

Additional Added Commands

Models: 2831E, 5491B

:FUNction Command

Command syntax:

:FUNction <name>

Command parameter:

<name> =

VOLTage:AC	Selects AC Voltage
VOLTage:DC	Selects DC Voltage
VOLTage:ACDC	Selects AC+DC Voltage
CURRent:AC	Selects AC Current
CURRent:DC	Selects DC Current
CURRent:ACDC	Selects AC+DC Current
RESistance	Selects 2-wire Resistance
FREQuency	Selects Frequency
PERiod	Selects Period
DIODE	Selects Diode
CONTinuity	Selects Continuity

Query:

:FUNction? Query currently selected function

Example:

:FUNC CURRent:AC Selects AC current function for primary display

:FUNC? Returns currently selected function from primary display

Description:

This command is used to select the measurement function of the instrument of the primary display. Each measurement function “remembers” its own unique setup configuration, such as range, speed, filter and rel. This eliminates the need to re-program setup conditions every time you switch from one function to another.

:FUNction2 Subsystem

:FUNction2

Command syntax:

:FUNction2 <name>

Command parameter:

<name> =

VOLTage:AC	Selects AC Voltage
VOLTage:DC	Selects DC Voltage
CURRent:AC	Selects AC Current
CURRent:DC	Selects DC Current
FREQuency	Selects Frequency
dB	Selects dB
dBm	Selects dBm

Query:

:FUNction2? Query currently selected function

Example:

:FUNC2 dB Selects dB function for secondary display

:FUNC2? Queries the current function set for secondary display

Description:

This command is used to select the measurement function of the instrument of the secondary display. Each measurement function “remembers” its own unique setup configuration, such as range, speed, filter and rel. This eliminates the need to re-program setup conditions every time you switch from one function to another.

:STATe

Command syntax:

:FUNction2:STATe

Command parameter:

 = 0 or "OFF"	Disables secondary display
1 or "ON"	Enables secondary display

Query:

:FUNction2:STATe? Returns the state of the secondary display

Example:

:FUNC2:STAT 1 Enables secondary display

:FUNC2:STAT? Queries the state of the secondary display

Description:

This subcommand controls the state of the secondary display. Secondary display must be enabled before :FUNction2 command can be used to set a secondary function for use/measurement.

:FETCh?

Command syntax:

:FETCh?

Example:

:FETC? Fetch measured data from display

Returned Data:

"+1.2345E+0" If primary display only.

"+12345E+0,+12.345E+0" If secondary display is enabled, both primary display value and secondary display value will be fetched, separated by a comma.

CALCulate subsystem

The commands in this system are used to control all functions that require calculation, such as math function and compare/limit function.

Command	Function Description	Default
:CALCulate	CALC subsystem	
:KMATH	Path to select math	
:PERCent <NRf>	Set reference value for % (-1e8 to 1e8)	1
:ACQuire	Set reference for % based on input measured value	
:PERCent?	Get current set reference value for %	
:STATe 	Set state of math function	
:STATe?	Query state of math function	
:LIMit	Path to select limit compare mode	
:UPPer <n>	Set upper limit value (-100e6 to 100e6)	1
:UPPer?	Query set upper limit value	
:LOWer <n>	Set lower limit value (-100e6 to 100e6)	-1
:LOWer?	Query set lower limit value	
:STATe 	Set state of limit compare function	OFF
:STATe?	Query state of limit compare function	
:FAIL?	Query limit test result (1=pass, 0=fail)	

:CALCulate

:KMATH command

:PERCent <NRf>

Command syntax:

:CALCulate:KMATH:PERCent <NRf>

Command parameter:

<NRf> = -1e8 to 1e8

:ACQuire

Command syntax:

:CALCulate:KMATH:PERCent:ACQuire

Description:

Sets the percent reference value based on measured value or display value from input.

Query:

:CALCulate:KMATH:PERCent?

Example:

:CALC:KMAT:PERC -4.56e5	Sets percent reference to -4.56e5
:CALC:KMAT:PERC:ACQ	Sets percent reference to measured value from input
:CALC:KMAT:PERC?	Queries currently configured percent reference value

Description:

This set of command sets and queries the reference value required for percent math operation. Once reference is set, when enabled, percent operation will measure and calculate percent of reading from the input against the reference value.

:STATe **Command syntax:**

:CALCulate:KMATh:STATe

Command parameter:

 = 0 or "OFF"	Disable or put to OFF state the percent math function
1 or "ON"	Enable or put to ON state the percent math function

Query:

:CALCulate:KMATh:STATe?

Example:

:CALC:KMAT:STAT 1	Enables the percent math function
:CALC:KMAT:STAT?	Queries the state of the percent math function

:LIMit command**:UPPer <n>****Command syntax:**

:CALCulate:LIMit:UPPer <n>

Command parameter:

<n> =	-100e6 to 100e6	Range of valid values to set for upper limit
	DEFault	Set upper limit to default value (1)
	MINimum	Set upper limit to lowest number (-100e6)
	MAXimum	Set upper limit to highest number (100e6)

Query:

:CALCulate:LIMit:UPPer?

Example:

:CALC:LIM:UPP 3.45e2	Sets upper limit compare value to 3.45e2
:CALC:LIM:UPP MAX	Sets upper limit compare value to max value, 100e6
:CALC:LIM:UPP?	Queries currently configured upper limit compare value

Description:

This set of commands are used to configure the upper limit value that is used for limit/compare Testing. Once limit/compare mode is enabled, this limit will be used to test against measured Inputs and check if it's below the upper limit value.

:LOWer <n>**Command syntax:**

:CALCulate:LIMit:LOWer <n>

Command parameter:

<n> =	-100e6 to 100e6	Range of valid values to set for lower limit
	DEFault	Set upper limit to default value (1)
	MINimum	Set upper limit to lowest number (-100e6)
	MAXimum	Set upper limit to highest number (100e6)

Query:

:CALCulate:LIMit:LOWer?

Example:

:CALC:LIM:LOW 3.45e2	Sets lower limit compare value to 3.45e2
:CALC:LIM:LOW MAX	Sets lower limit compare value to max value, 100e6
:CALC:LIM:LOW	Queries currently configured lower limit compare value

Description:

This set of commands are used to configure the lower limit value that is used for limit/compare Testing. Once limit/compare mode is enabled, this limit will be used to test against measured Inputs and check if it's above lower limit value.

:FAIL?**Command syntax:**

:CALCulate:LIMit:FAIL?

Return Data:

0	Input value failed limit test
1	Input value passed limit test

Example:

:CALC:LIM:FAIL?	Queries limit test results
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Description:

This returns the limit test results.

UNIT subsystem

The commands in this system are used to control reference values for dB and dBm calculation.

Command	Function Description	Default
:UNIT	UNIT subsystem	
:VOLTage	Path to select voltage subsystem	
:AC <name>	Select AC voltage unit (V, DB, DBM)	V
:DB	Path to select ACV DB	
:REfERENCE <n>	Set DB reference value for ACV (1e-4 to 1000)	1
:REfERENCE?	Query DB reference value for ACV	

:DBM	Path to select ACV DBM	
:IMPedance <n>	Set DBM impedance reference value (1 to 9999 Ω)	75 Ω
:IMPedance?	Query DBM impedance reference value	
:AC?	Query AC voltage unit	
:DC <name>	Select DC voltage unit (V, DB, DBM)	V
:DB	Path to select DCV DB	
:REference <n>	Set DB reference value for DCV (1e-4 to 1000)	1
:REference?	Query DB reference value for DCV	
:DBM	Path to select DCV DBM	
:IMPedance <n>	Set DBM impedance reference value (1 to 9999 Ω)	75
:IMPedance?	Query DBM impedance reference value	
:DC?	Query DC voltage unit	

:UNIT

:VOLTage

:AC <name>

Command syntax:

:UNIT:VOLTage:AC <name>

Command parameter:

<name> =	V	Voltage unit
	DB	DB unit
	DBM	DBM unit

Query:

:UNIT:VOLTage:AC?

Example:

:UNIT:VOLT:AC DB Sets display and measured value of AC voltage in dB unit

:UNIT:VOLT:AC? Queries the current unit set for measuring AC voltage

Description:

This set of commands configures the unit used for measuring AC voltage.

:DB:REference <n>

Command syntax:

:UNIT:VOLTage:AC:DB:REference <n>

Command parameter:

<n> =	1e-4 to 1000	Values in terms of V
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Query:

:UNIT:VOLTage:AC:DB:REfERENCE?

Example:

:UNIT:VOLT:AC:DB:REF 23.456 Sets voltage reference value for dB calculation for VAC

:UNIT:VOLT:AC:DB:REF? Queries the set voltage reference value

Description:

This set of command sets the voltage reference value required for computing and converting AC voltage measured input to unit of dB.

:DBM:IMPedance <n>**Command syntax:**

:UNIT:VOLTage:AC:DBM:IMPedance <n>

Command parameter:

<n> = 1 to 9999 Values in terms of Ω

Query:

:UNIT:VOLTage:AC:DB:IMPedance?

Example:

:UNIT:VOLT:AC:DBM:IMP 50 Sets impedance reference value for dBm calculation

:UNIT:VOLT:AC:DBM:IMP? Queries impedance reference value set for dBm

Description:

This set of command sets the impedance reference value used for calculating measured AC voltage value in units of dBm.

:DC <name>**Command syntax:**

:UNIT:VOLTage:DC <name>

Command parameter:

<name> =	V	Voltage unit
	DB	DB unit
	DBM	DBM unit

Query:

:UNIT:VOLTage:DC?

Example:

:UNIT:VOLT:DC DB Sets display and measured value of DC voltage in dB unit

:UNIT:VOLT:DC? Queries the current unit set for measuring DC voltage

Description:

This set of commands configures the unit used for measuring DC voltage.

:DB:REFeRence <n>

Command syntax:

:UNIT:VOLTage:DC:DB:REFeRence <n>

Command parameter:

<n> = 1e-4 to 1000 Values in terms of V

Query:

:UNIT:VOLTage:DC:DB:REFeRence?

Example:

:UNIT:VOLT:DC:DB:REF 23.456 Sets voltage reference value for dB calculation for VDC

:UNIT:VOLT:DC:DB:REF? Queries the set voltage reference value

Description:

This set of command sets the voltage reference value required for computing and converting DC voltage measured input to unit of dB.

:DBM:IMPedance <n>

Command syntax:

:UNIT:VOLTage:DC:DBM:IMPedance <n>

Command parameter:

<n> = 1 to 9999 Values in terms of Ω

Query:

:UNIT:VOLTage:DC:DB:IMPedance?

Example:

:UNIT:VOLT:DC:DBM:IMP 50

Sets impedance reference value for dBm calculation

:UNIT:VOLT:DC:DBM:IMP?

Queries impedance reference value set for dBm

Description:

This set of command sets the impedance reference value used for calculating measured DC voltage value in units of dBm.