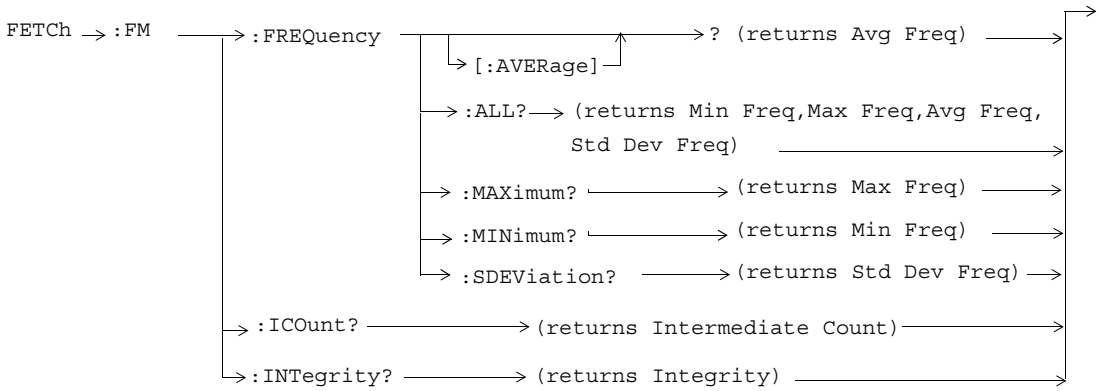
FETCh:DTXPower



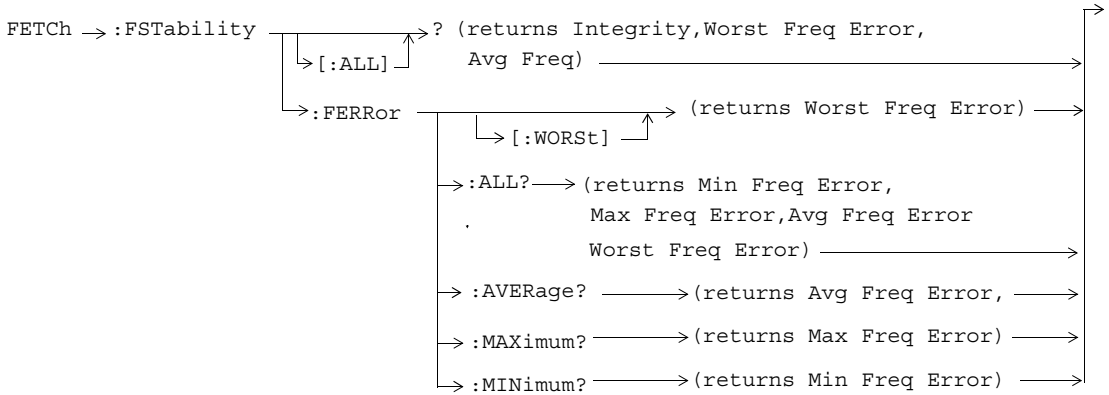
FETCh:FM

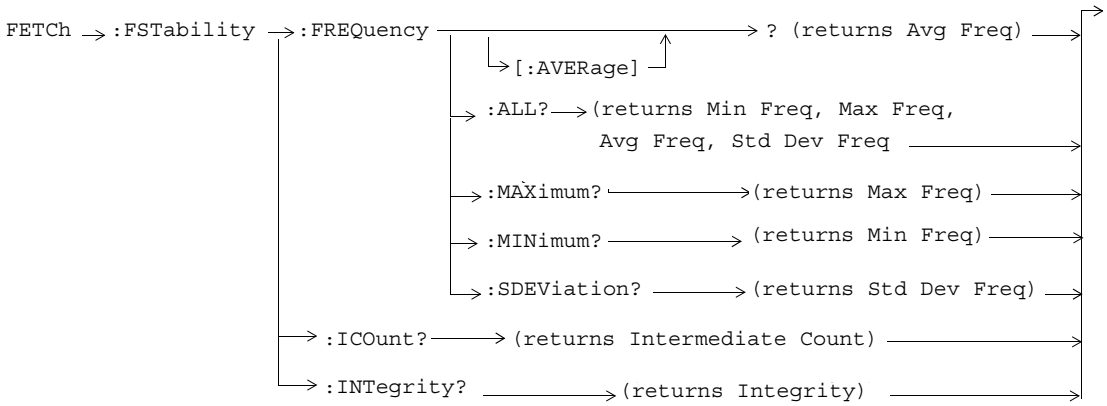

FETCh
:FM
[:ALL]
? (returns Integrity, Avg Deviation,Avg Dist,
Avg Frequency
:DEViation
[:AVERage]
? (returns Avg Deviation)
:ALL?
(returns Min Deviation,Max Deviation,
Avg Deviation,Std Dev Deviation)
:MAXimum?
(returns Max Deviation)
:MINimum?
(returns Min Deviation)
:SDEViation?
(returns Std Dev Deviation)


FETCh
:FM
:DISTortion
[:AVERage]
? (returns Avg Dist)
:ALL?
(returns Min Dist,Max Dist,Avg Dist,
Std Dev Dist)
:MAXimum?
(returns Max Dist)
:MINimum?
(returns Min Dist)
:SDEViation?
(returns Std Dev Dist)

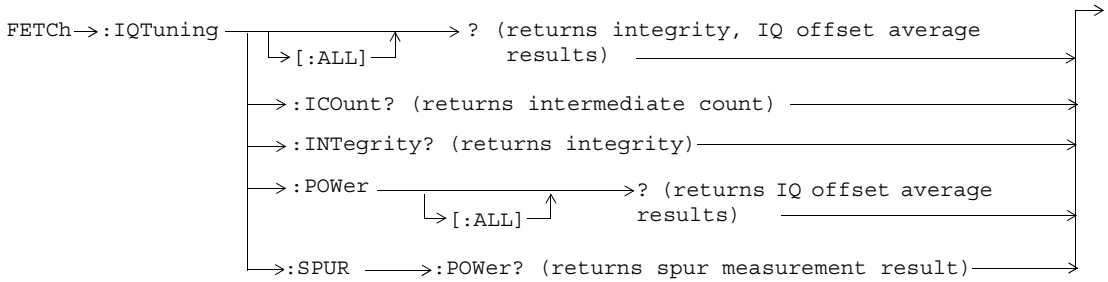

FETCh
:FM
:FREQuency
[:AVERage]
? (returns Avg Freq)
:ALL?
(returns Min Freq,Max Freq,Avg Freq,
Std Dev Freq)
:MAXimum?
(returns Max Freq)
:MINimum?
(returns Min Freq)
:SDEViation?
(returns Std Dev Freq)
:ICOunt?
(returns Intermediate Count)
:INTegrity?
(returns Integrity)

FETCh:FSTability

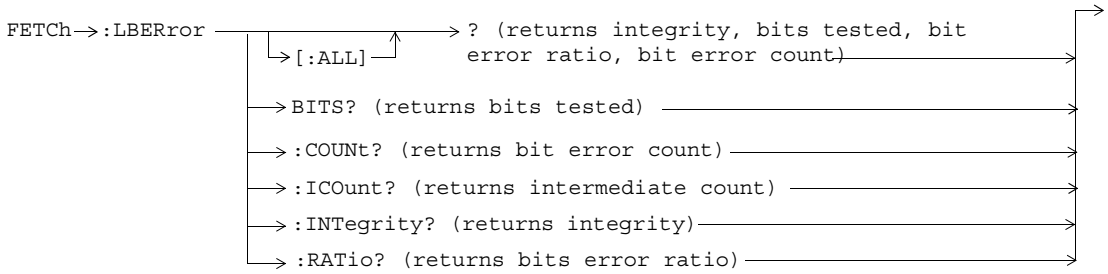



FETCh
:FSTability
:FREQuency
? (returns Avg Freq)
[:AVERage]
:ALL?
(returns Min Freq, Max Freq,
Avg Freq, Std Dev Freq
:MAXimum?
(returns Max Freq)
:MINimum?
(returns Min Freq)
:SDEViation?
(returns Std Dev Freq)
:ICOunt?
(returns Intermediate Count)
:INTegrity?
(returns Integrity)

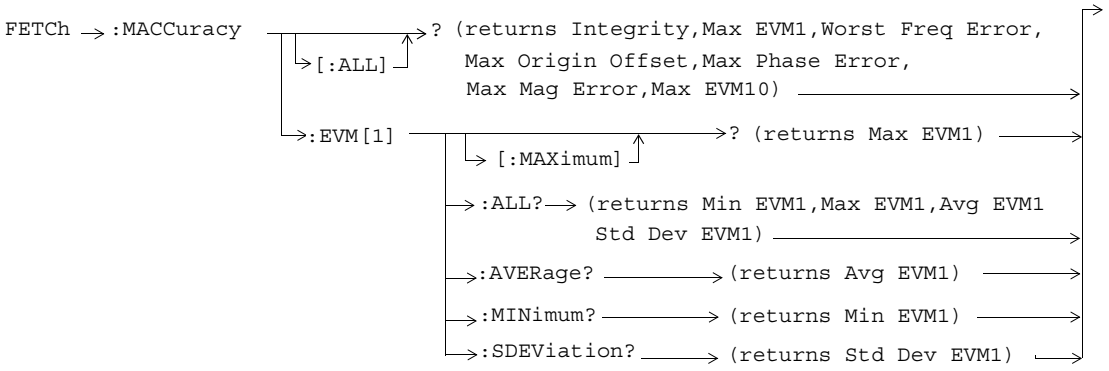
FETCh:IQTuning

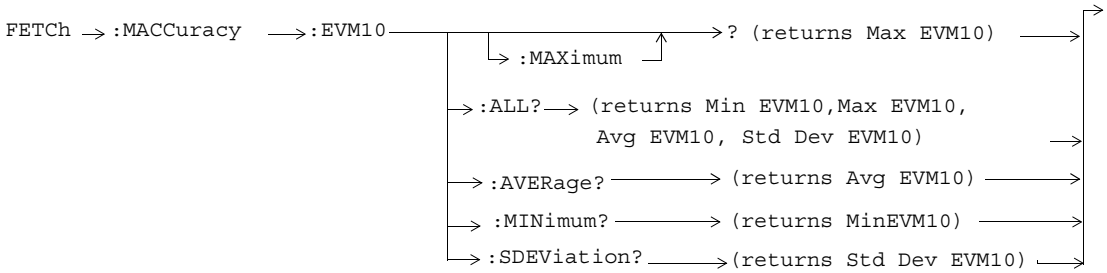


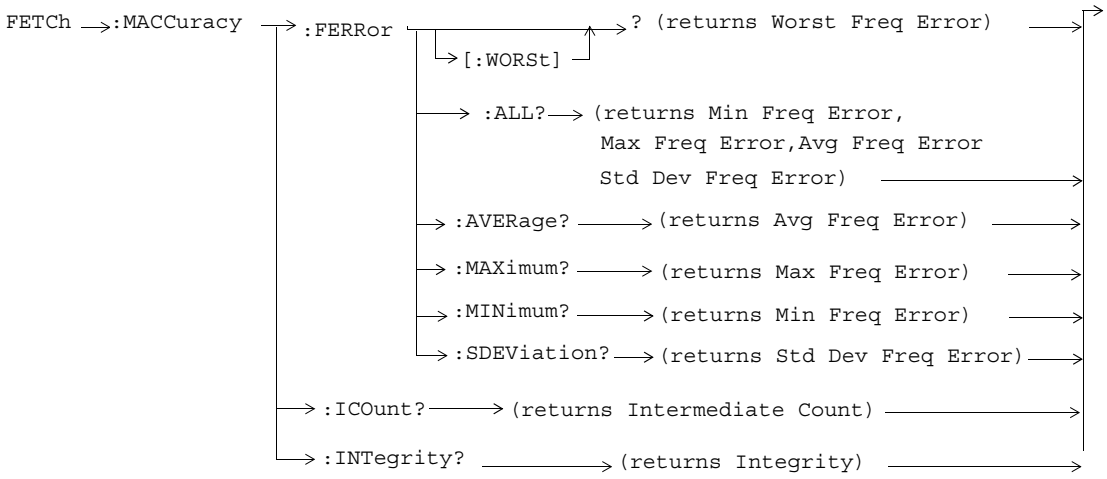
FETCh:LBERror

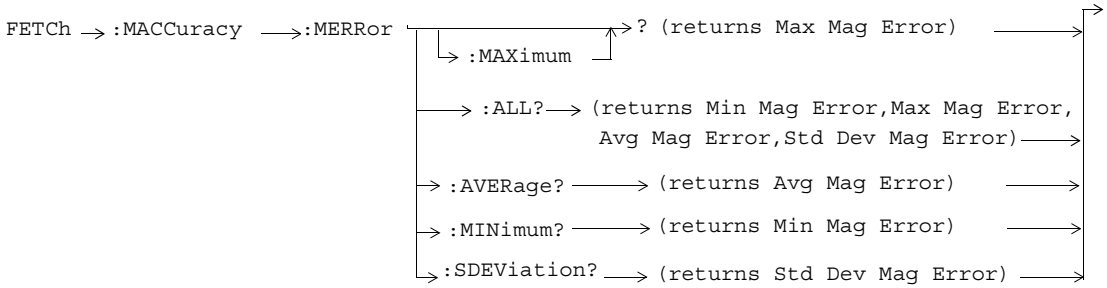


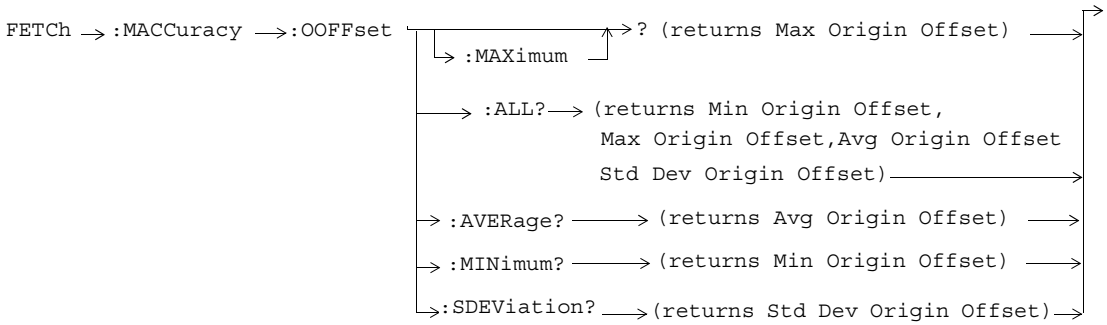
FETCh:MACCuracy

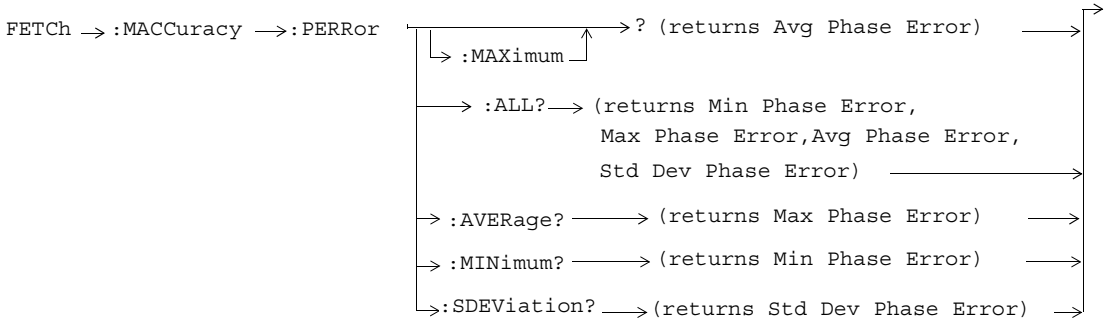



FETCh
:MACCuracy
:EVM10
? (returns Max EVM10)
:MAXimum
:ALL?
(returns Min EVM10,Max EVM10,
Avg EVM10, Std Dev EVM10)
:AVERage?
(returns Avg EVM10)
:MINimum?
(returns MinEVM10)
:SDEViation?
(returns Std Dev EVM10)

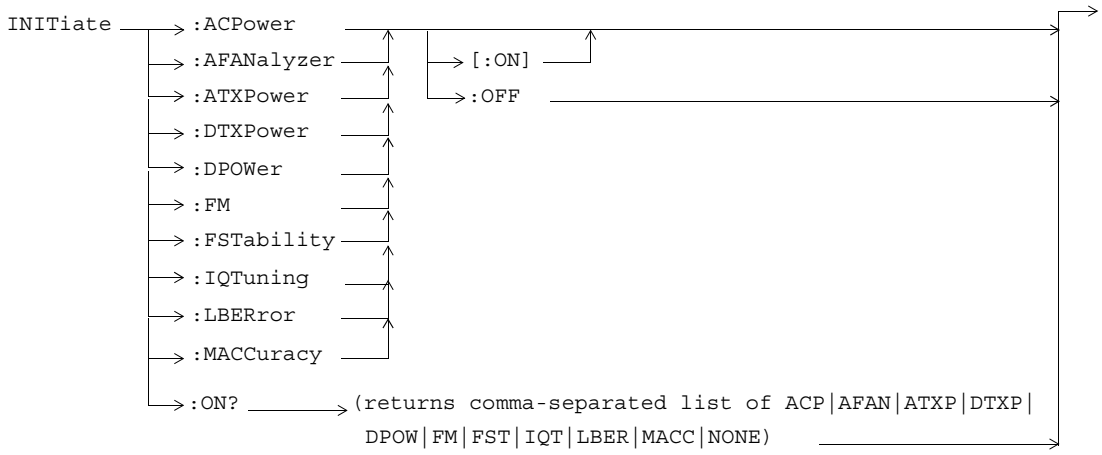

FETCh
:MACCuracy
:FERRor
? (returns Worst Freq Error)
[:WORSt]
:ALL?
(returns Min Freq Error,
Max Freq Error,Avg Freq Error
Std Dev Freq Error)
:AVERage?
(returns Avg Freq Error)
:MAXimum?
(returns Max Freq Error)
:MINimum?
(returns Min Freq Error)
:SDEViation?
(returns Std Dev Freq Error)
:ICOunt?
(returns Intermediate Count)
:INTegrity?
(returns Integrity)

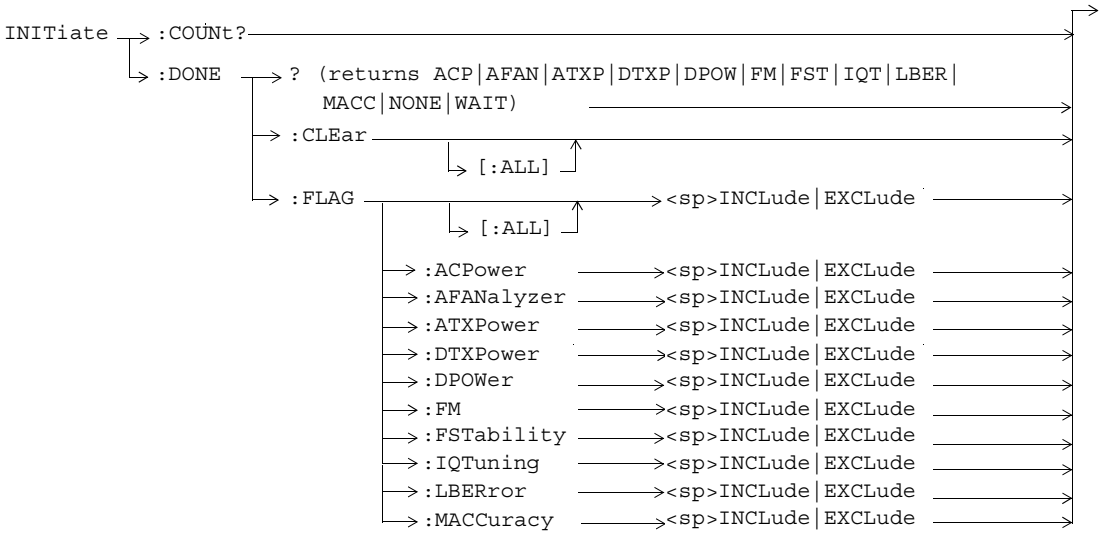

FETCh
:MACCuracy
:MERRor
? (returns Max Mag Error)
:MAXimum
:ALL?
(returns Min Mag Error,Max Mag Error,
Avg Mag Error,Std Dev Mag Error)
:AVERage?
(returns Avg Mag Error)
:MINimum?
(returns Min Mag Error)
:SDEViation?
(returns Std Dev Mag Error)


FETCh
:MACCuracy
:OOFFset
? (returns Max Origin Offset)
:MAXimum
:ALL?
(returns Min Origin Offset,
Max Origin Offset,Avg Origin Offset
Std Dev Origin Offset)
:AVERage?
(returns Avg Origin Offset)
:MINimum?
(returns Min Origin Offset)
:SDEViation?
(returns Std Dev Origin Offset)

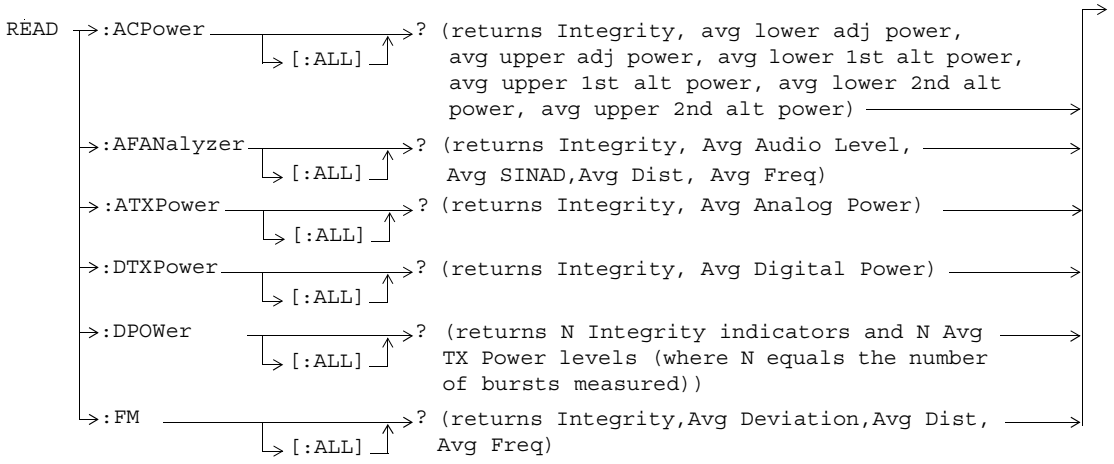

FETCh
:MACCuracy
:PERRor
? (returns Avg Phase Error)
:MAXimum
:ALL?
(returns Min Phase Error,
Max Phase Error,Avg Phase Error,
Std Dev Phase Error)
:AVERage?
(returns Max Phase Error)
:MINimum?
(returns Min Phase Error)
:SDEViation?
(returns Std Dev Phase Error)

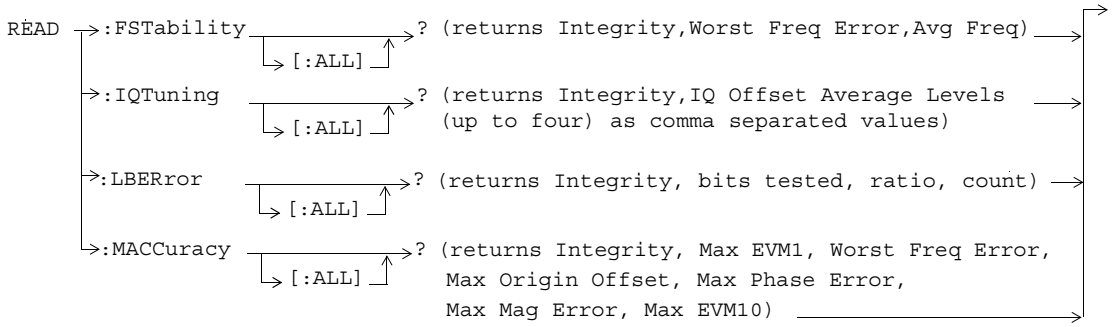
INITiate


INITiate
:ACPower
:AFANalyzer
:ATXPower
:DTXPower
:DPOWer
:FM
:FSTability
:IQTuning
:LBERror
:MACCuracy
:ON?
[:ON]
:OFF
(returns comma-separated list of ACP|AFAN|ATXP|DTXP|
DPOW|FM|FST|IQT|LBER|MACC|NONE)

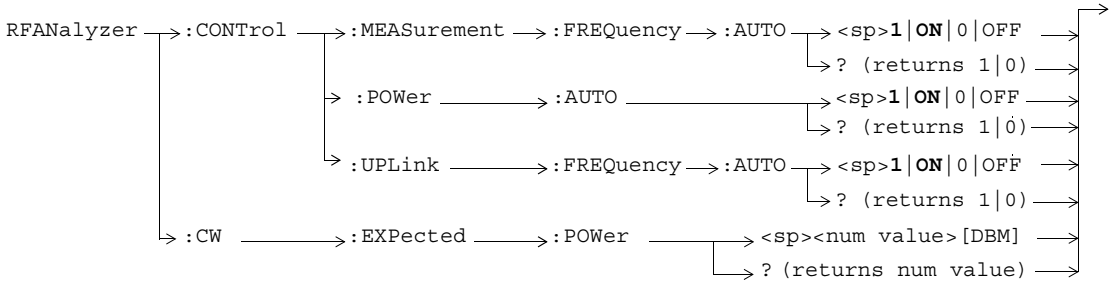

INITiate
:COUNt?
:DONE
? (returns ACP|AFAN|ATXP|DTXP|DPOW|FM|FST|IQT|LBER|
MACC|NONE|WAIT)
:CLEar
[:ALL]
:FLAG
[:ALL]
<sp>INCLude|EXCLude
:ACPower
:AFANalyzer
:ATXPower
:DTXPower
:DPOWer
:FM
:FSTability
:IQTuning
:LBERror
:MACCuracy

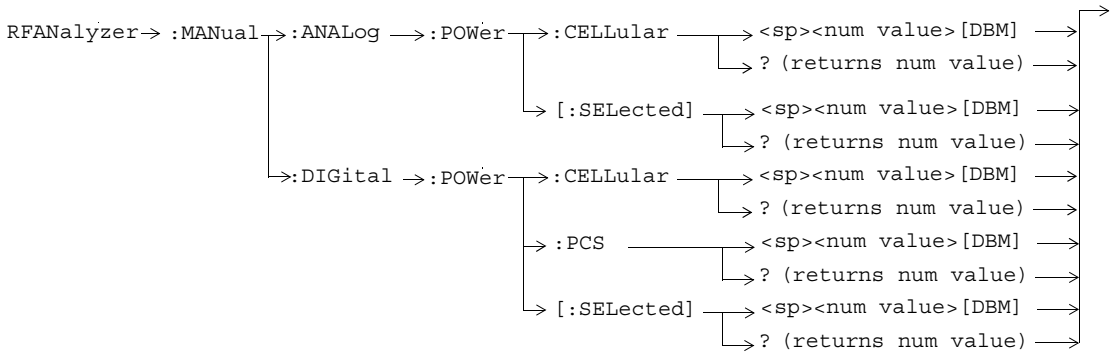
READ

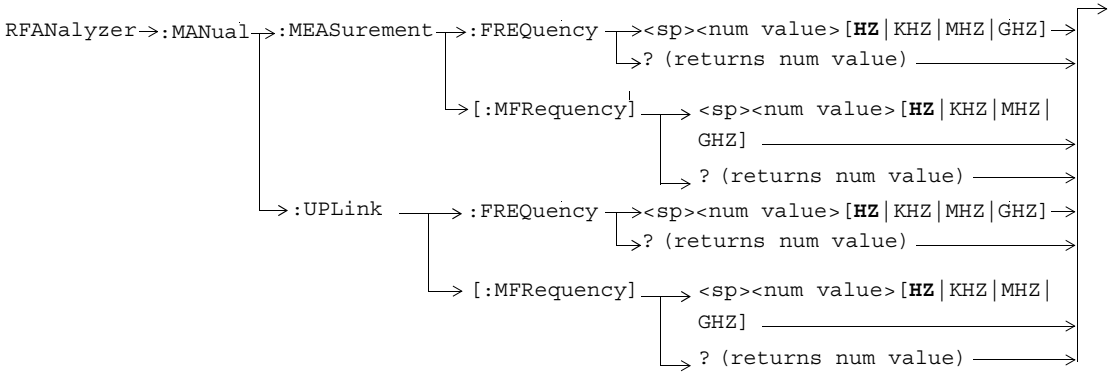

READ
:ACPower
[:ALL]
? (returns Integrity, avg lower adj power, avg upper adj power, avg lower 1st alt power, avg upper 1st alt power, avg lower 2nd alt power, avg upper 2nd alt power)
:AFANalyzer
[:ALL]
? (returns Integrity, Avg Audio Level, Avg SINAD,Avg Dist, Avg Freq)
:ATXPower
[:ALL]
? (returns Integrity, Avg Analog Power)
:DTXPower
[:ALL]
? (returns Integrity, Avg Digital Power)
:DPOWer
[:ALL]
? (returns N Integrity indicators and N Avg TX Power levels (where N equals the number of bursts measured))
:FM
[:ALL]
? (returns Integrity,Avg Deviation,Avg Dist, Avg Freq)


RËAD
:FSTability
[:ALL]
? (returns Integrity,Worst Freq Error,Avg Freq)
:IQTuning
[:ALL]
? (returns Integrity,IQ Offset Average Levels
(up to four) as comma separated values)
:LBERror
[:ALL]
? (returns Integrity, bits tested, ratio, count)
:MACCuracy
[:ALL]
? (returns Integrity, Max EVM1, Worst Freq Error,
Max Origin Offset, Max Phase Error,
Max Mag Error, Max EVM10)

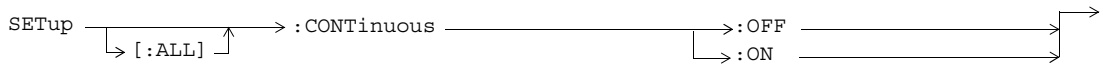
RFANalyzer


RFANalyzer
:CONTrol
:MEASurement
:FREQuency
:AUTO
<sp>1|ON|0|OFF
? (returns 1|0)
:POWer
:AUTO
<sp>1|ON|0|OFF
? (returns 1|0)
:UPLink
:FREQuency
:AUTO
<sp>1|ON|0|OFF
? (returns 1|0)
:CW
:EXPected
:POWer
<sp><num value>[DBM]
? (returns num value)

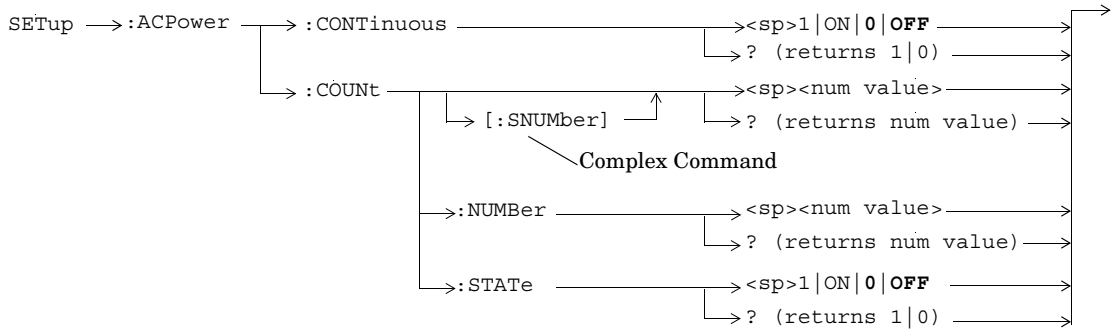

RFANalyzer
:MANual
:ANALog
:POWer
:CELLular
<sp><num value>[DBM]
? (returns num value)
[:SELected]
<sp><num value>[DBM]
? (returns num value)
:DIGital
:POWer
:CELLular
<sp><num value>[DBM]
? (returns num value)
:PCS
<sp><num value>[DBM]
? (returns num value)
[:SELected]
<sp><num value>[DBM]
? (returns num value)

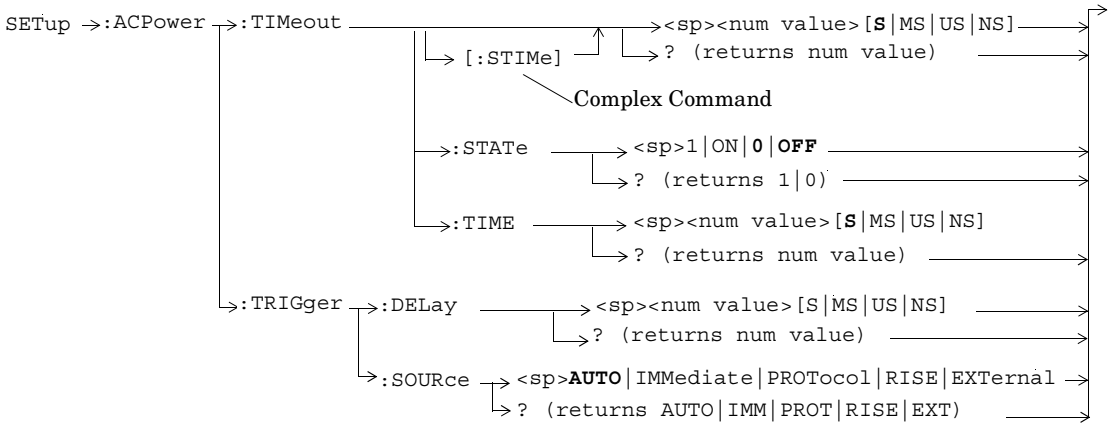

RFANalyzer
:MANual
:MEASurement
:FREQuency
<sp><num value>[HZ|KHZ|MHZ|GHZ]
? (returns num value)
[:MFRequency]
<sp><num value>[HZ|KHZ|MHZ|
GHZ]
? (returns num value)
:UPLink
:FREQuency
<sp><num value>[HZ|KHZ|MHZ|GHZ]
? (returns num value)
[:MFRequency]
<sp><num value>[HZ|KHZ|MHZ|
GHZ]
? (returns num value)

SETup[:ALL]:CONTinuous

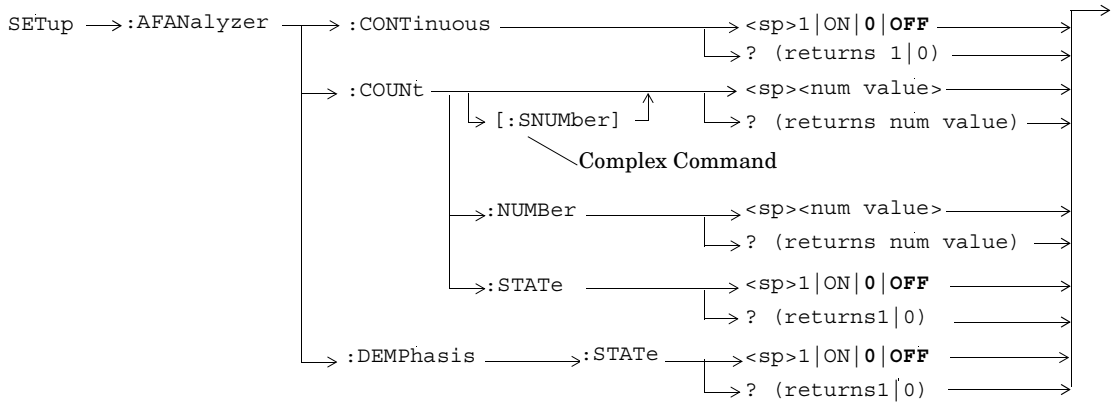


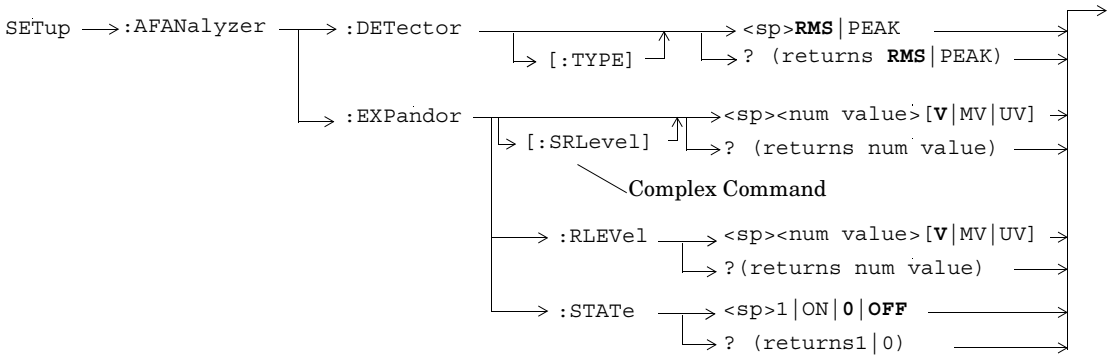
SETup:ACPower

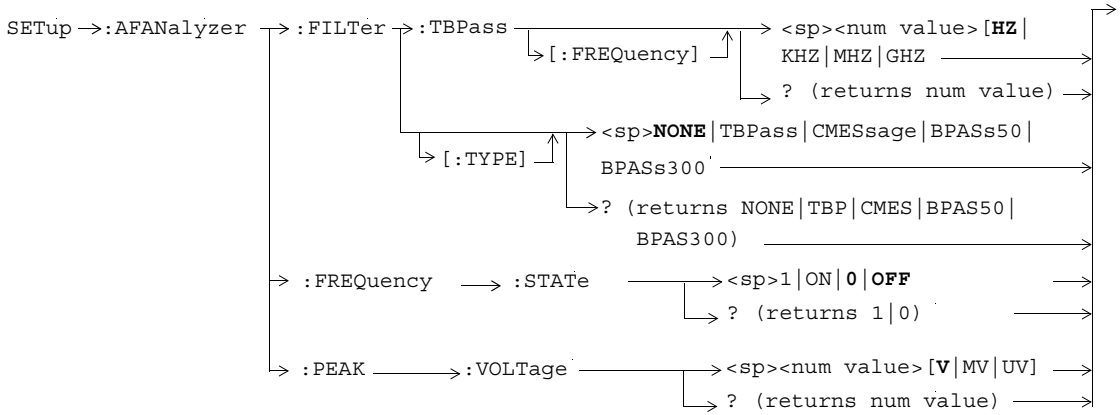


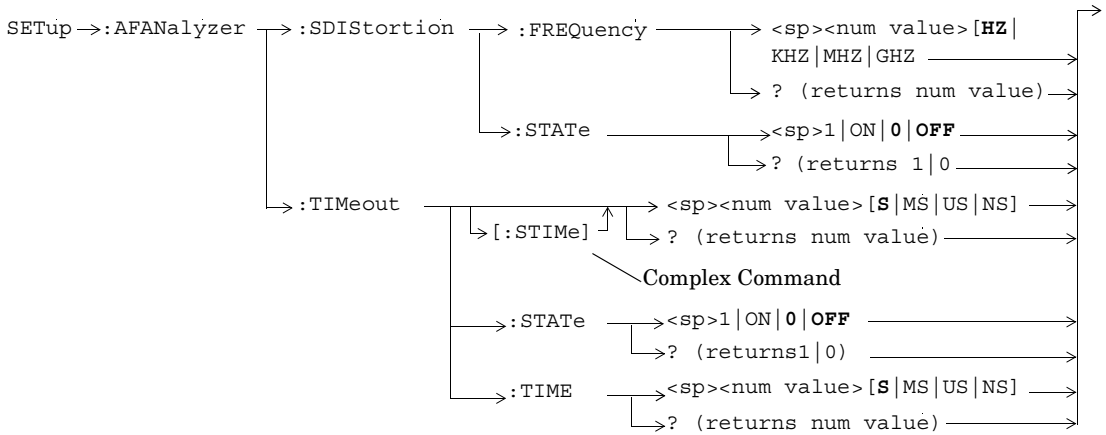

SETup
:ACPower
:TIMeout
<sp><num value>[S|MS|US|NS]
[:STIMe]
? (returns num value)
Complex Command
:STATe
<sp>1|ON|0|OFF
? (returns 1|0)
:TIME
<sp><num value>[S|MS|US|NS]
? (returns num value)
:TRIGger
:DELay
<sp><num value>[S|MS|US|NS]
? (returns num value)
:SOURce
<sp>AUTO|IMMediate|PROTocol|RISE|EXTernal
? (returns AUTO|IMM|PROT|RISE|EXT)

SETup:AFANalyzer

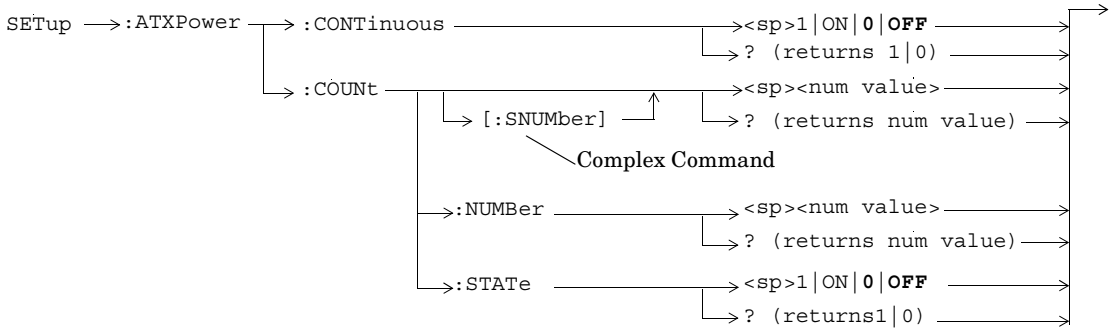


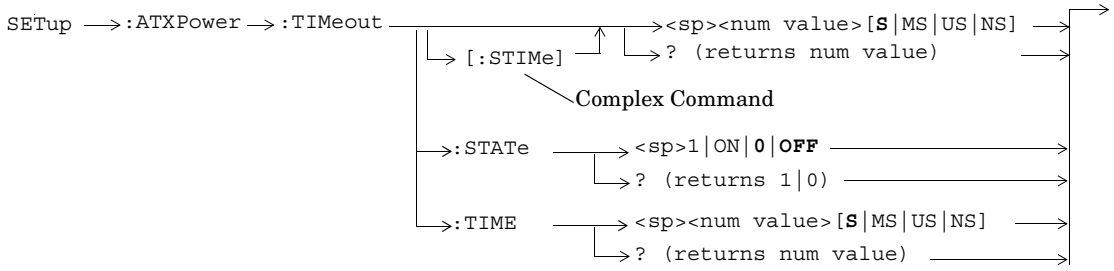

SETup
:AFANalyzer
:DETector
[:TYPE]
<sp>RMS|PEAK
? (returns RMS|PEAK)
:EXPandor
[:SRLevel]
<sp><num value>[V|MV|UV]
? (returns num value)
Complex Command
:RLEVel
<sp><num value>[V|MV|UV]
?(returns num value)
:STATe
<sp>1|ON|0|OFF
? (returns1|0)


SETup
:AFANalyzer
:FILTer
:TBPass
[:FREQuency]
<sp><num value>[HZ|
KHZ|MHZ|GHZ
? (returns num value)
[:TYPE]
<sp>NONE|TBPass|CMESsage|BPASs50|
BPASs300
? (returns NONE|TBP|CMES|BPAS50|
BPAS300)
:FREQuency
:STATe
<sp>1|ON|0|OFF
? (returns 1|0)
:PEAK
:VOLTage
<sp><num value>[V|MV|UV]
? (returns num value)

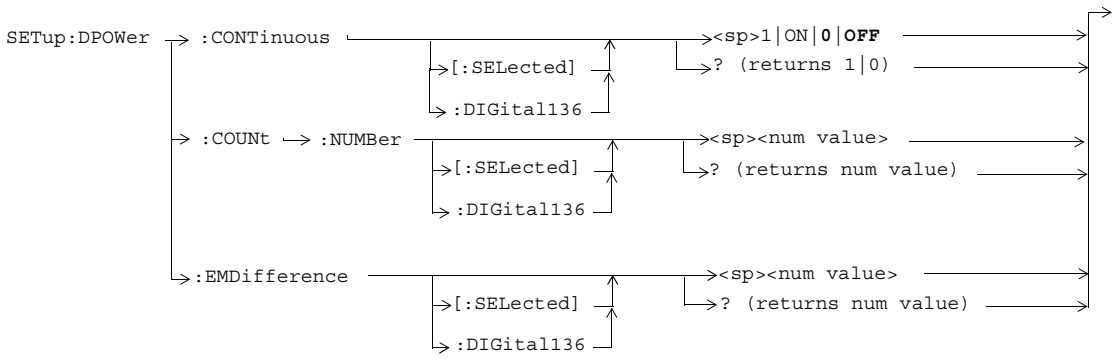

SETup
:AFANalyzer
:SDIStortion
:FREQuency
<sp><num value>[HZ|
KHZ|MHZ|GHZ
? (returns num value)
:STATe
<sp>1|ON|0|OFF
? (returns 1|0
:TIMeout
[:STIMe]
<sp><num value>[S|MS|US|NS]
? (returns num value)
Complex Command
:STATe
<sp>1|ON|0|OFF
? (returns1|0)
:TIME
<sp><num value>[S|MS|US|NS]
? (returns num value)

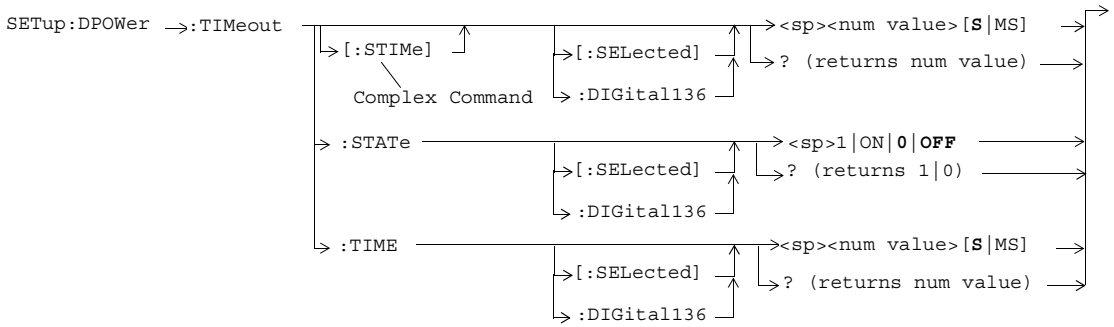
SETup:ATXPower



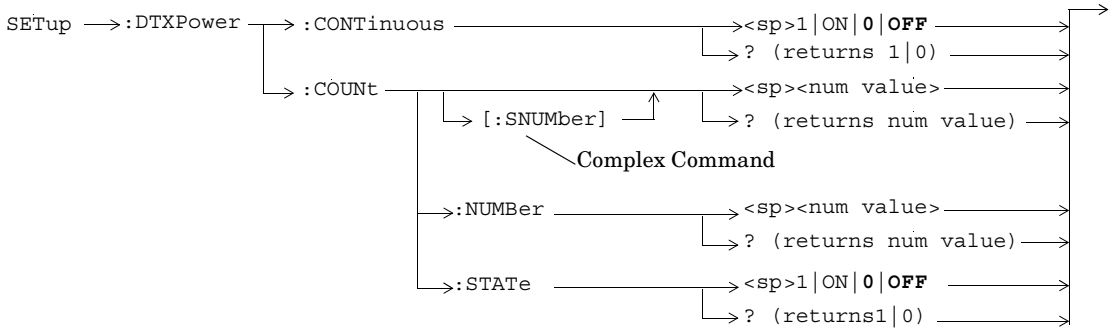

SETup
:ATXPower
:TIMeout
[:STIMe]
<sp><num value>[S|MS|US|NS]
? (returns num value)
Complex Command
:STATe
<sp>1|ON|0|OFF
? (returns 1|0)
:TIME
<sp><num value>[S|MS|US|NS]
? (returns num value)

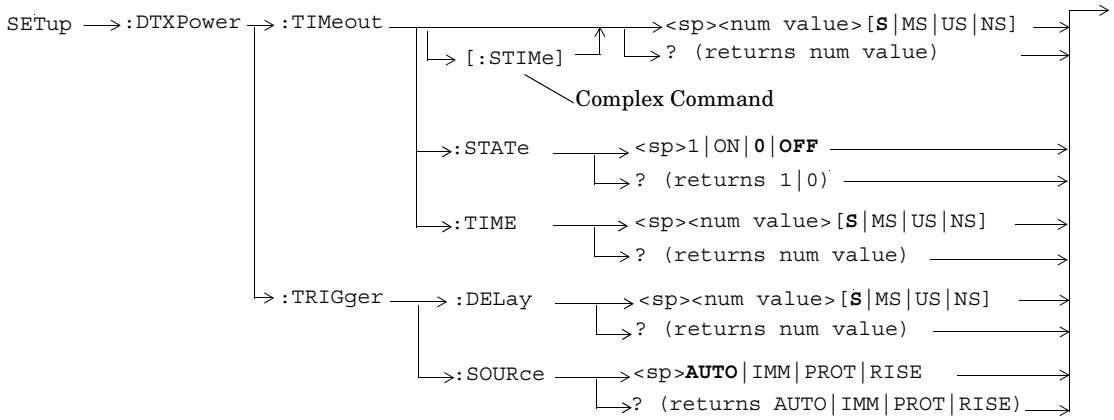
SETup:DPOWer



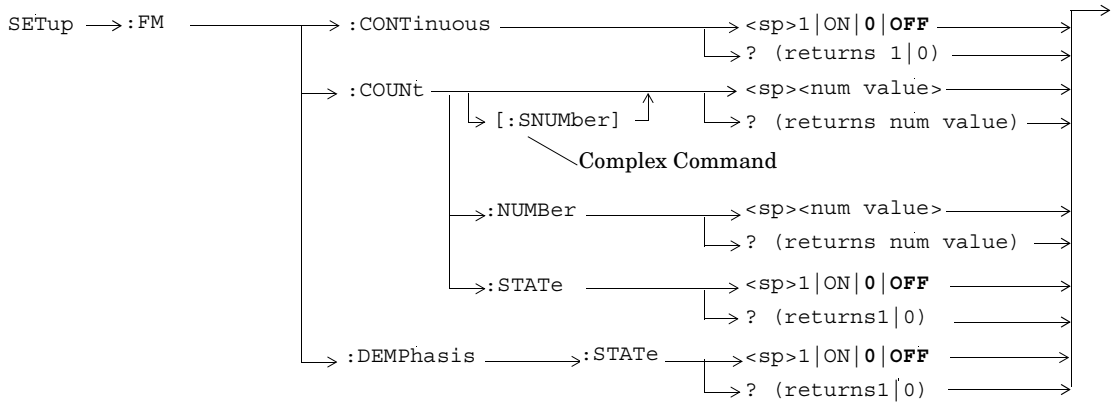

SETup:DPOWer
:TIMeout
[:STIMe]
Complex Command
[:SELected]
:DIGital136
<sp><num value>[S|MS]
? (returns num value)
:STATe
[:SELected]
:DIGital136
<sp>1|ON|0|OFF
? (returns 1|0)
:TIME
[:SELected]
:DIGital136
<sp><num value>[S|MS]
? (returns num value)

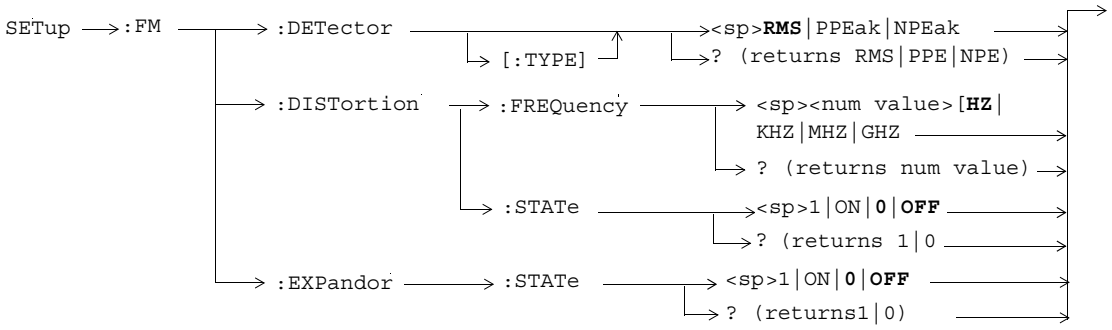
SETup:DTXPower

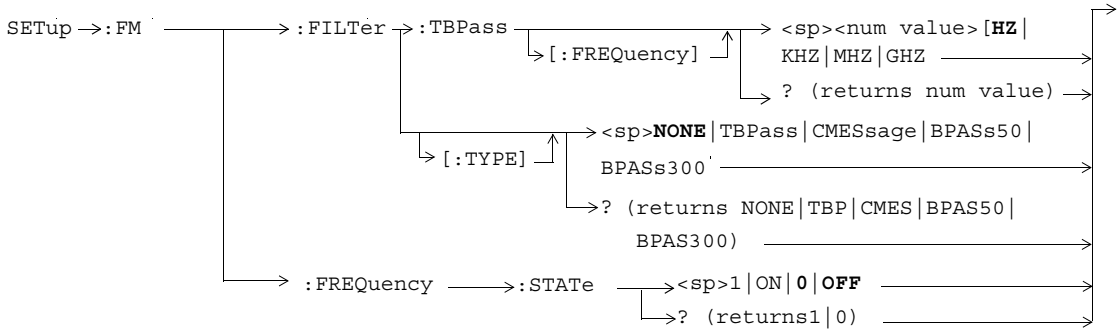


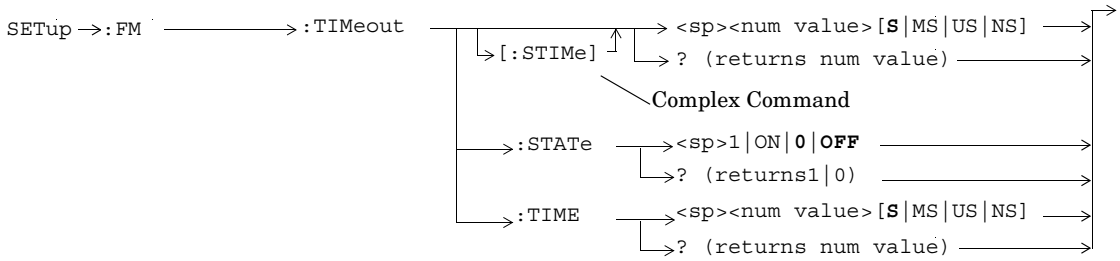

SETup
:DTXPower
:TIMeout
[:STIMe]
Complex Command
<sp><num value>[**S**|MS|US|NS]
? (returns num value)
:STATe
<sp>1|ON|**0**|**OFF**
? (returns 1|0)
:TIME
<sp><num value>[**S**|MS|US|NS]
? (returns num value)
:TRIGger
:DELay
<sp><num value>[**S**|MS|US|NS]
? (returns num value)
:SOURce
<sp>**AUTO**|IMM|PROT|RISE
? (returns AUTO|IMM|PROT|RISE)

SETup:FM

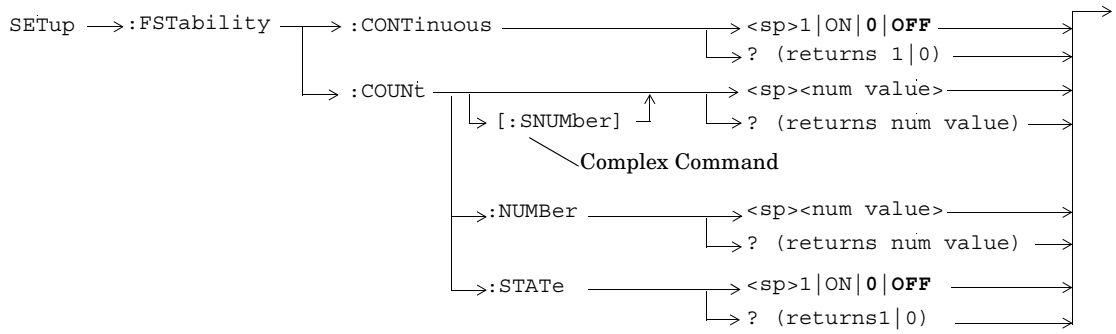

SETup
:FM
:CONTinuous
<sp>1|ON|0|OFF
? (returns 1|0)
:COUNt
<sp><num value>
[:SNUMber]
? (returns num value)
Complex Command
:NUMBer
<sp><num value>
? (returns num value)
:STATe
<sp>1|ON|0|OFF
? (returns1|0)
:DEMPhasis
:STATe
<sp>1|ON|0|OFF
? (returns1|0)

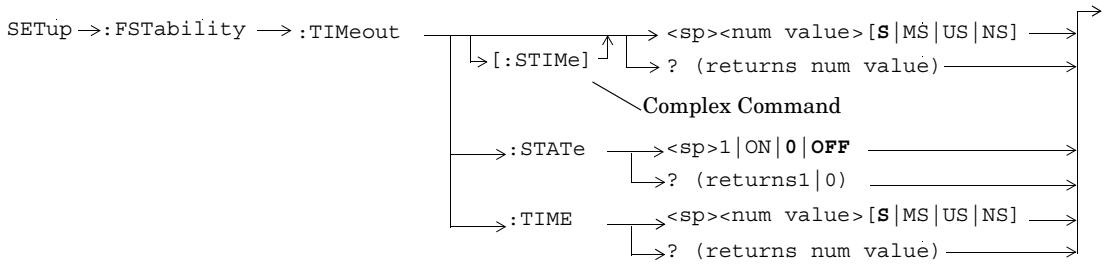

SETup
:FM
:DETector
[:TYPE]
<sp>RMS|PPEak|NPEak
? (returns RMS|PPE|NPE)
:DISTortion
:FREQuency
<sp><num value>[HZ|
KHZ|MHZ|GHZ
? (returns num value)
:STATe
<sp>1|ON|0|OFF
? (returns 1|0
:EXPandor
:STATe
<sp>1|ON|0|OFF
? (returns1|0)


SETup
:FM
:FILTer
:TBPass
[:FREQuency]
<sp><num value>[HZ|
KHZ|MHZ|GHZ
? (returns num value)
[:TYPE]
<sp>NONE|TBPass|CMESsage|BPASs50|
BPASs300
? (returns NONE|TBP|CMES|BPAS50|
BPAS300)
:FREQuency
:STATe
<sp>1|ON|0|OFF
? (returns1|0)

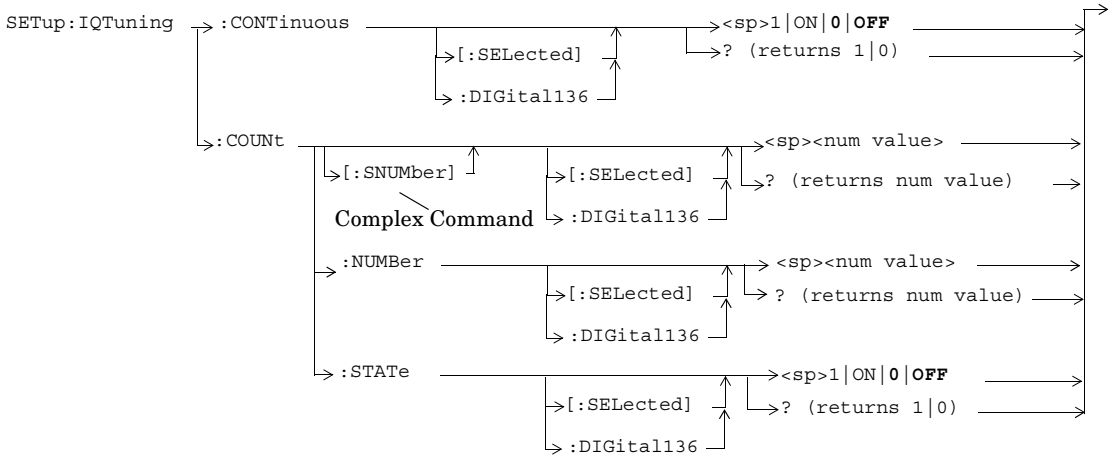

SETup
:FM
:TIMeout
[:STIMe]
<sp><num value>[S|MS|US|NS]
? (returns num value)
Complex Command
:STATe
<sp>1|ON|0|OFF
? (returns1|0)
:TIME
<sp><num value>[S|MS|US|NS]
? (returns num value)

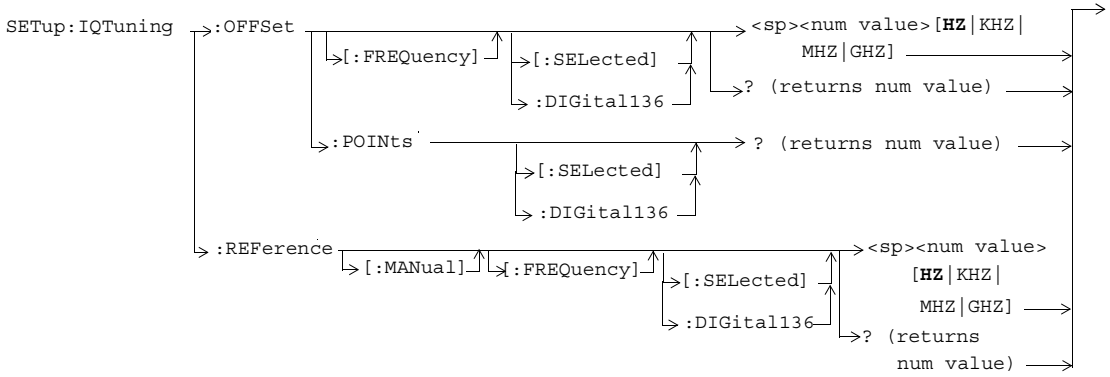
SETup:FSTability

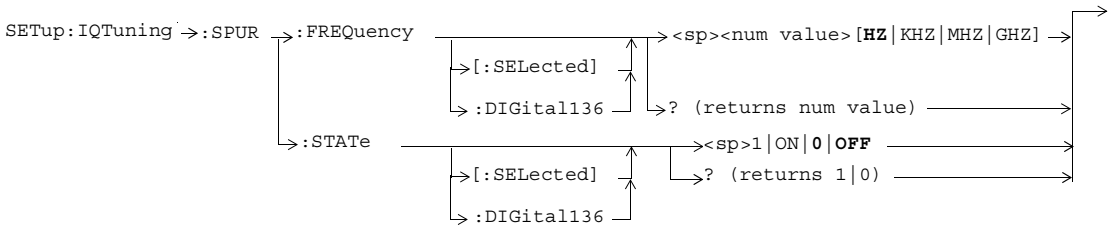


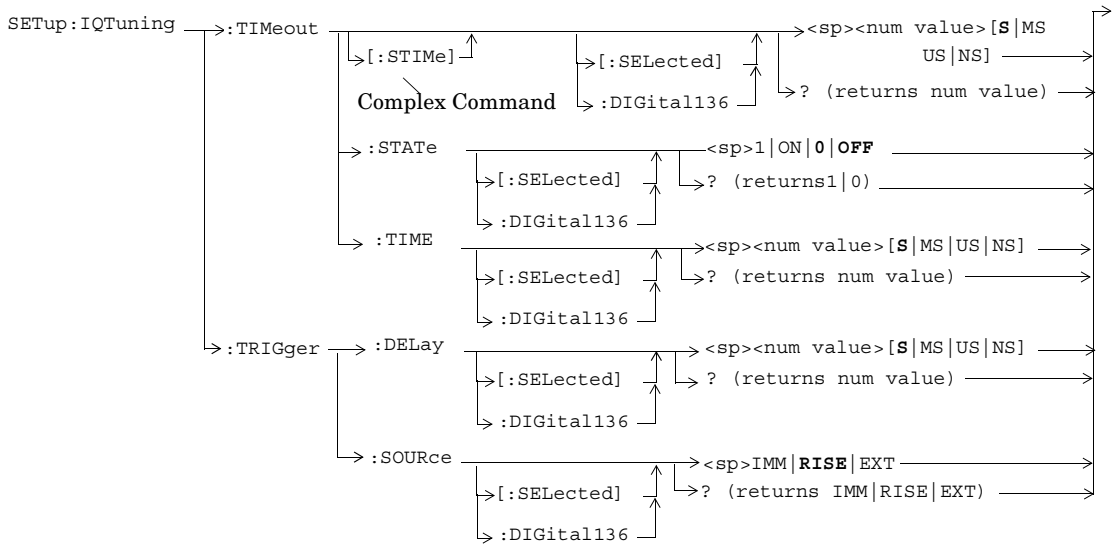

SETup
:FSTability
:TIMeout
[:STIMe]
<sp><num value>[S|MS|US|NS]
? (returns num value)
Complex Command
:STATe
<sp>1|ON|0|OFF
? (returns1|0)
:TIME
<sp><num value>[S|MS|US|NS]
? (returns num value)

SETup:IQTuning

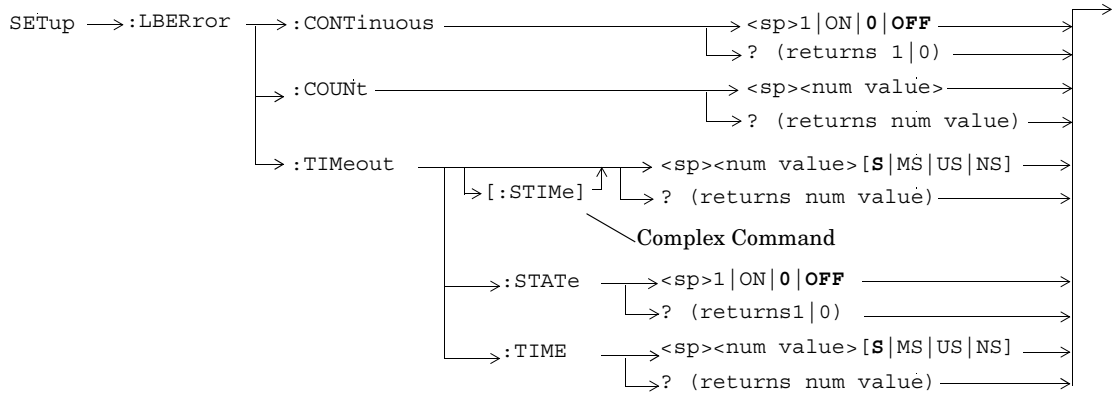



SETup:IQTuning
:OFFSet
[:FREQuency]
[:SELected]
:DIGital136
<sp><num value>[HZ|KHZ|
MHZ|GHZ]
? (returns num value)
:POINts
? (returns num value)
[:SELected]
:DIGital136
:REFerence
[:MANual]
[:FREQuency]
[:SELected]
:DIGital136
<sp><num value>
[HZ|KHZ|
MHZ|GHZ]
? (returns
num value)

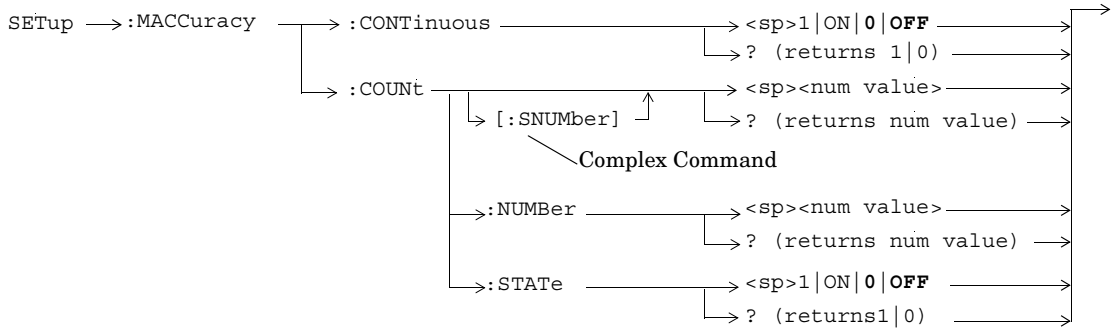

SETup:IQTuning
:SPUR
:FREQuency
[:SELected]
:DIGital136
<sp><num value>[**HZ**|KHZ|MHZ|GHZ]
? (returns num value)
:STATe
[:SELected]
:DIGital136
<sp>1|ON|**0**|**OFF**
? (returns 1|0)

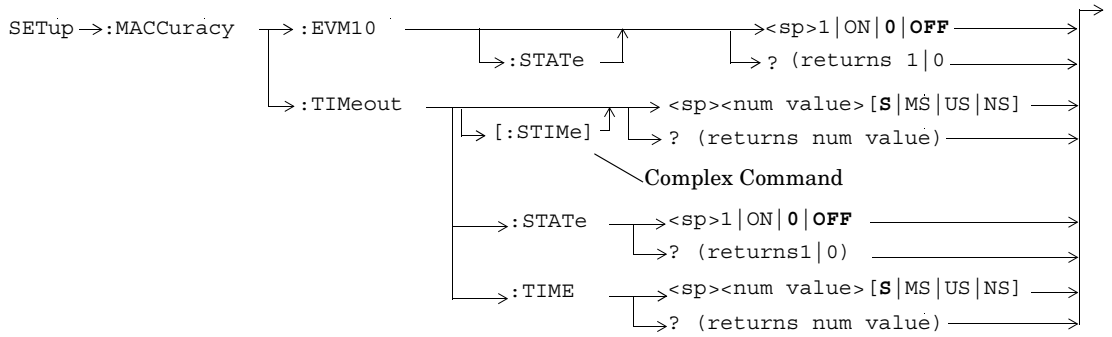

SETup:IQTuning
:TIMeout
[:STIMe]
Complex Command
[:SELected]
:DIGital136
<sp><num value>[S|MS
US|NS]
? (returns num value)
:STATe
[:SELected]
:DIGital136
<sp>1|ON|0|OFF
? (returns1|0)
:TIME
[:SELected]
:DIGital136
<sp><num value>[S|MS|US|NS]
? (returns num value)
:TRIGger
:DELay
[:SELected]
:DIGital136
<sp><num value>[S|MS|US|NS]
? (returns num value)
:SOURce
[:SELected]
:DIGital136
<sp>IMM|RISE|EXT
? (returns IMM|RISE|EXT)

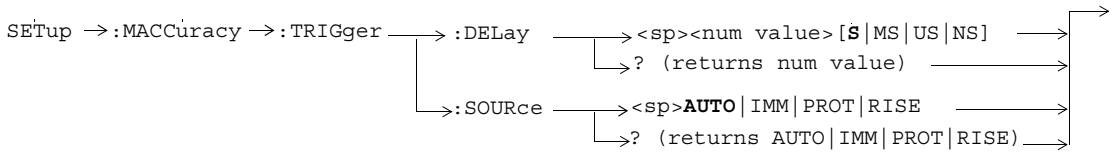
SETup:LBERror



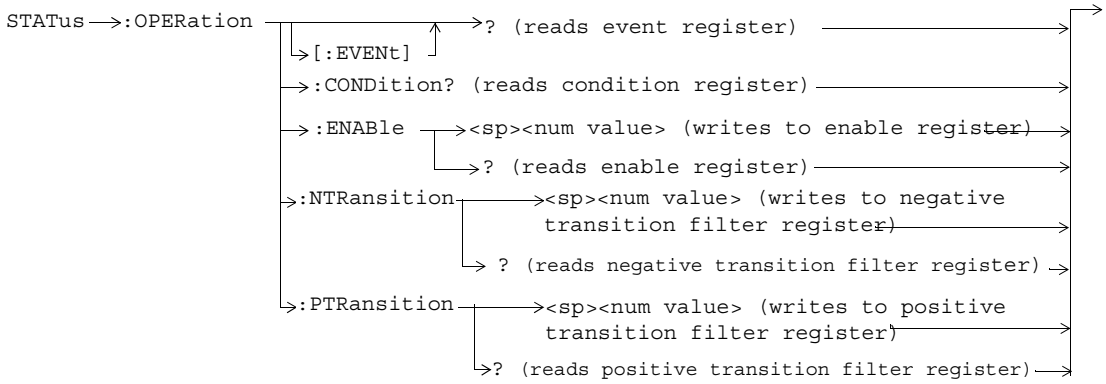
SETup:MACCuracy

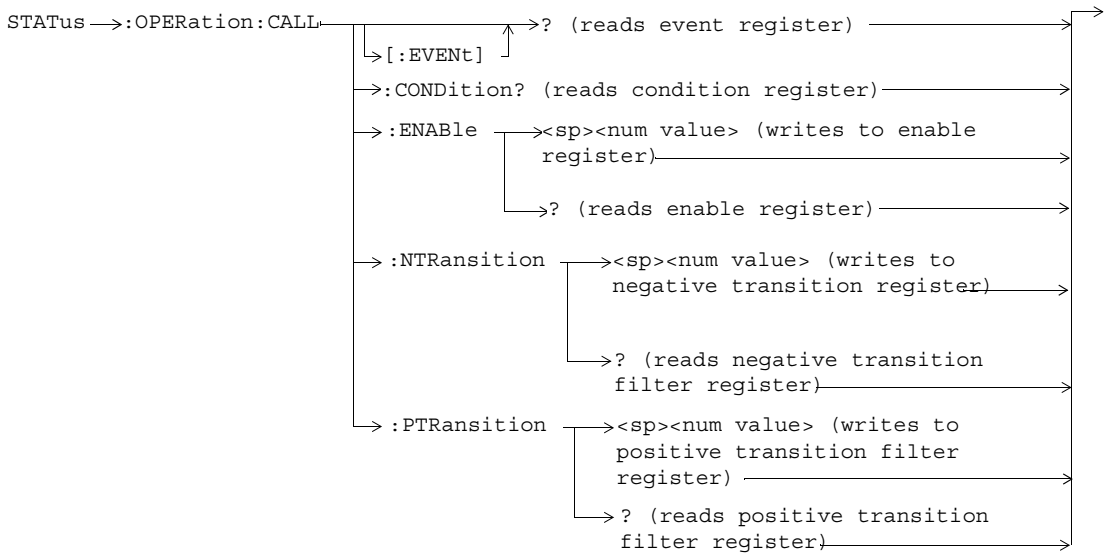


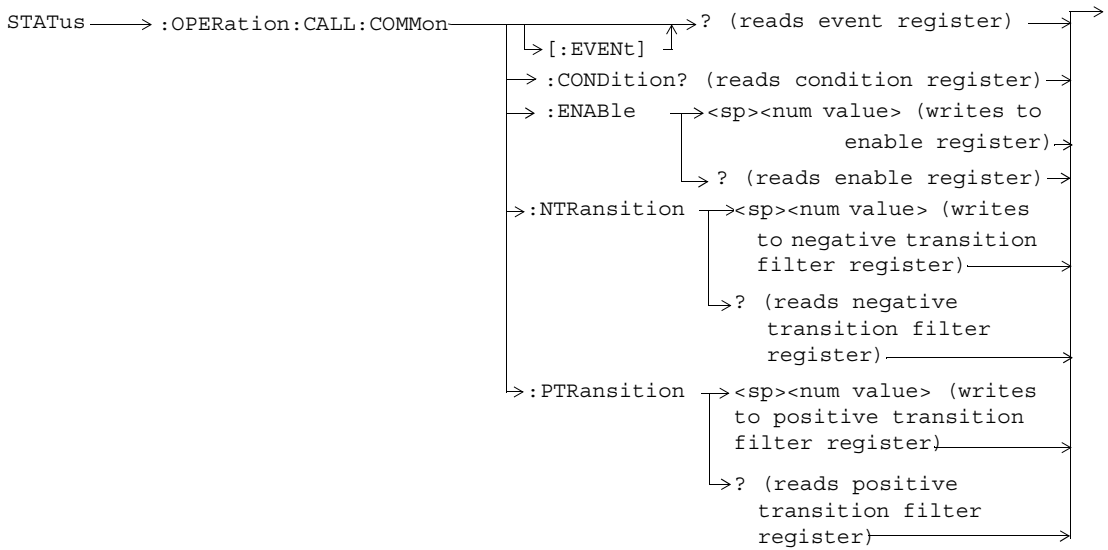

SETup
:MACCuracy
:EVM10
:STATe
<sp>1|ON|0|OFF
? (returns 1|0
:TIMeout
[:STIMe]
<sp><num value>[S|MS|US|NS]
? (returns num value)
Complex Command
:STATe
<sp>1|ON|0|OFF
? (returns1|0)
:TIME
<sp><num value>[S|MS|US|NS]
? (returns num value)

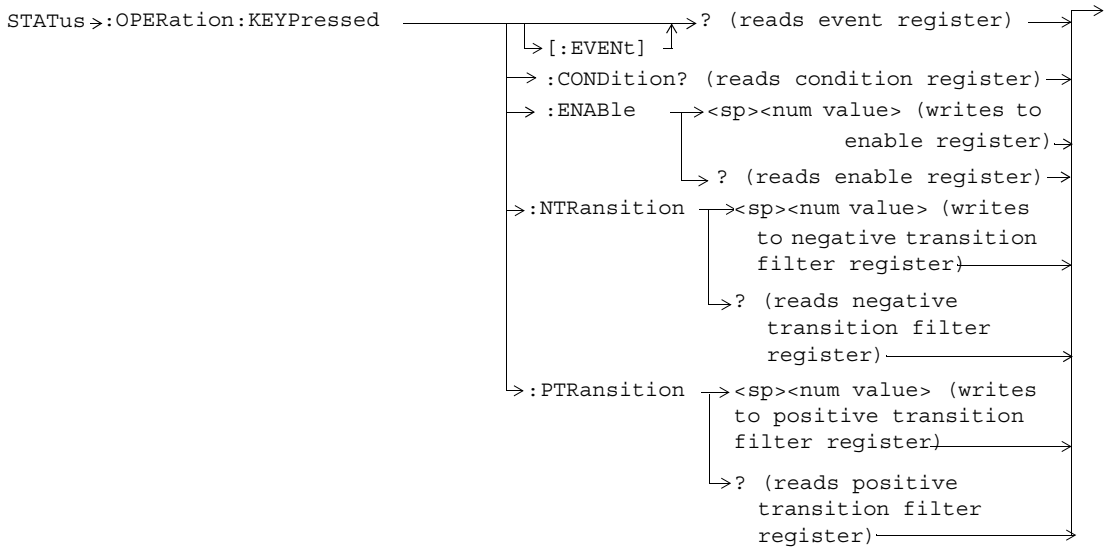

SETup
:MACCuracy
:TRIGger
:DELay
<sp><num value>[S|MS|US|NS]
? (returns num value)
:SOURce
<sp>AUTO|IMM|PROT|RISE
? (returns AUTO|IMM|PROT|RISE)

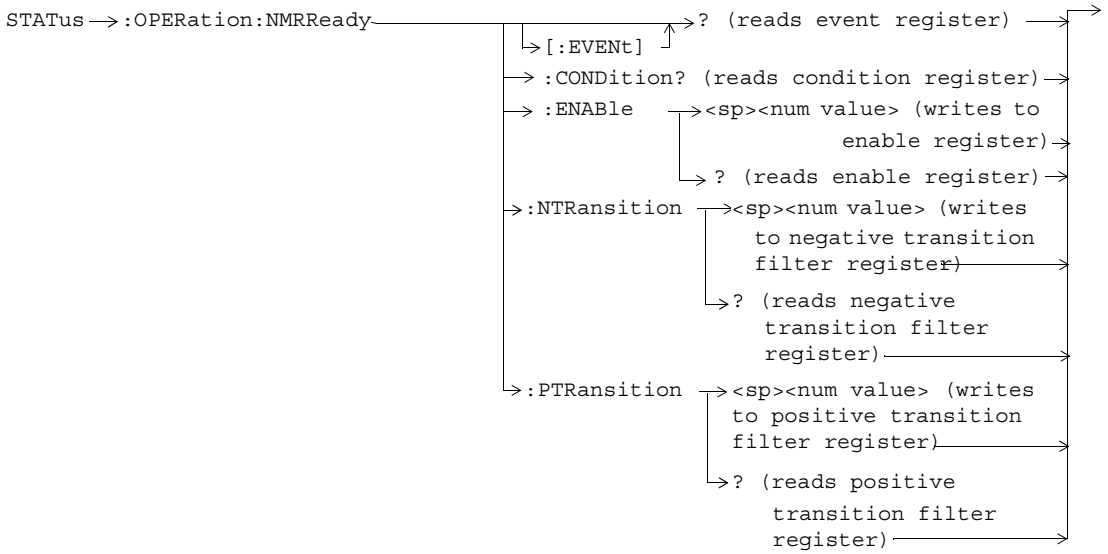
STATus:OPERation

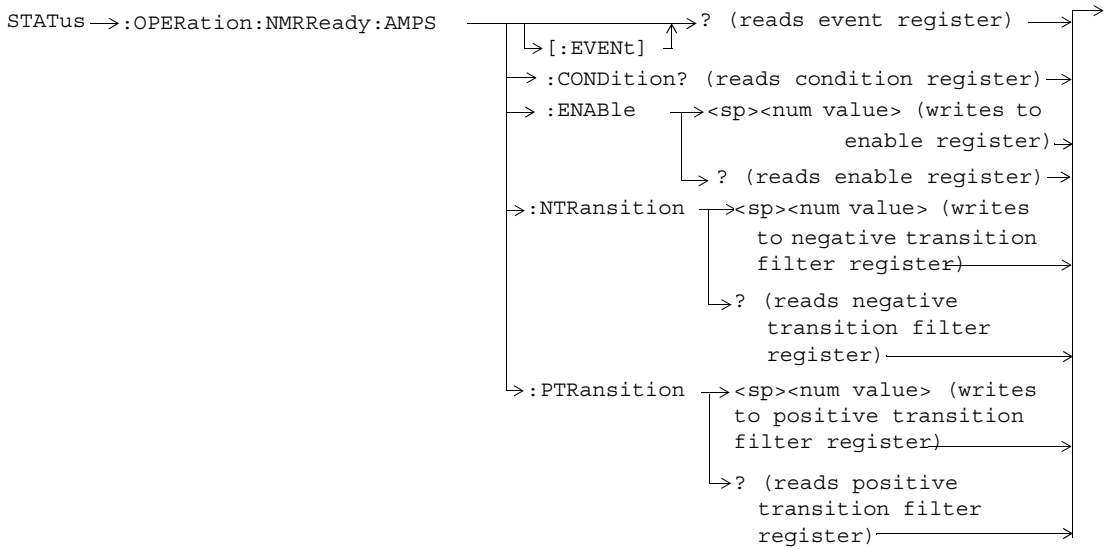


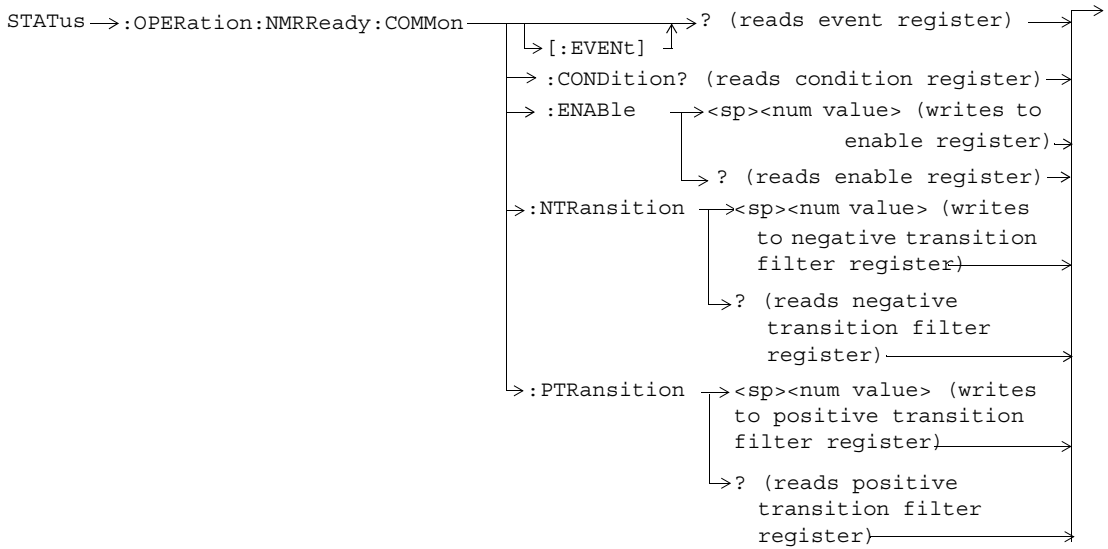

STATus
:OPERation:CALL
? (reads event register)
[:EVENt]
:CONDition? (reads condition register)
:ENABle
<sp><num value> (writes to enable register)
? (reads enable register)
:NTRansition
<sp><num value> (writes to negative transition register)
? (reads negative transition filter register)
:PTRansition
<sp><num value> (writes to positive transition filter register)
? (reads positive transition filter register)

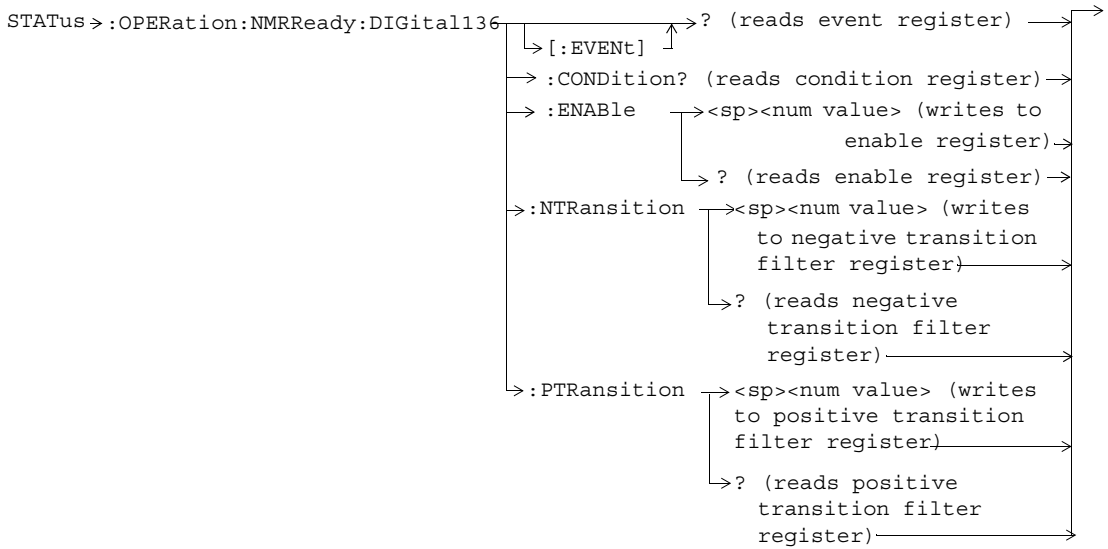

STATus
:OPERation:CALL:COMMon
[:EVENt]
? (reads event register)
:CONDition? (reads condition register)
:ENABle
<sp><num value> (writes to enable register)
? (reads enable register)
:NTRansition
<sp><num value> (writes to negative transition filter register)
? (reads negative transition filter register)
:PTRansition
<sp><num value> (writes to positive transition filter register)
? (reads positive transition filter register)


STATus:OPERation:KEYPressed
[:EVENt]
? (reads event register)
:CONDition? (reads condition register)
:ENABle
<sp><num value> (writes to enable register)
? (reads enable register)
:NTRansition
<sp><num value> (writes to negative transition filter register)
? (reads negative transition filter register)
:PTRansition
<sp><num value> (writes to positive transition filter register)
? (reads positive transition filter register)

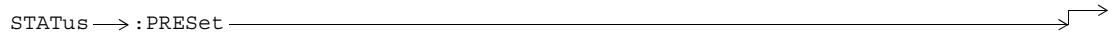

STATus
:OPERation:NMRReady
[:EVENt]
? (reads event register)
:CONDition? (reads condition register)
:ENABle
<sp><num value> (writes to enable register)
? (reads enable register)
:NTRansition
<sp><num value> (writes to negative transition filter register)
? (reads negative transition filter register)
:PTRansition
<sp><num value> (writes to positive transition filter register)
? (reads positive transition filter register)


STATus
:OPERation:NMRReady:AMPS
[:EVENt]
? (reads event register)
:CONDition? (reads condition register)
:ENABle
<sp><num value> (writes to enable register)
? (reads enable register)
:NTRansition
<sp><num value> (writes to negative transition filter register)
? (reads negative transition filter register)
:PTRansition
<sp><num value> (writes to positive transition filter register)
? (reads positive transition filter register)


STATus
:OPERation:NMRReady:COMMon
[:EVENt]
? (reads event register)
:CONDition? (reads condition register)
:ENABle
<sp><num value> (writes to enable register)
? (reads enable register)
:NTRansition
<sp><num value> (writes to negative transition filter register)
? (reads negative transition filter register)
:PTRansition
<sp><num value> (writes to positive transition filter register)
? (reads positive transition filter register)


STATus
:OPERation:NMRReady:DIGital136
? (reads event register)
[:EVENt]
:CONDition? (reads condition register)
:ENABle
<sp><num value> (writes to enable register)
? (reads enable register)
:NTRansition
<sp><num value> (writes to negative transition filter register)
? (reads negative transition filter register)
:PTRansition
<sp><num value> (writes to positive transition filter register)
? (reads positive transition filter register)

STATus:PRESet

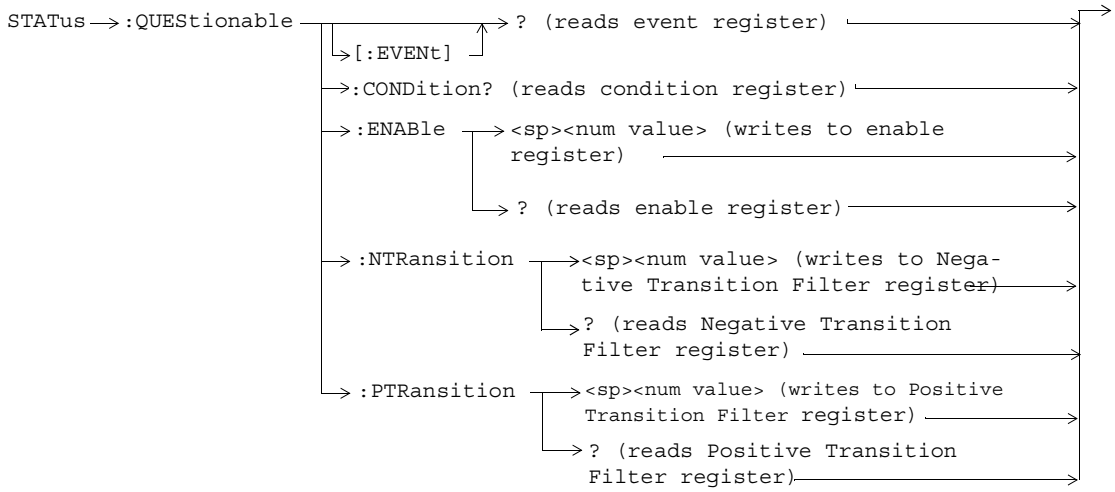


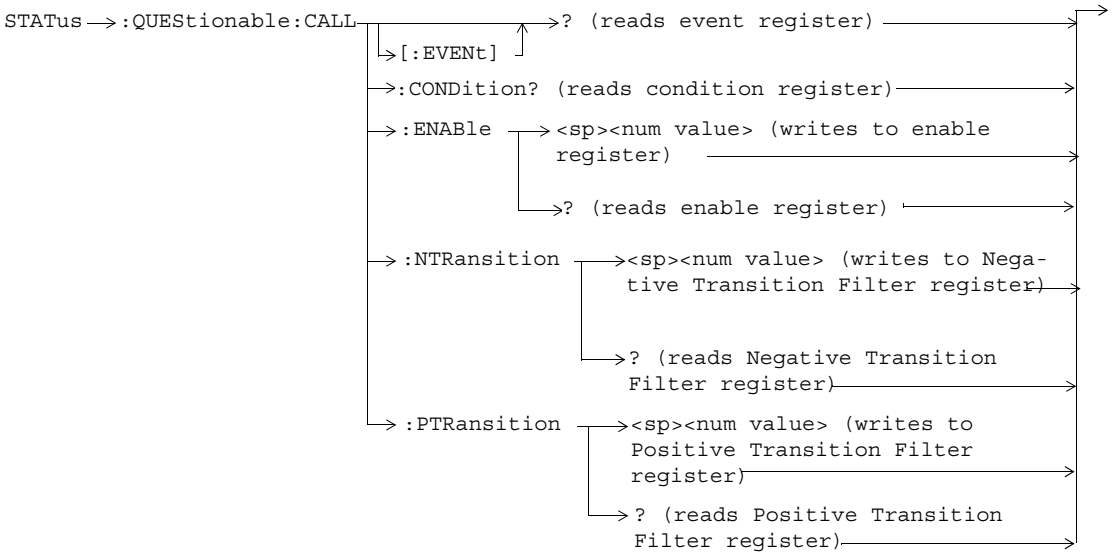
"Diagram Conventions" on page 7

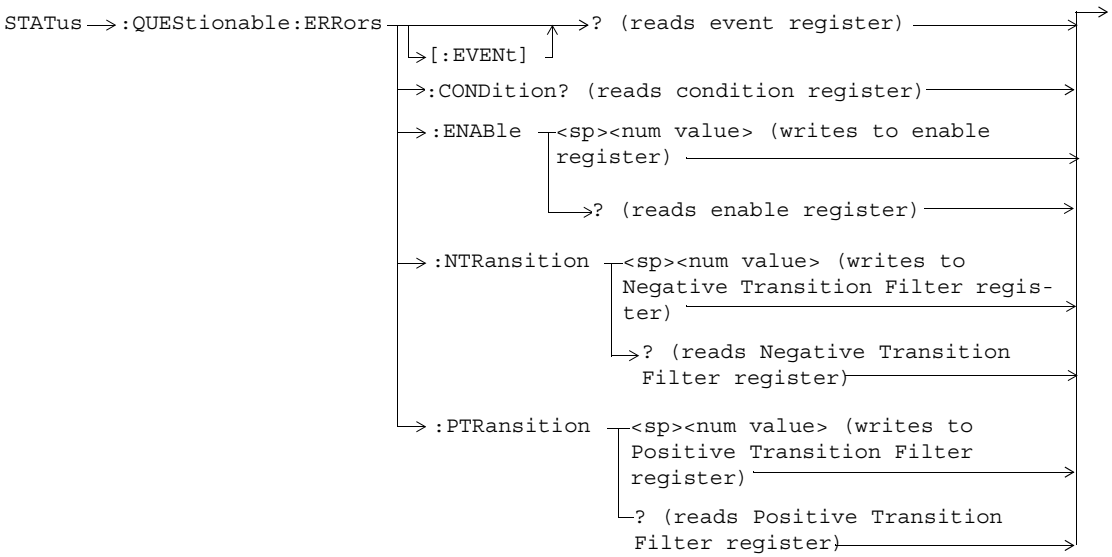
STATus:PRESet

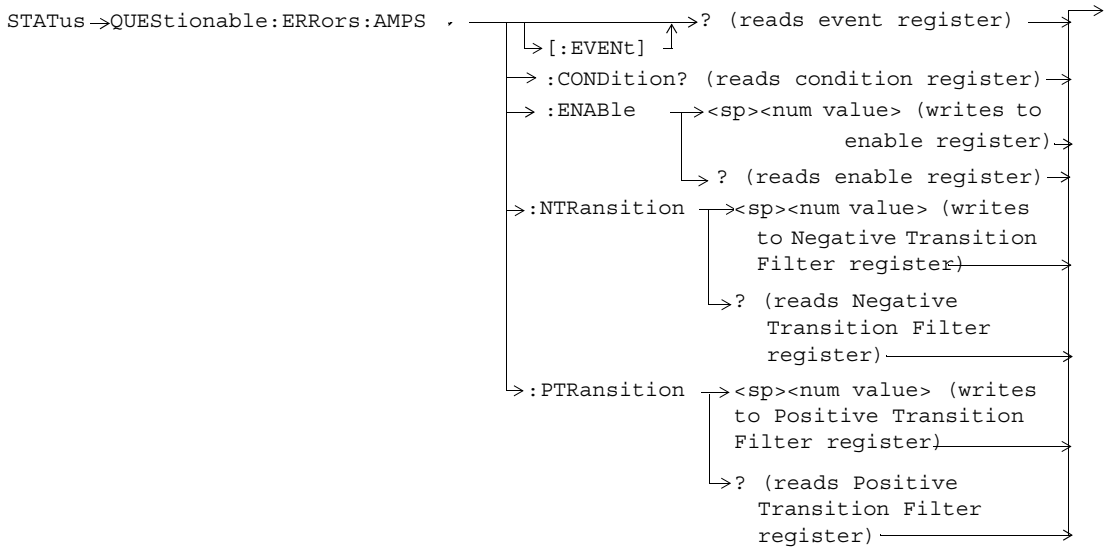
Function	Presets the Status Subsystem Sets all Enable Registers to 0 (not enabled). Sets all Positive Transition Registers (PTR) to 1 (positive transitions enabled). Sets all Negative Transition Registers (NTR) to 0 (negative transitions disabled).

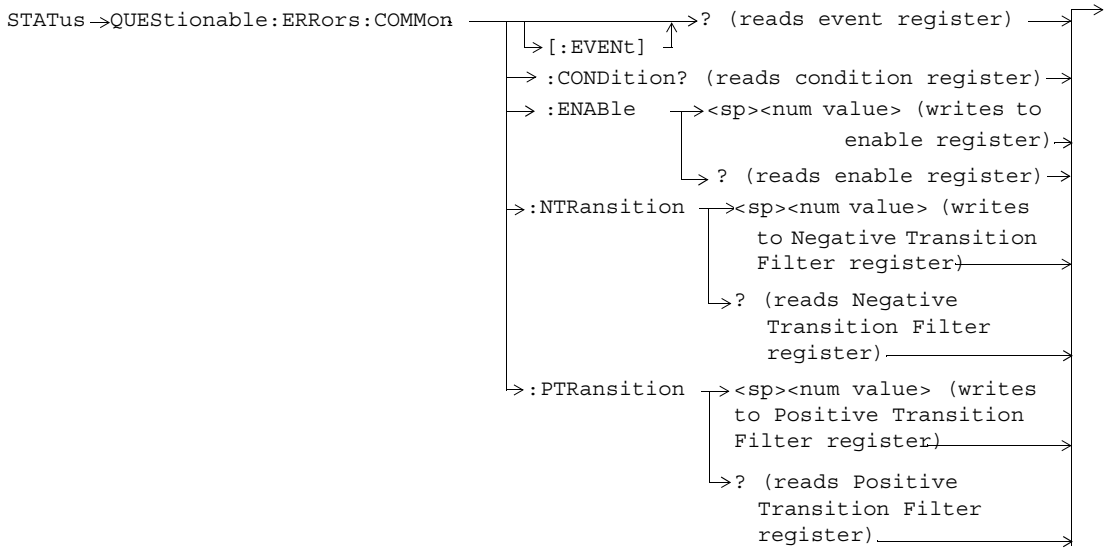
STATus:QUEStionable

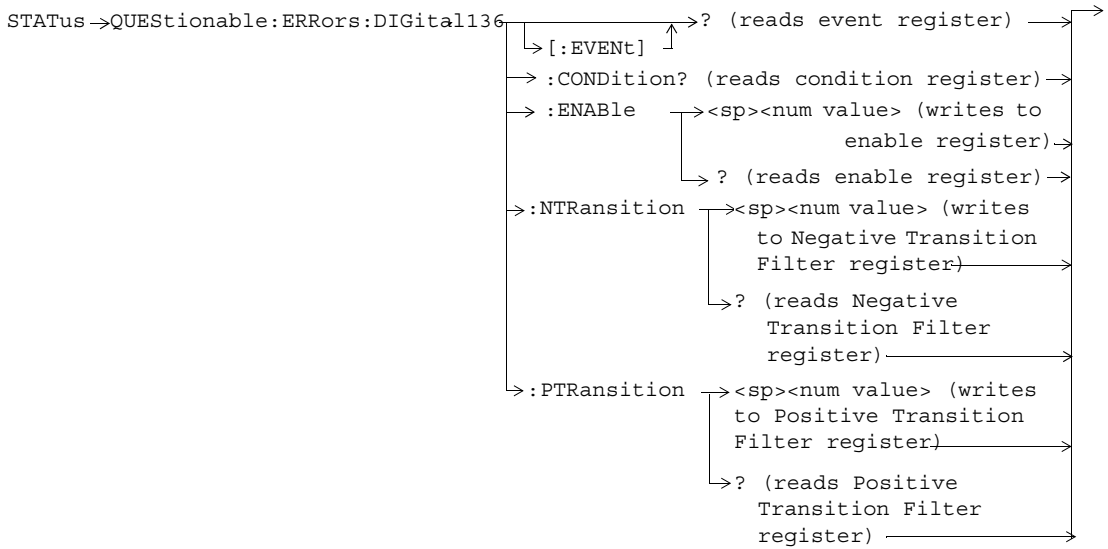


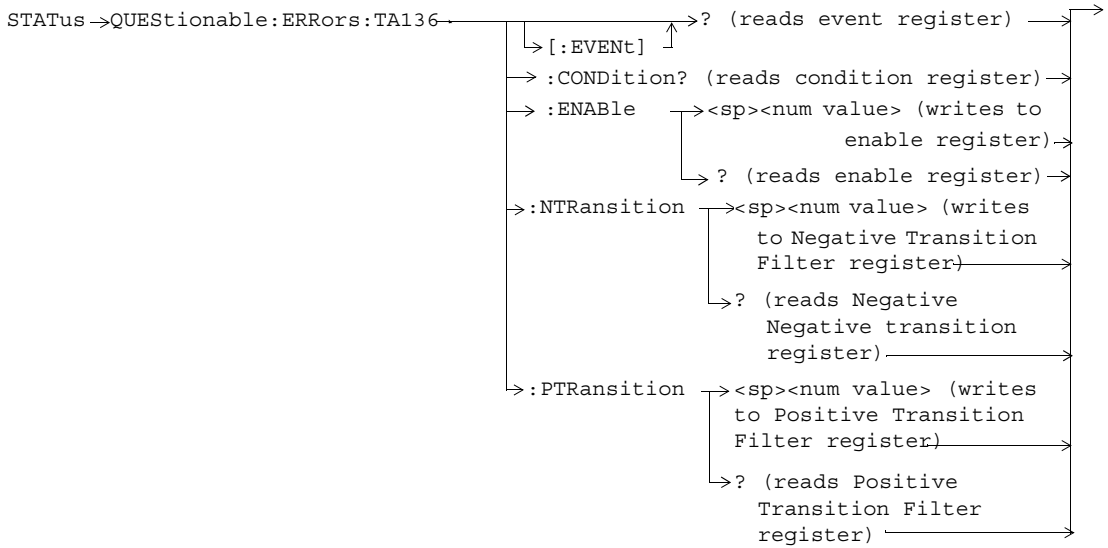

STATus
:QUEStionable:CALL
[:EVENt]
? (reads event register)
:CONDition? (reads condition register)
:ENABle
<sp><num value> (writes to enable register)
? (reads enable register)
:NTRansition
<sp><num value> (writes to Negative Transition Filter register)
? (reads Negative Transition Filter register)
:PTRansition
<sp><num value> (writes to Positive Transition Filter register)
? (reads Positive Transition Filter register)

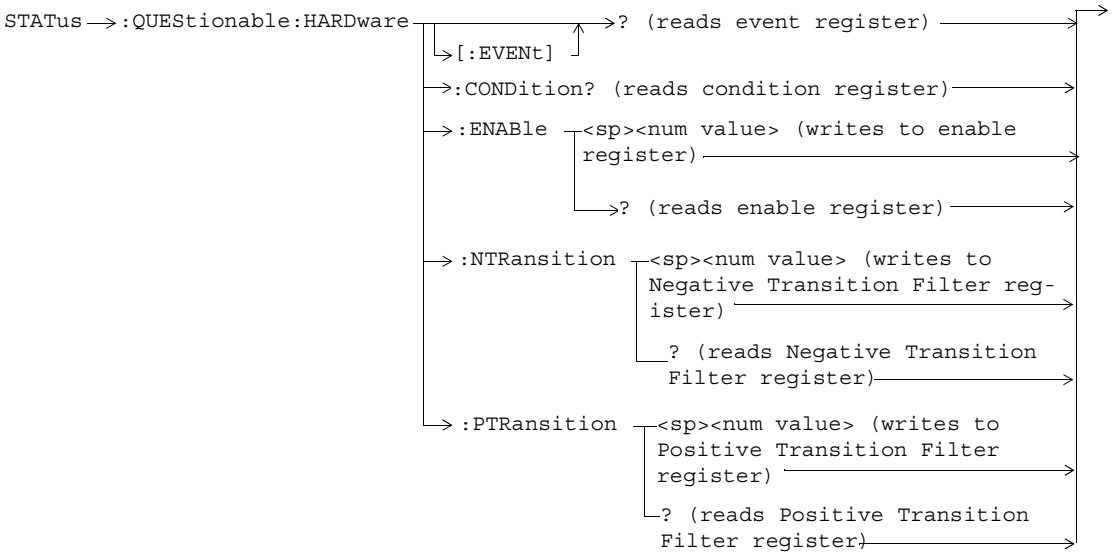

STATus
:QUEStionable:ERRors
[:EVENt]
? (reads event register)
:CONDition? (reads condition register)
:ENABle
<sp><num value> (writes to enable register)
? (reads enable register)
:NTRansition
<sp><num value> (writes to Negative Transition Filter register)
? (reads Negative Transition Filter register)
:PTRansition
<sp><num value> (writes to Positive Transition Filter register)
? (reads Positive Transition Filter register)


STATus
QUEStionable:ERRors:AMPS
,
? (reads event register)
[:EVENt]
:CONDition? (reads condition register)
:ENABle
<sp><num value> (writes to enable register)
? (reads enable register)
:NTRansition
<sp><num value> (writes to Negative Transition Filter register)
? (reads Negative Transition Filter register)
:PTRansition
<sp><num value> (writes to Positive Transition Filter register)
? (reads Positive Transition Filter register)


STATus
QUEStionable:ERRors:COMMon
? (reads event register)
[:EVENt]
:CONDition? (reads condition register)
:ENABle
<sp><num value> (writes to enable register)
? (reads enable register)
:NTRansition
<sp><num value> (writes to Negative Transition Filter register)
? (reads Negative Transition Filter register)
:PTRansition
<sp><num value> (writes to Positive Transition Filter register)
? (reads Positive Transition Filter register)


STATus
QUEStionable:ERRors:DIGital1136
? (reads event register)
[:EVENt]
:CONDition? (reads condition register)
:ENABle
<sp><num value> (writes to enable register)
? (reads enable register)
:NTRansition
<sp><num value> (writes to Negative Transition Filter register)
? (reads Negative Transition Filter register)
:PTRansition
<sp><num value> (writes to Positive Transition Filter register)
? (reads Positive Transition Filter register)


STATus
QUEStionable:ERRors:TA136
[:EVENt]
? (reads event register)
:CONDition? (reads condition register)
:ENABle
<sp><num value> (writes to enable register)
? (reads enable register)
:NTRansition
<sp><num value> (writes to Negative Transition Filter register)
? (reads Negative Negative transition register)
:PTRansition
<sp><num value> (writes to Positive Transition Filter register)
? (reads Positive Transition Filter register)


STATus
:QUEStionable:HARDware
? (reads event register)
[:EVENt]
:CONDition? (reads condition register)
:ENABle
<sp><num value> (writes to enable register)
? (reads enable register)
:NTRansition
<sp><num value> (writes to Negative Transition Filter register)
? (reads Negative Transition Filter register)
:PTRansition
<sp><num value> (writes to Positive Transition Filter register)
? (reads Positive Transition Filter register)

```
OUTPUT 714;"STATUS:QUESTIONABLE:EVENT?" !Queries and clears the Questionable Event
                                        !Register
OUTPUT 714;"STATUS:QUESTIONABLE:CONDITION?" !Queries and clears the Questionable Condition
                                           !Register
OUTPUT 714;"STATUS:QUESTIONABLE:ENABLE 1024" !Sets the Questionable Enable Register
                                             !for bit 10
OUTPUT 714;"STATUS:QUESTIONABLE:NTRANSITION 2" !Sets the Questionable Negative
                                               !Transition Filter Register for bit 1
OUTPUT 714;"STATUS:QUESTIONABLE:PTRANSITION 2" !Sets the Questionable Positive
                                               !Transition Filter Register for bit 1


OUTPUT 714;"STATUS:QUESTIONABLE:CALL:EVENT?" !Queries and clears the Questionable
                                             !Call Event Register
OUTPUT 714;"STATUS:QUESTIONABLE:CALL:CONDITION?" !Queries and clears the Questionable
                                                 !Call Condition Register
OUTPUT 714;"STATUS:QUESTIONABLE:CALL:ENABLE 1024" !Sets the Questionable
                                                  !Call Enable Register for bit 10
OUTPUT 714;"STATUS:QUESTIONABLE:CALL:NTRANSITION 2" !Sets the Questionable Call
                                                    !Negative Transition Filter Register
                                                    !for bit 1
OUTPUT 714;"STATUS:QUESTIONABLE:CALL:PTRANSITION 2" !Sets the Questionable Call
                                                    !Positive Transition Filter Register
                                                    !for bit 1
```

```
OUTPUT 714;"STATUS:QUESTIONABLE:ERRORS:EVENT?" !Queries and clears the Questionable
                                               !Errors Event Register
OUTPUT 714;"STATUS:QUESTIONABLE:ERRORS:CONDITION?" !Queries and clears the Questionable
                                                   !Errors Condition Register
OUTPUT 714;"STATUS:QUESTIONABLE:ERRORS:ENABLE 1024" !Sets the Questionable
                                                    !Errors Enable
                                                    !Register for bit 10
OUTPUT 714;"STATUS:QUESTIONABLE:ERRORS:NTRANSITION 2" !Sets the Questionable Errors
                                                      !Negative Transition Filter Register
                                                      !for bit 1
OUTPUT 714;"STATUS:QUESTIONABLE:ERRORS:PTRANSITION 2" !Sets the Questionable Errors
                                                      !Positive Transition Filter Register
                                                      !for bit 1


OUTPUT 714;"STATUS:QUESTIONABLE:ERRORS:COMMON:EVENT?" !Queries and clears the Questionable
                                                      !Errors Common Event Register
OUTPUT 714;"STATUS:QUESTIONABLE:ERRORS:COMMON:CONDITION?" !Queries the and clears the
                                                          !Questionable Errors
                                                          !Common Condition Register
OUTPUT 714;"STATUS:QUESTIONABLE:ERRORS:COMMON:ENABLE 1024" !Sets the Questionable
                                                           !Errors Common Enable
                                                           !Register for bit 10
OUTPUT 714;"STATUS:QUESTIONABLE:ERRORS:COMMON:NTRANSITION 2" !Sets the Questionable Errors
                                                             !Common Negative Transition
                                                             !Register for bit 1
```

```
OUTPUT 714;"STATUS:QUESTIONABLE:ERRORS:COMMON:PTRANSITION 2" !Sets the Questionable Errors
                                                             !Common Positive Tranasition
                                                             !Register for bit 1

OUTPUT 714;"STATUS:QUESTIONABLE:ERRORS:AMPS:EVENT?" !Queries and clears the Questionable
                                                    !Errors AMPS Event Register
OUTPUT 714;"STATUS:QUESTIONABLE:ERRORS:AMPS:CONDITION?" !Queries and clears the Questionable
                                                        !Errors AMPS Condition Register
OUTPUT 714;"STATUS:QUESTIONABLE:ERRORS:AMPS:ENABLE 1024" !Sets the Questionable
                                                         !Errors AMPS Enable
                                                         !Register for bit 10
OUTPUT 714;"STATUS:QUESTIONABLE:ERRORS:AMPS:NTRANSITION 2" !Sets the Questionable Errors
                                                           !AMPS Negative Transition
                                                           !Filter Register for bit 1
OUTPUT 714;"STATUS:QUESTIONABLE:ERRORS:AMPS:PTRANSITION 2" !Sets the Questionable Errors
                                                           !AMPS Positive Tranasition
                                                           !Filter Register for bit 1

OUTPUT 714;"STATUS:QUESTIONABLE:ERRORS:DIGITAL136:EVENT?" !Queries and clears the
                                                          !Questionable Errors
                                                          !Digital136 Event Register
OUTPUT 714;"STATUS:QUESTIONABLE:ERRORS:DIGITAL136:CONDITION?" !Queries and clears the
                                                              !Qestionable Errors
                                                              !Digital136 Condition Register
OUTPUT 714;"STATUS:QUESTIONABLE:ERRORS:DIGITAL136:ENABLE 1024" !Sets the Questionable
                                                               !Errors Digital136 Enable
```

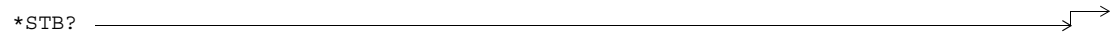
```
                                                                !Register for bit 10
OUTPUT 714;"STATUS:QUESTIONABLE:ERRORS:DIGITAL136:NTRANSITION 2" !Sets the Questionable
                                                                 !Errors Digital136 Negative
                                                                 !Transition Filter
                                                                 !Register for bit 1
OUTPUT 714;"STATUS:QUESTIONABLE:ERRORS:DIGITAL136:PTRANSITION 2" !Sets the Questionable
                                                                 !Errors Digital136 Positive
                                                                 !Transition Filter
                                                                 !Register for bit 1

OUTPUT 714;"STATUS:QUESTIONABLE:ERRORS:TA136:EVENT?" !Queries and clears the
                                                     !Questionable Errors
                                                     !TA136 Event Register
OUTPUT 714;"STATUS:QUESTIONABLE:ERRORS:TA136:CONDITION?" !Queries and clears the
                                                         !Qestionable Errors
                                                         !TA136 Condition Register
OUTPUT 714;"STATUS:QUESTIONABLE:ERRORS:TA136:ENABLE 1024" !Sets the Questionable
                                                          !Errors TA136 Enable
                                                          !Register for bit 10
OUTPUT 714;"STATUS:QUESTIONABLE:ERRORS:TA136:NTRANSITION 2" !Sets the Questionable
                                                            !Errors TA136 Negative
                                                            !Transition Filter
                                                            !Register for bit 1
OUTPUT 714;"STATUS:QUESTIONABLE:ERRORS:TA136:PTRANSITION 2" !Sets the Questionable
                                                            !Errors TA136 Positive
```

```
                                                        !Transition Filter
                                                        !Register for bit 1
OUTPUT 714;"STATUS:QUESTIONABLE:HARDWARE:EVENT?" !Queries and clears the Questionable
                                                 !Hardware Event Register
OUTPUT 714;"STATUS:QUESTIONABLE:HARDWARE:CONDITION?" !Queries and clears the Questionable
                                                     !Hardware Condition Register
OUTPUT 714;"STATUS:QUESTIONABLE:HARDWARE:ENABLE 1024" !Sets the Questionable
                                                      !Hardware Enable
                                                      !Register for bit 10
OUTPUT 714;"STATUS:QUESTIONABLE:HARDWARE:NTRANSITION 2" !Sets the Questionable
                                                        !Hardware Negative Transition Filter
                                                        !Register for bit 1
OUTPUT 714;"STATUS:QUESTIONABLE:HARDWARE:PTRANSITION 2" !Sets the Questionable
                                                        !Hardware Positive Transition Filter
                                                        !Register for bit 1
```

Status Byte Register

*STB?



NOTE The Status Byte Register can also be read with a serial poll. For example, the command “Status_byte = SPOLL(714)” would perform a serial poll of the Status Byte Register, returning and releasing RQS (bit 6).

Status Byte Register Bit Assignments

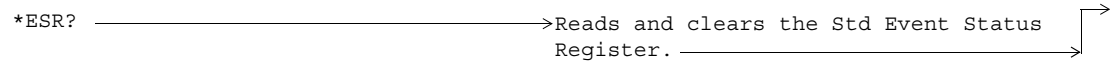
Bit Number	Binary Weighting	Label	Description
7	128	STATus: OPERation	Summarizes the STATus: OPERation Status Register, which fans out to the NMRReady and CALL Status Registers.
6	64	RQS (SRQ TRUE?)/Master Summary Status	RQS is read by a serial poll (SPOLL) Master Summary Status is read by a *STB? query - defined by IEEE 488.2
5	32	Standard Event Status Register	Summarizes the Standard Event Status Register
4	16	Message Available	SCPI - Defined
3	8	STATus: QUEStionable Status Register	Summary Message comes from the STATus: QUEStionable Status Register, which fans out to the CALL and HARDware Status Registers
2	4	Error/ Event Queue	SCPI - Defined

Bit Number	Binary Weighting	Label	Description
1	2	Reserved	
0	1	Reserved	

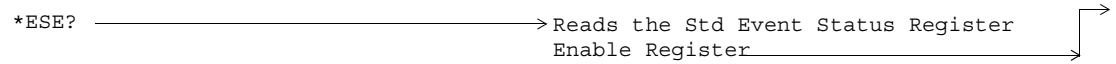
Status Byte Register Bit Assignments

Standard Event Status Register

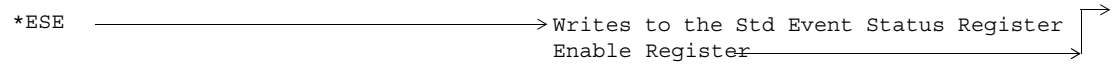
***ESR?**



***ESE?**



***ESE**



“Diagram Conventions” on page 7

Standard Event Status Register Bit Assignment

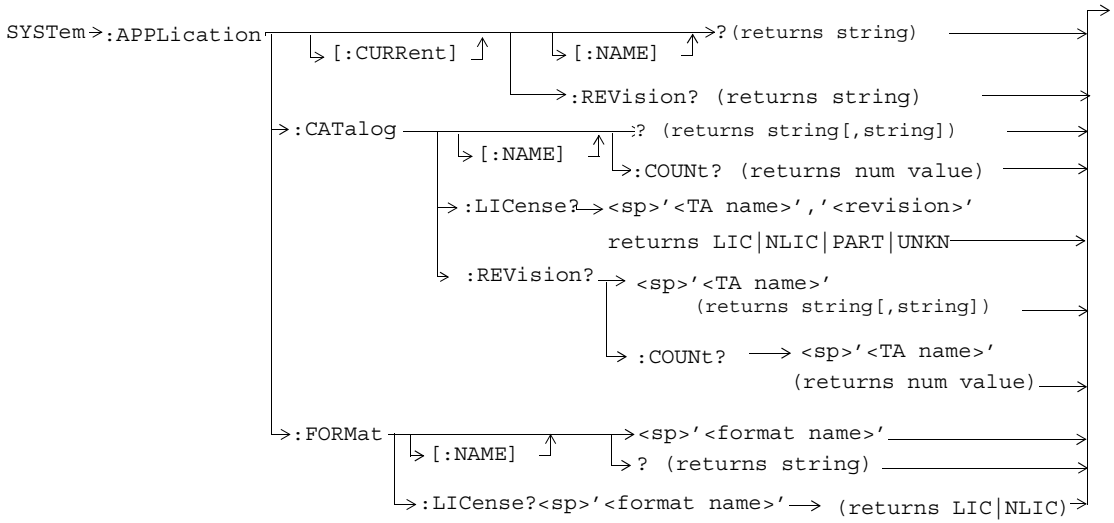
Bit Number	Binary Weighting	Condition	Description
15	32768	Reserved by IEEE.	This bit will always be 0.
14	16384	Reserved by IEEE.	This bit will always be 0.
13	8192	Reserved by IEEE.	This bit will always be 0.
12	4096	Reserved by IEEE.	This bit will always be 0.
11	2048	Reserved by IEEE.	This bit will always be 0.
10	1024	Reserved by IEEE.	This bit will always be 0.
9	512	Reserved by IEEE.	This bit will always be 0.
8	256	Reserved by IEEE.	This bit will always be 0.
7	128	Power On	This bit is set to 1 if the power supply has been turned off and on since the last time this register was read or otherwise cleared. Defined in "IEEE Std. 488.2-1992",11.5.1.1.2
6	64	Reserved for future use.	This bit will always be 0.

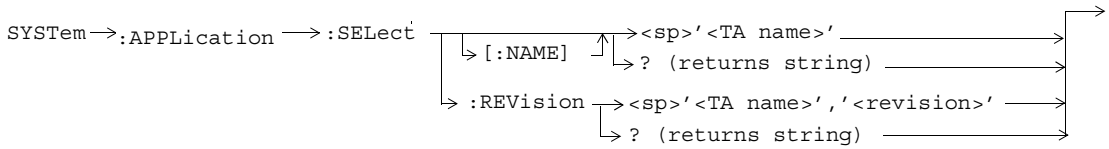
Bit Number	Binary Weighting	Condition	Description
5	32	Command Error	This bit is set to 1 if the test set detects an error while trying to process a command. The following events cause a command error: • An IEEE 488.2 syntax error. The test set received a message that did not follow the syntax defined by the standard. • A semantic error. For example the test set received an incorrectly spelled command. • The test set received a group execution trigger (GET) inside a program message

Bit Number	Binary Weighting	Condition	Description
4	16	Execution Error	This bit is set to 1 if the test set detects an error while trying to execute a command. The following events cause a execution error: • A <PROGRAM DATA> element received in a command is outside the legal range for the test set, or it is inconsistent with the operation of the test set. • The test set could not execute a valid command due to some test set hardware/firmware condition.
3	8	Device Dependent Error	This bit is set to 1 if a test set operation does not execute properly due to an internal condition (such as, overrange). This bit indicates that the error was not a command, query, or execution error.

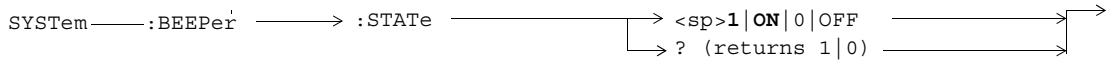
Bit Number	Binary Weighting	Condition	Description
2	4	Query Error	This bit is set to 1 if an error has occurred while trying to read the test set's output queue. The following events cause a query error: • An attempt is made to read data from the output queue when no data is present or is pending. • Data in the output queue has been lost. An example of this would be an output queue overflow.
1	2	Reserved for future use.	This bit will always be 0.
0	1	Operation Complete	This bit is set to 1 when the test set has completed all pending operations and is ready to accept new commands. This bit is only generated in response to the *OPC IEEE 488.2 common command.

SYSTem:APPLication

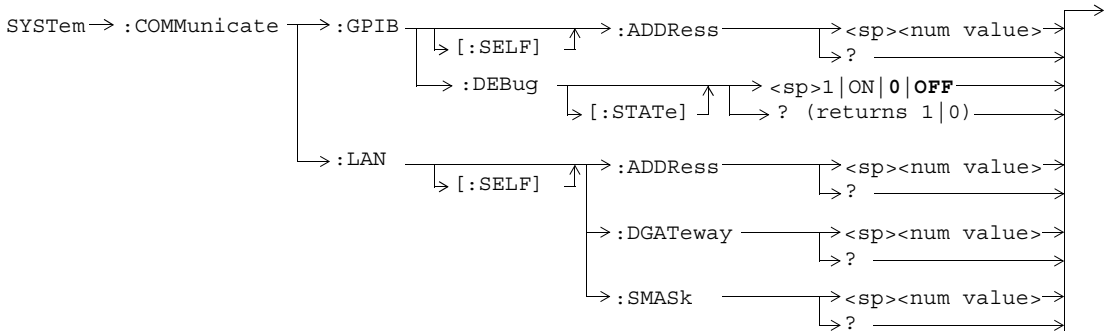



SYSTem
:APPLication
:SELect
[:NAME]
<sp>'<TA name>'
? (returns string)
:REVision
<sp>'<TA name>','<revision>'
? (returns string)

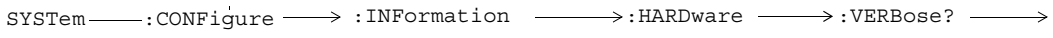
SYSTem:BEEPer



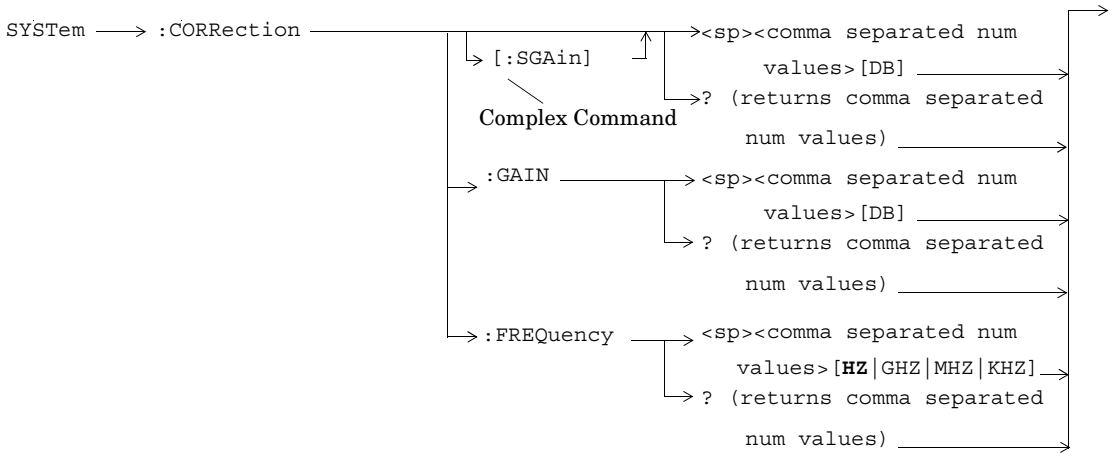
SYSTem:COMMunicate

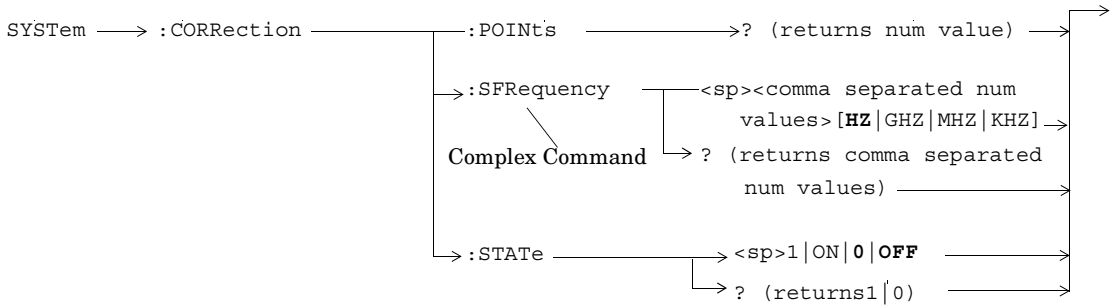


SYSTem:CONFigure:INFormation:HARDware:VERBose?

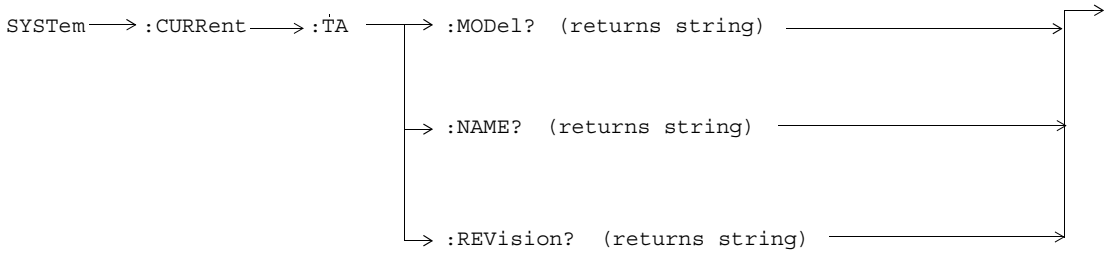


SYSTem:CORRection

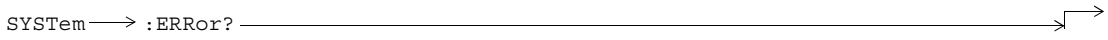



SYSTem
:CORRection
:POINts
? (returns num value)
:SFRequency
<sp><comma separated num values>[HZ|GHZ|MHZ|KHZ]
? (returns comma separated num values)
Complex Command
:STATe
<sp>1|ON|0|OFF
? (returns1|0)

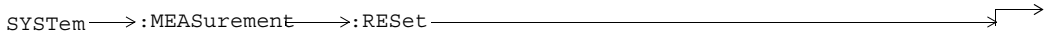
SYSTem:CURRent:TA



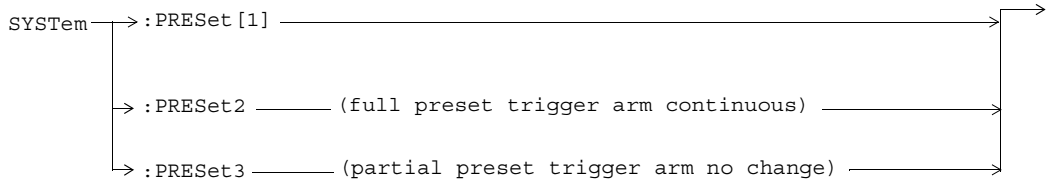
SYSTem:ERRor?



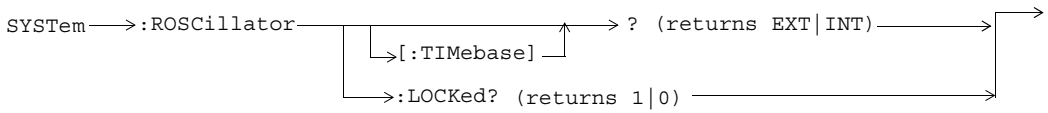
SYSTem:MEASurement:RESet



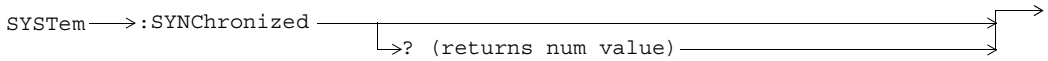
SYSTem:PRESet



SYSTem:ROSCillator



SYSTem:SYNChronized



IEEE 488.2 Common Commands

Description

***CLS**

The *CLS, clear status command, is defined in “IEEE Std 488.2-1992”, 10.3. This command will also clear and close the error message screen on the test set’s display.

***ESE**

The *ESE, standard event status enable command, is defined in “IEEE Std 488.2-1992”, 10.10.

***ESE?**

The *ESE?, standard event status enable query, is defined in “IEEE Std 488.2-1992”, 10.11.

***ESR?**

The *ESR?, standard event status register query, is defined in “IEEE Std 488.2-1992 “,10.12.

***IDN?**

The *IDN?, identification queryis defined in “IEEE Std 488.2-1992”, 10.14.*IDN? is used to retrieve information about the test set in ASCII format.

*IDN?, returns ASCII codes 32 through 126 excluding comma and semicolon in four comma separated fields. Field 1 returns the manufacturer, field 2 returns the instrument model number, field 3 returns the serial number, field 4 returns 0.

***OPC**

The *OPC, operation complete command, is defined in “IEEE 488.2-1992”, 10.18. *OPC causes the test set to continuously sense the No Operation Pending flag. When the No Operation Pending flag becomes TRUE, the OPC event bit in the standard event status register (ESR) is set to indicate that the state of all pending operations is completed. The *OPC common command is not recommended for use as an overlapped command.

***OPC?**

The *OPC?, operation complete query, is defined in “IEEE Std 488.2-1992”, 10.19. The *OPC? query allows synchronization between the controller and the test set using either the message available (MAV) bit in the status byte, or a read of the output OPC?. The *OPC? query does not effect the OPC event bit in the Standard Event Status Register (ESR). The *OPC? common command is not recommended for use as an overlapped command.

***OPT?**

The *OPT?, option identification query, is defined in “IEEE Std 488.2-1992”, 10.20. Each option will have a unique name, that name will be retuned with the query.

***RST**

The *RST, full preset command, is defined in “IEEE Std 488.2-1992”, 10.32. A full preset is also accomplished

using the SYStem:PRESet2 command. A full preset restores the majority of settings to their default values and sets measurement trigger arm to single.

***SRE**

The *SRE, service request enable command, is defined in “IEEE Std 488.2-1992”, 10.34. The parameter range for this command is 0 through 255.

***SRE?**

The *SRE?, service request enable query, is defined in “IEEE Std 488.2-1992”, 10.35. Values returned by this query range from 0 through 255.

***STB?**

The *STB?, read status byte query, is defined in “IEEE Std 488.2-1992”, 10.36. Values returned by this query range from 0 through 255.

***WAI**

The *WAI, wait-to-continue command, is defined in “IEEE Std 488.2-1992”, 10.39. The *WAI command prevents the test set from executing any further commands or queries until all pending operation flags are false. The *WAI common command is not recommended for use as an overlapped command.

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