Agilent Technologies E5500A SCPI Commands Quick Reference Guide

What You'll Find in This Quick Reference…

- **Syntax Conventions**, page 2
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Syntax Conventions

For more information about a particular command, refer to the *Agilent Technologies E5500 SCPI Reference Guide*.

- Syntax descriptions use these conventions:

  { } encloses one or more parameters that may be included zero or more times

  | indicates “or”; only one item can be chosen

  < > indicates a variable that needs further definition

  [ ] indicates the enclosed items are optional

  (~) Indicates a valid range of values

- A question mark (?) makes the query form of a command. Commands listed with a ? are query only; commands listed with –? cannot be queried.
- A colon (:) indicates branching points on the command tree.

- A semicolon (;) sends multiple commands within a single program message. The command parser assumes the second command comes from the same branch as the preceding command. Use ;: to reset the command parser to the base of the command tree.

Responses for Status Register Queries:

Event Status Register (*ESR?) Mask is *ESE (value)

bit 0 = 1 = Operation Complete
bit 1 = 2 = Request Control
bit 2 = 4 = Query Error
bit 3 = 8 = Device Dependent Error. (Summary of QSR bits 9,10,11)
bit 4 = 16 = Execution Error. All API call error returns.
bit 5 = 32 = Command Error
bit 6 = 64 = User Request
bit 7 = 128 = Power On

Status Byte (*STB?) Mask is *SRE (value)

bit 0 = 1 = Not Used
bit 1 = 2 = Not Used
bit 2 = 4 = Error/Event Queue
bit 3 = 8 = Summary of Questionable Status Register
bit 4 = 16 = MAV (Message Available)
bit 5 = 32 = Summary of Standard Event Status Register
bit 6 = 64 = RQS (SRQ State)
bit 7 = 128 = Summary of Operation Status Register

Status Operation Register (STATus:OPERation:CONDition?)

bit 0 = 1 = Calibrating
bit 1–3 = Not Used
bit 4 = 16 = Measuring
bit 5–7 = Not Used

bit 8 = 256 = Paused

bit 9 = 512 = Idle

bit 10–15 = Not Used

Status Questionable Register (STATus:QUEStionable:CONDition?)

bit 0–8 = Not Used

bit 9 = 512 = Warning message available.

bit 10 = 1024 = Pause message available.

bit 11 = 2048 = Abort message available.

bit 12 = 4096 = Server Status message available.

bit 13–15 = Not Used

Overlapped commands which start Pending Operations.

These are the only commands to which *OPC, *OPC? and *WAI apply:

INITiate:CALibrate (Calibrate)

INITiate:MEASure (Measure)

INITiate:IMMediate:ALL (Calibrate and Measure)

Full Command Set

NOTE

- Characters in lower case may be omitted.
- Commands within square brackets [.] are optional.
- Parentheses mark places where data parameters are required. Choose one from the list provided or enter a numeric value.
- Allowed Terminators: DB, mA, Hz, KHz, MHz, GHz.
- Default Terminators: If none of the above are provided, the entry will be assumed to be in fundamental units of measure, which includes: dB, Hz, etc.
- Numeric values: Exponential notation is accepted along with simple integers. ie 234, -139.34E+6

Format Of Measurement Data Output

Measured Data

SENSe:DATA:HEADer:POINts? Returns Number of points.

SENSe:DATA?

Returns triples with each element seperated by a comma and terminated by cr/lf.

Each triple consists of the “frequency, amplitude and spur flag”.

Processes Data

CALCulate:DATA:HEADer:POINts? Returns the number of points.

CALCulate:DATA? Return varies with CALCulate:VIEW: setting.

CALCulate:VIE:SPURtable Returns “frequency, amplitude” per point.

CALCulate:VIEW:TRACe Returns “amplitude” per point.

CALCulate:VIEW:XYData Returns “frequency, amplitude, spur_flag” per point.

SCPI Commands

Required

*CLS
*ESE (value)
*ESE?
*ESR?
*IDN?
*OPC
*OPC?
*RST
*SRE (value)
*SRE?
*STB?
*TST?

*WAI

ABOR ABORt

CALC CALCulate:ACCumulated[:PHASe]? (tau, start-offset, stop-offset)

CALCulate:AVARiance? (tau, Frequency offset)

CALCulate:CFSCale (value)

CALCulate:CFSCale?

CALCulate:DATA?

CALCulate:DATA:HEADer:POINts?

CALCulate:DIPower (value)

CALCulate:DIPower?

CALCulate:F2OScillator[:COMPare] ("inFileA", "inFileAB", "outFile"[,"title"])

CALCulate:F3OScillator[:COMPare] ("inFileAB", "inFileAC", "inFileBC", "outFileA", "outFileB", "outFileC"[,"titleA", "titleB", "titleC"])

CALCulate:INTegral? (start-offset, stop-offset)

CALCulate:INTegral:TYPe (NORMal | CCITt)

CALCulate:INTegral:TYPe?
CALCulate:LIMit:NOISe:MAXimum (segment#, start_freq, start_amplitude, stop_freq, stop_amplitude)
CALCulate:LIMit:NOISe:MAXimum? (segment_number)
CALCulate:LIMit:NOISe:MAXimum:DELete (segment_number)
CALCulate:LIMit:NOISe:MAXimum:DELete:ALL
CALCulate:LIMit:NOISe:MAXimum:DISPlay (0 | OFF | 1 | ON)
CALCulate:LIMit:NOISe:MAXimum:DISPlay?
CALCulate:LIMit:NOISe:MAXimum:FAIL? (segment_number)
CALCulate:LIMit:NOISe:MAXimum:FAIL:ALL?
CALCulate:LIMit:NOISe:MINimum (segment#, start_freq, start_amplitude, stop_freq, stop_amplitude)
CALCulate:LIMit:NOISe:MINimum? (segment_number)
CALCulate:LIMit:NOISe:MINimum:DELete (segment_number)
CALCulate:LIMit:NOISe:MINimum:DELete:ALL
CALCulate:LIMit:NOISe:MINimum:DISPlay (0 | OFF | 1 | ON)
CALCulate:LIMit:NOISe:MINimum:DISPlay?

CALCulate:LIMit:NOISe:MINimum:FAIL? (segment_number)
CALCulate:LIMit:NOISe:MINimum:FAIL:ALL?
CALCulate:LIMit:SPUR:MAXimum (segment#, start_freq, start_amplitude, stop_freq, stop_amplitude)
CALCulate:LIMit:SPUR:MAXimum? (segment_number)
CALCulate:LIMit:SPUR:MAXimum:DELete (segment_number)
CALCulate:LIMit:SPUR:MAXimum:DELete:ALL
CALCulate:LIMit:SPUR:MAXimum:DISPlay (0 | OFF | 1 | ON)
CALCulate:LIMit:SPUR:MAXimum:DISPlay?
CALCulate:LIMit:SPUR:MAXimum:FAIL? (segment_number)
CALCulate:LIMit:SPUR:MAXimum:FAIL:ALL?
CALCulate:LIMit:SPUR:MINimum (segment#, start_freq, start_amplitude, stop_freq, stop_amplitude)
CALCulate:LIMit:SPUR:MINimum? (segment_number)
CALCulate:LIMit:SPUR:MINimum:DELete (segment_number)
CALCulate:LIMit:SPUR:MINimum:DELete:ALL
CALCulate:LIMit:SPUR:MINimum:DISPlay (0 | OFF | 1 | ON)

CALCulate:LIMit:SPUR:MINimum:DISPlay?
CALCulate:LIMit:SPUR:MINimum:FAIL? (segment_number)
CALCulate:LIMit:SPUR:MINimum:FAIL:ALL?
CALCulate:PBWidth (value)
CALCulate:PBWidth?
CALCulate:SELect (BOTH | NOISe | SPURs)
CALCulate:SELect?
CALCulate:SMOothing (value)
CALCulate:SMOothing?
CALCulate:TRANsform (SSBN | SDPF | SDFF | SFFF | NF2P | AMN | BBAN)
CALCulate:TRANsform?
CALCulate:TVARiance? (tau, Frequency offset)
CALCulate:VIEW:SPURtable
CALCulate:VIEW:TRACe (start-offset, stop-offset, #points, distribution (log/linear))
CALCulate:VIEW:XYData

CALCulate:YSHift (value)

CALCulate:YSHift?

CAL

CALibrate:DETector:CONStant (value)

CALibrate:DETector:CONStant?

CALibrate:DETector:CONStant:METHod (BEATnote | DCPeak | SSPur | DSPur | FMD | AMIN | PSHift | NONE)

CALibrate:DETector:CONStant:METHod?

CALibrate:DETector:CONStant:SPUR:AMPLitude (value)

CALibrate:DETector:CONStant:SPUR:AMPLitude?

CALibrate:DETector:CONStant:SPUR:OFFSet (value)

CALibrate:DETector:CONStant:SPUR:OFFSet?

CALibrate:VCO:IRESistance (value)

CALibrate:VCO:IRESistance?

CALibrate:VCO:PLLSuppress (0 | OFF | 1 | ON)

CALibrate:VCO:PLLSuppress?

CALibrate:VCO:PLLSuppress:APOLe?
CALibrate:VCO:PLLSuppress:CBWidth?
CALibrate:VCO:PLLSuppress:DISPlay[:ALWays] (0 | OFF | 1 | ON)
CALibrate:VCO:PLLSuppress:DISPlay[:ALWays]?
CALibrate:VCO:PLLSuppress:ERRor (value)
CALibrate:VCO:PLLSuppress:ERRor?
CALibrate:VCO:PLLSuppress:ERRor:ACTion (THEoretical | ADJusted | PAUSe)
CALibrate:VCO:PLLSuppress:ERRor:ACTion?
CALibrate:VCO:PLLSuppress:PTRange?
CALibrate:VCO:TCONstant?
CALibrate:VCO:TCONstant:METHod (CURRent | MEASure | CALCulate)
CALibrate:VCO:TCONstant:METHod?
CALibrate:VCO:TCONstant:NOMinal (value)
CALibrate:VCO:TCONstant:NOMinal?
CALibrate:VCO:TMODe (EFC | DCFM)

CALibrate:VCO:TMODe?
CALibrate:VCO:VCADjust (value)
CALibrate:VCO:VCADjust?
CALibrate:VCO:VCENter (value)
CALibrate:VCO:VCENter?
CALibrate:VCO:VRANge (value)
CALibrate:VCO:VRANge?

DISP

DISPlay:GRAPh:BOUNds:AMPLitude (Transform,Min,Max)
DISPlay:GRAPh:BOUNds:AMPLitude? (SSBN | SDPF | SDFF | SFFF | NF2P | AMN | BBAN)
DISPlay:GRAPh:BOUNds:FREQuency (Min,Max)
DISPlay:GRAPh:BOUNds:FREQuency?
DISPlay:GRAPh:CFSCale (value)
DISPlay:GRAPh:CFSCale?
DISPlay:GRAPh:DIPower (value)
DISPlay:GRAPh:DIPower?

DISPlay:GRAPh:PBWidth (value)
DISPlay:GRAPh:PBWidth?
DISPlay:GRAPh:SMOothing (value)
DISPlay:GRAPh:SMOothing?
DISPlay:GRAPh:TRANsform (SSBN | SDPF | SDFF | SFFF | NF2P | AMN | BBAN)
DISPlay:GRAPh:TRANsform?
DISPlay:GRAPh:YSHift (value)
DISPlay:GRAPh:YSHift?
DISPlay:MEASurement:TIME?
DISPlay:TEXT:TITLe ("string")
DISPlay:TEXT:TITLe?

FORM FORMat[:DATA] (ASCii | REAL, length)

INIT INITiate[:IMMediate][:ALL]
INITiate[:IMMediate]:CALibrate
INITiate[:IMMediate]:MEASure

MMEM MMEMory:LOAD[:ALL] (“path\name.pnm”)
MMEMory:STORe (“path\name.pnm”)

PAUS PAUSe:ABORt:AUTO (0 | OFF | 1 | ON)
PAUSe:ABORt:AUTO?
PAUSe:ADJust:LNAGain (14 | 28 | 42 | 56)
PAUSe:ADJust:LNAGain?
PAUSe:ADJust:VCOCenter (value)
PAUSe:ADJust:VCOCenter?
PAUSe:CONNect (0 | OFF | 1 | ON)
PAUSe:CONNect?
PAUSe:CONTinue
PAUSe:RETRy
PAUSe:SPECial

SENS [:SENSe]:DATA?
[:SENSe]:DATA:HEADer:POINts?

[:SENSe]:DCONverter:ATTenuator (0 to 35 dB in 5 dB steps)
[:SENSe]:DCONverter:ATTenuator?
[:SENSe]:DCONverter:ATTenuator:AUTO (0 | OFF | 1 | ON)
[:SENSe]:DCONverter:ATTenuator:AUTO?
[:SENSe]:DCONverter:ATTenuator:AUTO:IMMediate
[:SENSe]:DCONverter:BAND (UWAVe | A | K | Q | U | V | W)
[:SENSe]:DCONverter:BAND?
[:SENSe]:DCONverter:FREQuency (value)
[:SENSe]:DCONverter:FREQuency?
[:SENSe]:DCONverter:IFFRequency?
[:SENSe]:DCONverter:IFGain (-10 to 45 dB in 5 dB steps)
[:SENSe]:DCONverter:IFGain?
[:SENSe]:DCONverter:IFGain:AUTO (0 | OFF | 1 | ON)
[:SENSe]:DCONverter:IFGain:AUTO?
[:SENSe]:DCONverter:IFGain:AUTO:IMMediate

[:SENSe]:DCONverter:L1BWidth (value)
[:SENSe]:DCONverter:L1BWidth?
[:SENSe]:DCONverter:L6BWidth (value)
[:SENSe]:DCONverter:L6BWidth?
[:SENSe]:DCONverter:LOPower (value)
[:SENSe]:DCONverter:LOPower?
[:SENSe]:DCONverter:LOSelect (value)
[:SENSe]:DCONverter:LOSelect?
[:SENSe]:DCONverter:LOSelect:AUTO (0 | OFF | 1 | ON)
[:SENSe]:DCONverter:LOSelect:AUTO?
[:SENSe]:DCONverter:MEXT:BIAS (value)
[:SENSe]:DCONverter:MEXT:BIAS?
[:SENSe]:DCONverter:MEXT:BIAS:STATe (0 | OFF | 1 | ON)
[:SENSe]:DCONverter:MEXT:BIAS:STATe?
[:SENSe]:DCONverter:MMLO?

[:SENSe]:DCONverter:PLO
[:SENSe]:DCONverter:REFerence (value)
[:SENSe]:DCONverter:REFerence?
[:SENSe]:DCONverter:TSENsitivity?
[:SENSe]:DCONverter:TUNE:PORT (OFF | INTernal | FRONt | REAR)
[:SENSe]:DCONverter:TUNE:PORT?
[:SENSe]:DETector:FREQuency (value)
[:SENSe]:DETector:FREQuency?
[:SENSe]:DETector:SELect (AUTO | EXT | LFR | HFR | UWAVe | TAM | TINoise | DCAM | DIAM)
[:SENSe]:DETector:SELect?
[:SENSe]:FFT:INPut:COUPling (AC | DC)
[:SENSe]:FFT:INPut:COUPling?
[:SENSe]:NOISe:BBGain (value)
[:SENSe]:NOISe:BBGain?
[:SENSe]:NOISe:FFT (EXTended | MULTiple)

[:SENSe]:NOISe:FFT?
[:SENSe]:NOISe:MEAStype (ABSolute | Residual | Fm | Am | BEANd | NOTSet)
[:SENSe]:NOISe:MEAStype?
[:SENSe]:NOISe:PULSed (0 | OFF | 1 | ON)
[:SENSe]:NOISe:PULSed?
[:SENSe]:NOISe:QUADrature[:METHod] (PSHifter | SOURce)
[:SENSe]:NOISe:QUADrature[:METHod]?
[:SENSe]:RANGe:FFT:AVERage:MINimum (value)
[:SENSe]:RANGe:FFT:AVERage:MINimum?
[:SENSe]:RANGe:FFT:SEGTable[:MEASurement][:QUALity] (NORMal | FAST | Accurate | CUSTom)
[:SENSe]:RANGe:FFT:SEGTable[:MEASurement][:QUALity]?
[:SENSe]:RANGe:OFFSet (Start frequency,Stop frequency)
[:SENSe]:RANGe:OFFSet?
[:SENSe]:RANGe:SWEPt:SEGTable[:MEASurement][:QUALity] (NORMal | FAST | Accurate | CUSTom)
[:SENSe]:RANGe:SWEPt:SEGTable[:MEASurement][:QUALity]?

[:SENSe]:TSET:ATTenuator (0 to 35 dB in 5 dB Steps)
[:SENSe]:TSET:ATTenuator?
[:SENSe]:TSET:ATTenuator:AUTO (0 | OFF | 1 | ON)
[:SENSe]:TSET:ATTenuator:AUTO?
[:SENSe]:TSET:DCBlock (0 | OFF | 1 | ON)
[:SENSe]:TSET:DCBlock?
[:SENSe]:TSET:LNAGain (14 | 28 | 42 | 56)
[:SENSe]:TSET:LNAGain?
[:SENSe]:TSET:LNAGain:METHod (AUTO | FIXed | PAUSe)
[:SENSe]:TSET:LNAGain:METHod?
[:SENSe]:TSET:LNAGain:MINimum (value)
[:SENSe]:TSET:LNAGain:MINimum?
[:SENSe]:TSET:LPF (value)
[:SENSe]:TSET:LPF?
[:SENSe]:TSET:LPF:AUTO (0 | OFF | 1 | ON)

[:SENSe]:TSET:LPF:AUTO?
[:SENSe]:TSET:PLL:ATTenuator (0 to 42 dB in 6 dB Steps)
[:SENSe]:TSET:PLL:ATTenuator?
[:SENSe]:TSET:PLL:UNLock:IGNore (0 | OFF | 1 | ON)
[:SENSe]:TSET:PLL:UNLock:IGNore?
[:SENSe]:TVCO (REFerence | CARRier | DCONverter | INTernal)
[:SENSe]:TVCO?

SOUR
SOURce:CALibration:FM[:DEViation] (value)
SOURce:CALibration:FM[:DEViation] ?
SOURce:CALibration:FM:INTernal:FREQuency (value)
SOURce:CALibration:FM:INTernal:FREQuency?
SOURce:CALibration:FREQuency[:CW|FIXed] (value)
SOURce:CALibration:FREQuency[:CW|FIXed]?
SOURce:CALibration:POWer[:LEVel|AMPLitude] (value)
SOURce:CALibration:POWer[:LEVel|AMPLitude]?

SOURce:CARRier:FREQuency[:CW|FIXed] (value)
SOURce:CARRier:FREQuency[:CW|FIXed]?
SOURce:CARRier:POWer[:LEVel|AMPLitude] (value)
SOURce:CARRier:POWer[:LEVel|AMPLitude]?
SOURce:REFerence:FREQuency:DIVisor (value)
SOURce:REFerence:FREQuency:DIVisor?
SOURce:REFerence:FREQuency:MULTiplier (value)
SOURce:REFerence:FREQuency:MULTiplier?
SOURce:REFerence:POWer[:LEVel|AMPLitude] (value)
SOURce:REFerence:POWer[:LEVel|AMPLitude]?
SOURce:RESidual:FREQuency[:CW|FIXed] (value)
SOURce:RESidual:FREQuency[:CW|FIXed]?
SOURce:RESidual:FREQuency:CALCulate?
SOURce:RESidual:FREQuency:CALCulate (0 | OFF | 1 | ON)
SOURce:RESidual:FREQuency:DETector:COUPled (0 | OFF | 1 | ON)

SOURce:RESidual:FREQuency:DETector:COUPled?
SOURce:RESidual:FREQuency:DIVisor (value)
SOURce:RESidual:FREQuency:DIVisor?
SOURce:RESidual:FREQuency:MULTiplier (value)
SOURce:RESidual:FREQuency:MULTiplier?
SOURce:RESidual:POWer[:LEVel|AMPLitude] (value)
SOURce:RESidual:POWer[:LEVel|AMPLitude]?

STAT
STATus:ADVise:ENABle (0 | OFF | 1 | ON)
STATus:ADVise:ENABle?
STATus:OPERation:CONDition?
STATus:OPERation:ENABle (value)
STATus:OPERation:ENABle?
STATus:OPERation:EVENt?
STATus:OPERation:NTRansition (value)
STATus:OPERation:NTRansition?

STATus:OPERation:PTRansition (value)
STATus:OPERation:PTRansition?
STATus:PRESet
STATus:QUEStionable:CONDition?
STATus:QUEStionable:ENABle (value)
STATus:QUEStionable:ENABle?
STATus:QUEStionable:[EVENt]?
STATus:QUEStionable:NTRansition (value)
STATus:QUEStionable:NTRansition?
STATus:QUEStionable:PTRansition (value)
STATus:QUEStionable:PTRansition?

SYST SYSTem:ASSet:CALSource ("None" | "asset_name")
SYSTem:ASSet:CALSource?
SYSTem:ASSet:CARRier ("None" | "asset_name")
SYSTem:ASSet:CARRier?

SYSTem:ASSet:COUNter ("None" | "asset_name")
SYSTem:ASSet:COUNter?
SYSTem:ASSet:DCONverter ("None" | "asset_name")
SYSTem:ASSet:DCONverter?
SYSTem:ASSet:DCONverter:USAGe (NONE | MANual | SYSTem)
SYSTem:ASSet:DCONverter:USAGe?
SYSTem:ASSet:FFT ("None" | "asset_name")
SYSTem:ASSet:FFT?
SYSTem:ASSet:FFT:CUSTom[:SEGTable] ("path\name.fst")
SYSTem:ASSet:PSHifter ("None" | "asset_name")
SYSTem:ASSet:PSHifter?
SYSTem:ASSet:REFerence ("None" | "asset_name")
SYSTem:ASSet:REFerence?
SYSTem:ASSet:RESidual ("None" | "asset_name")
SYSTem:ASSet:RESidual?

SYSTem:ASSet:SLAVe:SOURce ("None" | "asset_name")
SYSTem:ASSet:SLAVe:SOURce?
SYSTem:ASSet:SLAVe:SOURce:PORT?
SYSTem:ASSet:SLAVe:SOURce:PORT (LOINput | AUXinput)
SYSTem:ASSet:SWANalyzer (value)
SYSTem:ASSet:SWANalyzer?
SYSTem:ASSet:SWANalyzer:CUSTom[:SEGTable] ("path\filename.sst")
SYSTem:ASSet:TBASe ("None" | "asset_name")
SYSTem:ASSet:TBASe?
SYSTem:ASSet:TSET ("None" | "asset_name")
SYSTem:ASSet:TSET?
SYSTem:ERRor?
SYSTem:GUI:LLOCkout[:STATe]
SYSTem:GUI:REMote[:STATe] (0 | OFF | 1 | ON)
SYSTem:GUI:REMote[:STATe]?

SYSTem:HELP:HEADers?
SYSTem:PATH:CARRier (TSET | DCONverter)
SYSTem:PATH:CARRier?
SYSTem:PATH:DCBBanalyzer (TSLF | TSHF | TSRF)
SYSTem:PATH:DCBBanalyzer?
SYSTem:PATH:FFTanalyzer (TSLF | TSHF | TSRF | DCRF)
SYSTem:PATH:FFTanalyzer?
SYSTem:PATH:SWANalyzer (TSLF | TSHF | TSRF | DCRF)
SYSTem:PATH:SWANalyzer?
SYSTem:PATH:TVCO (FPANel | RPANel | INTernal)
SYSTem:PATH:TVCO?
SYSTem:TSTart?
SYSTem:VERSion?

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