

Programming Commands

Agilent Technologies ESA-E Series Spectrum Analyzers cdmaOne Measurement Personality

This manual provides documentation for the following instruments:

ESA-E Series

E4402B (9 kHz - 3.0 GHz)

E4404B (9 kHz - 6.7 GHz)

E4405B (9 kHz - 13.2 GHz)

E4407B (9 kHz - 26.5 GHz)



Agilent Technologies

Manufacturing Part Number: E4401-90142

Printed in USA

March 2000

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Contents

1. Programming Commands Cross Reference

Functional Index to SCPI Subsection	1-2
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2. Language Reference

CALCulate Subsystem	2-2
Code Domain—Estimated Rho Lower Limit Testing	2-2
Code Domain—Relative Phase Upper Limit Testing	2-2
Code Domain—Estimated Rho Lower Limit	2-3
Code Domain—Relative Phase Upper Limit	2-3
Code Domain—Relative Timing Upper Limit	2-4
Code Domain—Relative Timing Upper Limit Testing	2-5
Channel Power—Lower Limit Test	2-6
Channel Power—Upper Limit Test	2-6
Channel Power—Lower Limit	2-6
Channel Power—Upper Limit	2-7
Test Current Results Against all Limits	2-8
Spur Close—Limit Definition Source	2-8
Spur Close—Limit Test	2-9
Spurs at Harmonics—Upper Absolute Limit	2-9
Spurs at Harmonics—Upper Relative Limit	2-10
Spurs at Harmonics—Upper Absolute Limit Test	2-11
Spurs at Harmonics—Upper Relative Limit Test	2-11
Occupied Bandwidth—Emissions Bandwidth Lower Limit	2-11
Occupied Bandwidth—Emissions Bandwidth Lower Limit Test	2-12
Occupied Bandwidth—Emissions Bandwidth Upper Limit	2-13
Occupied Bandwidth—Emissions Bandwidth Upper Limit Test	2-14
Occupied Bandwidth—Occupied Bandwidth Lower Limit	2-14
Occupied Bandwidth—Occupied Bandwidth Lower Limit Test	2-15
Occupied Bandwidth—Occupied Bandwidth Upper Limit	2-15
Occupied Bandwidth—Occupied Bandwidth Upper Limit Test	2-16
Out of Band Spurious—Upper Absolute Limit	2-17
Out of Band Spurious—Upper Relative Limit	2-17
Out of Band Spurious—Limit Test	2-18
Receive Channel Power—Lower Limit Test	2-18
Receive Channel Power—Upper Limit Test	2-18
Receive Channel Power—Lower Limit	2-19
Receive Channel Power—Upper Limit	2-20
Rho—Carrier Feedthrough Upper Limit Test	2-20
Rho—Error Vector Magnitude Upper Limit Test	2-21
Rho—Frequency Error Upper Limit Test	2-21
Rho—Modulation Magnitude Error Upper Limit Test	2-21
Rho—Modulation Phase Error Upper Limit Test	2-22
Rho—Rho Lower Limit Test	2-22
Rho—Carrier Feedthrough Upper Limit	2-23
Rho—Error Vector Magnitude Upper Limit	2-23
Rho—Frequency Error Upper Limit	2-24
Rho—Modulation Magnitude Error Upper Limit	2-25
Rho—Modulation Phase Error Upper Limit	2-26
Rho—Rho Lower Limit	2-27

Contents

Rho—Time Offset Upper Limit	2-28
Rho—Time Offset Upper Limit Test	2-29
Receiver Spurious—Receive Upper Limit	2-29
Receiver Spurious—Receive Upper Limit Test	2-30
Receiver Spurious—Transmit Upper Limit	2-30
Receiver Spurious—Transmit Upper Limit Test	2-31
CONFigure Subsystem	2-32
DISPlay Subsystem	2-33
Trace Y-Axis Amplitude Scaling	2-33
Trace Y-Axis Reference Level	2-33
FETCh Subsystem	2-34
INITiate Subsystem	2-35
Continuous or Single Measurements	2-35
Pause the Measurement	2-35
Restart the Measurement	2-36
Resume the Measurement	2-36
INSTrument Subsystem	2-37
Select Application by Number	2-37
Select Application	2-38
MEASure Group of Commands	2-39
Measure Commands	2-39
Configure Commands	2-40
Fetch Commands	2-41
Read Commands	2-41
Code Domain Measurement	2-42
Channel Power Measurement	2-45
Spur Close Measurement	2-46
Monitor Band/Channel Measurement	2-47
Occupied Bandwidth Measurement	2-48
Out of Band Spurious Emissions Measurement	2-49
Receive Channel Power Measurement	2-50
Rho (Waveform Quality) Measurement	2-51
Receiver Spurious Response Measurement	2-54
Spurs at Harmonics Measurement	2-55
MMEMory Subsystem	2-56
Store a Measurement Results in a File	2-56
READ Subsystem	2-57
SENSE Subsystem	2-58
Code Domain Measurement	2-58
Digital Demod PN Offset	2-62
RF Channel Frequency	2-62
RF Channel Number	2-63
Channel Power Measurement	2-64
Correction for Base Station RF Port External Attenuation	2-69
RF Noise Correction Threshold	2-69
RF Gain Correction	2-70
Spur Close—Measurement	2-71
Demodulation Synchronization Source	2-76
Demodulation Trigger Source	2-76

Contents

Preamplifier Dialog Box Control	2-77
Center Frequency Step Size Automatic	2-77
Center Frequency Step Size	2-78
Temporary Center Frequency	2-78
Spurs at Harmonics Measurement	2-79
Monitor Band/Channel Measurement	2-84
Occupied Bandwidth Measurement	2-94
Out of Band Spurious Measurement	2-99
Reference Oscillator External Frequency	2-105
Reference Oscillator Rear Panel Output	2-105
Reference Oscillator Source	2-105
Carrier Power State	2-106
Carrier Detection Threshold	2-106
Minimum Level of Detection	2-107
RF Port Input Attenuation	2-107
RF Port Power Range Auto	2-107
Channel Bandwidth for cdmaOne Measurements	2-108
Radio Device Under Test	2-108
Radio Standard Band	2-109
Receive Channel Power Measurement	2-110
Rho (Waveform Quality) Measurement	2-115
Receiver Spurious Measurement	2-119
STATus Subsystem	2-124
Operation Condition Query	2-124
Operation Enable	2-124
Operation Event Query	2-125
Operation Negative Transition	2-125
Operation Positive Transition	2-125
SYSTEM Subsystem	2-126
System Configuration Query	2-126
TRIGger Subsystem	2-127
Rear Panel External Trigger Delay	2-127
Rear Panel External Trigger Slope	2-127
Frame Trigger Delay	2-127
Frame Trigger Period	2-128
RF Burst Trigger Delay	2-128
RF Burst Trigger Level	2-129

Commands

Alphabetical Listing

:CALCulate:CDPower:LIMit:<standard>.BS | BTS:ERHO:LOWer [:DATA] <value>	2-3
:CALCulate:CDPower:LIMit:<standard>.BS | BTS:ERHO:LOWer [:DATA]?	2-3
:CALCulate:CDPower:LIMit:<standard>.BS | BTS:PHASe[:UPPer] [:DATA] <angle>	2-3
:CALCulate:CDPower:LIMit:<standard>.BS | BTS:PHASe[:UPPer] [:DATA]?	2-3
:CALCulate:CDPower:LIMit:<standard>.BS BTS:TIMing[:UPPer] [:DATA] <time>	2-4
:CALCulate:CDPower:LIMit:<standard>.BS | BTS:TIMing[:UPPer] [:DATA]?	2-4
:CALCulate:CDPower:LIMit:ERHO:LOWer:STATe OFF | ON | 0 | 1	2-2
:CALCulate:CDPower:LIMit:ERHO:LOWer:STATe?	2-2
:CALCulate:CDPower:LIMit:PHASe[:UPPer]:STATe OFF | ON | 0 | 1	2-2
:CALCulate:CDPower:LIMit:PHASe[:UPPer]:STATe?	2-2
:CALCulate:CDPower:LIMit:TIMing[:UPPer]:STATe OFF | ON | 0 | 1	2-5
:CALCulate:CDPower:LIMit:TIMing[:UPPer]:STATe?	2-5
:CALCulate:CHPower:LIMit:<standard>.BS | BTS:CHPower:LOWer [:DATA] <power>	2-6
:CALCulate:CHPower:LIMit:<standard>.BS | BTS:CHPower:LOWer [:DATA]?	2-6
:CALCulate:CHPower:LIMit:<standard>.BS | BTS:CHPower[:UPPer][:DATA] <power>	2-7
:CALCulate:CHPower:LIMit:<standard>.BS | BTS:CHPower[:UPPer][:DATA]?	2-7
:CALCulate:CHPower:LIMit:CHPower:LOWer:STATe OFF | ON | 0 | 1	2-6
:CALCulate:CHPower:LIMit:CHPower:LOWer:STATe?	2-6
:CALCulate:CHPower:LIMit:CHPower[:UPPer]:STATe OFF | ON | 0 | 1	2-6
:CALCulate:CHPower:LIMit:CHPower[:UPPer]:STATe?	2-6
:CALCulate:CLIMits:FAIL?	2-8
:CALCulate:CSPur:LIMit:SOURce STANdard | FILE	2-8
:CALCulate:CSPur:LIMit:SOURce STANdard | FILE?	2-8
:CALCulate:CSPur:LIMit:STATe OFF | ON | 0 | 1	2-9
:CALCulate:CSPur:LIMit:STATe?	2-9
:CALCulate:HARMonics:LIMit:<standard>.BS | BTS:ABSolute	

Commands

Alphabetical Listing

<code>[[:UPPer]][:DATA] <power></code>	2-9
<code>:CALCulate:HARMonics:LIMit:<standard>:BS | BTS:ABSolute [:UPPer]][:DATA]?</code>	2-9
<code>:CALCulate:HARMonics:LIMit:<standard>:BS | BTS:RELative [:UPPer]][:DATA] <rel_power></code>	2-10
<code>:CALCulate:HARMonics:LIMit:<standard>:BS | BTS:RELative [:UPPer]][:DATA]?</code>	2-10
<code>:CALCulate:HARMonics:LIMit:ABSolute[:UPPer]:STATe OFF | ON | 0 | 1</code>	2-11
<code>:CALCulate:HARMonics:LIMit:ABSolute[:UPPer]:STATe?</code>	2-11
<code>:CALCulate:HARMonics:LIMit:RELative[:UPPer]:STATe OFF | ON | 0 | 1</code>	2-11
<code>:CALCulate:HARMonics:LIMit:RELative[:UPPer]:STATe?</code>	2-11
<code>:CALCulate:OBWidth:LIMit:<standard>:BS | BTS:EBWidth:LOWer [:DATA] <frequency></code>	2-11
<code>:CALCulate:OBWidth:LIMit:<standard>:BS | BTS:EBWidth:LOWer [:DATA]?</code>	2-11
<code>:CALCulate:OBWidth:LIMit:<standard>:BS | BTS:EBWidth[:UPPer] [:DATA] <frequency></code>	2-13
<code>:CALCulate:OBWidth:LIMit:<standard>:BS | BTS:EBWidth[:UPPer] [:DATA]?</code>	2-13
<code>:CALCulate:OBWidth:LIMit:<standard>:BS | BTS [:OBWidth]:LOWer[:DATA] <frequency></code>	2-14
<code>:CALCulate:OBWidth:LIMit:<standard>:BS | BTS [:OBWidth]:LOWer[:DATA]?</code>	2-14
<code>:CALCulate:OBWidth:LIMit:<standard>:BS | BTS [:OBWidth][:UPPer]][:DATA] <frequency></code>	2-15
<code>:CALCulate:OBWidth:LIMit:<standard>:BS | BTS [:OBWidth][:UPPer]][:DATA]?</code>	2-15
<code>:CALCulate:OBWidth:LIMit:EBWidth:LOWer:STATe OFF | ON | 0 | 1</code>	2-12
<code>:CALCulate:OBWidth:LIMit:EBWidth:LOWer:STATe?</code>	2-12
<code>:CALCulate:OBWidth:LIMit:EBWidth[:UPPer]:STATe OFF | ON | 0 | 1</code>	2-14
<code>:CALCulate:OBWidth:LIMit:EBWidth[:UPPer]:STATe?</code>	2-14
<code>:CALCulate:OBWidth:LIMit[:OBWidth]:LOWer:STATe OFF | ON | 0 | 1</code>	2-15
<code>:CALCulate:OBWidth:LIMit[:OBWidth]:LOWer:STATe?</code>	2-15
<code>:CALCulate:OBWidth:LIMit[:OBWidth][:UPPer]:STATe OFF | ON | 0 | 1</code>	2-16
<code>:CALCulate:OBWidth:LIMit[:OBWidth][:UPPer]:STATe?</code>	2-16

Commands

Alphabetical Listing

:CALCulate:OObSpur:LIMit:TABLE:ABSolute[:UPPer][:DATA] <power1, power2, ..., powerN>	2-17
:CALCulate:OObSpur:LIMit:TABLE:ABSolute[:UPPer][:DATA]?	2-17
:CALCulate:OObSpur:LIMit:TABLE:RELative[:UPPer][:DATA] <rel_power1, rel_power2, ..., rel_powerN>	2-17
:CALCulate:OObSpur:LIMit:TABLE:RELative[:UPPer][:DATA]?	2-17
:CALCulate:OObSpur:LIMit:TABLE:TYPE <value1, value2, ..., valueN>	2-18
:CALCulate:OObSpur:LIMit:TABLE:TYPE?	2-18
:CALCulate:RCHPower:LIMit:<standard>:BS | BTS:RCHPower :LOWer[:DATA] <value>	2-19
:CALCulate:RCHPower:LIMit:<standard>:BS | BTS:RCHPower :LOWer[:DATA]?	2-19
:CALCulate:RCHPower:LIMit:<standard>:BS | BTS:RCHPower :UPPer[:DATA] <value>	2-20
:CALCulate:RCHPower:LIMit:<standard>:BS | BTS:RCHPower :UPPer[:DATA]?	2-20
:CALCulate:RCHPower:LIMit:RCHPower:LOWer:STATe OFF | ON | 0 | 1	2-18
:CALCulate:RCHPower:LIMit:RCHPower:LOWer:STATe?	2-18
:CALCulate:RCHPower:LIMit:RCHPower[:UPPer]:STATe OFF | ON | 0 | 1	2-18
:CALCulate:RCHPower:LIMit:RCHPower[:UPPer]:STATe?	2-18
:CALCulate:RHO:LIMit:<standard>:BS | BTS:CFThrough[:UPPer][:DATA] <rel_power>	2-23
:CALCulate:RHO:LIMit:<standard>:BS | BTS:CFThrough[:UPPer][:DATA]?	2-23
:CALCulate:RHO:LIMit:<standard>:BS | BTS:EVM[:UPPer][:DATA] <percentage>	2-23
:CALCulate:RHO:LIMit:<standard>:BS | BTS:EVM[:UPPer][:DATA]?	2-23
:CALCulate:RHO:LIMit:<standard>:BS | BTS:FERRor[:UPPer][:DATA] <frequency>	2-24
:CALCulate:RHO:LIMit:<standard>:BS | BTS:FERRor[:UPPer][:DATA]?	2-24
:CALCulate:RHO:LIMit:<standard>:BS | BTS:MAGNitude[:UPPer][:DATA] <percentage>	2-25
:CALCulate:RHO:LIMit:<standard>:BS | BTS:MAGNitude[:UPPer][:DATA]?	2-25
:CALCulate:RHO:LIMit:<standard>:BS | BTS:PHASe[:UPPer]	

Commands

Alphabetical Listing

[:DATA] <angle>	2-26
:CALCulate:RHO:LIMit:<standard>:BS | BTS:PHASe[:UPPer] [:DATA]?	2-26
:CALCulate:RHO:LIMit:<standard>:BS | BTS:RHO:LOWer[:DATA] <parameter>	2-27
:CALCulate:RHO:LIMit:<standard>:BS | BTS:RHO:LOWer[:DATA]?	2-27
:CALCulate:RHO:LIMit:<standard>:BS BTS:TOFFset[:UPPer] [:DATA] <time>	2-28
:CALCulate:RHO:LIMit:<standard>:BS | BTS:TOFFset[:UPPer] [:DATA]?	2-28
:CALCulate:RHO:LIMit:CFTHrough[:UPPer]:STATe OFF | ON | 0 | 1	2-20
:CALCulate:RHO:LIMit:CFTHrough[:UPPer]:STATe?	2-20
:CALCulate:RHO:LIMit:EVM[:UPPer]:STATe OFF | ON | 0 | 1	2-21
:CALCulate:RHO:LIMit:EVM[:UPPer]:STATe?	2-21
:CALCulate:RHO:LIMit:FERRor[:UPPer]:STATe OFF | ON | 0 | 1	2-21
:CALCulate:RHO:LIMit:FERRor[:UPPer]:STATe?	2-21
:CALCulate:RHO:LIMit:MAGNitude[:UPPer]:STATe OFF | ON | 0 | 1	2-21
:CALCulate:RHO:LIMit:MAGNitude[:UPPer]:STATe?	2-21
:CALCulate:RHO:LIMit:PHASe[:UPPer]:STATe OFF | ON | 0 | 1	2-22
:CALCulate:RHO:LIMit:PHASe[:UPPer]:STATe?	2-22
:CALCulate:RHO:LIMit:RHO:LOWer:STATe OFF | ON | 0 | 1	2-22
:CALCulate:RHO:LIMit:RHO:LOWer:STATe?	2-22
:CALCulate:RHO:LIMit:TOFFset[:UPPer]:STATe OFF | ON | 0 | 1	2-29
:CALCulate:RHO:LIMit:TOFFset[:UPPer]:STATe?	2-29
:CALCulate:RSPur:LIMit:<standard>:BS | BTS:RECeive[:UPPer] [:DATA] <power>	2-29
:CALCulate:RSPur:LIMit:<standard>:BS | BTS:RECeive[:UPPer] [:DATA]?	2-29
:CALCulate:RSPur:LIMit:<standard>:BS | BTS:TRANsmit[:UPPer] [:DATA] <power>	2-30
:CALCulate:RSPur:LIMit:<standard>:BS | BTS:TRANsmit[:UPPer] [:DATA]?	2-30
:CALCulate:RSPur:LIMit:RECeive[:UPPer]:STATe OFF | ON | 0 | 1	2-30
:CALCulate:RSPur:LIMit:RECeive[:UPPer]:STATe?	2-30
:CALCulate:RSPur:LIMit:TRANsmit[:UPPer]:STATe OFF | ON | 0 | 1	2-31

Commands

Alphabetical Listing

:CALCulate:RSPur:LIMit:TRANsmit[:UPPer]:STATe?	2-31
:CONFigure:<measurement>	2-32
:CONFigure:<measurement>	2-40
:CONFigure:CDPower	2-42
:CONFigure:CHPower	2-45
:CONFigure:CSPur	2-46
:CONFigure:HARMonics	2-55
:CONFigure:MONitor	2-47
:CONFigure:OBW	2-48
:CONFigure:OOBSpur	2-49
:CONFigure:RCHPower	2-50
:CONFigure:RHO	2-51
:CONFigure:RSPur	2-54
:DISPlay:WINDow:TRACe:Y[:SCALe]:PDIVision <rel_ampl>	2-33
:DISPlay:WINDow:TRACe:Y[:SCALe]:PDIVision?	2-33
:DISPlay:WINDow:TRACe:Y[:SCALe]:RLEVel <ampl>	2-33
:DISPlay:WINDow:TRACe:Y[:SCALe]:RLEVel?	2-33
:FETCh:<measurement>[n]?	2-34
:FETCh:<measurement>[n]?	2-41
:FETCh:CDPower[n]?	2-42
:FETCh:CHPower[n]?	2-45
:FETCh:CSPur[n]?	2-46
:FETCh:HARMonics[n]?	2-55
:FETCh:MONitor[n]	2-47
:FETCh:OBW[n]?	2-48
:FETCh:OOBSpur[n]?	2-49
:FETCh:RCHPower[n]?	2-50
:FETCh:RHO[n]?	2-51
:FETCh:RSPur[n]?	2-54
:INITiate:CONTInuous OFF | ON | 0 | 1	2-35
:INITiate:CONTInuous?	2-35

Commands

Alphabetical Listing

:INITiate:PAUse	2-35
:INITiate:REStart	2-36
:INITiate:RESume	2-36
:INSTrument:NSElect <integer>	2-37
:INSTrument:NSElect?	2-37
:INSTrument[:SElect] 'SA' | 'CDMA' (application specific mode)	2-38
:INSTrument[:SElect]?	2-38
:MEASure:<measurement>[n]?	2-39
:MEASure:CDPower[n]?	2-42
:MEASure:CHPower[n]?	2-45
:MEASure:CSPur[n]?	2-46
:MEASure:HARMonics[n]?	2-55
:MEASure:MONitor[n]	2-47
:MEASure:OBW[n]?	2-48
:MEASure:OOBSpur[n]?	2-49
:MEASure:RCHPower[n]?	2-50
:MEASure:RHO[n]?	2-51
:MEASure:RSPur[n]?	2-54
:MMEMory:STORe:RESults filename.csv	2-56
:READ:<measurement>[n]?	2-41
:READ:<measurement>[n]?	2-57
:READ:CDPower[n]?	2-42
:READ:CHPower[n]?	2-45
:READ:CSPur[n]?	2-46
:READ:HARMonics[n]?	2-55
:READ:MONitor[n]	2-47
:READ:OBW[n]?	2-48
:READ:OOBSpur[n]?	2-49
:READ:RCHPower[n]?	2-50
:READ:RHO[n]?	2-51
:READ:RSPur[n]?	2-54

Commands

Alphabetical Listing

:STATus:OPERation:CONDition?	.2-124
:STATus:OPERation:ENABLE <number>	.2-124
:STATus:OPERation:ENABLE?	.2-124
:STATus:OPERation:NTRansition <number>	.2-125
:STATus:OPERation:NTRansition?	.2-125
:STATus:OPERation:PTRansition <number>	.2-125
:STATus:OPERation:PTRansition?	.2-125
:STATus:OPERation[:EVENT]?	.2-125
:SYSTem:CONFigure:MODE?	.2-126
:TRIGger:FRAMe:DELay <time>	.2-127
:TRIGger:FRAMe:DELay?	.2-127
:TRIGger[:SEQuence]:EXTernal:DELay <time>	.2-127
:TRIGger[:SEQuence]:EXTernal:DELay?	.2-127
:TRIGger[:SEQuence]:EXTernal:SLOPe POSitive | NEGative	.2-127
:TRIGger[:SEQuence]:EXTernal:SLOPe?	.2-127
:TRIGger[:SEQuence]:FRAMe:PERiod <time>	.2-128
:TRIGger[:SEQuence]:FRAMe:PERiod?	.2-128
:TRIGger[:SEQuence]:RFBurst:DELay <time>	.2-128
:TRIGger[:SEQuence]:RFBurst:DELay?	.2-128
:TRIGger[:SEQuence]:RFBurst:LEVel <percent>	.2-129
:TRIGger[:SEQuence]:RFBurst:LEVel?	.2-129
[:SENSe]:CDPower:ASET:THReshold <rel_power>	.2-59
[:SENSe]:CDPower:ASET:THReshold?	.2-59
[:SENSe]:CDPower:AVERage:COUNt <integer>	.2-58
[:SENSe]:CDPower:AVERage:COUNt?	.2-58
[:SENSe]:CDPower:AVERage:TCONtrol EXPonential | REPeat	.2-59
[:SENSe]:CDPower:AVERage:TCONtrol?	.2-59
[:SENSe]:CDPower:AVERage[:STATe] OFF | ON | 0 | 1	.2-58
[:SENSe]:CDPower:AVERage[:STATe]?	.2-58
[:SENSe]:CDPower:METHod POWER | TPHase	.2-60
[:SENSe]:CDPower:METHod?	.2-60

Commands

Alphabetical Listing

[:SENSe]:CDPower:MIXer:RANGe[:UPPer] <power>	2-59
[:SENSe]:CDPower:MIXer:RANGe[:UPPer]?	2-59
[:SENSe]:CDPower:SPECTrum NORMal | INVert	2-60
[:SENSe]:CDPower:SPECTrum?	2-60
[:SENSe]:CDPower:SWEep:TIME <time>	2-61
[:SENSe]:CDPower:SWEep:TIME?	2-61
[:SENSe]:CHANnel:PNOFfset <integer>	2-62
[:SENSe]:CHANnel:PNOFfset?	2-62
[:SENSe]:CHANnel:RFCHannel:FREQuency <freq>	2-62
[:SENSe]:CHANnel:RFCHannel:FREQuency?	2-62
[:SENSe]:CHANnel:RFCHannel[:NUMBer] <integer>	2-63
[:SENSe]:CHANnel:RFCHannel[:NUMBer]?	2-63
[:SENSe]:CHPower:AVERage:COUNt <integer>	2-64
[:SENSe]:CHPower:AVERage:COUNt?	2-64
[:SENSe]:CHPower:AVERage:TCONtrol EXPonential | REPeat	2-65
[:SENSe]:CHPower:AVERage:TCONtrol?	2-65
[:SENSe]:CHPower:AVERage[:STATe] OFF | ON | 0 | 1	2-64
[:SENSe]:CHPower:AVERage[:STATe]?	2-64
[:SENSe]:CHPower:BANDwidth | BWIDth:INTegration <freq>	2-65
[:SENSe]:CHPower:BANDwidth | BWIDth:INTegration?	2-65
[:SENSe]:CHPower:BANDwidth | BWIDth[:RESolution] <freq>	2-66
[:SENSe]:CHPower:BANDwidth | BWIDth[:RESolution]:AUTO OFF | ON | 0 | 1	2-66
[:SENSe]:CHPower:BANDwidth | BWIDth[:RESolution]:AUTO?	2-66
[:SENSe]:CHPower:BANDwidth | BWIDth[:RESolution]?	2-66
[:SENSe]:CHPower:CORRection:NOISe[:AUTO] OFF | ON | 0 | 1	2-67
[:SENSe]:CHPower:CORRection:NOISe[:AUTO]?	2-67
[:SENSe]:CHPower:FREQuency:SPAN <freq>	2-66
[:SENSe]:CHPower:FREQuency:SPAN?	2-66
[:SENSe]:CHPower:MIXer:RANGe[:UPPer] <power>	2-67
[:SENSe]:CHPower:MIXer:RANGe[:UPPer]?	2-67
[:SENSe]:CHPower:TRIGger:SOURce EXTernal | IMMEDIATE	2-68

Commands

Alphabetical Listing

[:SENSe]:CHPower:TRIGger:SOURce?	2-68
[:SENSe]:CORRection:BS[:RF]:LOSS <rel_power>	2-69
[:SENSe]:CORRection:BS[:RF]:LOSS?	2-69
[:SENSe]:CORRection:NOISe:THReshold <rel_power>.	2-69
[:SENSe]:CORRection:NOISe:THReshold?	2-69
[:SENSe]:CORRection[:RF]:GAIN <rel_power>	2-70
[:SENSe]:CORRection[:RF]:GAIN?	2-70
[:SENSe]:CSPur:AVERAge:COUNt <integer>	2-71
[:SENSe]:CSPur:AVERAge:COUNt?	2-71
[:SENSe]:CSPur:AVERAge:TCONtrol EXPonential | REPeat.	2-72
[:SENSe]:CSPur:AVERAge:TCONtrol?	2-72
[:SENSe]:CSPur:AVERAge[:STATe] OFF | ON | 0 | 1	2-71
[:SENSe]:CSPur:AVERAge[:STATe]?	2-71
[:SENSe]:CSPur:BANDwidth | BWIDth:VIDeo <freq>.	2-73
[:SENSe]:CSPur:BANDwidth | BWIDth:VIDeo?	2-73
[:SENSe]:CSPur:BANDwidth | BWIDth[:RESolution] <freq>	2-73
[:SENSe]:CSPur:BANDwidth | BWIDth[:RESolution]?	2-73
[:SENSe]:CSPur:DETEctor[:FUNCTION] POSitive | NEGative | SAMPlE	2-74
[:SENSe]:CSPur:DETEctor[:FUNCTION]?	2-74
[:SENSe]:CSPur:MIXer:RANGe[:UPPer] <power>.	2-74
[:SENSe]:CSPur:MIXer:RANGe[:UPPer]?	2-74
[:SENSe]:CSPur:TRIGger:SOURce EXTernal | IMMEDIATE	2-75
[:SENSe]:CSPur:TRIGger:SOURce?	2-75
[:SENSe]:CSPur:TYPE EXAMine | FULL	2-72
[:SENSe]:CSPur:TYPE?	2-72
[:SENSe]:DEMod:SYNC ESEC | NONE.	2-76
[:SENSe]:DEMod:SYNC?	2-76
[:SENSe]:DEMod:TRIGger:SOURce EXTernal | FRAME | IMMEDIATE | RFBurst.	2-76
[:SENSe]:DEMod:TRIGger:SOURce?	2-76
[:SENSe]:DIALog:PAMPlifier[:STATe] OFF | ON | 0 | 1	2-77
[:SENSe]:DIALog:PAMPlifier[:STATe]?	2-77

Commands

Alphabetical Listing

[:SENSe]:FREQuency:CENTer:STEP:AUTO OFF | ON | 0 | 1	2-77
[:SENSe]:FREQuency:CENTer:STEP:AUTO?	2-77
[:SENSe]:FREQuency:CENTer:STEP[:INCRement] <freq>	2-78
[:SENSe]:FREQuency:CENTer:STEP[:INCRement]?	2-78
[:SENSe]:FREQuency:CENTer:TEMPorary <freq>	2-78
[:SENSe]:FREQuency:CENTer:TEMPorary?	2-78
[:SENSe]:HARMonics:AVERage:COUNT <integer>	2-79
[:SENSe]:HARMonics:AVERage:COUNT?	2-79
[:SENSe]:HARMonics:AVERage:TCONtrol EXPonential | REPeat	2-79
[:SENSe]:HARMonics:AVERage:TCONtrol?	2-79
[:SENSe]:HARMonics:AVERage[:STATe] OFF | ON | 0 | 1	2-79
[:SENSe]:HARMonics:AVERage[:STATe]?	2-79
[:SENSe]:HARMonics:BANDwidth | :BWIDth:RESolution <freq>	2-80
[:SENSe]:HARMonics:BANDwidth | :BWIDth:RESolution?	2-80
[:SENSe]:HARMonics:BANDwidth | :BWIDth:VIDeo <freq>	2-80
[:SENSe]:HARMonics:BANDwidth | :BWIDth:VIDeo?	2-80
[:SENSe]:HARMonics:BANDwidth | BWIDth:VIDeo:AUTO OFF | ON | 0 | 1	2-81
[:SENSe]:HARMonics:BANDwidth | BWIDth:VIDeo:AUTO?	2-81
[:SENSe]:HARMonics:DETEctor POSitive | NEGative | SAMPLe	2-81
[:SENSe]:HARMonics:DETEctor?	2-81
[:SENSe]:HARMonics:MIXer:RANGe[:UPPer] <power>	2-82
[:SENSe]:HARMonics:MIXer:RANGe[:UPPer]?	2-82
[:SENSe]:HARMonics:NUMBer <integer>	2-82
[:SENSe]:HARMonics:NUMBer?	2-82
[:SENSe]:HARMonics:SWEep:TIME <time>	2-82
[:SENSe]:HARMonics:SWEep:TIME?	2-82
[:SENSe]:HARMonics:TRIGger:SOURce EXTernal | IMMEDIATE	2-83
[:SENSe]:HARMonics:TRIGger:SOURce?	2-83
[:SENSe]:MONitor:AVERage:COUNT <integer>	2-84
[:SENSe]:MONitor:AVERage:COUNT?	2-84
[:SENSe]:MONitor:AVERage:TCONtrol EXPonential | REPeat	2-84

Commands

Alphabetical Listing

[:SENSe]:MONitor:AVERage:TCONtrol?	2-84
[:SENSe]:MONitor:AVERage[:STATe] OFF | ON | 0 | 1	2-84
[:SENSe]:MONitor:AVERage[:STATe]?	2-84
[:SENSe]:MONitor:BAND:BANDwidth | BWIDth:VIDeo <freq>	2-86
[:SENSe]:MONitor:BAND:BANDwidth | BWIDth:VIDeo:AUTO OFF | ON | 0 | 1	2-86
[:SENSe]:MONitor:BAND:BANDwidth | BWIDth:VIDeo:AUTO?	2-86
[:SENSe]:MONitor:BAND:BANDwidth | BWIDth:VIDeo?	2-86
[:SENSe]:MONitor:BAND:BANDwidth | BWIDth[:RESolution] <freq>	2-85
[:SENSe]:MONitor:BAND:BANDwidth | BWIDth[:RESolution]:AUTO OFF | ON | 0 | 1	2-86
[:SENSe]:MONitor:BAND:BANDwidth | BWIDth[:RESolution]:AUTO?	2-86
[:SENSe]:MONitor:BAND:BANDwidth | BWIDth[:RESolution]?	2-85
[:SENSe]:MONitor:BAND:BLOCK <integer>	2-87
[:SENSe]:MONitor:BAND:BLOCK?	2-87
[:SENSe]:MONitor:BAND:DETEctor POSitive | SAMPlE | NEGative	2-88
[:SENSe]:MONitor:BAND:DETEctor?	2-88
[:SENSe]:MONitor:BAND:MAXHold[:STATe] OFF | ON | 0 | 1	2-88
[:SENSe]:MONitor:BAND:MAXHold[:STATe]?	2-88
[:SENSe]:MONitor:BAND:PRGain[:STATe] OFF | ON | 0 | 1	2-89
[:SENSe]:MONitor:BAND:PRGain[:STATe]?	2-89
[:SENSe]:MONitor:BAND:SPAN <freq>	2-89
[:SENSe]:MONitor:BAND:SPAN?	2-89
[:SENSe]:MONitor:CHANnel:BANDwidth | BWIDth:VIDeo <freq>	2-91
[:SENSe]:MONitor:CHANnel:BANDwidth | BWIDth:VIDeo :AUTO OFF | ON | 0 | 1	2-91
[:SENSe]:MONitor:CHANnel:BANDwidth | BWIDth:VIDeo :AUTO?	2-91
[:SENSe]:MONitor:CHANnel:BANDwidth | BWIDth:VIDeo?	2-91
[:SENSe]:MONitor:CHANnel:BANDwidth | BWIDth[:RESolution] <freq>	2-90
[:SENSe]:MONitor:CHANnel:BANDwidth | BWIDth[:RESolution] :AUTO OFF | ON | 0 | 1	2-90
[:SENSe]:MONitor:CHANnel:BANDwidth | BWIDth[:RESolution] :AUTO?	2-90

Commands

Alphabetical Listing

[:SENSe]:MONitor:CHANnel:BANDwidth | BWIDth[:RESolution]?	2-90
[:SENSe]:MONitor:CHANnel:DETEctor POSitive | SAMPlE | NEGative	2-92
[:SENSe]:MONitor:CHANnel:DETEctor?	2-92
[:SENSe]:MONitor:CHANnel:MAXHold[:STATe] OFF | ON | 0 | 1	2-92
[:SENSe]:MONitor:CHANnel:MAXHold[:STATe]?	2-92
[:SENSe]:MONitor:CHANnel:PRGain[:STATe] OFF | ON | 0 | 1	2-92
[:SENSe]:MONitor:CHANnel:PRGain[:STATe]?	2-92
[:SENSe]:MONitor:CHANnel:SPAN <freq>	2-93
[:SENSe]:MONitor:CHANnel:SPAN?	2-93
[:SENSe]:MONitor:FBAND TRANsmit | RECeive	2-89
[:SENSe]:MONitor:FBAND?	2-89
[:SENSe]:MONitor:METHod CHANnel | BAND	2-93
[:SENSe]:MONitor:METHod?	2-93
[:SENSe]:OBWidth:AVERage:COUNT <integer>	2-94
[:SENSe]:OBWidth:AVERage:COUNT?	2-94
[:SENSe]:OBWidth:AVERage:TCONtrol EXPonential | REPeat	2-95
[:SENSe]:OBWidth:AVERage:TCONtrol?	2-95
[:SENSe]:OBWidth:AVERage[:STATe] OFF | ON | 0 | 1	2-94
[:SENSe]:OBWidth:AVERage[:STATe]?	2-94
[:SENSe]:OBWidth:BANDwidth | BWIDth:VIDeo <freq>	2-96
[:SENSe]:OBWidth:BANDwidth | BWIDth:VIDeo?	2-96
[:SENSe]:OBWidth:BANDwidth | BWIDth[:RESolution] <freq>	2-95
[:SENSe]:OBWidth:BANDwidth | BWIDth[:RESolution]?	2-95
[:SENSe]:OBWidth:DETEctor[:FUNCTion] POSitive | NEGative | SAMPlE	2-96
[:SENSe]:OBWidth:DETEctor[:FUNCTion]?	2-96
[:SENSe]:OBWidth:EBWidth:XDB <rel_power>	2-96
[:SENSe]:OBWidth:EBWidth:XDB?	2-96
[:SENSe]:OBWidth:MAXHold[:STATe] OFF | ON | 0 | 1	2-97
[:SENSe]:OBWidth:MAXHold[:STATe]?	2-97
[:SENSe]:OBWidth:MIXer:RANGe[:UPPer] <power>	2-97
[:SENSe]:OBWidth:MIXer:RANGe[:UPPer]?	2-97

Commands

Alphabetical Listing

[:SENSe]:OBWidth:PERCent <number> . . . . .	.2-98
[:SENSe]:OBWidth:PERCent? . . . . .	.2-98
[:SENSe]:OBWidth:TRIGger:SOURce EXTernal | IMMEDIATE . . . . .	.2-98
[:SENSe]:OBWidth:TRIGger:SOURce? . . . . .	.2-98
[:SENSe]:OOBSpur:AVERage:COUNt <integer> . . . . .	.2-99
[:SENSe]:OOBSpur:AVERage:COUNt? . . . . .	.2-99
[:SENSe]:OOBSpur:AVERage:TCONtrol EXPonential | REPeat . . . . .	.2-100
[:SENSe]:OOBSpur:AVERage:TCONtrol? . . . . .	.2-100
[:SENSe]:OOBSpur:AVERage[:STATe] OFF | ON | 0 | 1 . . . . .	.2-99
[:SENSe]:OOBSpur:AVERage[:STATe]? . . . . .	.2-99
[:SENSe]:OOBSpur:MIXer:RANGe[:UPPer] <power> . . . . .	.2-100
[:SENSe]:OOBSpur:MIXer:RANGe[:UPPer]? . . . . .	.2-100
[:SENSe]:OOBSpur:OVRsweep:FACTor <value> . . . . .	.2-101
[:SENSe]:OOBSpur:OVRsweep:FACTor? . . . . .	.2-101
[:SENSe]:OOBSpur:OVRsweep[:STATe] OFF | ON | 0 | 1 . . . . .	.2-100
[:SENSe]:OOBSpur:OVRsweep[:STATe]? . . . . .	.2-100
[:SENSe]:OOBSpur:SPRange <integer> . . . . .	.2-101
[:SENSe]:OOBSpur:SPRange? . . . . .	.2-101
[:SENSe]:OOBSpur:TABLE:Bandwidth | BWIDth:RESolution <bw1, bw2, ..., bwN> . . . . .	.2-101
[:SENSe]:OOBSpur:TABLE:Bandwidth | BWIDth:RESolution? . . . . .	.2-101
[:SENSe]:OOBSpur:TABLE:Bandwidth | BWIDth:VIDeo <bw1, bw2, ..., bwN> . . . . .	.2-102
[:SENSe]:OOBSpur:TABLE:Bandwidth | BWIDth:VIDeo? . . . . .	.2-102
[:SENSe]:OOBSpur:TABLE:CFRequency <freq1, freq2, ..., freqN> . . . . .	.2-102
[:SENSe]:OOBSpur:TABLE:CFRequency? . . . . .	.2-102
[:SENSe]:OOBSpur:TABLE:DETEctor POSitive | SAMPlE | NEGative . . . . .	.2-103
[:SENSe]:OOBSpur:TABLE:DETEctor? . . . . .	.2-103
[:SENSe]:OOBSpur:TABLE:FREQuency:SPAN <freq1, freq2, ..., freqN> . . . . .	.2-103
[:SENSe]:OOBSpur:TABLE:FREQuency:SPAN? . . . . .	.2-103
[:SENSe]:OOBSpur:TRIGger:SOURce EXTernal | IMMEDIATE . . . . .	.2-103
[:SENSe]:OOBSpur:TRIGger:SOURce? . . . . .	.2-103
[:SENSe]:OPTion:ROSCillator:EXTernal:FREQuency <freq> . . . . .	.2-105

Commands

Alphabetical Listing

[:SENSe]:OPTion:ROSCillator:EXTernal:FREQuency?	2-105
[:SENSe]:OPTion:ROSCillator:OUTPut?	2-105
[:SENSe]:OPTion:ROSCillator:OUTPut[:STATe] OFF | ON | 0 | 1	2-105
[:SENSe]:OPTion:ROSCillator:SOURce INTernal | EXTernal.	2-105
[:SENSe]:OPTion:ROSCillator:SOURce?	2-105
[:SENSe]:POWer:CARRier:STATe OFF | ON | 0 | 1	2-106
[:SENSe]:POWer:CARRier:STATe?	2-106
[:SENSe]:POWer:CTHReshold <power>	2-106
[:SENSe]:POWer:CTHReshold?	2-106
[:SENSe]:POWer:LEVel:MINimum <power>	2-107
[:SENSe]:POWer:LEVel:MINimum?	2-107
[:SENSe]:POWer[:RF]:ATTenuation <rel_power>	2-107
[:SENSe]:POWer[:RF]:ATTenuation?	2-107
[:SENSe]:POWer[:RF]:RANGe:AUTO OFF | ON | 0 | 1	2-107
[:SENSe]:POWer[:RF]:RANGe:AUTO?	2-107
[:SENSe]:RADio:BANDwidth | BWIDth <freq>	2-108
[:SENSe]:RADio:BANDwidth | BWIDth?	2-108
[:SENSe]:RADio:DEVice BS | MS	2-108
[:SENSe]:RADio:DEVice?	2-108
[:SENSe]:RADio:STANdard:BAND ARIBT53 | C95B | C95C | CKOR | IS95A | JSTD8 | P95B | P95C | PKOR	2-109
[:SENSe]:RADio:STANdard:BAND?	2-109
[:SENSe]:RCHPower:AVERage:COUNT <integer>	2-110
[:SENSe]:RCHPower:AVERage:COUNT?	2-110
[:SENSe]:RCHPower:AVERage:TCONtrol EXPonential | REPeat.	2-110
[:SENSe]:RCHPower:AVERage:TCONtrol?	2-110
[:SENSe]:RCHPower:AVERage[:STATe] OFF | ON | 0 | 1	2-110
[:SENSe]:RCHPower:AVERage[:STATe]?	2-110
[:SENSe]:RCHPower:BANDwidth | BWIDth:INTegration <freq>	2-111
[:SENSe]:RCHPower:BANDwidth | BWIDth:INTegration?	2-111
[:SENSe]:RCHPower:BANDwidth | BWIDth[:RESolution] <freq>	2-111

Commands

Alphabetical Listing

[:SENSe]:RCHPower:BANDwidth | BWIDth[:RESolution]?	.2-111
[:SENSe]:RCHPower:CORRection:NOISe[:AUTO] OFF | ON | 0 | 1	.2-112
[:SENSe]:RCHPower:CORRection:NOISe[:AUTO]?	.2-112
[:SENSe]:RCHPower:FREQuency:SPAN <freq>	.2-112
[:SENSe]:RCHPower:FREQuency:SPAN?	.2-112
[:SENSe]:RCHPower:MIXer:RANGe[:UPPer] <power>	.2-113
[:SENSe]:RCHPower:MIXer:RANGe[:UPPer]?	.2-113
[:SENSe]:RCHPower:PRGain[:STATe] OFF | ON | 0 | 1	.2-113
[:SENSe]:RCHPower:PRGain[:STATe]?	.2-113
[:SENSe]:RCHPower:TRIGger:SOURce EXTernal | IMMEDIATE	.2-113
[:SENSe]:RCHPower:TRIGger:SOURce?	.2-113
[:SENSe]:RHO:AVERage:COUNt <integer>	.2-115
[:SENSe]:RHO:AVERage:COUNt?	.2-115
[:SENSe]:RHO:AVERage:TCONtrol EXPonential | REPeat	.2-115
[:SENSe]:RHO:AVERage:TCONtrol?	.2-116
[:SENSe]:RHO:AVERage[:STATe] OFF | ON | 0 | 1	.2-115
[:SENSe]:RHO:AVERage[:STATe]?	.2-115
[:SENSe]:RHO:DISPlay:DOTS OFF | ON | 0 | 1	.2-116
[:SENSe]:RHO:DISPlay:DOTS?	.2-116
[:SENSe]:RHO:DISPlay:LENGth <value>	.2-116
[:SENSe]:RHO:DISPlay:LENGth?	.2-116
[:SENSe]:RHO:MIXer:RANGe[:UPPer] <power>	.2-117
[:SENSe]:RHO:MIXer:RANGe[:UPPer]?	.2-117
[:SENSe]:RHO:NSPC ONE | TWO | FOUR	.2-117
[:SENSe]:RHO:NSPC?	.2-117
[:SENSe]:RHO:SPECTrum NORMal | INVert	.2-118
[:SENSe]:RHO:SPECTrum?	.2-118
[:SENSe]:RHO:SWEep:TIME <time>	.2-118
[:SENSe]:RHO:SWEep:TIME?	.2-118
[:SENSe]:RSPur:AVERage:COUNt <integer>	.2-119
[:SENSe]:RSPur:AVERage:COUNt?	.2-119

Commands

Alphabetical Listing

[:SENSe]:RSPur:AVERAge:TCONtrol EXPonential | REPeat	2-120
[:SENSe]:RSPur:AVERAge:TCONtrol?	2-120
[:SENSe]:RSPur:AVERAge[:STATe] OFF | ON | 0 | 1	2-119
[:SENSe]:RSPur:AVERAge[:STATe]?	2-119
[:SENSe]:RSPur:BANDwidth | BWIDth:VIDeo <freq>	2-120
[:SENSe]:RSPur:BANDwidth | BWIDth:VIDeo?	2-121
[:SENSe]:RSPur:BANDwidth | BWIDth[:RESolution] <freq>	2-120
[:SENSe]:RSPur:BANDwidth | BWIDth[:RESolution]?	2-120
[:SENSe]:RSPur:BLOCK <value> (Tuning Plan Dependent)	2-121
[:SENSe]:RSPur:BLOCK?	2-121
[:SENSe]:RSPur:DETEctor[:FUNction] POSitive | NEGative | SAMPlE	2-122
[:SENSe]:RSPur:DETEctor[:FUNction]?	2-122
[:SENSe]:RSPur:FBAND TRANsmit | RECEive	2-121
[:SENSe]:RSPur:FBAND?	2-121
[:SENSe]:RSPur:MIXer:RANGe[:UPPer] <power>	2-122
[:SENSe]:RSPur:MIXer:RANGe[:UPPer]?	2-122
[:SENSe]:RSPur:PRGain[:STATe] OFF | ON | 0 | 1	2-123
[:SENSe]:RSPur:PRGain[:STATe]?	2-123
[:SENSe]:RSPur:TRIGger:SOURce EXTernal | IMMEDIATE	2-123
[:SENSe]:RSPur:TRIGger:SOURce?	2-123

Functional Index to SCPI Subsection

The following table lists the SCPI subsystems or subsections associated with the instrument cdmaOne function categories. The commands listed are for cdmaOne specific functions. These commands are documented in [Chapter 2](#), “[Language Reference](#).” If you require information on the commands for the Agilent ESA Spectrum Analyzers, refer to the *Agilent ESA Spectrum Analyzers Programmer’s Guide*.

Function Category	SCPI Subsection or Subsystem
ATTENUATOR	see function category: Internal Attenuation
BANDWIDTH	:CALCulate :FETCh :READ [:SENSe]:CHPower:BANDwidth | BWIDth [:SENSe]:CSPur:BANDwidth | BWIDth [:SENSe]:HARMonics:BANDwidth | BWIDth [:SENSe]:MONitor:BAND:BANDwidth | BWIDth [:SENSe]:MONitor:CHANnel:BANDwidth | BWIDth [:SENSe]:OBWidth:BANDwidth | BWIDth [:SENSe]:OBWidth:EBWidth [:SENSe]:OBSpur:TABLE:BANDwidth | BWIDth [:SENSe]:RADio:BANDwidth | BWIDth [:SENSe]:RCHPower:BANDwidth | BWIDth
CONFIGURATION and STATUS	:SYSTem
CORRECTED MEASUREMENTS	[:SENSe]:CORRection
LOAD or SAVE	:MMEMory
DEMODULATION	[:SENSe]:DEMod
DISPLAY	:DISPlay:WINDow
FREQUENCY	[:SENSe]:OBSpur:TABLE:CFRequency [:SENSe]:OPTion:ROSCillator:EXTernal:FREQuency [:SENSe]:Frequency[:CENTer] [:SENSe]:CHANnel:FRCHannel:FREQuency
FREQUENCY SPAN	[:SENSe]:FREQuency [:SENSe]:CHPower:FREQuency:SPAN [:SENSe]:MONitor:BAND:FREQuency:SPAN [:SENSe]:MONitor:CHANnel:FREQuency:SPAN [:SENSe]:RCHPower:FREQuency:SPAN
INTERNAL ATTENUATION	[:SENSe]:POWer

Function Category	SCPI Subsection or Subsystem
LIMITS	:CALCulate
MEASURE	:CONFigure :FETCh :MEASure :READ [:SENSe]:CHPower [:SENSe]:CSPur [:SENSe]:HARMonics [:SENSe]:MONitor:BAND [:SENSe]:MONitor:CHANnel [:SENSe]:OBWidth [:SENSe]:OOBSpur [:SENSe]:RCHPower [:SENSe]:RSPur [:SENSe]:RHO
SWEEP	[:SENSe]:CDPower:SWEep [:SENSe]:SWEep
TRACE	:DISPlay
TRIGGER	[:SENSe]:<measurmenr>:TRIGger

2

Language Reference

These commands are only available when the cdmaOne mode has been selected using INSTRUMENT:SElect or INSTRUMENT:NSElect. If cdmaOne mode is selected, commands that are unique to another mode are not available.

CALCulate Subsystem

This subsystem is used to perform post-acquisition data processing. In effect, the collection of new data triggers the CALCulate subsystem. In this instrument, the primary functions in this subsystem are markers and limits.

Code Domain—Estimated Rho Lower Limit Testing

```
:CALCulate:CDPower:LIMit:ERHO:LOWer:STATe OFF|ON|0|1
```

```
:CALCulate:CDPower:LIMit:ERHO:LOWer:STATe?
```

Turn the estimated rho lower pass/fail limit test on or off.

Factory Preset
and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, More, Limits...

Code Domain—Relative Phase Upper Limit Testing

```
:CALCulate:CDPower:LIMit:PHASe[:UPPer]:STATe OFF|ON|0|1
```

```
:CALCulate:CDPower:LIMit:PHASe[:UPPer]:STATe?
```

Turn the relative phase upper limit test on or off.

Factory Preset
and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, More, Limits...

Code Domain—Estimated Rho Lower Limit

```
:CALCulate:CDPower:LIMit:<standard>:BS |BTS:ERHO:LOWer  
[:DATA] <value>
```

```
:CALCulate:CDPower:LIMit:<standard>:BS |BTS:ERHO:LOWer  
[:DATA]?
```

Set the lower limit for code-domain estimated rho pass/fail test.

BS = Base Station

BTS = Base Transceiver Station

BS = BTS

Available Standards

IS95A	IS-95-A
JSTD8	ANSI J-STD-008
C95B	TIA/EIA-95-B Cell
P95B	TIA/EIA-95-B PCS
CKOR	TTA.KO-06.0003 (Korea Cell)
PKOR	TTA.KO-06.0013 (Korea PCS)
C95C	TIA/EIA-95-C Cell
P95C	TIA/EIA-95-C PCS
ARIB T53	ARIB-T53

Factory Preset
and *RST: 0.912—All standards

Range: 0 to 1.0

Default Unit: None

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: Meas Setup, More, Limits...

Code Domain—Relative Phase Upper Limit

```
:CALCulate:CDPower:LIMit:<standard>:BS |BTS:PHASe[:UPPer]  
[:DATA] <angle>
```

```
:CALCulate:CDPower:LIMit:<standard>:BS |BTS:PHASe[:UPPer]  
[:DATA]?
```

Set the upper limit, in radians for code-domain relative phase testing. The absolute values of the relative phase measurement results are tested against this value.

BS = Base Station

BTS = Base Transceiver Station

BS = BTS

Available Standards

IS95A	IS-95-A
JSTD8	ANSI J-STD-008
C95B	TIA/EIA-95-B Cell
P95B	TIA/EIA-95-B PCS
CKOR	TTA.KO-06.0003 (Korea Cell)
PKOR	TTA.KO-06.0013 (Korea PCS)
C95C	TIA/EIA-95-C Cell
P95C	TIA/EIA-95-C PCS
ARIB T53	ARIB-T53

Factory Preset
and *RST:

IS95A, JSTD8, CKOR, PKOR	C95B, P95B, C95C, P95C, ARIB T53
0.05 mRad	0.15 mRad

Range: -3.1459 to 3.1459

Default Unit: Rad

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: **Meas Setup, More, Limits...**

Code Domain—Relative Timing Upper Limit

```
:CALCulate:CDPower:LIMit:<standard>:BS|BTS:TIMing[:UPPer]
[:DATA] <time>
```

```
:CALCulate:CDPower:LIMit:<standard>:BS|BTS:TIMing[:UPPer]
[:DATA]?
```

Set the upper limit, in seconds, for code-domain relative timing testing. The absolute values of the relative timing measurement results are tested against this value.

BS = Base Station

BTS = Base Transceiver Station

BS = BTS

Available Standards

IS95A	IS-95-A
JSTD8	ANSI J-STD-008
C95B	TIA/EIA-95-B Cell
P95B	TIA/EIA-95-B PCS
CKOR	TTA.KO-06.0003 (Korea Cell)
PKOR	TTA.KO-06.0013 (Korea PCS)
C95C	TIA/EIA-95-C Cell
P95C	TIA/EIA-95-C PCS
ARIB T53	ARIB-T53

Factory Preset
 and *RST: 10 μ s—All standards

Range: -26.7 ms to 26.7 ms

Default Unit: sec

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
 Access: **Meas Setup, More, Limits...**

Code Domain—Relative Timing Upper Limit Testing

:CALCulate:CDPower:LIMit:TIMing[:UPPer]:STATe OFF|ON|0|1

:CALCulate:CDPower:LIMit:TIMing[:UPPer]:STATe?

Turn relative timing upper limit test on or off.

Factory Preset
 and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
 Access: **Meas Setup, More, Limits...**

Channel Power—Lower Limit Test

```
:CALCulate:CHPower:LIMit:CHPower:LOWer:STATE OFF|ON|0|1
```

```
:CALCulate:CHPower:LIMit:CHPower:LOWer:STATE?
```

Turn channel power lower limit test on or off.

Factory Preset
and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, More, Limits...

Channel Power—Upper Limit Test

```
:CALCulate:CHPower:LIMit:CHPower[:UPPer]:STATE OFF|ON|0|1
```

```
:CALCulate:CHPower:LIMit:CHPower[:UPPer]:STATE?
```

Turn channel power upper limit test on or off.

Factory Preset
and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, More, Limits...

Channel Power—Lower Limit

```
:CALCulate:CHPower:LIMit:<standard>:BS|BTS:CHPower:LOWer  
[:DATA] <power>
```

```
:CALCulate:CHPower:LIMit:<standard>:BS|BTS:CHPower:LOWer  
[:DATA]?
```

Set the lower limit, in dBm, for channel power testing. This value should be lower than or equal to the upper limit value.

BS = Base Station

BTS = Base Transceiver Station

BS = BTS

Available Standards

IS95A IS-95-A

JSTD8	ANSI J-STD-008
C95B	TIA/EIA-95-B Cell
P95B	TIA/EIA-95-B PCS
CKOR	TTA.KO-06.0003 (Korea Cell)
PKOR	TTA.KO-06.0013 (Korea PCS)
C95C	TIA/EIA-95-C Cell
P95C	TIA/EIA-95-C PCS
ARIB T53	ARIB-T53

Factory Preset
and *RST: -50 dBm—All standards

Range: -200 dBm to 50 dBm

Default Unit: dBm

Remarks: You must be in the cdmaOne mode to use this command. Use :INSTrument:SELEct to set the mode.

Front Panel
Access: Meas Setup, More, Limits...

Channel Power—Upper Limit

```
:CALCulate:CHPower:LIMit:<standard>:BS|BTS:CHPower[:UPPer]
[:DATA] <power>
```

```
:CALCulate:CHPower:LIMit:<standard>:BS|BTS:CHPower[:UPPer]
[:DATA]?
```

Set the upper limit, in dBm, for channel power testing. This value should be higher than or equal to the lower limit value.

BS = Base Station

BTS = Base Transceiver Station

BS = BTS

Available Standards

IS95A	IS-95-A
JSTD8	ANSI J-STD-008
C95B	TIA/EIA-95-B Cell
P95B	TIA/EIA-95-B PCS
CKOR	TTA.KO-06.0003 (Korea Cell)

PKOR	TTA.KO-06.0013 (Korea PCS)
C95C	TIA/EIA-95-C Cell
P95C	TIA/EIA-95-C PCS
ARIB T53	ARIB-T53

Factory Preset
and *RST: 50 dBm—All standards
Range: –200 dBm to 50 dBm
Default Unit: dBm
Remarks: You must be in the cdmaOne mode to use this command. Use :INSTrument:SElect to set the mode.

Front Panel
Access: **Meas Setup, More, Limits...**

Test Current Results Against all Limits

:CALCulate:CLIMits:FAIL?

Queries the current status of the limit testing. Returns a 0 if the current measurement results pass when compared with the currently set limits for the measurement. Returns a 1 if the current measurement results fail any limit tests.

Spur Close—Limit Definition Source

:CALCulate:CSPur:LIMit:SOURce STANDARD|FILE

:CALCulate:CSPur:LIMit:SOURce STANDARD|FILE?

Set the source for the limit values used in the limits test.

STANDARD Defined by the Standard selected using the
[:SENSe]:RADio:STANdard:BAND command.

FILE Defined by a user entered file.

Factory Preset
and *RST: Standard
Remarks: You must be in the cdmaOne mode to use this command. Use INSTrument:SElect to set the mode.

Front Panel
Access: **Meas Setup, More, Limits...**

Spur Close—Limit Test

`:CALCulate:CSPur:LIMit:STATE OFF|ON|0|1`

`:CALCulate:CSPur:LIMit:STATE?`

Turn upper limit test for close-in spurious signals on or off.

Factory Preset
 and *RST: On

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
 Access: Meas Setup, More, Limits & Offsets...

Spurs at Harmonics—Upper Absolute Limit

`:CALCulate:HARMonics:LIMit:<standard>:BS|BTS:ABSolute[:UPPer][:DATA] <power>`

`:CALCulate:HARMonics:LIMit:<standard>:BS|BTS:ABSolute[:UPPer][:DATA]?`

Set the upper absolute limits for harmonics measurement testing.

BS = Base Station

BTS = Base Transceiver Station

BS = BTS

Available Standards

IS95A	IS-95-A
JSTD8	ANSI J-STD-008
C95B	TIA/EIA-95-B Cell
P95B	TIA/EIA-95-B PCS
CKOR	TTA.KO-06.0003 (Korea Cell)
PKOR	TTA.KO-06.0013 (Korea PCS)
C95C	TIA/EIA-95-C Cell
P95C	TIA/EIA-95-C PCS
ARIB T53	ARIB-T53

Factory Preset
 and *RST: -13 dBm

Range: -200 dBm to 50 dBm

Default Unit: dBm

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: Meas Setup, Limits ...

Spurs at Harmonics—Upper Relative Limit

```
:CALCulate:HARMonics:LIMit:<standard>:BS|BTS:RELative  
[:UPPer][:DATA] <rel_power>
```

```
:CALCulate:HARMonics:LIMit:<standard>:BS|BTS:RELative  
[:UPPer][:DATA]?
```

Set the upper relative limit for harmonics measurement testing.

BS = Base Station

BTS = Base Transceiver Station

BS = BTS

Available Standards

IS95A	IS-95-A
JSTD8	ANSI J-STD-008
C95B	TIA/EIA-95-B Cell
P95B	TIA/EIA-95-B PCS
CKOR	TTA.KO-06.0003 (Korea Cell)
PKOR	TTA.KO-06.0013 (Korea PCS)
C95C	TIA/EIA-95-C Cell
P95C	TIA/EIA-95-C PCS
ARIB T53	ARIB-T53

Factory Preset
and *RST: -30 dBc

Range: -200 dBc to 50 dBc

Default Unit: dB

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: Meas Setup, More, Limits...

Spurs at Harmonics—Upper Absolute Limit Test

```
:CALCulate:HARMonics:LIMit:ABSolute[:UPPer]:STATe  
OFF|ON|0|1
```

```
:CALCulate:HARMonics:LIMit:ABSolute[:UPPer]:STATe?
```

Turn the harmonics absolute upper limit test on or off.

Factory Preset
and *RST: On

Remarks: You must be in the cdmaOne mode to use this
command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, More, Limits...

Spurs at Harmonics—Upper Relative Limit Test

```
:CALCulate:HARMonics:LIMit:RELative[:UPPer]:STATe  
OFF|ON|0|1
```

```
:CALCulate:HARMonics:LIMit:RELative[:UPPer]:STATe?
```

Turn the harmonics relative upper limit test on or off.

Factory Preset
and *RST: On

Remarks: You must be in the cdmaOne mode to use this
command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, More, Limits...

Occupied Bandwidth—Emissions Bandwidth Lower Limit

```
:CALCulate:OBWidth:LIMit:<standard>:BS|BTS:EBWidth:LOWer  
[:DATA] <frequency>
```

```
:CALCulate:OBWidth:LIMit:<standard>:BS|BTS:EBWidth:LOWer  
[:DATA]?
```

Set the lower limit for occupied bandwidth measurement emissions
bandwidth testing. This value should be less than the upper limit value.

BS = Base Station

BTS = Base Transceiver Station

BS = BTS

Available Standards

IS95A	IS-95-A
JSTD8	ANSI J-STD-008
C95B	TIA/EIA-95-B Cell
P95B	TIA/EIA-95-B PCS
CKOR	TTA.KO-06.0003 (Korea Cell)
PKOR	TTA.KO-06.0013 (Korea PCS)
C95C	TIA/EIA-95-C Cell
P95C	TIA/EIA-95-C PCS
ARIB T53	ARIB-T53

Factory Preset
and *RST: 1.0 MHz—All standards

Range: 10 Hz to 50 MHz

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: **Meas Setup, Limits ...**

Occupied Bandwidth—Emissions Bandwidth Lower Limit Test

:CALCulate:OBWidth:LIMit:EBwidth:LOWer:STATe OFF|ON|0|1

:CALCulate:OBWidth:LIMit:EBwidth:LOWer:STATe?

Turn the emissions bandwidth lower limit test on or off.

Factory Preset
and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: **Meas Setup, More, Limits...**

Occupied Bandwidth—Emissions Bandwidth Upper Limit

```
:CALCulate:OBwidth:LIMit:<standard>:BS |BTS:EBwidth[:UPPer]
[:DATA] <frequency>
```

```
:CALCulate:OBwidth:LIMit:<standard>:BS |BTS:EBwidth[:UPPer]
[:DATA]?
```

Set the upper limit for occupied bandwidth measurement emissions bandwidth testing. This value should be greater than the lower limit value.

BS = Base Station

BTS = Base Transceiver Station

BS = BTS

Available Standards

IS95A	IS-95-A
JSTD8	ANSI J-STD-008
C95B	TIA/EIA-95-B Cell
P95B	TIA/EIA-95-B PCS
CKOR	TTA.KO-06.0003 (Korea Cell)
PKOR	TTA.KO-06.0013 (Korea PCS)
C95C	TIA/EIA-95-C Cell
P95C	TIA/EIA-95-C PCS
ARIB T53	ARIB-T53

Factory Preset
 and *RST: 1.5 MHz—All standards

Range: 10 Hz to 50 MHz

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: **Meas Setup, More, Limits...**

Occupied Bandwidth—Emissions Bandwidth Upper Limit Test

```
:CALCulate:OBWidth:LIMit:EBWidth[:UPPer]:STATe OFF|ON|0|1
```

```
:CALCulate:OBWidth:LIMit:EBWidth[:UPPer]:STATe?
```

Turn emissions bandwidth upper limit test on or off.

Factory Preset
and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, More, Limits...

Occupied Bandwidth—Occupied Bandwidth Lower Limit

```
:CALCulate:OBWidth:LIMit:<standard>:BS|BTS  
[:OBWidth]:LOWer[:DATA] <frequency>
```

```
:CALCulate:OBWidth:LIMit:<standard>:BS|BTS  
[:OBWidth]:LOWer[:DATA]?
```

Set the lower limit for occupied bandwidth measurement testing. This value must be lower than the upper limit value.

BS = Base Station

BTS = Base Transceiver Station

BS = BTS

Available Standards

IS95A	IS-95-A
JSTD8	ANSI J-STD-008
C95B	TIA/EIA-95-B Cell
P95B	TIA/EIA-95-B PCS
CKOR	TTA.KO-06.0003 (Korea Cell)
PKOR	TTA.KO-06.0013 (Korea PCS)
C95C	TIA/EIA-95-C Cell
P95C	TIA/EIA-95-C PCS
ARIB T53	ARIB-T53

Factory Preset
 and *RST: 1.0 MHz—All standards

Range: 10 Hz to 50 MHz

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
 Access: **Meas Setup, More, Limits...**

Occupied Bandwidth—Occupied Bandwidth Lower Limit Test

```
:CALCulate:OBwidth:LIMit[:OBwidth]:LOWer:STATe OFF|ON|0|1
:CALCulate:OBwidth:LIMit[:OBwidth]:LOWer:STATe?
```

Turn occupied bandwidth lower limit test on or off.

Factory Preset
 and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
 Access: **Meas Setup, More, Limits...**

Occupied Bandwidth—Occupied Bandwidth Upper Limit

```
:CALCulate:OBwidth:LIMit:<standard>:BS|BTS
[:OBwidth][:UPPer][:DATA] <frequency>
:CALCulate:OBwidth:LIMit:<standard>:BS|BTS
[:OBwidth][:UPPer][:DATA]?
```

Set the upper limit for occupied bandwidth measurement testing. This value must be greater than the lower limit value.

BS = Base Station

BTS = Base Transceiver Station

BS = BTS

Available Standards

IS95A IS-95-A

Language Reference
CALCulate Subsystem

JSTD8	ANSI J-STD-008
C95B	TIA/EIA-95-B Cell
P95B	TIA/EIA-95-B PCS
CKOR	TTA.KO-06.0003 (Korea Cell)
PKOR	TTA.KO-06.0013 (Korea PCS)
C95C	TIA/EIA-95-C Cell
P95C	TIA/EIA-95-C PCS
ARIB T53	ARIB-T53

Factory Preset
and *RST:

IS95A, C95B, C95C, CKOR, JSTD8, P95B, P95C, PKOR	ARIB T53
1.5 MHz	1.48 MHz

Range: 10 Hz to 50 MHz

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: Meas Setup, More, Limits...

Occupied Bandwidth—Occupied Bandwidth Upper Limit Test

`:CALCulate:OBWidth:LIMit[:OBWidth][:UPPer]:STATE OFF|ON|0|1`

`:CALCulate:OBWidth:LIMit[:OBWidth][:UPPer]:STATE?`

Turn occupied bandwidth upper limit test on or off.

Factory Preset

and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: Meas Setup, More, Limits...

Out of Band Spurious—Upper Absolute Limit

```
:CALCulate:OBSpur:LIMit:TABLE:ABSolute[:UPPer][:DATA]  
<power1, power2, ..., powerN>
```

```
:CALCulate:OBSpur:LIMit:TABLE:ABSolute[:UPPer][:DATA]?
```

Set the upper absolute limits for each out of band spurious emissions measurement range.

Range: -170 dBm to 170 dBm

Default Unit: dBm

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: **Meas Setup, Edit Table ...**

Out of Band Spurious—Upper Relative Limit

```
:CALCulate:OBSpur:LIMit:TABLE:RELative[:UPPer][:DATA]  
<rel_power1, rel_power2, ..., rel_powerN>
```

```
:CALCulate:OBSpur:LIMit:TABLE:RELative[:UPPer][:DATA]?
```

Set the upper relative limits for each out of band spurious emissions measurement range.

Range: -170 dBc to 170 dBc

Default Unit: dBc

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: **Meas Setup, Edit Table ...**

Out of Band Spurious—Limit Test

```
:CALCulate:OBSpur:LIMit:TABLE:TYPE  
<value1, value2, ..., valueN>
```

```
:CALCulate:OBSpur:LIMit:TABLE:TYPE?
```

Set the pass fail logic criteria for each range of the out of band spurious measurement. Either the absolute or relative limit test can be turned on, both tests can be turned on together, or both tests can be turned off. If both limit tests are turned on, the pass fail logic can be set so the test is passed if both limit tests are passed or if either test is passed.

Factory Preset

and *RST: Off

Range: OFF, ABS, REL, OR, and AND

Remarks: The enumerated selection is passed as a list <value1, value2, ..., valueN>.

You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: Meas Setup, Edit Table

Receive Channel Power—Lower Limit Test

```
:CALCulate:RCHPower:LIMit:RCHPower:LOWer:STATE OFF|ON|0|1
```

```
:CALCulate:RCHPower:LIMit:RCHPower:LOWer:STATE?
```

Turn the receive channel power lower limit test on or off.

Factory Preset

and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: Meas Setup, More, Limits...

Receive Channel Power—Upper Limit Test

```
:CALCulate:RCHPower:LIMit:RCHPower[:UPPer]:STATE OFF|ON|0|1
```

```
:CALCulate:RCHPower:LIMit:RCHPower[:UPPer]:STATE?
```

Turn receive channel power upper limit test on or off.

Factory Preset

and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: Meas Setup, More, Limits...

Receive Channel Power—Lower Limit

```
:CALCulate:RCHPower:LIMit:<standard>:BS|BTS:RCHPower
:LOWer[:DATA] <value>
```

```
:CALCulate:RCHPower:LIMit:<standard>:BS|BTS:RCHPower
:LOWer[:DATA]?
```

Set the lower limit, in dBm, for receive channel power testing. This value should be less than or equal to the upper limit value.

BS = Base Station

BTS = Base Transceiver Station

BS = BTS

Available Standards

IS95A	IS-95-A
JSTD8	ANSI J-STD-008
C95B	TIA/EIA-95-B Cell
P95B	TIA/EIA-95-B PCS
CKOR	TTA.KO-06.0003 (Korea Cell)
PKOR	TTA.KO-06.0013 (Korea PCS)
C95C	TIA/EIA-95-C Cell
P95C	TIA/EIA-95-C PCS
ARIB T53	ARIB-T53

Factory Preset

and *RST: -50 dBm—All standards

Range: -200 dBm to 50 dBm

Default Unit: dBm

Remarks: You must be in the cdmaOne mode to use this command. Use :INSTRument:SElect to set the mode.

Front Panel

Access: Meas Setup, More, Limits...

Receive Channel Power—Upper Limit

```
:CALCulate:RCHPower:LIMit:<standard>:BS|BTS:RCHPower  
:UPPer[:DATA] <value>
```

```
:CALCulate:RCHPower:LIMit:<standard>:BS|BTS:RCHPower  
:UPPer[:DATA]?
```

Set the upper limit, in dBm, for receive channel power testing. This value should be greater than or equal to the lower limit value.

BS = Base Station

BTS = Base Transceiver Station

BS = BTS

Available Standards

IS95A	IS-95-A
JSTD8	ANSI J-STD-008
C95B	TIA/EIA-95-B Cell
P95B	TIA/EIA-95-B PCS
CKOR	TTA.KO-06.0003 (Korea Cell)
PKOR	TTA.KO-06.0013 (Korea PCS)
C95C	TIA/EIA-95-C Cell
P95C	TIA/EIA-95-C PCS
ARIB T53	ARIB-T53

Factory Preset

and *RST: 50 dBm—All standards

Range: -200 dBm to 50 dBm

Default Unit: dBm

Remarks: You must be in the cdmaOne mode to use this command. Use :INSTRument:SElect to set the mode.

Front Panel

Access: **Meas Setup, More, Limits...**

Rho—Carrier Feedthrough Upper Limit Test

```
:CALCulate:RHO:LIMit:CFThrough[:UPPer[:STATE OFF|ON|0|1
```

```
:CALCulate:RHO:LIMit:CFThrough[:UPPer[:STATE?
```

Turn Rho carrier feedthrough upper limit test on or off.

Factory Preset
and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, More, Limits...

Rho—Error Vector Magnitude Upper Limit Test

```
:CALCulate:RHO:LIMit:EVM[:UPPer]:STATE OFF|ON|0|1
```

```
:CALCulate:RHO:LIMit:EVM[:UPPer]:STATE?
```

Turn rho error vector magnitude upper limit test on or off.

Factory Preset
and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, More, Limits...

Rho—Frequency Error Upper Limit Test

```
:CALCulate:RHO:LIMit:FERRor[:UPPer]:STATE OFF|ON|0|1
```

```
:CALCulate:RHO:LIMit:FERRor[:UPPer]:STATE?
```

Turn the rho frequency error upper limit test on or off.

Factory Preset
and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, More, Limits...

Rho—Modulation Magnitude Error Upper Limit Test

```
:CALCulate:RHO:LIMit:MAGNitude[:UPPer]:STATE OFF|ON|0|1
```

```
:CALCulate:RHO:LIMit:MAGNitude[:UPPer]:STATE?
```

Turn rho modulation magnitude error upper limit test on or off.

Factory Preset
and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, More, Limits...

Rho—Modulation Phase Error Upper Limit Test

```
:CALCulate:RHO:LIMit:PHASe[:UPPer]:STATe OFF|ON|0|1
```

```
:CALCulate:RHO:LIMit:PHASe[:UPPer]:STATe?
```

Turn rho modulation phase error upper limit test on or off.

Factory Preset
and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, More, Limits...

Rho—Rho Lower Limit Test

```
:CALCulate:RHO:LIMit:RHO:LOWer:STATe OFF|ON|0|1
```

```
:CALCulate:RHO:LIMit:RHO:LOWer:STATe?
```

Turn rho results lower limit test on or off.

Factory Preset
and *RST: ON

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, More, Limits...

Rho—Carrier Feedthrough Upper Limit

```
:CALCulate:RHO:LIMit:<standard>:BS|BTS:CFThrougH:[UPPer[
[:DATA] <rel_power>
```

```
:CALCulate:RHO:LIMit:<standard>:BS|BTS:CFThrougH:[UPPer[
[:DATA]?
```

Set the upper limit, in dB, for rho carrier feedthrough testing.

BS = Base Station

BTS = Base Transceiver Station

BS = BTS

Available Standards

IS95A	IS-95-A
JSTD8	ANSI J-STD-008
C95B	TIA/EIA-95-B Cell
P95B	TIA/EIA-95-B PCS
CKOR	TTA.KO-06.0003 (Korea Cell)
PKOR	TTA.KO-06.0013 (Korea PCS)
C95C	TIA/EIA-95-C Cell
P95C	TIA/EIA-95-C PCS
ARIB T53	ARIB-T53

Factory Preset
and *RST: -40 dBm—All standards

Range: -200 dB to 0 dB

Default Unit: dB

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: Meas Setup, More, Limits...

Rho—Error Vector Magnitude Upper Limit

```
:CALCulate:RHO:LIMit:<standard>:BS|BTS:EVM[:UPPer][[:DATA]
<percentage>
```

```
:CALCulate:RHO:LIMit:<standard>:BS|BTS:EVM[:UPPer][[:DATA]?
```

Set the upper limit, in percent, for rho error vector magnitude testing.

BS = Base Station

BTS = Base Transceiver Station

BS = BTS

Available Standards

IS95A	IS-95-A
JSTD8	ANSI J-STD-008
C95B	TIA/EIA-95-B Cell
P95B	TIA/EIA-95-B PCS
CKOR	TTA.KO-06.0003 (Korea Cell)
PKOR	TTA.KO-06.0013 (Korea PCS)
C95C	TIA/EIA-95-C Cell
P95C	TIA/EIA-95-C PCS
ARIB T53	ARIB-T53

Factory Preset
and *RST: 25%—All standards

Range: 0 to 100%

Default Unit: % (percent)

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: **Meas Setup, More, Limits...**

Rho—Frequency Error Upper Limit

```
:CALCulate:RHO:LIMit:<standard>:BS|BTS:FERRor[:UPPer]  
[:DATA] <frequency>
```

```
:CALCulate:RHO:LIMit:<standard>:BS|BTS:FERRor[:UPPer]  
[:DATA]?
```

Set the upper limit, in hertz, for rho frequency error testing. The absolute value of the frequency error results are tested against this value.

BS = Base Station

BTS = Base Transceiver Station

BS = BTS

Available Standards

IS95A	IS-95-A
JSTD8	ANSI J-STD-008
C95B	TIA/EIA-95-B Cell
P95B	TIA/EIA-95-B PCS
CKOR	TTA.KO-06.0003 (Korea Cell)
PKOR	TTA.KO-06.0013 (Korea PCS)
C95C	TIA/EIA-95-C Cell
P95C	TIA/EIA-95-C PCS
ARIB T53	ARIB-T53

Factory Preset
and *RST:

IS95A, C95B, C95C, CKOR, ARIB T53	JSTD8, P95B, P95C	PKOR
43.5 Hz	99.5 Hz	93.5 Hz

Range: -1.0 MHz to 1.0 MHz

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: Meas Setup, More, Limits...

Rho—Modulation Magnitude Error Upper Limit

```
:CALCulate:RHO:LIMit:<standard>:BS|BTS:MAGNitude[:UPPer]
[:DATA] <percentage>
```

```
:CALCulate:RHO:LIMit:<standard>:BS|BTS:MAGNitude[:UPPer]
[:DATA]?
```

Set the upper limit, in percent, for rho modulation magnitude error testing.

BS = Base Station

BTS = Base Transceiver Station

BS = BTS

Available Standards

IS95A	IS-95-A
JSTD8	ANSI J-STD-008

C95B	TIA/EIA-95-B Cell
P95B	TIA/EIA-95-B PCS
CKOR	TTA.KO-06.0003 (Korea Cell)
PKOR	TTA.KO-06.0013 (Korea PCS)
C95C	TIA/EIA-95-C Cell
P95C	TIA/EIA-95-C PCS
ARIB T53	ARIB-T53

Factory Preset
and *RST: 25%

Range: 0 to 100%

Default Unit: % (percent)

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: **Meas Setup, More, Limits...**

Rho—Modulation Phase Error Upper Limit

```
:CALCulate:RHO:LIMit:<standard>:BS|BTS:PHASe[:UPPer]  
[:DATA] <angle>
```

```
:CALCulate:RHO:LIMit:<standard>:BS|BTS:PHASe[:UPPer]  
[:DATA]?
```

Set the upper limit, in degrees, for rho modulation phase error testing.

BS = Base Station

BTS = Base Transceiver Station

BS = BTS

Available Standards

IS95A	IS-95-A
JSTD8	ANSI J-STD-008
C95B	TIA/EIA-95-B Cell
P95B	TIA/EIA-95-B PCS
CKOR	TTA.KO-06.0003 (Korea Cell)
PKOR	TTA.KO-06.0013 (Korea PCS)
C95C	TIA/EIA-95-C Cell

P95C TIA/EIA-95-C PCS

ARIB T53 ARIB-T53

Factory Preset
 and *RST: 20 deg—All standards

Range: 0 to 360

Default Unit: degree

Remarks: You must be in the cdmaOne mode to use this
 command. Use INSTRument:SElect to set the mode.

Front Panel

Access: Meas Setup, More, Limits...

Rho—Rho Lower Limit

```
:CALCulate:RHO:LIMit:<standard>:BS |BTS:RHO:LOWer[:DATA]
<parameter>
```

```
:CALCulate:RHO:LIMit:<standard>:BS |BTS:RHO:LOWer[:DATA]?
```

Set the lower limit for rho results testing.

BS = Base Station

BTS = Base Transceiver Station

BS = BTS

Available Standards

IS95A IS-95-A

JSTD8 ANSI J-STD-008

C95B TIA/EIA-95-B Cell

P95B TIA/EIA-95-B PCS

CKOR TTA.KO-06.0003 (Korea Cell)

PKOR TTA.KO-06.0013 (Korea PCS)

C95C TIA/EIA-95-C Cell

P95C TIA/EIA-95-C PCS

ARIB T53 ARIB-T53

Factory Preset
 and *RST: 0.912—All standards

Range: 0 to 1.0

Default Unit: None

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: Meas Setup, More, Limits...

Rho—Time Offset Upper Limit

```
:CALCulate:RHO:LIMit:<standard>:BS|BTS:TOffset[:UPPer]  
[:DATA] <time>
```

```
:CALCulate:RHO:LIMit:<standard>:BS|BTS:TOffset[:UPPer]  
[:DATA]?
```

Set the upper limit, in microseconds, for rho time offset testing.

BS = Base Station

BTS = Base Transceiver Station

BS = BTS

Available Standards

IS95A	IS-95-A
JSTD8	ANSI J-STD-008
C95B	TIA/EIA-95-B Cell
P95B	TIA/EIA-95-B PCS
CKOR	TTA.KO-06.0003 (Korea Cell)
PKOR	TTA.KO-06.0013 (Korea PCS)
C95C	TIA/EIA-95-C Cell
P95C	TIA/EIA-95-C PCS
ARIB T53	ARIB-T53

Factory Preset
and *RST: 10 μ s

Range: -26.7 ms to 26.7 ms

Default Unit: sec

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: Meas Setup, More, Limits...

Rho—Time Offset Upper Limit Test

`:CALCulate:RHO:LIMit:TOFFset[:UPPer]:STATe OFF|ON|0|1`

`:CALCulate:RHO:LIMit:TOFFset[:UPPer]:STATe?`

Turn time offset upper limit test on or off.

Factory Preset

and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: Meas Setup, More, Limits...

Receiver Spurious—Receive Upper Limit

`:CALCulate:RSPur:LIMit:<standard>:BS|BTS:RECeive[:UPPer] [:DATA] <power>`

`:CALCulate:RSPur:LIMit:<standard>:BS|BTS:RECeive[:UPPer] [:DATA]?`

Set the upper limit, in dBm, for receiver spurious response receive band testing.

BS = Base Station

BTS = Base Transceiver Station

BS = BTS

Available Standards

IS95A	IS-95-A
JSTD8	ANSI J-STD-008
C95B	TIA/EIA-95-B Cell
P95B	TIA/EIA-95-B PCS
CKOR	TTA.KO-06.0003 (Korea Cell)
PKOR	TTA.KO-06.0013 (Korea PCS)
C95C	TIA/EIA-95-C Cell
P95C	TIA/EIA-95-C PCS
ARIB T53	ARIB-T53

Factory Preset
and *RST: -80 dBm—All standards

Range: -200 dBm to 50 dBm

Default Unit: dBm

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, More, Limits...

Receiver Spurious—Receive Upper Limit Test

```
:CALCulate:RSPur:LIMit:RECeive[:UPPer]:STATE OFF|ON|0|1
```

```
:CALCulate:RSPur:LIMit:RECeive[:UPPer]:STATE?
```

Turn receiver spurious response receive band upper limit test on or off.

Factory Preset
and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, More, Limits...

Receiver Spurious—Transmit Upper Limit

```
:CALCulate:RSPur:LIMit:<standard>:BS|BTS:TRANsmit[:UPPer]  
[:DATA] <power>
```

```
:CALCulate:RSPur:LIMit:<standard>:BS|BTS:TRANsmit[:UPPer]  
[:DATA]?
```

Set the upper limit, in dBm, or receive spurious response transmit band testing.

BS = Base Station

BTS = Base Transceiver Station

BS = BTS

Available Standards

IS95A	IS-95-A
JSTD8	ANSI J-STD-008

C95B	TIA/EIA-95-B Cell
P95B	TIA/EIA-95-B PCS
CKOR	TTA.KO-06.0003 (Korea Cell)
PKOR	TTA.KO-06.0013 (Korea PCS)
C95C	TIA/EIA-95-C Cell
P95C	TIA/EIA-95-C PCS
ARIB T53	ARIB-T53

Factory Preset and *RST: -60 dBm—All standards
 Range: -200 dBm to 50 dBm
 Default Unit: dBm
 Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.
 Front Panel
 Access: **Meas Setup, More, Limits...**

Receiver Spurious—Transmit Upper Limit Test

```
:CALCulate:RSPur:LIMit:TRANsmit[:UPPer]:STATe OFF|ON|0|1
:CALCulate:RSPur:LIMit:TRANsmit[:UPPer]:STATe?
```

Turn receive spurious response transmit band upper limit test on or off.

Factory Preset and *RST: Off
 Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.
 Front Panel
 Access: **Meas Setup, More, Limits...**

CONFigure Subsystem

:CONFigure:<measurement>

The CONFigure commands are used with several other commands and are documented in the section on the [“MEASure Group of Commands”](#) on page 39.

DISPlay Subsystem

The DISPlay controls the selection and presentation of textual, graphical, and TRACe information. Within a DISPlay, information may be separated into individual WINDows.

Trace Y-Axis Amplitude Scaling

```
:DISPlay:WINDow:TRACe:Y[:SCALe]:PDIVision <rel_ampl>
```

```
:DISPlay:WINDow:TRACe:Y[:SCALe]:PDIVision?
```

Sets the value for each division of the y-axis on the display when y-axis units are set to amplitude units.

Factory Preset
and *RST: 10 dB

Range: 0.1 to 20.0 dB

Default Unit: dB

Front Panel
Access: **AMPLITUDE Y Scale, Scale/Div**

Trace Y-Axis Reference Level

```
:DISPlay:WINDow:TRACe:Y[:SCALe]:RLEVEL <ampl>
```

```
:DISPlay:WINDow:TRACe:Y[:SCALe]:RLEVEL?
```

Sets the reference level (maximum amplitude value on the display) of the y-axis.

Factory Preset
and *RST: 0 dBm

Range: With reference level offset:
-327.6 to 55 dBm
-149.9 to 55 dBm with reference level offset and max
mixer level = -10 dBm. In external mixing, the range is
-327.5 to -10 dBm at the mixer.

Default Unit: current active units

Front Panel
Access: **Amplitude Y Scale, Ref Level**

FETCh Subsystem

`:FETCh:<measurement>[n]?`

The FETCh? commands are used with several other commands and are documented in the section on the “[MEASure Group of Commands](#)” on [page 39](#).

INITiate Subsystem

The INITiate subsystem is used to control the initiation of the trigger. Refer to the TRIGger and ABORt subsystems for related commands.

Continuous or Single Measurements

`:INITiate:CONTinuous OFF|ON|0|1`

`:INITiate:CONTinuous?`

Selects whether the trigger system is continuously initiated or not. This corresponds to continuous measurement or single measurement operation.

When set to ON, at the completion of each trigger cycle, the trigger system immediately initiates another trigger cycle.

When set to OFF, the trigger system remains in an “idle” state until CONTinuous is set to ON or an INITiate[:IMMediate] command is received. On receiving the INITiate[:IMMediate] command, it will go through a single trigger cycle, and then return to the “idle” state.

Factory Preset: ON

*RST: ON (OFF recommended for remote operation)

Front Panel

Access: Meas Control, Measure Single Cont

Pause the Measurement

`:INITiate:PAUSE`

Pauses the current measurement by changing the current measurement state from the “wait for trigger” state to the “paused” state. If the measurement is not in the “wait for trigger” state when the command is issued, the transition will be made the next time that state is entered as part of the trigger cycle. When in the pause state, the spectrum analyzer auto-align process stops. If the analyzer is paused for long a period of time, measurement accuracy may degrade.

Front Panel

Access: Meas Control, Pause

Restart the Measurement

:INITiate:REStart

Restarts the current measurement regardless of its current operating state. It is equivalent to:

INITiate[:IMMEDIATE] (for single measurement mode)

ABort (for continuous measurement mode)

Front Panel

Access: **Restart**

or

Meas Control, Restart

Resume the Measurement

:INITiate:RESume

Resumes the current measurement by changing the current measurement state from the “paused state” back to the “wait for trigger” state. If the measurement is not in the “paused” state, when the command is issued, an error is reported.

Front Panel

Access: **Meas Control, Resume**

INSTRUMENT Subsystem

This subsystem includes commands for querying and selecting instrument measurement (personality option) modes.

Select Application by Number

`:INSTRument:NSElect <integer>`

`:INSTRument:NSElect?`

Select the measurement application by its instrument number. The actual available choices depends upon which applications are installed in the instrument.

1 = SA

3 = GSM

4 = cdmaOne

NOTE

If you are using the status bits and the analyzer mode is changed, the status bits should be read, and any errors resolved, prior to switching modes. Error conditions that exist prior to switching modes cannot be detected using the condition registers after the mode change. This is true unless they recur after the mode change, although transitions of these conditions can be detected using the event registers.

Changing modes resets all SCPI status registers and mask registers to their power-on defaults. Hence, any event or condition register masks must be re-established after a mode change. Also note that the power up status bit is set by any mode change, since that is the default state after power up.

Factory Preset

and *RST: Persistent state with factory default of 1

Range: 1 to x, where x depends upon which applications are installed.

Front Panel

Access: **Mode**

Select Application

`:INSTRUMENT[:SElect] `SA'|`CDMA'` (application specific mode)

`:INSTRUMENT[:SElect]?`

Select the measurement application mode by enumerated choice. The actual available choices depends upon which applications (modes) are installed in the instrument.

Once the instrument mode is selected, only the commands that are valid for that mode can be executed. See the manual for installed options for the mode designator (if any) for that option.

NOTE

If you are using the SCPI status registers and the analyzer mode is changed, the status bits should be read, and any errors resolved, prior to switching modes. Error conditions that exist prior to switching modes cannot be detected using the condition registers after the mode change. This is true unless they recur after the mode change, although transitions of these conditions can be detected using the event registers.

Changing modes resets all SCPI status registers and mask registers to their power-on defaults. Hence, any event or condition register masks must be re-established after a mode change. Also note that the power up status bit is set by any mode change, since that is the default state after power up.

Factory Preset
and *RST: Persistent state with factory default of Spectrum Analyzer

Front Panel
Access: **Mode**

MEASure Group of Commands

This group includes commands used to make measurements and return results. The different commands can be used to provide fine control of the overall measurement process. Most measurements should be done in single measurement mode, rather than doing the measurement continuously.

Each measurement sets the instrument state that is appropriate for that measurement. Other commands are available for each **Mode** to allow changing settings, view, limits, etc. Refer to:

SENSe:<measurement>, SENSe:CHANnel, SENSe:CORRection,
SENSe:FREQuency, SENSe:POWer, SENSe:RADio, SENSe:SNYC
CALCulate:<measurement>, CALCulate:CLIMits/DATA
DISPlay:<measurement>
TRIGger

Measure Commands

:MEASure:<measurement>[n]?

This is a fast single-command way to make a measurement using the factory default instrument settings. These are the settings and units that conform to the Standard.

- Stops the current measurement and sets up the instrument for the specified measurement using the factory defaults
- Initiates the data acquisition for the measurement
- Blocks other SCPI communication, waiting until the measurement is complete before returning results.
- Turns the averaging function on and sets the number of averages to 10 for all measurements.
- After the data is valid it returns the scalar results, or the trace data, for the specified measurement.

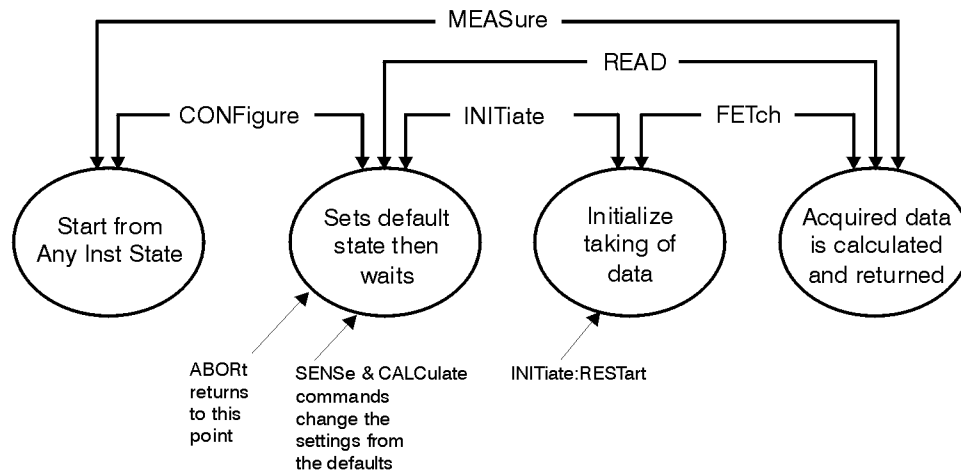
If the optional [n] value is not included, or is set to 1, the scalar measurement results will be returned. If the [n] value is set to a value other than 1, the selected trace data results will be returned. See each command for details of what types of scalar results or trace data results are available.

If you need to change some of the measurement parameters from the factory default settings you can set up the measurement with the CONFigure command. Use the commands in the SENSE:<measurement> and CALCulate:<measurement> subsystems to change the settings. Then you can use the READ? command, or the INITiate and FETCh? commands, to initiate the measurement and query the results. See Figure 2-1.

If you need to repeatedly make a given measurement with settings other than the factory defaults, you can use the commands in the SENSE:<measurement> and CALCulate:<measurement> subsystems to set up the measurement. Then use the READ? command or INITiate and FETCh? commands, to initiate the measurement and query results.

Measurement settings persist if you initiate a different measurement and then return to a previous one. Use READ:<measurement>? if you want to use those persistent settings. If you want to go back to the default settings, use MEASure:<measurement>?.

Figure 2-1 Measurement Group of Commands



Configure Commands

:CONFigure:<measurement>

This command stops the current measurement and sets up the instrument for the specified measurement using the factory default instrument settings. It does not initiate the taking of measurement data. This command also turns the averaging function on and sets the number of averages to 10 for all measurements.

The CONFigure? query returns the current measurement name.

Fetch Commands

:FETCh:<measurement>[n]?

This command puts valid data into the output buffer, but does not initiate data acquisition. Use the INITiate[:IMMediate] command to acquire data before you use the FETCh command. You can only fetch results from the measurement that is currently selected.

If the optional [n] value is not included, or is set to 1, the scalar measurement results will be returned. If the [n] value is set to a value other than 1, the selected trace data results will be returned. See each command for details of what types of scalar results or trace data results are available.

Read Commands

:READ:<measurement>[n]?

- Does not preset the measurement to the factory defaults. (The MEASure? and CONFigure? commands reset the parameters to the default values.) It uses the settings from the last measurement.
- Initiates the measurement and puts valid data into the output buffer. If a measurement other than the current one is specified, the instrument will switch to that measurement before it initiates the measurement and returns results.
- Blocks other SCPI communication, waiting until the measurement is complete before returning the results

If the optional [n] value is not included, or is set to 1, the scalar measurement results will be returned. If the [n] value is set to a value other than 1, the selected trace data results will be returned. See each command for details of what types of scalar results or trace data results are available. The binary data formats should be used when handling large blocks of data since they are smaller and faster than the ASCII format.

Measurement settings persist if you initiate a different measurement and then return to a previous one. Use READ:<measurement>? if you want to use those persistent settings. If you want to go back to the default settings, use MEASure:<measurement>?.

Code Domain Measurement

This measures the power for each of the 64 Walsh codes/channels, relative to the total power in the pilot channel. You must be in the cdmaOne mode to use these commands. Use INSTRument:SElect to set the mode.

The general functionality of CONFigure, FETCh, MEASure, and READ are described at the beginning of this section. See the SENSE:CDPower commands for more measurement related commands.

:CONFigure:CDPower

:FETCh:CDPower[n]?

:READ:CDPower[n]?

:MEASure:CDPower[n]?

Front Panel

Access: Measure, Code Domain

After the measurement is selected, press **Restore Meas Defaults** to restore factory defaults.

Measurement Results Available

n	Results Returned
not specified or n=1	<p>Returns the following comma-separated scalar results:</p> <ol style="list-style-type: none"> 1. Time offset is a floating point number with units of seconds. This is the time delay of the even second clock with respect to the start of the short code PN sequences. Time offset takes into account the setting of the PN offset parameter. For example, with the PN offset to 2 the reported time offset would be the calculated time offset times 64 chip intervals (or $2 \times 52.0833e-6$). 2. Frequency error is a floating point number (in Hz) of the frequency error in the measured signal. This error is based on the linear best fit of the uncorrected measured phase. 3. Carrier feedthrough is a floating point number (in dB) of the dc offset, of I and Q, from the origin. 4. Pilot power is a floating point number with units of dB. It is the relative power of the pilot channel (Walsh code 0) with respect to the carrier power. 5. Paging power is a floating point number with units of dB. It is the relative power of the paging channel (Walsh code 1) with respect to the carrier power. <p>Continued on next page</p>

Measurement Results Available

n	Results Returned
not specified or n=1	<p>Returns the following comma-separated scalar results:</p> <ol style="list-style-type: none"> 6. Sync power is a floating point number with units of dB. It is the relative power of the sync channel (Walsh code 32) with respect to the carrier power. 7. Average traffic power is a floating point number with units of dB. It is the average relative power of the active traffic channels with respect to the carrier power. Traffic channels are defined as all of the Walsh codes except Walsh 0,1,32. A traffic channel is active if its coding power is greater than the active set threshold parameter which you have selected. 8. Maximum inactive traffic power is a floating point number with units of dB. It is the maximum relative power of an inactive traffic channel with respect to the carrier power. Traffic channels are defined as all of the Walsh codes except Walsh 0,1,32. A traffic channel is inactive if its coding power is less than the active set threshold parameter which you have selected. 9. Average inactive traffic power is a floating point number with units of dB. It is the average relative power of the inactive traffic channels with respect to the carrier power. Traffic channels are defined as all of the Walsh codes except Walsh 0,1,32. A traffic channel is inactive if its coding power is less than the active set threshold parameter which you have selected. 10. RHO (estimated) is a floating point number without units. This is an estimate of Rho based on the input signal as a pilot only signal. It is calculated by estimating the noise floor for the active code channels using the average of the noise in all of the inactive channels. The measured noise floor is subtracted from all active channels before they are summed together to get the total signal power. The ratio of total noise power to total power is the Rho (estimated).
2	<p>Power trace - Returns comma-separated floating point numbers that are the trace data of the code domain <i>power</i> trace for all 64 Walsh codes. This series of 64 numbers represent the relative power levels (in dB) of all 64 walsh codes, with respect to the carrier power.</p>
3	<p>Timing trace - Returns comma-separated floating point numbers that are the trace data of the code domain <i>timing</i> trace for all 64 Walsh codes. This series of 64 numbers represent the relative timing estimations (in seconds) of the codes, relative to the pilot channel. Typical values are on the order of 1 ns.</p> <hr/> <p>NOTE The default method is to measure the power only. CONFIG and MEAS reset the method parameter to Power. If you use this subopcode with the method left as Power, invalid data will be returned. Set Method to Timing/Phase for proper results.</p> <hr/>

Measurement Results Available

n	Results Returned
4	<p>Phase trace - Returns comma-separated floating point numbers that are the trace data of the code domain <i>phase</i> trace for all 64 Walsh codes. This series of 64 numbers represent the relative phase estimations (in radians) of the codes, relative to the pilot channel. Typical values are on the order of 1 mrad.</p> <hr/> <p>NOTE The default method is to measure the power only. CONFIG and MEAS reset the method parameter to Power. If you use this subopcode with the method left as Power, invalid data will be returned. Set Method to Timing/Phase for proper results.</p> <hr/>

Channel Power Measurement

This measures the total rms power in a specified integration bandwidth. You must be in the cdmaOne mode to use these commands. Use INSTRument:SElect to set the mode.

The general functionality of CONFigure, FETCh, MEASure, and READ are described at the beginning of this section. See the SENSE:CHPower commands for more measurement related commands.

```
:CONFigure:CHPower
:FETCh:CHPower[n]?
:READ:CHPower[n]?
:MEASure:CHPower[n]?
```

Front Panel

Access: **Measure, Channel Power**

After the measurement is selected, press **Restore Meas Defaults** to restore factory defaults.

Measurement Results Available

n	Results Returned
not specified or n=1	Returns 2 comma-separated scalar results: <ol style="list-style-type: none"> 1. Channel Power is a floating point number representing the total channel power in the specified integration bandwidth. 2. Power Spectral Density is the power (in dBm/Hz) in the specified integration bandwidth.

Spur Close Measurement

This measures the spurious emissions in the transmit band relative to the channel power in the selected channel. You must be in the cdmaOne mode to use these commands. Use INSTRument:SElect to set the mode.

The general functionality of CONFigure, FETCh, MEASure, and READ are described at the beginning of this section. See the SENSE:CSPur commands for more measurement related commands.

:CONFigure:CSPur

:FETCh:CSPur[n]?

:READ:CSPur[n]?

:MEASure:CSPur[n]?

Front Panel

Access: **Measure, Spur Close**

After the measurement is selected, press **Restore Meas Defaults** to restore factory defaults.

Measurement Results Available

n	Results Returned
not specified or n=1	<p>Returns 10 comma-separated scalar results. The 10 results represent, first, the channel power and then 3 spur values. The 3 values are composed of the spurious value from each of 3 measurement segments. The measurement segments are Lower, Center, and Upper. For each of the 3 spurs displayed, 3 values are returned:</p> <ol style="list-style-type: none"> 1. The spur frequency difference from channel center frequency (in Hz) 2. The spur amplitude difference from the limit (in dB) 3. The spur amplitude difference from channel power (in dBc)
2	Returns trace of the segment containing the worst spur.

Monitor Band/Channel Measurement

This measurement has two measurement methods: monitor band and monitor channel. In monitor band, the cdmaOne frequency band is viewed. In monitor channel, the spectrum of a selected channel is viewed.

The general functionality of CONFigure, FETCh, MEASure, and READ are described at the beginning of this section. See the SENSE:PSTeps commands for more measurement related commands.

:CONFigure:MONitor

:FETCh:MONitor[n]

:READ:MONitor[n]

:MEASure:MONitor[n]

Front Panel

Access: **Measure, Monitor Band/Channel**

After the measurement is selected, press **Restore Meas Defaults** to restore factory defaults.

Measurement Results Available

n	Results Returned
not specified or n=1	No return value

Occupied Bandwidth Measurement

This measures the bandwidth of the carrier signal. You must be in the cdmaOne mode to use these commands. Use INSTRument:SElect to set the mode.

The general functionality of CONFigure, FETCh, MEASure, and READ are described at the beginning of this section. See the SENSE:OBW commands for more measurement related commands.

:CONFigure:OBW

:FETCh:OBW[n]?

:READ:OBW[n]?

:MEASure:OBW[n]?

Front Panel

Access: **Measure, Occupied BW**

After the measurement is selected, press **Restore Meas Defaults** to restore factory defaults.

Measurement results available

n	Results Returned
not specified or n=1	Returns 3 comma-separated scalar results, in the following order: <ol style="list-style-type: none">1. Occupied bandwidth - Hz2. Emissions bandwidth- Hz3. Transmit frequency error - Hz

Out of Band Spurious Emissions Measurement

This measures the out of band spurious emissions relative to the receive channel power in the selected channel. You must be in the GSM or cdmaOne mode to use these commands. Use INSTRument:SElect to set the mode.

The general functionality of CONFigure, FETCh, MEASure, and READ are described at the beginning of this section. See the SENSE:OOBSpur commands for more measurement related commands.

```
:CONFigure:OOBSpur
:FETCh:OOBSpur[n]?
:READ:OOBSpur[n]?
:MEASure:OOBSpur[n]?
```

Front Panel

Access: **Measure, Out Of Band Spurious**

After the measurement is selected, press **Restore Meas Defaults** to restore factory defaults.

Measurement Results Available

n	Results Returned
not specified or n=1	<p>Returns the following two components:</p> <p>First—the number of ranges that were measured (1 - 20)</p> <p>Second—the results for each range are returned. Each result is made up of seven values for each of a maximum of 10 spurs for a total of 10 X N spurs and 70 X N return values. Where N = the number of ranges set. The return values for each spur are:</p> <ol style="list-style-type: none"> 1. Range number 2. Spur number 3. Center frequency 4. Amplitude 5. Delta absolute limit 6. Delta relative limit 7. Pass/Fail results

Receive Channel Power Measurement

This measures the total rms power in a specific bandwidth at the receive channel frequency. You must be in the cdmaOne mode to use these commands. Use INSTRument:SElect to set the mode.

The general functionality of CONFigure, FETCh, MEASure, and READ are described at the beginning of this section. See the SENSE:CHPower commands for more measurement related commands.

:CONFigure:RCHPower

:FETCh:RCHPower [n]?

:READ:RCHPower [n]?

:MEASure:RCHPower [n]?

Front Panel

Access: **Measure, Rx Channel Power**

After the measurement is selected, press **Restore Meas Defaults** to restore factory defaults.

Measurement Results Available

n	Results Returned
not specified or n=1	Returns 2 comma-separated scalar results: <ol style="list-style-type: none"><li data-bbox="480 1098 1333 1161">1. Channel Power is a floating point number representing the total channel power in the specified integration bandwidth.<li data-bbox="480 1178 1354 1241">2. Power Spectral Density is the power (in dBm/Hz) in the specified integration bandwidth.

Rho (Waveform Quality) Measurement

This measures the modulation accuracy of the transmitter by checking the magnitude and phase error and the EVM (error vector magnitude). You must be in the cdmaOne mode to use these commands. Use INSTRument:SElect to set the mode.

The general functionality of CONFigure, FETCh, MEASure, and READ are described at the beginning of this section. See the SENSE:RHO commands for more measurement related commands.

:CONFigure:RHO

:FETCh:RHO[n]?

:READ:RHO[n]?

:MEASure:RHO[n]?

Front Panel

Access: **Measure, Mod Accuracy (Rho)**

After the measurement is selected, press **Restore Meas Defaults** to restore factory defaults.

Measurement Results Available

n	Results Returned
0	<p>Returns processed I/Q trace data, as a series of comma-separated trace points. The I values are listed first in each pair, using the 0 through even-indexed values. The Q values are the odd-indexed values.</p> <p>The standard sample rate is 4.9152 MHz and the trace length is determined by the current measurement interval.</p> <p>The number of trace points depends on the current measurement interval and points per chip settings.</p> <p>The numbers are sent in the following order:</p> <p style="padding-left: 40px;">In-phase (I) sample, of symbol 0 decision point Quadrature-phase (Q) sample, of symbol 0 decision point ... In-phase (I) sample, of symbol 1 decision point Quadrature-phase (Q) sample, of symbol 1 decision point ...</p> <p>The trace can be interpolated to 1, 2, 4 points/chip selected with the display Points/Chip softkey or the NSPC remote command.</p> <p>The Points/Chip soft key controls number of points between decision points in the trace, changing the number of I/Q pairs sent for each decision point.</p> <p style="padding-left: 40px;">1=only the decision points 2=the decision points with one point between them 4=the decision points with three points between them</p>

n	Results Returned
not specified or n=1	<p>Returns 7 comma-separated floating point numbers, in the following order:</p> <ol style="list-style-type: none"> 1. Rho (no units) represents the correlation of the measured power compared to the ideal pilot channel. The calculation is performed after the complimentary filter, so it is IS95 compliant. It is performed at the decision points in the pilot waveform. If averaging is on, this is the average of the individual rms measurements. 2. Time offset (with units of seconds) is the time delay of the even second clock with respect to the start of the short code PN sequences, at offsets from the 15 zeros in the characteristic phase of the sequence. 3. Frequency error of the measured signal, with units of Hz. This is based on the linear best fit of the uncorrected measured phase. 4. Carrier feedthrough has units of dB and is the dc error offset of I and Q, from the origin. 5. EVM has units of percent. The calculation is based on the composite of the phase error and magnitude error, between the measured signal and the ideal pilot channel. It is performed after the complimentary filter which removes the inter-symbol interference in the modulated data. If averaging is on, this is the average of the individual rms measurements. 6. Magnitude error (with units of percent) is the rms error between the measured (compensated) magnitude and the ideal magnitude. This is performed after the complimentary filter which removes the inter-symbol interference in the modulated data. If averaging is on, this is the average of the individual rms measurements. 7. Phase error (with units in percent) is the rms phase error between the measured phase and the ideal phase. The calculation is performed after the complimentary filter which removes the inter-symbol interference in the modulated data. If averaging is on, this is the average of the individual rms measurements.
2	<p>EVM Trace – returns error vector magnitude (EVM) data, as comma-separated trace points in percent. The first value is the chip 0 decision point. The trace is interpolated for the currently selected points/chips displayed on the front panel. The number of trace points depends on the current measurement interval setting.</p>
3	<p>Magnitude Error Trace – returns magnitude error data, as comma-separated trace points, in percent. The first value is the chip 0 decision point. The trace is interpolated for the currently selected points/chips displayed on the front panel. The number of trace points depends on the current measurement interval setting.</p>
4	<p>Phase Error Trace – returns phase error data as comma-separated trace points, in degrees. The first value is the chip 0 decision point. The trace is interpolated for the currently selected points/chip displayed on the front panel. The number of trace points depends on the current measurement interval setting.</p>

n	Results Returned
6	<p>Reference IQ Data – returns a series of floating point numbers that alternately represent I and Q pairs of the reference trace data.</p> <p>The number of trace points depends on the current measurement interval and points per chip settings.</p> <p>The numbers are sent in the following order:</p> <ul style="list-style-type: none"> In-phase (I) sample, of symbol 0 decision point Quadrature-phase (Q) sample, of symbol 0 decision point ... In-phase (I) sample, of symbol 1 decision point Quadrature-phase (Q) sample, of symbol 1 decision point ... <p>The trace can be interpolated to 1, 2, 4 points/chip selected with the display Points/Chip softkey or the NSPC remote command.</p> <p>The Points/Chip soft key controls number of points between decision points in the trace, changing the number of I/Q pairs sent for each decision point.</p> <ul style="list-style-type: none"> 1=only the decision points 2=the decision points with one point between them 4=the decision points with three points between them

Receiver Spurious Response Measurement

This measures the spurious emissions in the receive band relative to the channel power in the selected channel. You must be in the cdmaOne mode to use these commands. Use INSTRument:SELEct to set the mode.

The general functionality of CONFigure, FETCh, MEASure, and READ are described at the beginning of this section. See the SENSE:RSPur commands for more measurement related commands.

:CONFigure:RSPur

:FETCh:RSPur[n]?

:READ:RSPur[n]?

:MEASure:RSPur[n]?

Front Panel

Access: **Measure, RX Spur**

After the measurement is selected, press **Restore Meas Defaults** to restore factory defaults.

Measurement Results Available

n	Results Returned
not specified or n=1	<p>Returns 9 comma-separated scalar results corresponding to the 3 worst spurs in the band starting with the worst:</p> <ol style="list-style-type: none"> 1. The worst spur's frequency (in Hz) 2. The worst spur's amplitude (in dBm) 3. The worst spur's amplitude difference from the limit (in dB) 4. The second worst spur's frequency (in MHz) 5. The second worst spur's amplitude (in dBm) 6. The second worst spur's amplitude difference from the limit (in dB) 7. The third worst spur's frequency (in Hz) 8. The third worst spur's amplitude (in dBm) 9. The third worst spur's amplitude difference from the limit (in dB) <p>If no second or third spurs are found, a value of 999 is returned.</p>

Spurs at Harmonics Measurement

Measures the power of the spurious emissions at the selected harmonic frequencies of the current channel frequency using the selected resolution bandwidth filter. You can set the number of spurs to be measured. For each harmonic, the reference level is set 40 dB above the largest amplitude limit with input attenuation held constant. The attenuation is set to limit the carrier (fundamental) power at the spectrum analyzer input mixer to the value determined by **Max Mixer Lvl**. You must be in the **cdmaOne** mode to use these commands. Use **INSTRument:SELect** to set the mode.

The general functionality of **CONFigure**, **FETCh**, **MEASure**, and **READ** are described at the beginning of this section. See the **SENSE:HARMonics** commands for more measurement related commands.

```
:CONFigure:HARMonics
:FETCh:HARMonics[n]?
:READ:HARMonics[n]?
:MEASure:HARMonics[n]?
```

Front Panel

Access: **Measure, Harmonics**

After the measurement is selected, press **Restore Meas Defaults** to restore factory defaults.

Measurement Results Available

n	Results Returned
not specified or n=1	Returns 61 values. The channel power value and a 10 row by 6 column array of values. Each row contains the following values: <ol style="list-style-type: none"> 1. Harmonic number 2. Frequency (MHz) 3. Absolute amplitude (dBm) 4. Delta from the absolute limit 5. Relative amplitude from the carrier (dBc) 6. Delta from the relative limit

MMEMory Subsystem

The purpose of the MMEMory subsystem is to provide access to mass storage devices such as internal or external disk drives. Any part of memory that is treated as a device will be in the MMEMory subsystem.

If mass storage is not specified in the filename, the default mass storage specified in the MSIS command will be used.

The forward slash / and the reverse slash \ are both acceptable delimiters for specifying a directory path.

Store a Measurement Results in a File

`:MMEMory:STORe:RESults filename.csv`

Saves the measurement results to a file in memory. The file name must have a file extension of .csv and will be in the CSV (comma-separated values) format.

Example: MMEM:STOR:RES 'C:mymeas.csv'

Front Panel

Access: **File, Save, Type, More, Measurement Results**

READ Subsystem

:READ:<measurement>[n]?

The READ? commands are used with several other commands and are documented in the section on the [“MEASure Group of Commands”](#) on [page 39](#).

SENSe Subsystem

Sets the instrument state parameters so that you can measure the input signal.

Code Domain Measurement

Commands for querying the code domain measurement results and for setting to the default values are found in the “MEASure Group of Commands” on page 39. The equivalent front panel keys for the parameters described in the following commands, are found under the Meas Setup key, after the Code Domain measurement has been selected from the MEASURE key menu.

Code Domain—Average Count

```
[ :SENSe ] :CDPower :AVERAge :COUNT <integer>
```

```
[ :SENSe ] :CDPower :AVERAge :COUNT?
```

Set the number of frames that will be averaged. After the specified number of frames (average counts) have been averaged, the averaging mode (termination control) setting determines the averaging action.

Factory Preset
and *RST: 10

Range: 1 to 1000

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Code Domain—Averaging State

```
[ :SENSe ] :CDPower :AVERAge [ :STATe ] OFF | ON | 0 | 1
```

```
[ :SENSe ] :CDPower :AVERAge [ :STATe ]?
```

Turn code domain averaging on or off.

Factory Preset
and *RST: Off

Remarks: Trace data results are not averaged. Only scalar results are averaged.

You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Code Domain—Averaging Termination Control

```
[ :SENSe ] :CDPower :AVERage :TCONtrol EXPonential | REPEAT
```

```
[ :SENSe ] :CDPower :AVERage :TCONtrol ?
```

Select the type of termination control used for averaging. This determines the averaging action after the specified number of frames (average count) is reached.

Exponential - Each successive data acquisition after the average count is reached, is exponentially weighted and combined with the existing average.

Repeat - After reaching the average count, the averaging is reset and a new average is started.

Factory Preset
and *RST: Exponential

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Code Domain—Active Set Threshold

```
[ :SENSe ] :CDPower :ASET :THReshold <rel_power>
```

```
[ :SENSe ] :CDPower :ASET :THReshold ?
```

Set the active set threshold value. Walsh channels with power less than this value, will be treated as non-active (noise) channels.

Factory Preset
and *RST: -20 dB

Range: -200 dB to 0 dB

Default Unit: dB

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Code Domain—RF Mixer Input Maximum Power

```
[ :SENSe ] :CDPower :MIXer :RANGe [ :UPPer ] <power>
```

```
[ :SENSe ] :CDPower :MIXer :RANGe [ :UPPer ] ?
```

Specifies the maximum power at the input mixer for the code domain measurement.

Factory Preset
and *RST: -10 dBm

Range: -70 dBm to 30 dBm

Default Unit: dBm

Remarks: You must be in the cdmaOne mode to use this command. Use :INSTrument:SElect to set the mode.

Front Panel

Access: Meas Setup, Advanced, Max Mixer Lvl

Code Domain—Method

```
[ :SENSe ] :CDPower :METHod POWER | TPHase
```

```
[ :SENSe ] :CDPower :METHod?
```

Select the measurement method.

- Power - Measures the code domain power of all 64 Walsh Channels.
- Timing & Phase - Measures the code domain power, code domain timing, and code domain phase of all 64 Walsh channels.

Factory Preset

and *RST: Power

Remarks You must be in the cdmaOne mode to use this command. Use INSTrument:SElect to set the mode.

Code Domain—Spectrum Normal/Invert

```
[ :SENSe ] :CDPower :SPECTrum NORMal | INVert
```

```
[ :SENSe ] :CDPower :SPECTrum?
```

Select normal or inverted spectrum for demodulation.

Normal - normal spectrum is used.

Invert - specifies phase inversion where the sign of 'Q' is reversed.

Factory Preset

and *RST: Normal

Remarks You must be in the cdmaOne mode to use this command. Use INSTrument:SElect to set the mode.

Code Domain (Measurement Interval)

`[:SENSe]:CDPower:SWEep:TIME <time>`

`[:SENSe]:CDPower:SWEep:TIME?`

Set the length of the measurement interval that will be used.

Factory Preset

and *RST: 1.250 ms

Range: 500 μ s to 26.7 ms

Default Unit: seconds

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Digital Demod PN Offset

`[:SENSe]:CHANnel:PNOffset <integer>`

`[:SENSe]:CHANnel:PNOffset?`

Set the PN offset number for the base station being tested.

Factory Preset

and *RST: 0

Range: 0 to 511

Default Unit: None

Remarks: Global to the current mode.

You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: FREQUENCY Channel, PN Offset

or

Mode Setup, Demod, Tab⇒

RF Channel Frequency

`[:SENSe]:CHANnel:RFCHannel:FREQUENCY <freq>`

`[:SENSe]:CHANnel:RFCHannel:FREQUENCY?`

Set the RF channel frequency.

Factory Preset

and *RST: The first channel in the current tuning plan.

Range: The same as the SA Range

Default Unit: Hz

Remarks: Global to the current mode.

To use this command, select the appropriate mode using INSTRument:SElect.

Front Panel

Access: FREQUENCY Channel, Channel Freq

RF Channel Number

[:SENSE] :CHANnel:RFChannel [:NUMBer] <integer>

[:SENSE] :CHANnel:RFChannel [:NUMBer] ?

Set the analyzer to a frequency that corresponds to the RF channel number.

Factory Preset

and *RST: 1

Range: IS-95A—1 to 799 and 991 to 1023

J-STD-008—1 to 1199

ARIB STD-T53—1 to 799, 801-1039, 1041-1199

TTA.KO-06.0003 (Korea Cell)—1 to 799 and 991 to 1023

TTA.KO-06.0013 (Korea PCS)—1 to 599

Default Unit: None

Remarks: Global to the current mode.

You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: FREQUENCY Channel, RF Channel

Channel Power Measurement

Commands for querying the channel power measurement results and for setting to the default values are found in the “MEASure Group of Commands” on page 39. The equivalent front panel keys for the parameters described in the following commands, are found under the **Meas Setup** key, after the **Channel Power** measurement has been selected from the **MEASURE** key menu.

Channel Power—Average Count

```
[ :SENSe ] :CHPower :AVERAge :COUNT <integer>
```

```
[ :SENSe ] :CHPower :AVERAge :COUNT?
```

Set the number of data acquisitions that will be averaged. After the specified number of average counts, the averaging mode (terminal control) setting determines the averaging action.

Factory Preset
and *RST: 10

Range: 1 to 1000

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: **Meas Setup**

Channel Power—Averaging State

```
[ :SENSe ] :CHPower :AVERAge [ :STATe ] OFF | ON | 0 | 1
```

```
[ :SENSe ] :CHPower :AVERAge [ :STATe ]?
```

Turn averaging on or off.

Factory Preset
and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: **Meas Setup**

Channel Power—Averaging Termination Control

`[:SENSe]:CHPower:AVERage:TCONtrol EXPonential|REPEAT`

`[:SENSe]:CHPower:AVERage:TCONtrol?`

Select the type of termination control used for the averaging function. This determines the averaging action after the specified number of data acquisitions (average count) is reached.

Exponential - Each successive data acquisition after the average count is reached, is exponentially weighted and combined with the existing average.

Repeat - After reaching the average count, the averaging is reset and a new average is started.

Factory Preset
and *RST: Repeat

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup

Channel Power—Integration BW

`[:SENSe]:CHPower:BANDwidth|BWIDth:INTEgration <freq>`

`[:SENSe]:CHPower:BANDwidth|BWIDth:INTEgration?`

Set the Integration BW (IBW) that will be used.

Factory Preset
and *RST: Channel bandwidth of the standard selected using the `[:SENSe]:RADio:STANdard:BAND` command.

Range: 1 kHz to ESA span maximum

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup

Channel Power—Resolution Bandwidth

```
[ :SENSE ] :CHPower :BANDwidth | BWIDth [ :RESolution ] <freq>
```

```
[ :SENSe ] :CHPower :BANDwidth | BWIDth [ :RESolution ] ?
```

Set the resolution bandwidth that will be used. If span is set to a value greater than 5 MHz, minimum resolution bandwidth is limited to 1 kHz.

Factory Preset

and *RST: 10 kHz

Range: Option 1DR—10 Hz to 5 MHz

non- Option 1DR—1 kHz to 5 MHz

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: Meas Setup, More, Advanced, Resolution BW

Channel Power—Resolution Bandwidth State

```
[ :SENSE ] :CHPower :BANDwidth | BWIDth [ :RESolution ] :AUTO
```

```
OFF | ON | 0 | 1
```

```
[ :SENSe ] :CHPower :BANDwidth | BWIDth [ :RESolution ] :AUTO?
```

Select auto (default value) or manual (user entered value) to set the resolution bandwidth.

Factory Preset

and *RST: On

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: Meas Setup, Advanced, Resolution BW

Channel Power—Span

```
[ :SENSE ] :CHPower :FREQuency :SPAN <freq>
```

```
[ :SENSe ] :CHPower :FREQuency :SPAN?
```

Set the frequency span that will be used. If resolution bandwidth is set to a value less than 1 kHz, maximum span is limited to 5 MHz.

Factory Preset
and *RST: Coupled (to the integration BW at approximately 1.6
times the integration bandwidth)

Range: IBW to IBW x 400

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this
command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup

Channel Power—Noise Correction State

```
[ :SENSe ]:CHPower:CORRection:NOISe[ :AUTO ] OFF|ON|0|1
[ :SENSe ]:CHPower:CORRection:NOISe[ :AUTO ]?
```

Turn Noise Correction to off or auto. When set to auto, noise correction will be activated when the measurement is within less than the noise correction threshold from the computed SA noise floor. Noise correction Threshold may be set using the Properties Form under the **Mode Setup** and **Properties...** keys.

Factory Preset
and *RST: Off

Remarks: You must be in the cdmaOne mode to use this
command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup

Channel Power—Maximum Mixer Power

```
[ :SENSe ]:CHPower:MIXer:RANGe[ :UPPer ] <power>
[ :SENSe ]:CHPower:MIXer:RANGe[ :UPPer ]?
```

Specifies the maximum power at the input mixer for the channel power measurement.

Factory Preset
and *RST: -10 dBm

Range: -70 dBm to 10 dBm

Default Unit: dBm

Remarks: You must be in the cdmaOne mode to use this
command. Use :INSTRument:SElect to set the mode.

Front Panel

Access: **Meas Setup, Advanced, Max Mixer Lvl**

Channel Power—Trigger Source

```
[ :SENSe ] :CHPower :TRIGger :SOURce EXTernal | IMMEDIATE
```

```
[ :SENSe ] :CHPower :TRIGger :SOURce?
```

Select the trigger source used to control the data acquisitions. This is an Advanced control that normally does not need to be changed.

External - rear panel external trigger input

Immediate - the next data acquisition is immediately taken (also called Free Run).

Factory Preset

and *RST: **Immediate (Free Run)**

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: **Meas Setup, Advanced, Trig Source**

Correction for Base Station RF Port External Attenuation

```
[ :SENSe]:CORRection:BS[:RF]:LOSS <rel_power>
```

```
[ :SENSe]:CORRection:BS[:RF]:LOSS?
```

Set the correction equal to the external attenuation used when measuring base stations.

Factory Preset
and *RST: 0 dB

Range: -50 to 100 dB

Default Unit: dB

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Value is used by all measurements except Rx Spur and Rx Channel Power.

Front Panel
Access: **Input**

or
Mode Setup, Input, Tab⇒

RF Noise Correction Threshold

```
[ :SENSe]:CORRection:NOISE:THReshold <rel_power>
```

```
[ :SENSe]:CORRection:NOISE:THReshold?
```

Sets the signal level above the noise floor at which the noise correction factor is automatically applied.

Factory Preset
and *RST: 15 dB

Range: 0 dB to 100 dB

Default Unit: dB

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: **Mode Setup, Properties**

RF Gain Correction [:SENSe]:CORRection[:RF]:GAIN
<rel_power>

[:SENSe]:CORRection[:RF]:GAIN?

Sets the gain of the external preamplifier for mobile station measurements.

Factory Preset
and *RST: 0 dB

Range: 0 dB to 100 dB

Default Unit: dB

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SELEct to set the mode.

Value is used the Rx Spur and Rx Channel Power measurements.

Front Panel

Access: **Input, Tab**⇒

or

Mode Setup, Input, Tab⇒

Spur Close—Measurement

Commands for querying the close spurs measurement results and for setting to the default values are found in the “[MEASure Group of Commands](#)” on page 39. The equivalent front panel keys for the parameters described in the following commands, are found under the **Meas Setup** key, after the **Spur Close** measurement has been selected from the **MEASURE** key menu.

Spur Close—Average Count

```
[ :SENSe ] :CSPur :AVERAge :COUNT <integer>
```

```
[ :SENSe ] :CSPur :AVERAge :COUNT?
```

Set the number of data acquisitions that will be averaged. After the specified number of average counts, the averaging mode (terminal control) setting determines the averaging action.

Factory Preset
and *RST: 10

Range: 1 to 1,000

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: **Meas Setup**

Spur Close—Averaging State

```
[ :SENSe ] :CSPur :AVERAge [ :STATe ] OFF | ON | 0 | 1
```

```
[ :SENSe ] :CSPur :AVERAge [ :STATe ]?
```

Turn averaging on or off.

Factory Preset
and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: **Meas Setup**

Spur Close—Averaging Termination Control

```
[ :SENSe ] : CSPur : AVERage : TCONtrol EXPonential | REPEAT
```

```
[ :SENSe ] : CSPur : AVERage : TCONtrol ?
```

Select the type of termination control used for the averaging function. This determines the averaging action after the specified number of data acquisitions (average count) is reached.

Exponential - Each successive data acquisition after the average count is reached, is exponentially weighted and combined with the existing average.

Repeat - After reaching the average count, the averaging is reset and a new average is started.

Factory Preset

and *RST: Repeat

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: Meas Setup

Spur Close—Type

```
[ :SENSe ] : CSPur : TYPE EXAMine | FULL
```

```
[ :SENSe ] : CSPur : TYPE ?
```

Select the measurement type.

Examine In single sweep mode—measures spurs in the upper, lower, and center segments and then displays the segment with the highest power spur. You can select other segments for display using the **View** key.

In the continuous mode—measures spurs in the upper, lower, and center segment. It then continuously measures the segment with the highest power spur. You can select other segments for display using the **View** key. The initial spur values are held and the marker value is updated with the current spur value found on each sweep. **Segment All** is not active when the measurement type **Examine** is selected.

Full In single sweep mode—measures the spurs in the upper, lower, and center segments and then displays the segment with the highest power spur. You can select other segments for display using the **View** key.

In continuous mode—measures spurs in the upper, lower, and center segment. It then continuously cycles through segments. Unlike **Examine**, all results values are updated with the current spur values found on each sweep.

Factory Preset
and *RST: Full

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Meas Setup

Spur Close—Resolution Bandwidth

[:SENSe] : CSPur : BANDwidth | BWIDth [:RESolution] <freq>

[:SENSe] : CSPur : BANDwidth | BWIDth [:RESolution] ?

Set the resolution bandwidth that will be used. If span is set to a value greater than 5 MHz, minimum resolution bandwidth is limited to 1 kHz.

Factory Preset
and *RST: 30 kHz

Range: Option 1DR—10 Hz to 5 MHz
non- Option 1DR—1 kHz to 5 MHz

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, More, Advanced, Resolution BW

Spur Close—Video Bandwidth

[:SENSe] : CSPur : BANDwidth | BWIDth : VIDEo <freq>

[:SENSe] : CSPur : BANDwidth | BWIDth : VIDEo ?

Set the video bandwidth that will be used.

Factory Preset
and *RST: 3 kHz

Range: Option 1DR—30 Hz to 3 MHz
non- Option 1DR—1 kHz to 3 MHz

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRUMENT:SElect to set the mode.

Front Panel

Access: **Meas Setup, More, Advanced, Video BW**

Spur Close—Detector Mode

```
[ :SENSe ] :CSPur :DETEctor [ :FUNCTION ] POSitive | NEGative | SAMPlE
```

```
[ :SENSe ] :CSPur :DETEctor [ :FUNCTION ] ?
```

Set the detector mode type for the measurement.

Factory Preset

and *RST: Sample

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRUMENT:SElect to set the mode.

Front Panel

Access: **Meas Setup, More, Advanced, Detector**

Spur Close—RF Mixer Input Maximum Power

```
[ :SENSe ] :CSPur :MIXer :RANGe [ :UPPer ] <power>
```

```
[ :SENSe ] :CSPur :MIXer :RANGe [ :UPPer ] ?
```

Specifies the maximum power at the input mixer for the measurement.

Factory Preset

and *RST: -10 dBm

Range: -70 dBm to 10 dBm

Default Unit: dBm

Remarks: You must be in the cdmaOne mode to use this command. Use :INSTRUMENT:SElect to set the mode.

Front Panel

Access: **Meas Setup, More, Advanced, Max Mixer Lvl**

Spur Close—Trigger Source

[:SENSE] :CSPur :TRIGger :SOURce EXTernal | IMMEDIATE

[:SENSE] :CSPur :TRIGger :SOURce?

Select the trigger source used to control the data acquisitions.

External – rear panel external trigger input.

Immediate – the next data acquisition is immediately taken, capturing the signal asynchronously (also called free run).

Factory Preset

and *RST: Immediate

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRUMENT:SELEct to set the mode.

Front Panel

Access: Meas Setup, More, Advanced, Trig Source

Demodulation Synchronization Source

[:SENSe] :DEMod :SYNC ESEC | NONE

[:SENSe] :DEMod :SYNC ?

Set the time reference to the external frame synchronization source.

ESEC – External frame synchronization source

Factory Preset

and *RST: ESEC

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: **Mode Setup, Trigger, Tab⇒**

or

Mode Setup, More, Trigger, More, Sync Type

Demodulation Trigger Source

[:SENSe] :DEMod :TRIGger :SOURce
EXTernal | FRAMe | IMMEDIATE | RFBURSt

[:SENSe] :DEMod :TRIGger :SOURce ?

Select the trigger source used to control data acquisitions.

External – rear panel external trigger input

Frame – internal frame trigger from front panel input

Immediate – the next data acquisition is immediately taken, capturing the signal asynchronously (also called free run).

RF Burst – internal wideband RF burst envelope trigger that has automatic level control for periodic burst signals. (Also called. BCT)

Factory Preset

and *RST: Frame

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: **Mode Setup, Demod**

Preamplifier Dialog Box Control

```
[ :SENSE]:DIALog:PAMPlifier[:STATe] OFF|ON|0|1
```

```
[ :SENSE]:DIALog:PAMPlifier[:STATe]?
```

Turns the preamplifier dialog boxes on or off. These dialog boxes are displayed for the Receiver Channel Power and Receiver Spurious measurements.

Factory Preset
and *RST: On

Front Panel
Access: Mode Setup, Properties

Center Frequency Step Size Automatic

```
[ :SENSE]:FREQuency:CENTer:STEP:AUTO OFF|ON|0|1
```

```
[ :SENSE]:FREQuency:CENTer:STEP:AUTO?
```

Specifies whether the step size is set automatically based on the span.

Factory Preset
and *RST: On

Front Panel
Access: FREQUENCY/Channel, Center Freq

Center Frequency Step Size

[:SENSE] :FREQUency:CENTer:STEP [:INCRement] <freq>

[:SENSE] :FREQUency:CENTer:STEP [:INCRement] ?

Specifies the center frequency step size.

Factory Preset

and *RST: The same as the channel spacing for the current Standard and tuning plan.

Range: The same as the SA mode range.

Default Unit: Hz

Front Panel

Access: FREQUENCY/Channel, Center Freq

Temporary Center Frequency

[:SENSE] :FREQUency:CENTer:TEMPorary <freq>

[:SENSE] :FREQUency:CENTer:TEMPorary ?

Set the temporary center frequency used for many of the measurements. The affected measurements include Channel Power, Receive Channel Power, Monitor Band/Channel, Mod Accuracy (Rho), Code Domain, and Occupied Bandwidth.

This is especially useful for spurious table and spectrum measurements because it allows the user to go off-frequency spurs without losing the channel frequency value.

Factory Preset

and *RST: The same as the preset channel frequency.

Range: The same as the SA mode range

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: FREQUENCY, Temp Ctr Freq

Spurs at Harmonics Measurement

Commands for querying the harmonic measurement results and for setting to the default values are found in the “[MEASure Group of Commands](#)” on page 39. The equivalent front panel keys for the parameters described in the following commands, are found under the **Meas Setup** key, after the **Harmonic** measurement has been selected from the **MEASURE** key menu.

Spurs at Harmonics—Averages

```
[ :SENSe]:HARMonics:AVERAge:COUNT <integer>
```

```
[ :SENSe]:HARMonics:AVERAge:COUNT?
```

Set the number of averages for the harmonic measurement.

Factory Preset
and *RST: 10

Range: 1 to 1,000

Remarks: This command specifies the number of sweep averages over which the amplitude of each spur will be calculated. Intermediate averaged results will be displayed.

Front Panel
Access: **Meas Setup, Avg Number**

Spurs at Harmonics—Turn On or Off Averaging

```
[ :SENSe]:HARMonics:AVERAge[:STATe] OFF|ON|0|1
```

```
[ :SENSe]:HARMonics:AVERAge[:STATe]?
```

Turn on or off spurs at harmonics measurement averaging.

Factory Preset
and *RST: Off

Front Panel
Access: **Meas Setup, Avg Number**

Spurs at Harmonics—Averaging Termination Control

```
[ :SENSe]:HARMonics:AVERAge:TCONtrol EXPONential|REPeat
```

```
[ :SENSe]:HARMonics:AVERAge:TCONtrol?
```

Select the type of termination control used for the averaging function. This determines the averaging action after the specified number of data acquisitions (average count) is reached.

Exponential - Each successive data acquisition after the average count is reached, is exponentially weighted and combined with the existing average.

Repeat - After reaching the average count, the averaging is reset and a new average is started.

Factory Preset
and *RST: Exponential

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Avg Mode

Spurs at Harmonics—Resolution Bandwidth

```
[ :SENSE ] :HARMonics :BANDwidth | :BWIDth :RESolution <freq>
```

```
[ :SENSE ] :HARMonics :BANDwidth | :BWIDth :RESolution ?
```

Set the resolution bandwidth that will be used. If span is set to a value greater than 5 MHz, minimum resolution bandwidth is limited to 1 kHz.

Factory Preset
and *RST: 1 MHz

Range: Option 1DR—10 Hz to 5 MHz
non-Option 1DR—1 kHz to 5 MHz

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Advanced, Resolution BW

Spurs at Harmonics—Video Bandwidth

```
[ :SENSE ] :HARMonics :BANDwidth | :BWIDth :VIDeo <freq>
```

```
[ :SENSE ] :HARMonics :BANDwidth | :BWIDth :VIDeo ?
```

Set the video bandwidth of the harmonics measurement.

Factory Preset
and *RST: 3x resolution bandwidth

Range: Option 1DR—30 Hz to 3 MHz
non-Option 1DR—1 KHz to 3 MHz

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Advanced, Video BW

Spurs at Harmonics—Video Bandwidth State

```
[ :SENSe]:HARMonics:BANDwidth|BWIDth:VIDEo:AUTO OFF|ON|0|1
```

```
[ :SENSe]:HARMonics:BANDwidth|BWIDth:VIDEo:AUTO?
```

Select auto (default value) or manual (user entered value) to set the video bandwidth.

Factory Preset
and *RST: On

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Advanced, Video BW

Spurs at Harmonics—Detector Mode

```
[ :SENSe]:HARMonics:DETEctor POSitive|NEGative|SAMPLE
```

```
[ :SENSe]:HARMonics:DETEctor?
```

Set the detector mode type for the harmonics measurement.

Factory Preset
and *RST: Sample

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Advanced, Detector

Spurs at Harmonics—RF Mixer Input Maximum Power

`[:SENSE]:HARMONics:MIXer:RANGe[:UPPer] <power>`

`[:SENSE]:HARMONics:MIXer:RANGe[:UPPer]?`

Specifies the maximum power at the input mixer for the harmonics measurement.

Factory Preset
and *RST: -10 dBm

Range: -70 dBm to 10 dBm

Default Unit: dBm

Remarks: You must be in the cdmaOne mode to use this command. Use `:INSTrument:SElect` to set the mode.

Front Panel

Access: **Meas Setup, Advanced, Max Mixer Lvl**

Spurs at Harmonics—Number

`[:SENSE]:HARMONics:NUMBer <integer>`

`[:SENSE]:HARMONics:NUMBer?`

Set the number of harmonics to be measured.

Factory Preset
and *RST: 3

Range: 2 to 10

Front Panel

Access: **Meas Setup, Num Hmncs**

Spurs at Harmonics—Sweep Time

`[:SENSE]:HARMONics:SWEep:TIME <time>`

`[:SENSE]:HARMONics:SWEep:TIME?`

Set the sweep time used for measuring each spur.

Factory Preset
and *RST: 20 ms

Range: 10 μ s to 1 ks

Default Unit: seconds)

Front Panel

Access: **Meas Setup, Advanced, Sweep Time**

Spurs at Harmonics—Trigger Source

```
[ :SENSe]:HARMonics:TRIGger:SOURce EXTeRnal|IMMeDiate
```

```
[ :SENSe]:HARMonics:TRIGger:SOURce?
```

Select the trigger source used to control data acquisitions.

External – rear panel external trigger input

Immediate – the next data acquisition is immediately taken, capturing the signal asynchronously (also called free run).

Factory Preset

and *RST: Immediate

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: Meas Setup, Trig Source

Monitor Band/Channel Measurement

Commands for querying the monitor band/channel measurement results and for setting to the default values are found in the “[MEASure Group of Commands](#)” on page 39. The equivalent front panel keys for the parameters described in the following commands, are found under the **Meas Setup** key, after the **Monitor Band/Channel** measurement has been selected from the **MEASURE** key menu.

Monitor Band/Channel—Average Count

```
[ :SENSE ]:MONitor:AVERage:COUNT <integer>
```

```
[ :SENSE ]:MONitor:AVERage:COUNT?
```

Set the number of data acquisitions that will be averaged. After the specified number of average counts, the averaging mode (terminal control) setting determines the averaging action.

Factory Preset
and *RST: 10

Range: 1 to 1000

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: **Meas Setup, Avg Number**

Monitor Band/Channel—Averaging State

```
[ :SENSE ]:MONitor:AVERage[ :STATe] OFF|ON|0|1
```

```
[ :SENSE ]:MONitor:AVERage[ :STATe]?
```

Turn averaging on or off.

Factory Preset
and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: **Meas Setup, Avg Number**

Monitor Band/Channel—Averaging Termination Control

```
[ :SENSE ]:MONitor:AVERage:TCONtrol EXPonential|REPeat
```

```
[ :SENSE ]:MONitor:AVERage:TCONtrol?
```

Select the type of termination control used for the averaging function.

This determines the averaging action after the specified number of data acquisitions (average count) is reached.

Exponential - Each successive data acquisition after the average count is reached, is exponentially weighted and combined with the existing average.

Repeat - After reaching the average count, the averaging is reset and a new average is started.

Factory Preset
and *RST: Exponential

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRUMENT:SELEct to set the mode.

Front Panel
Access: Meas Setup, Avg Mode

Monitor Band/Channel—Band Method Resolution Bandwidth

[:SENSE]:MONitor:BAND:BANDwidth|BWIDth[:RESolution] <freq>

[:SENSE]:MONitor:BAND:BANDwidth|BWIDth[:RESolution]?

Set the value of the resolution bandwidth for the band method of the monitor band/channel measurement. If span is set to a value greater than 5 MHz, minimum resolution bandwidth is limited to 1 kHz.

Factory Preset
and *RST: 300 kHz

Range: Option 1DR—10 Hz to 5 MHz
non- Option 1DR—1 kHz to 5 MHz

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRUMENT:SELEct to set the mode.

Front Panel
Access: Meas Setup, Band Setup, Res BW

Monitor Band/Channel—Band Method Resolution Bandwidth Control

```
[ :SENSE ] :MONitor :BAND :BANDwidth | BWIDth [ :RESolution ] :AUTO  
OFF | ON | 0 | 1
```

```
[ :SENSE ] :MONitor :BAND :BANDwidth | BWIDth [ :RESolution ] :AUTO?
```

Set the resolution bandwidth for the band method of the monitor band/channel measurement to auto.

On sets the bandwidth to the default value.

Off sets the bandwidth to the user entered value.

Factory Preset
and *RST: On

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRUMENT:SElect to set the mode.

Front Panel
Access: Meas Setup, Band Setup, Res BW

Monitor Band/Channel—Band Method Video Bandwidth

```
[ :SENSE ] :MONitor :BAND :BANDwidth | BWIDth :VIDeo <freq>
```

```
[ :SENSE ] :MONitor :BAND :BANDwidth | BWIDth :VIDeo?
```

Set the video bandwidth for the band method of the monitor band/channel measurement.

Factory Preset
and *RST: 300 kHz

Range: Option 1DR—30 Hz to 3 MHz
non-Option 1DR—1 KHz to 3 MHz

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRUMENT:SElect to set the mode.

Front Panel
Access: Meas Setup, Band Setup, Video BW

Monitor Band/Channel—Band Method Video Bandwidth Control

```
[ :SENSE ] :MONitor :BAND :BANDwidth | BWIDth :VIDeo :AUTO  
OFF | ON | 0 | 1
```

```
[ :SENSE ] :MONitor :BAND :BANDwidth | BWIDth :VIDeo :AUTO?
```

Set the video bandwidth for the band method of the monitor band/channel measurement to auto.

On sets the bandwidth to the default value.

Off sets the bandwidth to the user entered value.

Factory Preset

and *RST: On

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRUMENT:SElect to set the mode.

Front Panel

Access: Meas Setup, Band Setup, Video BW

Monitor Band/Channel—Band Method Block Selection

[:SENSe]:MONitor:BAND:BLOCK <integer>

[:SENSe]:MONitor:BAND:BLOCK?

Set the band monitor measurement to monitor all of the tuning bands or one of the tuning plan frequency blocks. The tuning plans allow the following block options:

IS-95A—Full = 0, A = 1, B = 2, A' = 3, B' = 4, or A'' = 5

J-STD-008—Full = 0, A = 1, D = 2, B = 3, E = 4, F = 5, or C = 6

ARIB STD-T53—Full = 0, A = 1, B = 2, or C = 3

TTA.KO-06.0003 (Korea Cell)—Full = 0, A = 1, B = 2, A' = 3, B' = 4, or A'' = 5

TTA.KO-06.0013 (Korea PCS)—Full = 0, A = 1, B = 2, or C = 3

Factory Preset

and *RST: Full = 0

Range: Dependent on the selected standard.

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRUMENT:SElect to set the mode.

Front Panel

Access: Meas Setup, Band Setup, Block

Monitor Band/Channel—Band Method Detector Mode

```
[ :SENSE ] :MONitor :BAND :DETECTOR POSitive | SAMPlE | NEGative  
[ :SENSE ] :MONitor :BAND :DETECTOR ?
```

Set the detector mode type for the band method of the monitor band/channel measurement.

POSitive - positive peak detection displays the highest sample taken during the interval being displayed.

SAMPlE - sample detection displays the first sample taken during the interval being displayed.

NEGative - negative peak detection displays the lowest sample taken during the interval being displayed.

Factory Preset

and *RST: Positive

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SELEct to set the mode.

Front Panel

Access: Meas Setup, Band Setup, Detector

Monitor Band/Channel—Band Method Maximum Hold Trace Average State

```
[ :SENSE ] :MONitor :BAND :MAXHold [ :STATe ] OFF | ON | 0 | 1  
[ :SENSE ] :MONitor :BAND :MAXHold [ :STATe ] ?
```

Turn maximum hold trace average feature on or off for the band method of the monitor band/channel measurement.

Factory Preset

and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SELEct to set the mode.

Front Panel

Access: Meas Setup, Band Setup, Max Hold

Monitor Band/Channel—Band Method Internal Preamplifier State

```
[ :SENSe]:MONitor:BAND:PRGain[:STATe] OFF|ON|0|1
```

```
[ :SENSe]:MONitor:BAND:PRGain[:STATe]?
```

Turns the internal preamp on or off.

Factory Preset
and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Int Preamp

Monitor Band/Channel—Band Method Frequency Span

```
[ :SENSe]:MONitor:BAND:SPAN <freq>
```

```
[ :SENSe]:MONitor:BAND:SPAN?
```

Set the frequency span of the monitor band measurement. If resolution bandwidth is set to a value less than 1 kHz, maximum span is limited to 5 MHz.

Factory Preset
and *RST: Full (Uses the full span of the selected standard.)

Range: ESA range

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Edit Table

Monitor Band/Channel—Transmit or Receive Band Selection

```
[ :SENSe]:MONitor:FBAND TRANsmit|RECeive
```

```
[ :SENSe]:MONitor:FBAND?
```

Set the band monitor measurement to monitor the transmit or receive band.

Factory Preset
and *RST: Transmit

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Band Setup, Band

Monitor Band/Channel—Channel Method Resolution Bandwidth

```
[ :SENSE ]:MONitor:CHANnel:BANDwidth|BWIDth[:RESolution]  
<freq>
```

```
[ :SENSE ]:MONitor:CHANnel:BANDwidth|BWIDth[:RESolution]?
```

Set the resolution bandwidth for the channel method of the monitor band/channel measurement. If span is set to a value greater than 5 MHz, minimum resolution bandwidth is limited to 1 kHz.

Factory Preset
and *RST: 30 kHz

Range: Option 1DR—10 Hz to 5 MHz
non-Option 1DR—1 kHz to 5 MHz

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Chan Setup, Res BW

Monitor Band/Channel—Channel Method Resolution Bandwidth State

```
[ :SENSE ]:MONitor:CHANnel:BANDwidth|BWIDth[:RESolution]  
:AUTO OFF|ON|0|1
```

```
[ :SENSE ]:MONitor:CHANnel:BANDwidth|BWIDth[:RESolution]  
:AUTO?
```

Select auto (default value) or manual (user entered value) to set the resolution bandwidth.

Factory Preset
and *RST: On

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Chan Setup, Res BW

Monitor Band/Channel—Channel Method Video Bandwidth

```
[ :SENSE]:MONitor:CHANnel:BANDwidth|BWIDth:VIDEo <freq>
[ :SENSE]:MONitor:CHANnel:BANDwidth|BWIDth:VIDEo?
```

Set the video bandwidth for the channel method of the monitor band/channel measurement.

Factory Preset
and *RST: 30 kHz

Range: Option 1DR—30 Hz to 3 MHz
non- Option 1DR—1 kHz to 3 MHz

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRUMENT:SELEct to set the mode.

Front Panel
Access: Meas Setup, Chan Setup, Video BW

Monitor Band/Channel—Channel Method Video Bandwidth State

```
[ :SENSE]:MONitor:CHANnel:BANDwidth|BWIDth:VIDEo
:AUTO OFF|ON|0|1
[ :SENSE]:MONitor:CHANnel:BANDwidth|BWIDth:VIDEo
:AUTO?
```

Select auto (default value) or manual (user entered value) to set the video bandwidth.

Factory Preset
and *RST: On

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRUMENT:SELEct to set the mode.

Front Panel
Access: Meas Setup, Chan Setup, Res BW

Monitor Band/Channel—Channel Method Detector Mode

```
[ :SENSE ] :MONitor:CHANnel:DETEctor POSitive | SAMPlE | NEGative  
[ :SENSE ] :MONitor:CHANnel:DETEctor?
```

Set the detector mode type for the channel method of the monitor band/channel measurement.

Factory Preset
and *RST: Positive

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Band Setup, Detector

Monitor Band/Channel—Channel Method Maximum Hold Trace Average State

```
[ :SENSE ] :MONitor:CHANnel:MAXHold[ :STATe ] OFF | ON | 0 | 1  
[ :SENSE ] :MONitor:CHANnel:MAXHold[ :STATe ]?
```

Turn maximum hold trace average feature on or off for the channel method of the monitor band/channel measurement.

Factory Preset
and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Chan Setup, Max Hold

Monitor Band/Channel—Channel Method Internal Preamp State

```
[ :SENSE ] :MONitor:CHANnel:PRGain[ :STATe ] OFF | ON | 0 | 1  
[ :SENSE ] :MONitor:CHANnel:PRGain[ :STATe ]?
```

Turns the internal preamp on or off.

Factory Preset
and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Chan Setup, Int Preamp

Monitor Band/Channel—Channel Method Frequency Span

`[:SENSe]:MONitor:CHANnel:SPAN <freq>`

`[:SENSe]:MONitor:CHANnel:SPAN?`

Set the frequency span of the monitor channel measurement. If resolution bandwidth is set to a value less than 1 kHz, maximum span is limited to 5 MHz.

Factory Preset

and *RST: Defaults to the current channel BW.

Range: ESA range

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: Meas Setup, Edit Table

Monitor Band/Channel—Method Selection

`[:SENSe]:MONitor:METHod CHANNEL|BAND`

`[:SENSe]:MONitor:METHod?`

Sets the monitor measurement method to either channel or band.

Factory Preset

and *RST: Band

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: Meas Setup, Method

Occupied Bandwidth Measurement

Commands for querying the occupied bandwidth measurement results and for setting to the default values are found in the “[MEASure Group of Commands](#)” on page 39. The equivalent front panel keys for the parameters described in the following commands, are found under the **Meas Setup** key, after the **Occupied BW** measurement has been selected from the **MEASURE** key menu.

Occupied Bandwidth—Average Count

```
[ :SENSE ]:OBWidth:AVERAge:COUNT <integer>
```

```
[ :SENSe ]:OBWidth:AVERAge:COUNT?
```

Set the number of data acquisitions that will be averaged. After the specified number of average counts, the average mode (termination control) setting determines the average action.

Factory Preset
and *RST: 10

Range: 1 to 1000

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: **Meas Setup, Avg Number**

Occupied Bandwidth—Averaging State

```
[ :SENSE ]:OBWidth:AVERAge[ :STATe ] OFF|ON|0|1
```

```
[ :SENSe ]:OBWidth:AVERAge[ :STATe ]?
```

Turn averaging on or off.

Factory Preset
and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: **Meas Setup, Avg Number**

Occupied Bandwidth—Averaging Termination Control

[:SENSe]:OBWidth:AVERage:TCONtrol EXPONential|REPeat

[:SENSe]:OBWidth:AVERage:TCONtrol?

Select the type of termination control used for the averaging function. This determines the averaging action after the specified number of data acquisitions (average count) is reached.

Exponential - Each successive data acquisition after the average count is reached, is exponentially weighted and combined with the existing average.

Repeat - After reaching the average count, the averaging is reset and a new average is started.

Factory Preset
and *RST: Repeat

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Avg Mode

Occupied Bandwidth—Resolution Bandwidth

[:SENSe]:OBWidth:BANDwidth|BWIDth[:RESolution] <freq>

[:SENSe]:OBWidth:BANDwidth|BWIDth[:RESolution]?

Set the resolution bandwidth that will be used. If span is set to a value greater than 5 MHz, minimum resolution bandwidth is limited to 1 kHz.

Factory Preset
and *RST: Auto coupled

Range: Option 1DR—10 Hz to 5 MHz
non- Option 1DR—1 kHz to 5 MHz

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, More, Advanced, Res BW

Occupied Bandwidth—Video Bandwidth

```
[ :SENSE ] :OBWidth: BANDwidth | BWIDth: VIDEo <freq>
```

```
[ :SENSE ] :OBWidth: BANDwidth | BWIDth: VIDEo?
```

Set the video bandwidth that will be used.

Factory Preset

and *RST: 10 X Resolution Bandwidth

Range: Option 1DR—30 Hz to 3 MHz

non- Option 1DR—1 kHz to 3 MHz

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRUMENT:SELECT to set the mode.

Front Panel

Access: Meas Setup, Advanced, Video BW

Occupied Bandwidth—Detector Mode

```
[ :SENSE ] :OBWidth: DETector [ :FUNCTION ]
```

```
POSitive | NEGative | SAMPlE
```

```
[ :SENSE ] :OBWidth: DETector [ :FUNCTION ]?
```

Set the detector mode type for the occupied bandwidth measurement.

Factory Preset

and *RST: Sample

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRUMENT:SELECT to set the mode.

Front Panel

Access: Meas Setup, More, Advanced, Detector

Occupied Bandwidth—Emissions Bandwidth Measurement Point

```
[ :SENSE ] :OBWidth: EBWidth: XDB <rel_power>
```

```
[ :SENSE ] :OBWidth: EBWidth: XDB?
```

Set the bandwidth measurement point from the mean signal power, in dB.

Factory Preset

and *RST: -26 dB

Range: -100 dB to -0.1 dB

Default Unit: dB

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRUMENT:SElect to set the mode.

Front Panel

Access: Meas Setup, Emiss BW X dB

Occupied Bandwidth—Maximum Hold Trace Average State

[:SENSE]:OBwidth:MAXHold[:STATE] OFF|ON|0|1

[:SENSE]:OBwidth:MAXHold[:STATE]?

Turn maximum hold trace feature on or off.

Factory Preset

and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRUMENT:SElect to set the mode.

Front Panel

Access: Meas Setup, More, Advanced

Occupied Bandwidth—RF Mixer Input Maximum Power

[:SENSE]:OBwidth:MIXer:RANGE[:UPPer] <power>

[:SENSE]:OBwidth:MIXer:RANGE[:UPPer]?

Specifies the maximum power at the input mixer for the occupied bandwidth measurement.

Factory Preset

and *RST: -10 dBm

Range: -70 dBm to 10 dBm

Default Unit: dBm

Remarks: You must be in the cdmaOne mode to use this command. Use :INSTRUMENT:SElect to set the mode.

Front Panel

Access: Meas Setup, More, Advanced, Max Mixer Lvl

Occupied Bandwidth—Percent of Total Power

[:SENSE] :OBWidth:PERCent <number>

[:SENSe] :OBWidth:PERCent?

Set the percentage of the total power for which the occupied bandwidth is calculated.

Factory Preset
and *RST: 99.0%

Range: 10% to 99.99%

Default Unit: percent

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Occ BW % Pwr

Occupied Bandwidth—Trigger Source

[:SENSE] :OBWidth:TRIGger:SOURce EXTeRnal | IMMeDiate

[:SENSe] :OBWidth:TRIGger:SOURce?

Select the trigger source used to control the data acquisitions for the occupied bandwidth measurement.

External – rear panel external trigger input

Immediate – the next data acquisition is immediately taken, capturing the signal asynchronously (also called free run)

Factory Preset
and *RST: Immediate

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, More, Advanced, Trig Source

Out of Band Spurious Measurement

Commands for querying the out of band spurious measurement results and for setting to the default values are found in the “MEASure Group of Commands” on page 39. The equivalent front panel keys for the parameters described in the following commands, are found under the Meas Setup key, after the Out Of Band Spurious measurement has been selected from the MEASURE key menu.

Out of Band Spurious—Average Count

```
[ :SENSe ] :OObSpur :AVERAge :COUNT <integer>
```

```
[ :SENSe ] :OObSpur :AVERAge :COUNT?
```

Set the number of data acquisitions that will be averaged. After the specified number of average counts, the averaging mode (terminal control) setting determines the averaging action.

Factory Preset
and *RST: 10

Range: 1 to 1000

Remarks: You must be in cdmaOne mode to use this command.
Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Avg Number

Out of Band Spurious—Averaging State

```
[ :SENSe ] :OObSpur :AVERAge [ :STATe ] OFF | ON | 0 | 1
```

```
[ :SENSe ] :OObSpur :AVERAge [ :STATe ]?
```

Turn averaging on or off.

Factory Preset
and *RST: Off

Remarks: You must be in cdmaOne mode to use this command.
Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Avg Number

Out of Band Spurious—Averaging Termination Control

```
[ :SENSe ] :OOBSpur :AVERage :TCONtrol EXPonential | REPEAT  
[ :SENSe ] :OOBSpur :AVERage :TCONtrol ?
```

Select the type of termination control used for the averaging function. This determines the averaging action after the specified number of data acquisitions (average count) is reached.

Exponential - Each successive data acquisition after the average count is reached, is exponentially weighted and combined with the existing average.

Repeat - After reaching the average count, the averaging is reset and a new average is started.

Factory Preset
and *RST: Repeat

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Advanced, Trig Source

Out of Band Spurious—RF Mixer Input Maximum Power

```
[ :SENSe ] :OOBSpur :MIXer :RANGe [ :UPPer ] <power>  
[ :SENSe ] :OOBSpur :MIXer :RANGe [ :UPPer ] ?
```

Specifies the maximum power at the input mixer for the out of band spurious measurement.

Factory Preset
and *RST: -10 dBm
Range: -70 dBm to 10 dBm
Default Unit: dBm

Remarks: You must be in the cdmaOne mode to use this command. Use :INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Advanced, Max Mixer Lvl

Out of Band Spurious—Oversweep State

```
[ :SENSe ] :OOBSpur :OVRsweep [ :STATe ] OFF | ON | 0 | 1  
[ :SENSe ] :OOBSpur :OVRsweep [ :STATe ] ?
```

Turn oversweep function on or off.

Factory Preset
and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Oversweep

Out of Band Spurious—Oversweep Factor

[:SENSe] :OOBSpur :OVRsweep :FACTor <value>

[:SENSe] :OOBSpur :OVRsweep :FACTor?

Set the factor value used to oversweep each range.

Factory Preset
and *RST: 2

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Oversweep

Out of Band Spurious—Spurs Per Range

[:SENSe] :OOBSpur :SPRange <integer>

[:SENSe] :OOBSpur :SPRange?

Set the number of spurious emissions to be measured per range.

Factory Preset
and *RST: 1

Range: 1 to 10

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Spurs/Range

Out of Band Spurious—Resolution Bandwidth

[:SENSe] :OOBSpur :TABLE :BANDwidth | BWIDth :RESolution <bw1, bw2, ..., bwN>

[:SENSe] :OOBSpur :TABLE :BANDwidth | BWIDth :RESolution?

Set the resolution bandwidth of the range where spurs are measured.

Range: Option 1DR—10 Hz to 5 MHz
non-Option 1DR—1 kHz to 5 MHz

Default Unit: kHz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Edit Table

Out of Band Spurious—Video Bandwidth

```
[ :SENSe ] :OOBSpur :TABLE :BANDwidth | BWIDth :VIDeo <bw1, bw2, ..., bwN>
```

```
[ :SENSe ] :OOBSpur :TABLE :BANDwidth | BWIDth :VIDeo?
```

Set the video bandwidth of the range where spurs are measured.

Range: Option 1DR—30 Hz to 3 MHz
non-Option 1DR—1 kHz to 3 MHz

Default Unit: kHz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Edit Table

Out of Band Spurious—Center Frequency

```
[ :SENSe ] :OOBSpur :TABLE :CFRequency <freq1, freq2, ..., freqN>
```

```
[ :SENSe ] :OOBSpur :TABLE :CFRequency?
```

Set the center frequency of the range where spurs are measured.

Range: ESA range

Default Unit: MHz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Edit Table

Out of Band Spurious—Detector Mode

```
[ :SENSe]:OBSpur:TABLE:DETEctor POSitive|SAMPlE|NEGative
```

```
[ :SENSe]:OBSpur:TABLE:DETEctor?
```

Set the detector mode type for the range where spurs are measured.

Factory Preset

and *RST: Positive

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: Meas Setup, Edit Table

Out of Band Spurious—Frequency Span

```
[ :SENSe]:OBSpur:TABLE:FREQuency:SPAN <freq1, freq2, ..., freqN>
```

```
[ :SENSe]:OBSpur:TABLE:FREQuency:SPAN?
```

Set the frequency span of the range where spurs are measured.

Range: ESA range

Default Unit: MHz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: Meas Setup, Edit Table

Out of Band Spurious—Trigger Source

```
[ :SENSe]:OBSpur:TRIGger:SOURce EXTErnal|IMMEdiate
```

```
[ :SENSe]:OBSpur:TRIGger:SOURce?
```

Select the trigger source used to control data acquisitions.

External – rear panel external trigger input.

Immediate – the next data acquisition is immediately taken, capturing the signal asynchronously (also called free run).

Language Reference
SENSe Subsystem

Factory Preset
and *RST: **Immediate**

Remarks: **You must be in the cdmaOne mode to use this
command. Use INSTRument:SElect to set the mode.**

Front Panel
Access: **Meas Setup, Advanced, Trig Source**

Reference Oscillator External Frequency

```
[ :SENSe]:OPTion:ROSCillator:EXTernal:FREQuency <freq>
```

```
[ :SENSe]:OPTion:ROSCillator:EXTernal:FREQuency?
```

Set the frequency of the external reference oscillator being supplied to the option B7E RF assembly Ext Ref In jack. This provides the proper frequency division in the option B7E RF assembly to achieve the required 10 MHz reference frequency. Switch to the external reference with OPT:ROSC:SOUR.

Preset

and *RST: 10 MHz

Range: 1 MHz to 30 MHz

Default Unit: Hz

Remarks: Global to cdmaOne measurements.

Front Panel

Access: **Mode Setup, Properties**

Reference Oscillator Rear Panel Output

```
[ :SENSe]:OPTion:ROSCillator:OUTPut[:STATE] OFF|ON|0|1
```

```
[ :SENSe]:OPTion:ROSCillator:OUTPut?
```

Set the frequency source for the option B7E RF assembly 10 MHz Out jack to the option reference oscillator.

Preset

and *RST: Off

Remarks: Global to cdmaOne measurements.

Front Panel

Access: **Mode Setup, Properties**

Reference Oscillator Source

```
[ :SENSe]:OPTion:ROSCillator:SOURce INTERNAL|EXTERNAL
```

```
[ :SENSe]:OPTion:ROSCillator:SOURce?
```

Select the reference oscillator (time base) source to the internal reference oscillator or an external oscillator. Use OPT:ROSC:EXT:FREQ to tell the instrument the frequency of the external reference.

INTERNAL - uses 10 MHz internal time base

EXTERNAL - uses the signal at the rear panel external reference input port.

Preset
and *RST: Internal

Remarks: Global to cdmaOne measurements.

Front Panel
Access: **Mode Setup, Properties**

Carrier Power State

```
[ :SENSe ] :POWER:CARRier:STATe OFF|ON|0|1
```

```
[ :SENSe ] :POWER:CARRier:STATe?
```

Turn carrier power check function on or off.

Factory Preset
and *RST: On

Remarks: You must be in the cdmaOne mode to use this command. Use :INSTrument:SElect to set the mode.

Front Panel
Access: **Mode Setup, Properties**

Carrier Detection Threshold

```
[ :SENSe ] :POWER:CThReshold <power>
```

```
[ :SENSe ] :POWER:CThReshold?
```

Set the minimum carrier signal level for detection.

Factory Preset
and *RST: 5 dBm

Range: -100 dBm to 30 dBm

Default Unit: dBm

Remarks: You must be in the cdmaOne mode to use this command. Use :INSTrument:SElect to set the mode.

Front Panel
Access: **Mode Setup, Properties**

Minimum Level of Detection

`[:SENSe] :POWER:LEVel:MINimum <power>`

`[:SENSe] :POWER:LEVel:MINimum?`

Set the minimum signal level for detection.

Factory Preset

and *RST: -60 dBm

Range: -200 dBm to 50 dBm

Unit: dBm

Remarks: You must be in the cdmaOne mode to use this command. Use `:INSTRument:SElect` to set the mode.

Front Panel

Access: **Mode Setup, Properties**

RF Port Input Attenuation

`[:SENSe] :POWER[:RF] :ATTenuation <rel_power>`

`[:SENSe] :POWER[:RF] :ATTenuation?`

Set the RF input attenuator. This value is set at its auto value if RF input is set to auto.

Factory Preset

and *RST: 5 dB

Range: 0 to 75 dB in 5 dB steps

Default Unit: dB

Front Panel

Access: **Input**

or

Input/Output

RF Port Power Range Auto

`[:SENSe] :POWER[:RF] :RANGe:AUTO OFF | ON | 0 | 1`

`[:SENSe] :POWER[:RF] :RANGe:AUTO?`

Select the RF port power range to be set either automatically or manually.

On - power range is automatically set as determined by the actual measured power level at the start of a measurement.

Off - power range is manually set

Factory Preset
and *RST: On

Front Panel
Access: Input

Channel Bandwidth for cdmaOne Measurements

```
[ :SENSe ]:RADio:BA NDwidth|BWIDth <freq>
```

```
[ :SENSe ]:RADio:BA NDwidth|BWIDth?
```

Specifies the cdmaOne channel bandwidth.

Factory Preset
and *RST: 1.2288 MHz

Range: 1 kHz to 50 MHz.

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this
command. Use :INSTRument:SElect to set the mode.

Global to the cdmaOne mode.

Front Panel
Access: **Mode Setup, Radio**

Radio Device Under Test

```
[ :SENSe ]:RADio:DEvice BS|MS
```

```
[ :SENSe ]:RADio:DEvice?
```

Select the type of radio device to be tested.

BS – Base transceiver station test.

MS – Mobile transceiver station test.

Factory Preset
and *RST: BS

Remarks: You must be in the cdmaOne mode to use this
command. Use INSTRument:SElect to set the mode.

Global to current mode.

Front Panel
Access: **Mode Setup, Radio, Tab⇒**

Radio Standard Band

```
[ :SENSe]:RADIo:STANdard:BAND  
ARIBT53|C95B|C95C|CKOR|IS95A|JSTD8|P95B|P95C|PKOR
```

```
[ :SENSe]:RADIo:STANdard:BAND?
```

Select the standard variant that applies to the radio to be tested.

ARIBT53 - ARIB STD-T53

C95B - EIA/TIA-95B Cellular

C95C - EIA/TIA-95C Cellular

CKOR - TTA.KO-06.0003 (Korea Cell)

IS95A - IS-95A Cellular

JSTD8 - J-STD-008 PCS

P95B - EIA/TIA-95B (PCS)

P95C - EIA/TIA-95C (PCS)

PKOR - TTA.KO-06.0013 (Korea PCS)

Factory Preset
and *RST: IS-95A Cellular

Remarks: Global to the current mode.

You must be in the cdmaOne mode to use this
command. Use INSTRument:SElect to set the mode.

Front Panel
Access: **Mode Setup, Radio, Standard/Band**

Receive Channel Power Measurement

Commands for querying the receive channel power measurement results and for setting to the default values are found in the “[MEASure Group of Commands](#)” on page 39. The equivalent front panel keys for the parameters described in the following commands, are found under the **Meas Setup** key, after the **Receive Channel Power** measurement has been selected from the **MEASURE** key menu.

Receive Channel Power—Average Count

```
[ :SENSe ]:RCHPower:AVERAge:COUNT <integer>
```

```
[ :SENSe ]:RCHPower:AVERAge:COUNT?
```

Set the number of data acquisitions that will be averaged. After the specified number of average counts, the averaging mode (terminal control) setting determines the averaging action.

Factory Preset
and *RST: 10

Range: 1 to 1000

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Avg Number

Receive Channel Power—Averaging State

```
[ :SENSe ]:RCHPower:AVERAge[ :STATe ] OFF|ON|0|1
```

```
[ :SENSe ]:RCHPower:AVERAge[ :STATe ]?
```

Turn averaging on or off.

Factory Preset
and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Avg Number

Receive Channel Power—Averaging Termination Control

```
[ :SENSe ]:RCHPower:AVERAge:TCONtrol EXPonential|REPeat
```

```
[ :SENSe ]:RCHPower:AVERAge:TCONtrol?
```

Select the type of termination control used for the averaging function.

This determines the averaging action after the specified number of data acquisitions (average count) is reached.

Exponential - Each successive data acquisition after the average count is reached, is exponentially weighted and combined with the existing average.

Repeat - After reaching the average count, the averaging is reset and a new average is started.

Factory Preset
and *RST: Exponential

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Avg Mode

Receive Channel Power—Integration Bandwidth

[:SENSe]:RCHPower:BANDwidth|BWIDth:INTEgration <freq>

[:SENSe]:RCHPower:BANDwidth|BWIDth:INTEgration?

Set the integration bandwidth (IBW) that will be used.

Factory Preset
and *RST: Channel bandwidth of the standard selected using the [:SENSe]:RADio:STANdard:BAND command.

Range: 1 kHz to maximum ESA span

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Integ BW

Receive Channel Power—Resolution Bandwidth

[:SENSe]:RCHPower:BANDwidth|BWIDth[:RESolution] <freq>

[:SENSe]:RCHPower:BANDwidth|BWIDth[:RESolution]?

Set the resolution bandwidth that will be used. If span is set to a value greater than 5 MHz, minimum resolution bandwidth is limited to 1 kHz.

Factory Preset
and *RST: Calculated based on the Standard selected using the [:SENSe]:RADio:STANdard:BAND command.

Range: Option 1DR—10 Hz to 5 MHz
non- Option 1DR—1 kHz to 5 MHz

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: **Meas Setup, More, Advanced, Res BW**

Receive Channel Power—Noise Correction State

```
[ :SENSE ] :RCHPower:CORrection:NOISE[ :AUTO ] OFF|ON|0|1  
[ :SENSE ] :RCHPower:CORrection:NOISE[ :AUTO ]?
```

Turn Noise Correction to off or auto. When set to auto, noise correction will be activated when the measurement is within less than the noise correction threshold from the computed SA noise floor. Noise correction Threshold may be set using the Properties Form under the **Mode Setup** and **Properties...** keys.

Factory Preset
and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: **Meas Setup**

Receive Channel Power—Span

```
[ :SENSE ] :RCHPower:FREquency:SPAN <freq>  
[ :SENSE ] :RCHPower:FREquency:SPAN?
```

Set the frequency span that will be used. If resolution bandwidth is set to a value less than 1 kHz, maximum span is limited to 5 MHz.

Factory Preset
and *RST: Coupled (to the integration BW at approximately 1.6 times the integration bandwidth)

Range: IBW to IBW X 400

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: **Span, Chn Pwr Span**

Receive Channel Power—RF Mixer Input Maximum Power

[:SENSe] :RCHPower :MIXer :RANGe [:UPPer] <power>

[:SENSe] :RCHPower :MIXer :RANGe [:UPPer] ?

Specifies the maximum power at the input mixer for the receiver channel power measurement.

Factory Preset

and *RST: -10 dBm

Range: -70 dBm to 10 dBm

Default Unit: dBm

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: Meas Setup, More, Advanced, Max Mixer Lvl

Receiver Channel Power—Internal Preamp State

[:SENSe] :RCHPower :PRGain [:STATe] OFF | ON | 0 | 1

[:SENSe] :RCHPower :PRGain [:STATe] ?

Turns the internal preamp on or off.

Factory Preset

and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: Meas Setup, More, Int Preamp

Receive Channel Power—Trigger Source

[:SENSe] :RCHPower :TRIGger :SOURce EXtErnal | IMMEDIATE

[:SENSe] :RCHPower :TRIGger :SOURce ?

Select the trigger source used to control the data acquisitions. This is an Advanced control that normally does not need to be changed.

External - rear panel external trigger input

Immediate - the next data acquisition is immediately taken (also called Free Run).

Factory Preset

and *RST: Immediate (Free Run)

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel

Access: **Meas Setup, More, Advanced, Trig Source**

Rho (Waveform Quality) Measurement

Commands for querying the rho measurement results and for setting to the default values are found in the “MEASure Group of Commands” on [page 39](#). The equivalent front panel keys for the parameters described in the following commands, are found under the **Meas Setup** key, after the **Mod Accuracy (Rho)** measurement has been selected from the **MEASURE** key menu.

Rho—Average Count

```
[ :SENSe ] :RHO:AVERAge:COUNT <integer>
```

```
[ :SENSe ] :RHO:AVERAge:COUNT?
```

Set the number of frames that will be averaged. After the specified number of frames (average counts), the averaging mode (termination control) setting determines the averaging action.

Factory Preset
and *RST: 10

Range: 1 to 1000

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: **Meas Setup, Avg Frames**

Rho—Averaging State

```
[ :SENSe ] :RHO:AVERAge[ :STATe ] OFF | ON | 0 | 1
```

```
[ :SENSe ] :RHO:AVERAge[ :STATe ]?
```

Turn averaging on or off.

Factory Preset
and *RST: Off

Remarks: Trace data results are not averaged. Only scalar results are averaged.

You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: **Meas Setup, Avg Frames**

Rho—Averaging Termination Control

```
[ :SENSe ] :RHO:AVERAge:TCONtrol EXPonential | REPEAT
```

`[[:SENSe]:RHO:AVERAge:TCONtrol?`

Select the type of termination control used for the averaging function. This determines the averaging action after the specified number of frames (average count) is reached.

Exponential - Each successive data acquisition after the average count is reached, is exponentially weighted and combined with the existing average.

Repeat - After reaching the average count, the averaging is reset and a new average is started.

Factory Preset
and *RST: Exponential

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Avg Frames

Rho—Display Chip Dots

`[[:SENSe]:RHO:DISPlay:DOTS OFF|ON|0|1`

`[[:SENSe]:RHO:DISPlay:DOTS?`

Turns the chip dots on or off for the rho measurement. Chip dots are the markers that indicate the decision points on the I/Q graph.

Factory Preset
and *RST: On

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Display, Chip Dots

Rho—Display Length

`[[:SENSe]:RHO:DISPlay:LENGth <value>`

`[[:SENSe]:RHO:DISPlay:LENGth?`

Set the segment length to view a portion of the display interval for the rho measurement I/Q trace. Use `[[:SENS]:RHO:SWE:TIME` to set the display interval and `[[:SENS]:RHO:DISP:TOFF` to set the start of the trace segment.

Factory Preset
and *RST: 600

Range: 1 to 40,000
 Default Unit: Samples
 Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.
 Front Panel
 Access: Display, I/Q Points

Rho—RF Mixer Input Maximum Power

[:SENSe] :RHO:MIXer :RANGe [:UPPer] <power>

[:SENSe] :RHO:MIXer :RANGe [:UPPer] ?

Specifies the maximum power at the input mixer for the rho measurement.

Factory Preset
 and *RST: -10 dBm

Range: -70 dBm to 10 dBm

Default Unit: dBm

Remarks: You must be in the cdmaOne mode to use this command. Use :INSTRument:SElect to set the mode.

Front Panel
 Access: Meas Setup, Advanced, Max Mixer Lvl

Rho—Number of Sample Points Per Chip

[:SENSe] :RHO:NSPC ONE | TWO | FOUR

[:SENSe] :RHO:NSPC ?

Allows you to select the number of sample points for the trace to be interpolated to One, Two, or Four points/chip.

- One = only the decision points
- Two = the decision points with one point between them
- Four = the decision points with three points between them

Factory Preset
 and *RST: Four

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
 Access: Display, Chip Dots

Rho—Spectrum Normal/Invert

```
[ :SENSe ] :RHO:SPECTrum NORMAl | INVert
```

```
[ :SENSe ] :RHO:SPECTrum?
```

Select normal or inverted spectrum for demodulation.

Normal - normal spectrum is used

Invert - inverted spectrum is used

Factory Preset

and *RST: Normal

Remarks You must be in the cdmaOne mode to use this command. Use INSTRument:SELEct to set the mode.

Front Panel

Access: Meas Setup, Spectrum

Rho—Sweep Time (Measurement Interval)

```
[ :SENSe ] :RHO:SWEep:TIME <time>
```

```
[ :SENSe ] :RHO:SWEep:TIME?
```

Set the length of the measurement interval that will be used.

Factory Preset

and *RST: 1.250 ms

Range: 150 μ s to 26.7 ms

Default Unit: seconds

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SELEct to set the mode.

Front Panel

Access: Meas Setup, Meas Intvl

Receiver Spurious Measurement

Commands for querying the receiver spurious responses measurement results and for setting to the default values are found in the “[MEASure Group of Commands](#)” on page 39. The equivalent front panel keys for the parameters described in the following commands, are found under the **Meas Setup** key, after the **RX Spur** measurement has been selected from the **MEASURE** key menu.

Receiver Spurious—Average Count]

```
[ :SENSe ] :RSPur :AVERAge :COUNT <integer>
```

```
[ :SENSe ] :RSPur :AVERAge :COUNT?
```

Set the number of data acquisitions that will be averaged. After the specified number of average counts, the averaging mode (terminal control) setting determines the averaging action.

Factory Preset
and *RST: 10

Range: 1 to 1000

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: **Meas Setup, Avg Number**

Receiver Spurious—Averaging State

```
[ :SENSe ] :RSPur :AVERAge [ :STATe ] OFF | ON | 0 | 1
```

```
[ :SENSe ] :RSPur :AVERAge [ :STATe ]?
```

Turn averaging on or off.

Factory Preset
and *RST: Off

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: **Meas Setup, Avg Number**

Receiver Spurious—Averaging Termination Control

```
[ :SENSe ] :RSPur :AVERage :TCONtrol EXPonential | REPeat  
[ :SENSe ] :RSPur :AVERage :TCONtrol ?
```

Select the type of termination control used for averaging. This determines the averaging action after the specified number of data acquisitions (average count) is reached.

Exponential - Each successive data acquisition after the average count is reached, is exponentially weighted and combined with the existing average.

Repeat - After reaching the average count, the averaging is reset and a new average is started.

Factory Preset
and *RST: Exponential

Remarks: You must be in the cdmaOne or GSM mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Avg Mode

Receiver Spurious—Resolution Bandwidth

```
[ :SENSe ] :RSPur :BANDwidth | BWIDth [ :RESolution ] <freq>  
[ :SENSe ] :RSPur :BANDwidth | BWIDth [ :RESolution ] ?
```

Set the resolution bandwidth that will be used. If span is set to a value greater than 5 MHz, minimum resolution bandwidth is limited to 1 kHz.

Factory Preset
and *RST: 30 kHz

Range: Option 1DR—10 Hz to 5 MHz
non- Option 1DR—1 kHz to 5 MHz

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, More, Advanced, Resolution BW

Receiver Spurious—Video Bandwidth

```
[ :SENSe ] :RSPur :BANDwidth | BWIDth :VIDeo <freq>
```

`[:SENSe] :RSPur :BANDwidth | BWIDth :VIDeo?`

Set the video bandwidth that will be used.

Factory Preset
and *RST: 3 kHz

Range: Option 1DR—30 Hz to 3 MHz
non- Option 1DR—1 kHz to 3 MHz

Default Unit: Hz

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, More, Advanced, Video BW

Receiver Spurious—Band Select

`[:SENSe] :RSPur :FBAND TRANsmit | RECeive`

`[:SENSe] :RSPur :FBAND?`

Sets the receiver spurious measurement to measure either transmit or receive band.

Factory Preset
and *RST: Receive band

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRument:SElect to set the mode.

Front Panel
Access: Meas Setup, Band Select

Receiver Spurious—Block

`[:SENSe] :RSPur :BLOCk <value> (Tuning Plan Dependent)`

`[:SENSe] :RSPur :BLOCk?`

Set the receiver spurious measurement to monitor the full block or sub-blocks of the band. The tuning plans allow the following block options:

IS-95A—Full = 0, A = 1, B = 2, A' = 3, B' = 4, or A'' = 5

J-STD-008—Full = 0, A = 1, D = 2, B = 3, E = 4, F = 5, or C = 6

ARIB STD-T53—Full = 0, A = 1, B = 2, or C = 3

TTA.KO-06.0003 (Korea Cell)—Full = 0, A = 1, B = 2, A' = 3, B' = 4, or A'' = 5

TTA.KO-06.0013 (Korea PCS)—Full = 0, A = 1, B = 2, or C = 3

Factory Preset

and *RST: 0 = Full

Range: Dependent on the standard selected using the
[:SENSE]:RADIO:STANDARD:BAND command.

Remarks: The parameters available for this command are dependent on the standard and tuning plan selected for the measurement. You must be in the cdmaOne mode to use this command. Use INSTRUMENT:SELECT to set the mode.

Front Panel

Access: Meas Setup, Block Select

Receiver Spurious—Detector Mode

```
[:SENSE]:RSPur:DETECTOR[:FUNCTION] POSitive|NEGative|SAMPLE  
[:SENSE]:RSPur:DETECTOR[:FUNCTION]?
```

Set the detector mode type for the receiver spurious measurement.

Factory Preset

and *RST: Peak

Remarks: You must be in the cdmaOne mode to use this command. Use INSTRUMENT:SELECT to set the mode.

Front Panel

Access: Meas Setup, Advanced, Detector

Receiver Spurious—RF Mixer Input Maximum Power

```
[:SENSE]:RSPur:MIXer:RANGe[:UPPer] <power>  
[:SENSE]:RSPur:MIXer:RANGe[:UPPer]?
```

Specifies the maximum power at the input mixer for the receiver spurious measurement.

Factory Preset
and *RST: -10 dBm

Range: -70 dBm to 10 dBm

Default Unit: dBm

Remarks: You must be in the cdmaOne mode to use this
 command. Use :INSTRument:SElect to set the mode.

Front Panel
Access: **Meas Setup, More, Advanced, Max Mixer Lvl**

Receiver Spurious—Internal Preamp State

`[:SENSe] :RSPur:PRGain[:STATe] OFF | ON | 0 | 1`

`[:SENSe] :RSPur:PRGain[:STATe] ?`

Turns the internal preamp on or off.

Factory Preset
and *RST: Off

Remarks: You must be in the cdmaOne mode to use this
 command. Use INSTRument:SElect to set the mode.

Front Panel
Access: **Meas Setup, More, Int Preamp**

Receiver Spurious—Trigger Source

`[:SENSe] :RSPur:TRIGger:SOURce EXTeRnal | IMMeDiate`

`[:SENSe] :RSPur:TRIGger:SOURce ?`

Select the trigger source used to control data acquisitions.

External – Sets the trigger to the rear panel external trigger input

Immediate – The next measurement is immediately taken,
 capturing the signal asynchronously (also called free run).

Factory Preset
and *RST: Immediate

Remarks: You must be in the cdmaOne mode to use this
 command. Use INSTRument:SElect to set the mode.

Front Panel
Access: **Meas Setup, More, Advanced, Trig Source**

STATus Subsystem

The STATus subsystem controls the SCPI-defined status-reporting structures.

Operation Condition Query

`:STATus:OPERation:CONDition?`

This query returns the decimal value of the sum of the bits in the Status Operation Condition register.

NOTE

The data in this register is continuously updated and reflects the current conditions.

Operation Enable

`:STATus:OPERation:ENABle <number>`

`:STATus:OPERation:ENABle?`

This command determines what bits in the Operation Condition Register will set bits in the Operation Event register, which also sets the Operation Status Summary bit (bit 7) in the Status Byte Register. The variable <number> is the sum of the decimal values of the bits you want to enable.

NOTE

The preset condition is to have all bits in this enable register set to 0. To have any Operation Events reported to the Status Byte Register, 1 or more bits need to be set to 1. There is little reason to have any bits enabled for typical manufacturing tests. Enabling bits in this register would be of more value during test development.

Factory Preset
and *RST: 0
Range: 0 to 32767

Operation Event Query

```
:STATus:OPERation[:EVENT]?
```

This query returns the decimal value of the sum of the bits in the Operation Event register.

NOTE

The register requires that the equivalent PTR or NTR filters be set before a condition register bit can set a bit in the event register.

The data in this register is latched until it is queried. Once queried, the data is cleared.

Operation Negative Transition

```
:STATus:OPERation:NTRansition <number>
```

```
:STATus:OPERation:NTRansition?
```

This command determines what bits in the Operation Condition register will set the corresponding bit in the Operation Event register when that bit has a negative transition (1 to 0). The variable <number> is the sum of the decimal values of the bits that you want to enable.

Factory Preset

and *RST: 0

Range: 0 to 32767

Operation Positive Transition

```
:STATus:OPERation:PTRansition <number>
```

```
:STATus:OPERation:PTRansition?
```

This command determines what bits in the Operation Condition register will set the corresponding bit in the Operation Event register when that bit has a positive transition (0 to 1). The variable <number> is the sum of the decimal values of the bits that you want to enable.

Factory Preset

and *RST: 32767 (all 1's)

Range: 0 to 32767

SYSTem Subsystem

This subsystem is used to set the controls and parameters associated with the overall system communication. These are functions that are not related to instrument performance. Examples include functions for performing general housekeeping and functions related to setting global configurations.

System Configuration Query

:SYSTem:CONFiGure:MODE?

Queries the instrument for the current configuration and returns the current DLP version.

Remarks: info

TRIGger Subsystem

The Trigger Subsystem is used to set the controls and parameters associated with triggering the data acquisitions. Other trigger-related commands are found in the INITiate and ABORT subsystems.

Rear Panel External Trigger Delay

```
:TRIGger[:SEQuence]:EXTErnal:DELay <time>
```

```
:TRIGger[:SEQuence]:EXTErnal:DELay?
```

Set the trigger delay when using the rear panel external trigger.

Factory Preset
and *RST: 0 s

Range: 0 ns to 429 s Anything less than 300 ns is equal to off.

Default Unit: seconds

Front Panel
Access: Mode Setup, Trigger, Tab⇒

Rear Panel External Trigger Slope

```
:TRIGger[:SEQuence]:EXTErnal:SLOPe POSitive|NEGative
```

```
:TRIGger[:SEQuence]:EXTErnal:SLOPe?
```

Sets the trigger slope when using the rear panel external trigger input.

Factory Preset
and *RST: Positive

Front Panel
Access: Mode Setup, Trigger, Tab⇒

Frame Trigger Delay

```
:TRIGger:FRAMe:DELay <time>
```

```
:TRIGger:FRAMe:DELay?
```

Set trigger delay to be used in zero span measurements to adjust the active burst within a mask. Use positive values to achieve trigger delay (that is, to measure later than the trigger source event) and use negative values to achieve pre-trigger (that is, to measure earlier than the trigger source event).

Factory Preset
and *RST: 0

Range: 0 ns to 429 s Anything less than 300 ns is equal to off.

Default Unit: seconds

Front Panel

Access: Mode Setup, Trigger....

or

Trig, Tab⇒, Frame Timer Delay

Frame Trigger Period

`:TRIGger[:SEquence]:FRAME:PERiod <time>`

`:TRIGger[:SEquence]:FRAME:PERiod?`

Set the frame period that you want when using the external frame timer trigger. If the traffic rate is changed, the value of the frame period is initialized to the preset value.

Factory Preset
and *RST: 26.6666667 ms

Range: 50 μ s to 13.65333 s

Default Unit: Seconds

Front Panel

Access: Mode Setup, Trigger, Tab⇒, Frame Timer Period

RF Burst Trigger Delay

`:TRIGger[:SEquence]:RFBurst:DELay <time>`

`:TRIGger[:SEquence]:RFBurst:DELay?`

Set the trigger delay when using the RF burst (wideband) trigger.

Factory Preset
and *RST: 0 μ sec

Range: 0 ns to 429 s Anything less than 300 ns is equal to off.

Default Unit: seconds

Front Panel

Access: Mode Setup, Trigger, Tab⇒, RF Burst Delay

RF Burst Trigger Level

`:TRIGger[:SEquence]:RFBurst:LEVel <percent>`

`:TRIGger[:SEquence]:RFBurst:LEVel?`

Set the trigger level when using the RF Burst (wideband) Trigger. The value is relative to the peak of the signal. RF Burst is also known as RF Envelope.

Factory Preset

and *RST: -6 dB

Range: -25 to 0 dB

Default Unit: dB

Front Panel

Access: Mode Setup, Trigger, Tab⇒, RF Burst Level

- A**
- active channel threshold value, 2-59
 - amplitude
 - input range, 2-107
 - amplitude scaling, 2-33
 - applications, selecting, 2-37, 2-38
 - attenuation
 - setting, 2-107
 - averaging
 - CDPower, 2-58, 2-59
 - CHPower, 2-64, 2-65, 2-94, 2-95
 - CSPur, 2-71, 2-72
 - HARMonics, 2-79
 - MONitor channel/band, 2-84, 2-88, 2-92
 - OBW, 2-94
 - occupied bandwidth, 2-97
 - OOBSpur, 2-99
 - RCHPower, 2-100, 2-110
 - receiver spurious, 2-120
 - RHO, 2-115, 2-116
 - RSPur, 2-119
- B**
- bandwidth
 - CHPower, 2-65
 - MONitor channel/band, 2-90, 2-91
 - occupied bandwidth, 2-66, 2-81, 2-90, 2-91, 2-95
 - RCHPower, 2-111
 - setting channel BW, 2-108
 - bandwidth, resolution
 - HARMonics, 2-80
 - MONitor channel/band, 2-85, 2-86
 - bandwidth, video
 - HARMonics, 2-80
 - MONitor channel/band, 2-86
 - occupied bandwidth, 2-96
 - base station
 - loss correction, 2-69
 - base station testing, 2-108
 - block
 - MONitor channel/band, 2-87
 - RSPur, 2-121
 - burst trigger
 - level, 2-129
 - bus configuration, 2-126
- C**
- carrier
 - power, 2-106
 - CDMA
 - PN offset number, 2-62
 - CDMA measurement, 2-42, 2-45, 2-46, 2-49, 2-50, 2-51, 2-54, 2-55, 2-58, 2-64, 2-71, 2-110, 2-115
 - CDMA standards
 - 95A, 95B, 95C, ARIB, CKOR, PKOR, 2-109
 - cdmaOne
 - trigger source, 2-75, 2-76, 2-83, 2-103, 2-123
 - cdmaOne measurement, 2-84, 2-99
 - CDP
 - limit testing, 2-2, 2-3, 2-4, 2-5
 - CDPower
 - active set threshold value, 2-59
 - measurement method, 2-60
 - selecting spectrum type, 2-60
 - sweep time, 2-61
 - center frequency step size, 2-77, 2-78
 - changing
 - instrument settings, 2-58
 - channel bandwidth
 - setting, 2-108
 - channel frequency, setting, 2-62
 - channel number, setting, 2-63
 - channel power measurement
 - See also CHPower
 - channel power measurement, 2-45, 2-64
 - CHP
 - limit testing, 2-6, 2-7
 - CHPower
 - noise correction, 2-67
 - trigger source, 2-68
 - close spurs measurement, 2-46, 2-71
 - See also CSPur
 - code domain power measurement, 2-42, 2-58
 - See also CDPower
 - code domain power measurement method, 2-60
 - continuous vs. single measurement mode, 2-35
 - control measurement commands, 2-35
 - correction
 - base station loss, 2-69
 - RF gain, 2-70
 - correction, gain
 - RSPur, 2-123
 - CSP
 - limit testing, 2-8, 2-9
 - CSPur
 - trigger source, 2-75
 - CSPur, detector function
 - CSPur, 2-74
 - CSPur, resolution bandwidth
 - CSPur, 2-66, 2-73, 2-111, 2-120, 2-121
 - CSPur, video bandwidth
 - CSPur, 2-73
- D**
- data from measurements, 2-39
 - default values for measurements, 2-40
 - detector
 - MONitor channel/band, 2-88, 2-92
 - occupied bandwidth, 2-96, 2-122
 - detector function, 2-74
 - HARMonics, 2-81
 - disk drive commands, 2-56
 - display
 - reference level, 2-33
 - scaling, 2-33
 - display commands, 2-33
 - display, dots
 - RHO, 2-116, 2-117
 - display, length
 - RHO, 2-116
- E**
- emissions bandwidth
 - occupied bandwidth, 2-96
 - error monitoring, 2-124
 - external reference, 2-105
 - external trigger
 - delay, 2-127
 - slope, 2-127
- F**
- frame trigger delay, 2-127
 - frame trigger period, 2-128
 - frequency
 - step size, 2-77, 2-78
 - temporary center, 2-78
 - frequency span
 - CHPower, 2-66
 - RCHPower, 2-112
- G**
- GSM measurement, 2-47
- H**
- hardware status, 2-124
 - HARM
 - limit testing, 2-9, 2-10, 2-11

harmonics measurement, 2-55, 2-79
See also HARM

I

iDEN
trigger source, 2-98
iDEN measurement, 2-48, 2-94, 2-99
input attenuation, 2-107
input power
range, 2-107
inputs
configuration, 2-126
instrument configuration, 2-37
instrument status, 2-124
internal reference, 2-105

L

limit line testing, 2-8
limit testing
absolute, 2-9, 2-11
cdmaOne, 2-2, 2-3, 2-4, 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, 2-12, 2-13, 2-14, 2-15, 2-16, 2-17, 2-18, 2-19, 2-20, 2-21, 2-22, 2-23, 2-24, 2-25, 2-26, 2-27, 2-28, 2-29, 2-30, 2-31
CDP, 2-2, 2-3, 2-4, 2-5
CFTH, 2-20, 2-23
CHP, 2-6, 2-7
CSP, 2-8, 2-9
EBW, 2-11, 2-12, 2-13, 2-14
ERHO, 2-2
EVM, 2-21, 2-23
FERR, 2-21, 2-24
HARM, 2-9, 2-10, 2-11
Limit Line Segments, 2-8
MAGN, 2-21, 2-25
OBW, 2-11, 2-12, 2-13, 2-14, 2-15, 2-16, 2-18
OOBS, 2-17, 2-18
phase, 2-22, 2-26
Phase, Relative, 2-2, 2-3
RCHP, 2-18, 2-19, 2-20
REC, 2-29, 2-30
relative, 2-10, 2-11
RHO, 2-20, 2-21, 2-22, 2-23, 2-24, 2-25, 2-26, 2-27, 2-28, 2-29
RSP, 2-29, 2-30, 2-31
time offset, 2-28, 2-29
Timing, Relative, 2-4, 2-5
TRAN, 2-30, 2-31

M

mass storage commands, 2-56
maximum power to mixer, 2-59, 2-67, 2-74, 2-82, 2-97, 2-100, 2-113, 2-117, 2-122
measurement
channel power, 2-64
close spurs, 2-71
code domain power, 2-58
control of, 2-35
harmonics, 2-79
monitor channel/band, 2-84
occupied BW, 2-94
out of band spurs, 2-99
receive channel power, 2-110
rho (waveform quality), 2-115
single/continuous, 2-35
measurement modes
selecting, 2-37, 2-38
measurements
channel power, 2-45
close spurs, 2-46
code domain power, 2-42
configuration, 2-39
getting results, 2-39
harmonics, 2-55
monitor, 2-47
occupied BW, 2-48
out of band spurs, 2-49
receive channel power, 2-50
receiver spurs, 2-54
rho (waveform quality), 2-51
memory commands, 2-56
method
MONitor channel/band, 2-93
minimum level
power, 2-107
mixer
maximum input power, 2-59, 2-67, 2-74, 2-82, 2-97, 2-100, 2-113, 2-117, 2-122
mixer power
RCHPower, 2-113
mobile station testing, 2-108
monitor channel/band
measurement, 2-84
See also MON
monitor measurement, 2-47
monitoring instrument status, 2-124

N

noise correction
CHPower, 2-67
RCHPower, 2-112
RF threshold, 2-69
number

HARMonics, 2-82

O

OBW
limit testing, 2-11, 2-12, 2-13, 2-14, 2-15, 2-16
percent power, 2-98
trigger source, 2-98
OBW averaging, 2-94
occupied BW measurement, 2-48, 2-94
See also OBW
OOBS
limit testing, 2-17, 2-18
operation condition register, 2-124, 2-125
operation status, 2-124
out of band spurs measurement, 2-49, 2-99
See also OOBS
outputs
configuration, 2-126
oversweep
OOBSpur, 2-100, 2-101

P

pass/fail test, 2-8
pause
restart, 2-36
pause measurement, 2-35
PDC
trigger source, 2-98
PDC measurement, 2-48, 2-94
percent power, OBW, 2-98
personalities
selecting, 2-37, 2-38
phase inversion, 2-60
PN offset number setting, 2-62
power
% occupied power bandwidth, 2-98
pre-amplifier
on/off, 2-77, 2-89, 2-92, 2-113

R

RCHP
limit testing, 2-18, 2-19, 2-20
RCHPower
integration bandwidth, 2-111
mixer power, 2-113
noise correction, 2-112
trigger source, 2-113
receive channel power
measurement
See also RCHPower

- receive channel power
 - measurement, 2-50, 2-110
- receiver spurious
 - averaging termination control, 2-120
- receiver spurs measurement, 2-54
- reference
 - external, 2-105
 - internal, 2-105
- reference level, 2-33
- register
 - operation condition, 2-124, 2-125
- resolution bandwidth, 2-66, 2-73, 2-111, 2-120, 2-121
- restart measurement, 2-36
- results from measurements, 2-39
- resume measurement, 2-36
- RF gain correction, 2-70
- RF threshold
 - noise correction, 2-69
- RHO
 - limit testing, 2-20, 2-21, 2-22, 2-23, 2-24, 2-25, 2-26, 2-27, 2-28, 2-29
 - spectrum type, 2-118
 - sweep time, 2-118
- rho (waveform quality)
 - measurement, 2-51, 2-115
- See also RHO
- RSP
 - limit testing, 2-29, 2-30, 2-31
- S**
- saving traces, 2-56
- select, select
 - RSPur, 2-121
- setting default values, 2-40
- single vs. continuous
 - measurement mode, 2-35
- span
 - CHPower, 2-66
 - MONitor channel/band, 2-89, 2-93
 - RCHPower, 2-112
- spectrum type
 - RHO, 2-118
- spur range
 - OOBSpur, 2-101
- standard, selecting
 - 95A, 95B, 95C, ARIB, CKOR, PKOR, 2-109
- start measurement, 2-36
- state
 - changing, 2-58
- status subsystem, 2-124
- storing
 - traces, 2-56
- sweep time
 - HARMonics, 2-82
 - RHO, 2-118
- system configuration, 2-126
- T**
- table
 - bandwidth
 - OOBSpur, 2-101, 2-102
 - center frequency
 - OOBSpur, 2-102
 - detector
 - OOBSpur, 2-103
 - frequency span
 - OOBSpur, 2-103
- temporary center frequency
 - setting, 2-78
- test limits, 2-8
 - absolute, 2-9, 2-11
 - cdmaOne, 2-2, 2-3, 2-4, 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, 2-12, 2-13, 2-14, 2-15, 2-16, 2-17, 2-18, 2-19, 2-20, 2-21, 2-22, 2-23, 2-24, 2-25, 2-26, 2-27, 2-28, 2-29, 2-30, 2-31
 - CFTH, 2-20, 2-23
 - EBW, 2-11, 2-12, 2-13, 2-14
 - ERHO, 2-2
 - EVM, 2-21, 2-23
 - FERR, 2-21, 2-24
 - Limit Line Segments, 2-8
 - MAGN, 2-21, 2-25
 - OBW, 2-14, 2-15, 2-16, 2-18
 - phase, 2-22, 2-26
 - Phase, Relative, 2-2, 2-3
 - REC, 2-29, 2-30
 - relative, 2-10, 2-11
 - time offset, 2-28, 2-29
 - Timing, Relative, 2-4, 2-5
 - TRAN, 2-30, 2-31
- threshold
 - power, 2-106
- threshold value, CDPower, 2-59
- traces
 - storing, 2-56
- transmit/receive
 - MONitor channel/band, 2-89
- trigger
 - burst level, 2-129
 - commands, 2-127
 - delay, 2-127
 - external, 2-127
 - frame delay, 2-127
 - frame period, 2-128
 - slope, 2-127
- trigger source
 - cdmaOne, 2-76, 2-83, 2-103, 2-123
 - CSPur, 2-75
 - demodulation, 2-76
 - HARMonics, 2-83
 - OBW, 2-98
 - OOBSpurs, 2-103
 - RSPur, 2-123
- triggering
 - CHPower, 2-68
 - RCHPower, 2-113
- V**
- video bandwidth, 2-73
- view commands, 2-33
- W**
- waveform quality (rho)
 - measurement, 2-51, 2-115
- Y**
- y-axis scaling, 2-33