

Appendix B IEEE General Command

*CLS

Syntax : *CLS

Description: Clear the following items:

- Status Byte Register
- Standard Event Status Register
- Operation Status Event Register

*ESE

Syntax: *ESE <numeric>

*ESE?

Description: Standard Event Status Enable Register

parameter:

	<numeric>
description	Set the value of the standard event status enable register
Range	0-255
Initial value	0
Step	1

Return Query: {numeric}<newline><^END>

*ESR?

Syntax: *ESR?

Description: Read the value of the Standard Event Status Register. Executing this command will clear the value of this register.

Return Query: {numeric}<newline><^END>

*IDN?

Syntax: *IDN?

Description: Read product information。

Return Query: {string 1},{string 2},{string 3}, {string 4}
<newline><^END>

Read the data information as follows:{string 1} Tonghui.

{string 2} product model (ST2638/ST2638A).

{string 3} CPU firmware version number

{string 4} Digital board FPGA firmware version number.

***OPC**

Syntax: *OPC

Description: Set the standard event status register after all pending operations are completed (Standard Event Status Register) OPC 位 (bit0)。 (Can't query)

*OPC?

Syntax: *OPC?

Description:Read 1 after all pending operations are completed。 (Just used to query)

Return Query: {1}<newline><^END>

***RST**

Syntax: *RST

Description: Reset the machine to its initial state。

***SRE**

Syntax: *SRE <numeric>

*SRE?

Description: Set or query the value of the Service Request Enable Register.

	<numeric>
Description	Set the value of the Service Request Enable Register.
Range	0-255
Initial Value	0
Step	1

Return Query: {numeric}<newline><^END>

*** STB?**

Syntax: *STB?

Description: Query the value of the Status Byte Register .

Return Query: {numeric}<newline><^END>

***TRG**

Syntax: *TRG

Description: When the instrument's trigger source is set to (BUS) mode trigger, this command triggers the instrument to perform a measurement. And the instrument actively returns to the measurement data after performing the measurement. Data format reference FETCH? Command

Appendix C SCPI Command

一、 the command syntax of this manual

<> : The parameters inside a pair of angle brackets are a necessary part of the command.

[] : A string inside a square bracket can be omitted.

{ } : The inclusions in a pair of braces only need to be selected in the command. The entries are separated by a separator "|".

^END: EOI (end) signal of IEEE-488 bus

For example:

Syntax: :DISPlay[:WINDow]:TEXT2[:DATA]:FMSD[:STATe] {ON|OFF|1|0}

Can be abbreviated as:

Syntax: :DISPlay:TEXT2:FMSD ON

ABORt sub-system command

:ABORt

Syntax: :ABORt

Description: Reset the instrument test system to place the instrument in the IDLE state

CALibration sub-system commands

:CALibration:CABLe:CORRection:CLEAr

Syntax: :CALibration:CABLe:CORRection:CLEAr <numeric>

Description: Clear cable correction data(Can't query)

Parameters: <numeric>Indicates cable length(unit m), range:0, 1, 2, 4

:CALibration:CABLe:CORRection:COLLect[:ACQuire]:LOAD

Syntax: :CALibration:CABLe:CORRection:COLLect[:ACQuire]:LOAD<numeric >

Description: Measuring cable load correction data(Can't query)

Parameters: <numeric>Indicates cable length(unit m), range:0, 1, 2, 4

:CALibration:CABLe:CORRection:COLLect[:ACQuire]:OPEN

Syntax: :CALibration:CABLe:CORRection:COLLect[:ACQuire]:OPEN<numeric >

Description: Measuring cable open circuit correction data. (Can't query)

Parameters: <numeric>Indicates cable length(unit m), range:0, 1, 2, 4

:CALibration:CABLe:CORRection:COLLect[:ACQuire]:REFerence

Syntax: :CALibration:CABLe:CORRection:COLLect[:ACQuire]: REFerence <numeric>

Description: Measuring cable reference correction data (Can't query)

Parameters: <numeric>Indicates cable length(unit m), range:0, 1, 2, 4

:CALibration:CABLe:CORRection:COLLect :SAVe

Syntax: :CALibration:CABLe:CORRection:COLLect :SAVe<numeric>

Description: Save cable correction data (Can't query)

Parameters: <numeric>Indicates cable length(unit m), range:0, 1, 2, 4

:CALibration:CABLe:CORRection:COLLect :STAtE ?

Syntax: :CALibration:CABLe:CORRection:COLLect : STAtE ? <numeric>

Description: Get cable correction status (on/off)(query only)

Parameters: <numeric>Indicates cable length(unit m), range:0, 1, 2, 4

Return Query: {1|0}<newline><^end>

:CALibration:CABLe:[LENGth]

Syntax: :CALibration:CABLe:[LENGth] <numeric >

:CALibration:CABLe:[LENGth] ?

Description: Set the calibration cable length (can query)

Parameters: <numeric>Indicates cable length(unit m), range:0, 1, 2, 4

Return Query: {numeric}<newline><^end>

CALCulate1 sub-system commands

:CALCulate1:COMParator:AUXBin

Syntax: :CALCulate1:COMParator:AUXBin {ON|OFF|1|0}

:CALCulate1:COMParator:AUXBin?

Description: Set or query the AUX switch on the limit settings page

Return Query: {1|0}<newline><^end>

:CALCulate1:COMParator:BEEPer:CONDition

Syntax: :CALCulate1:COMParator:BEEPer:CONDition {PASS|FAIL}

:CALCulate1:COMParator:BEEPer:CONDition?

Description: Set or query the conditions on the limit settings page

Return Query: {PASS|FAIL}<newline><^end>

:CALCulate1:COMParator:BEEPer[:STATe]

Syntax: :CALCulate1:COMParator:BEEPer[:STATe] {ON|OFF|1|0}

:CALCulate1:COMParator:BEEPer[:STATe]?

Description: Set or query the alarm switch on the limit settings page

Return Query: {|1|0}<newline><^end>

:CALCulate1:COMParator:CLEar

Syntax: :CALCulate1:COMParator:CLEar

Description: Clear the table data on the limit list setting page and the ON/OFF status of each sorting file number (can not query)

:CALCulate1:COMParator:COUNt:CLEar

Syntax: :CALCulate1:COMParator:COUNt:CLEar

Description: Clear the count data of each file number on the file display page (can not query)

:CALCulate1:COMParator:COUNt:DATA?

Syntax: :CALCulate1:COMParator:COUNt:DATA?

Description: Read the count values of BIN1-BIN9, OUT_OF_BINS, and AUX_BIN.

Parameters

	Description
{numeric}	BIN1count value
{numeric2}	BIN2count value
{numeric3}	BIN3count value
{numeric4}	BIN4count value
{numeric5}	BIN5count value
{numeric6}	BIN6count value
{numeric7}	BIN7count value
{numeric8}	BIN8count value
{numeric9}	BIN9count value
{numeric0}	OUT_OF_BINScount value
{numeric11}	AUX_BINcount value

Return Query: {numeric1},..., {numeric11}<newline><^end>

:CALCulate1:COMParator:COUNt:MULTiple:DATA?

Syntax: :CALCulate1:COMParator:COUNt:MULTiple:DATA?

Description: Read the current channel (multi-channel open) BIN1-BIN9, OUT_OF_BINS, and AUX_BIN count value

Parameter:

	Description
{numeric1}	Current channel BIN1 count value
{numeric2}	Current channel BIN2 count value
{numeric3}	Current channel BIN3 count value
{numeric4}	Current channel BIN4 count value

{numeric5}	Current channel BIN5 count value
{numeric6}	Current channel BIN6 count value
{numeric7}	Current channel BIN7 count value
{numeric8}	Current channel BIN8 count value
{numeric9}	Current channel BIN9 count value
{numeric10}	Current channel OUT_OF_BINS count value
{numeric11}	Current channel AUX_BIN count value

Return Query: {numeric1}, ..., {numeric11}<newline><^end>

:CALCulate1:COMParator:COUNt:MULTiple:OVLD?

Syntax: :CALCulate1:COMParator:COUNt:MULTiple:OVLD?

Description: Read the current channel (multi-channel open) overload (OVERLOAD) count value

Return Query: {numeric}<newline><^end>

:CALCulate1:COMParator:COUNt:OVLD?

Syntax: :CALCulate1:COMParator:COUNt:OVLD?

Description: Read the count value of the overload (OVERLOAD)

Return Query: {numeric}<newline><^end>

:CALCulate1:COMParator:COUNt[:STATe]

Syntax: :CALCulate1:COMParator:COUNt[:STATe] {ON|OFF|1|0}

:CALCulate1:COMParator:COUNt[:STATe]?

Description: Turns the bin count function on or off.

Parameters:

	Description
ON or 1	Turn the bin count function on
OFF or 0(initial value)	Turn the bin count function off

Return Query: {1|0}<newline><^end>

:CALCulate1:COMParator:MODE

Syntax: :CALCulate1:COMParator:MODE {ABS|DEV|PCNT}

:CALCulate1:COMParator:MODE?

Description: Comparison mode of setting bin comparison function

Parameters:

	Description
ABS(initial value)	Sequential mode
DEV	Absolute tolerance model
PCNT	% tolerance mode

Return Query: {ABS|DEV|PCNT}<newline><^end>

:CALCulate1:COMParator:PRIMary:BIN{1-9}[:LIMIT]

Syntax: :CALCulate1:COMParator:PRIMary:BIN{1|2|3|4|5|6|7|8|9}[:LIMIT] <numeric1>,<numeric2>

:CALCulate1:COMParator:PRIMary:BIN{1|2|3|4|5|6|7|8|9}

[:LIMIT]?

Description: Set the upper and lower limits of the main parameters (BIN1-BIN9) in the bin comparison

Parameter:

	<numeric1>	<numeric2>
Description	Lower limit of the limit range	Upper limit of the limit range
Range	-999.999-999.999	-999.999-999.999
Initial Value	0	0
Unit	F or %	F or %

Return Query: {numeric1},{ numeric2}<newline><^end>

:CALCulate1:COMParator:PRIMary:BIN{1-9}:STATe

Syntax: :CALCulate1:COMParator:PRIMary:BIN{1|2|3|4|5|6|7|8|9}:STATe {ON|OFF|1|0}

:CALCulate1:COMParator:PRIMary:BIN{1|2|3|4|5|6|7|8|9}:STATe?

Description: Turn the (BIN1-BIN9) compare switch on or off.

Parameters:

	Description
ON or 1 (BIN1 initial value)	Turn on BIN
OFF or 0 (BIN2-BIN9 initial value)	Turn off BIN

Return Query: {1|0}<newline><^end>

:CALCulate1:COMParator:PRIMary:NOMinal

Syntax: :CALCulate1:COMParator:PRIMary:NOMinal<numeric>

:CALCulate1:COMParator:PRIMary:NOMinal?

Description: Set the nominal value of the main parameters

Parameters:

	<numeric>
Description	nominal value of the main parameters
Range	-999.999-999.999
Initial Value	0
Unit	F (Farad)

Return Query: {numeric1},{ numeric2}<newline><^end>

:CALCulate1:COMParator:SECOndary:LIMit

Syntax: :CALCulate1:COMParator:SECOndary:LIMit <numeric1>, <numeric2>

:CALCulate1:COMParator:SECOndary:LIMit?

Description: Set the upper and lower limits of the sorting function of the secondary parameter

Parameter :

	<numeric1>	<numeric2>
Description	Lower limit of the limit range	Upper limit of the limit range
Range	-99.999E9-99.999E9	-99.999E9-99.999E9
Initial Value	0	0
Unit	Determined by parameter type	Determined by parameter type

Return Query: {numeric}<newline><^end>

:CALCulate1:COMParator:SECondary:STATe

Syntax: :CALCulate1:COMParator:SECondary:STATe {ON|OFF|1|0}

:CALCulate1:COMParator:SECondary:STATe?

Description: Turn the sub-parameter comparison switch on or off

Parameter:

	Description
ON or 1(initial value)	Turn on the secondary parameter comparison switch
OFF or 0	Turn off the secondary parameter comparison switch

Return Query: {1|0}<newline><^end>

:CALCulate1:COMParator[:STATe]

Syntax: :CALCulate1:COMParator[:STATe] {ON|OFF|1|0}

:CALCulate1:COMParator[:STATe]?

Description: Turn comparison on or off

Parameter:

	Description
ON or 1(initial value)	Turn on comparison function
OFF or 0	Turn off comparison function

Return Query: {1|0}<newline><^end>

:CALCulate1:FORMat

Syntax: :CALCulate1:FORMat {CPD|CPQ|CPG|CPRP|CSD|CSQ|CSRS}

:CALCulate1:FORMat?

Description: Set the primary and secondary parameter functions

Parameter:

	Description
CPD	Set the parameter function to Cp-D
CPQ	Set the parameter function to Cp-Q
CPG	Set the parameter function to Cp-G
CPRP	Set the parameter function to Cp-Rp
CSD	Set the parameter function to Cs-D
CSQ	Set the parameter function to Cs-Q
CSRS	Set the parameter function to Cs-Rs

Return Query: {CPD|CPQ|CPG|CPRP|CSD|CSQ|CSRS}<newline><^end>

:CALCulate1:MATH:EXPRession:CATalog?

Syntax: :CALCulate1:MATH:EXPRession:CATalog?

Description: Return to the current main parameter measurement display mode (DEV,PCNT) (query only)

Return Query: {DEV|PCNT}<newline><^end>

:CALCulate1:MATH:EXPRession:NAME

Syntax: :CALCulate1:MATH:EXPRession:NAME {DEV|PCNT}

:CALCulate1:MATH:EXPRession:NAME?

Description: Set or query the main parameter measurement display mode

Parameter:

	Description
DEV(initial value)	Absolute value deviation
PCNT	% value deviation

Return Query: {DEV|PCNT}<newline><^end>

:CALCulate1:MATH:STATe

Syntax: :CALCulate1:MATH:STATe {ON|OFF|1|0}

:CALCulate1:MATH:STATe?

Description: Turn main parameter measurement display mode on or off

Parameter:

	Description
ON or 1(initial value)	Enable tolerance display mode
OFF or 0	Disable tolerance display mode

Return Query: {1|0}<newline><^end>

:CALCulate2:MATH:EXPRession:CATalog?

Syntax: :CALCulate2:MATH:EXPRession:CATalog?

Description: Return current sub-parameter measurement display mode(DEV,PCNT)(query only)

Return Query: {DEV|PCNT}<newline><^end>

CALCulate2 sub-system commands

:CALCulate2:MATH:EXPRession:NAME

Syntax: :CALCulate2:MATH:EXPRession:NAME {DEV|PCNT}

:CALCulate2:MATH:EXPRession:NAME?

Description: Set or query the secondary parameter measurement display mode

Parameters:

	Description
DEV(initial value)	Absolute value deviation
PCNT	% value deviation

Return Query: {DEV|PCNT}<newline><^end>

:CALCulate2:MATH:STATe

Syntax: :CALCulate2:MATH:STATe {ON|OFF|1|0}

:CALCulate2:MATH:STATe?

Description: Turn on or off the sub-parameter parameter measurement display mode

Parameters:

	Description
ON or 1(initial value)	Enable tolerance display mode
OFF or 0	Disable tolerance display mode

Return Query: {1|0}<newline><^end>

DATA sub-system commands

:DATA:FEED:BUF1

Syntax: :DATA:FEED:BUF1 { "CALCulate1" | "CALCulate1" | "" }

:DATA:FEED:BUF1?

Description: Fill the main parameter measurement data, the sub-parameter measurement data or the null data (ie neither of them) into buffer 1

Parameters:

	Description
"CALCulate1"	Fill the main parameters into buffer 1
"CALCulate1"	Fill the secondary parameters into buffer 1
"" (initial value)	Do not fill in the measurement data into buffer 1.

Return Query: { "CALCulate1" | "CALCulate1" | "" }<newline><^end>

:DATA:FEED:BUF2

Syntax: :DATA:FEED:BUF2 { "CALCulate1" | "CALCulate1" | "" }

:DATA:FEED:BUF2?

Description: Fill the main parameter measurement data, the sub-parameter measurement data or the null data (ie neither of them) into buffer 2

Parameters:

	Description
"CALCulate1"	Fill the main parameters into buffer 2
"CALCulate1"	Fill the secondary parameters into buffer 2
"" (initial value)	Do not fill in the measurement data into buffer 2

Return Query: { "CALCulate1" | "CALCulate1" | "" }<newline><^end>

:DATA:FEED:CONTRol:BUF1[:STATe]

Syntax: :DATA:FEED:CONTRol:BUF1[:STATe] {NEVer|ALWays}

:DATA:FEED:CONTRol:BUF1[:STATe]?

Description: Decide whether to always or never write measurement data to buffer 1

Parameters:

	Description
ALWays	Write test data to buffer 1 after each measurement
NEVer	Do not write test data to buffer 1

Return Query: {NEVer|ALWays} <newline><^end>

:DATA:FEED:CONTRol:BUF2[:STATe]

Syntax: :DATA:FEED:CONTRol:BUF2[:STATe] {NEVer|ALWays}

:DATA:FEED:CONTRol:BUF2[:STATe]?

Description: Decide whether to always or never write measurement data to buffer 2

Parameters:

	Description
ALWays	Write test data to buffer 2 after each measurement
NEVer	Do not write test data to buffer 2

Return Query: {NEVer|ALWays} <newline><^end>

:DATA:FEED:CONTRol:BUF3[:STATe]

Syntax: :DATA:FEED:CONTRol:BUF3[:STATe] {NEVer|ALWays}

:DATA:FEED:CONTRol:BUF3[:STATe]?

Description: Decide whether to always or never write measurement data to buffer 3

Parameters:

	Description
ALWays	Write test data to buffer 3 after each measurement
NEVer	Do not write test data to buffer 3

Return Query: {NEVer|ALWays} <newline><^end>

:DATA:FEED:CONTRol[:STATe]

Syntax: :DATA:FEED:CONTRol[:STATe] {BUF1|BUF2|BUF3} , {NEVer|ALWays}

:DATA:FEED:CONTRol[:STATe]? {BUF1|BUF2|BUF3}

Description: Decide whether to always or never write measurement data to buffer 1, buffer 2, buffer 3.

Parameters:

	Description
ALWays	Write test data to BUF1/BUF2/BUF3 after each measurement
NEVer	Do not write test data to BUF1/BUF2/BUF3

	Description
BUF1	Set buffer 1 as the measurement data storage container
BUF2	Set buffer 2 as the measurement data storage container
BUF3	Set buffer 3 as the measurement data storage container

Return Query: {NEVer|ALWays} <newline><^end>

:DATA:FEED[:SOURce]

Syntax: :DATA:FEED[:SOURce] {BUF1|BUF2} , { "CALCulate1" | "CALCulate1" | "" }

:DATA:FEED[:SOURce] {BUF1|BUF2}?

Description: Fill the main parameter measurement data, the sub-parameter measurement data or the null data (ie neither of them) into buffer 1 or buffer 2

Parameters:

	Description
BUF1	Set buffer 1 as the measurement data storage container
BUF2	Set buffer 2 as the measurement data storage container

	Description
“CALCulate1”	Fill in the main parameters {BUF1 BUF2}
“CALCulate1”	Fill in the secondary parameters {BUF1 BUF2}
“” (initial value)	Do not fill in the measurement data to {BUF1 BUF2}

Return Query: { “CALCulate1” | “CALCulate1” | “” }<newline><^end>

:DATA:POINts:BUF1

Syntax: :DATA:POINts:BUF1 <numeric>

:DATA:POINts:BUF1?

Description: Set the storage depth of the data container buffer 1, use this command to reset the current data container pointer

Parameters:

	<numeric>
Description	Storage depth of data container buffer 1
Range	1-200
Initial Value	200
Resolution interval	1

Return Query: {numeric}<newline><^end>

:DATA:POINts:BUF2

Syntax: :DATA:POINts:BUF2 <numeric>

:DATA:POINts:BUF2?

Description: Set the storage depth of the data container buffer 2, use this command to reset the current data container pointer

Parameters:

	<numeric>
Description	Storage depth of data container buffer 2
Range	1-200
Initial Value	200

Resolution interval	1
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Return Query: {numeric}<newline><^end>

:DATA:POINts:BUF3

Syntax: :DATA:POINts:BUF3 <numeric>

:DATA:POINts:BUF3?

Description: Set the storage depth of the data container buffer 3, use this command to reset the current data container pointer

Parameters:

	<numeric>
Description	Storage depth of data container buffer 3
Range	1-1000
Initial Value	1000
Resolution interval	1

Return Query: {numeric}<newline><^end>

:DATA:POINts[:DATA]

Syntax: :DATA:POINts[:DATA] {BUF1|BUF2|BUF3} , <numeric>

:DATA:POINts[:DATA]? {BUF1|BUF2|BUF3}

Description: Set the storage depth of the data container buffer 1 buffer 2 buffer 3, use this command to reset the current data container pointer

Parameters:

	Description
BUF1	Storage depth of data container buffer 1
BUF2	Storage depth of data container buffer 2
BUF3	Storage depth of data container buffer 3

	<numeric>
Description	Storage depth of data container {BUF1 BUF2 BUF3}
Range	data container buffer 1: 1-200 data container buffer 2: 1-200 data container buffer 3: 1-1000
Initial Value	data container buffer 1: 200 data container buffer 2: 200 data container buffer 3: 1000
Resolution interval	1

Return Query: {numeric}<newline><^end>

:DATA:REfERENCE1:DATA

Syntax: :DATA:REfERENCE1:DATA <numeric>

:DATA:REfERENCE1:DATA?

Description: Set or query the reference value of the main parameter of the tolerance measurement display mode

Parameters:

	<numeric>
Range	-99.9999E9-99.9999E9
Initial Value	0

Return Query: {numeric}<newline><^end>

:DATA:REference1:FILL

Syntax: :DATA:REference1:FILL

Description: Perform a measurement to obtain the reference value of the main parameter of the tolerance measurement display mode.

:DATA:REference2:DATA

Syntax: :DATA:REference2:DATA <numeric>

:DATA:REference2:DATA?

Description: Set or query the reference value of the tolerance parameter of the display mode

Parameters:

	<numeric>
Range	-99.9999E9-99.9999E9
Initial Value	0

Return Query: {numeric}<newline><^end>

:DATA:REference2:FILL

Syntax: :DATA:REference2:FILL

Description: Perform a measurement to obtain the reference value of the sub-parameter of the tolerance measurement display mode.

:DATA[:DATA]

Syntax: :DATA[:DATA] {VMON|IMON|BUF1|BUF2|BUF3|REF1|REF2}

:DATA[:DATA]?

Description: Read the voltage detection value, current detection value, container data of buffer1, buffer 2, buffer 3 , this command will reset the data container pointer.

Parameters:

	Description
VMON	Read monitoring voltage value
IMON	Read monitoring current value

BUF1	Read the measurement data in buffer 1
BUF2	Read the measurement data in buffer 2
BUF3	Read the measurement data in buffer 3

	Description
REF1	Main parameter reference value when setting or reading out tolerance mode
REF2	Sub-parameter reference value when setting or reading out the tolerance mode

	<numeric>
Description	Tolerance mode reference value
Range	-99.9999E9-99.9999E9 (for REF1) -99.9999E9-99.9999E9 (for REF2)
Initial Value	0
Unit	Determined by test function parameters

Return Query: When BUF1 or BUF2 is used as a parameter:

{numeric 1},{ numeric 2},{ numeric 3},···,{ numeric N*3}<newline><^end>

{numeric(n-1)*3+1}	Test state at the nth measurement 0:No error 1:OVERLOAD 2:Capacitor screening (LOW C) failed or contact check failed
{numeric(n-1)*3+2}	The measured value of the primary or secondary parameter of the nth measurement. If OVERLOAD is detected, the measured value is 9.9E37.
{numeric(n-1)*3+3}	Comparator count output for the nth measurement (when the comparator turns off output 11) 0:OUT_OF_BINS 1:BIN1 2:BIN2

	3:BIN3 4:BIN4 5:BIN5 6:BIN6 7:BIN7 8:BIN8 9:BIN9 10:AUX_BIN 11:OVLD(OVERLOAD) or NC(NO CONTACT)
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When BUF3 is used as a parameter (comparator function is off):

{numeric 1},{ numeric 2},{ numeric 3}···,{ numeric N*3}<newline><^end>

{numeric(n-1)*3+1}	Test state at the nth measurement 0: No Error 1:OVERLOAD 2:Capacitor screening (LOW C) failed or contact check failed
{numeric(n-1)*3+2}	The measured value of the main parameter of the nth measurement, if OVERLOAD is detected, the measured value is 9.9E37
{numeric(n-1)*3+3}	The measured value of the sub-parameter of the nth measurement, if OVERLOAD is detected, the measured value is 9.9E37

When BUF3 is used as a parameter (comparator function is turned on):

{numeric 1},{ numeric 2},{ numeric 3},{ numeric 4}···,{ numeric N*4}<newline><^end>

{numeric(n-1)*3+1}	Test state at the nth measurement 0:No Error 1:OVERLOAD 2:Capacitor screening (LOW C) failed or contact check failed
{numeric(n-1)*3+2}	The measured value of the main parameter of the nth measurement, if

	OVERLOAD is detected, the measured value is 9.9E37
{numeric(n-1)*3+3}	The measured value of the sub-parameter of the nth measurement, if OVERLOAD is detected, the measured value is 9.9E37
{numeric(n-1)*3+4}	<p>Comparator count output for the nth measurement (when the comparator turns off output 11)</p> <p>0:OUT_OF_BINS</p> <p>1:BIN1</p> <p>2:BIN2</p> <p>3:BIN3</p> <p>4:BIN4</p> <p>5:BIN5</p> <p>6:BIN6</p> <p>7:BIN7</p> <p>8:BIN8</p> <p>9:BIN9</p> <p>10:AUX_BIN</p> <p>11:OVLD(OVERLOAD) or NC(NO CONTACT)</p>

DISplay sub-system commands

:DISPlay:PAGE

Syntax: :DISPlay:PAGE

{MEASurement|BNUMber|BCOunt|MSETup|CSETup|LTABle|CATAlog|SYSTem|MLARge|SCONfig|SERVice|CCORrection|CCHeck}

:DISPlay:PAGE?

Description: Set or get the current page number

Parameters:

Page	Display page number description
MEASurement	Measurement display page
BNUMber	Bin number display page
BCOunt	Bin count page
MSETup	Measurement setup page
CSETup	User correction page
LTABle	Limit setting page
CATAlog	File page
SSETup	System setup page
MLARge	Large font display page
CCHeck	Contact check page
NSETup	Network settings page

Return Query:

{MEAS|BNUM|BCO|MSET|CSET|LTAB|CATA|SYST|SELF|MLAR|SCON|SERV|CCOR|CCH}<newline><^END>

:DISPlay[:WINDow][:STATe]

Syntax :DISPlay[:WINDow][:STATe] {ON|OFF|1|0}

:DISPlay[:WINDow][:STATe]?

Description: Turn on/off measurement result display

Parameters:

	Description
ON or 1 (initial value)	Turn on measurement display
OFF or 0	Turn off measurement display

Return Query: {1|0}<newline><^END>

:DISPlay[:WINDow]:TE XT1[:DATA]:FMSD:DATA

Syntax: :DISPlay[:WINDow]:TEXT1[:DATA]:FMSD:DATA <numeric>

:DISPlay[:WINDow]:TEXT1[:DATA]:FMSD:DATA?

Description: Set the main parameter fixed decimal point display format. The setting does not work when the main parameter display is set to the following mode:

1. Percentage tolerance display mode
2. The secondary parameter is D, Q or % display

Parameters:

	<numeric>
Description	The highest bit of main parameter decimal point display format
Range	1a 10a 100a 1f 10f 100f 1p 10p 100p 1n 10n 100n 1u 10u 100u 1m 10m 100m 1 10 100 1k 10k 100k 1M 10M 100M 1G 10G 100G 1T 10T 100T 1P 10P 100P 1E
initial value	1n

Return Query: {numeric}<newline><^END>

:DISPlay[:WINDow]:TEXT1[:DATA]:FMSD[:STATe]

Syntax: :DISPlay[:WINDow]:TEXT1[:DATA]:FMSD[:STATe] {ON|OFF|1|0}

:DISPlay[:WINDow]:TEXT1[:DATA]:FMSD[:STATe]?

Description: Main parameter decimal point display format control switch

Parameters:

	Description
ON or 1	Fixed decimal point format display
OFF or 0 (initial value)	Automatic decimal point format display

Return Query: {1|0}<newline><^END>

:DISPlay[:WINDow][:STATe]

Syntax: :DISPlay[:WINDow][:STATe] {ON|OFF|1|0}

:DISPlay[:WINDow][:STATe]?

Description: Turn on/off measurement result display

Parameters:

	Description
ON or 1 (initial value)	Turn on measurement display
OFF or 0	Turn off measurement display

Return Query: {1|0}<newline><^END>

:DISPlay[:WINDow]:TEXT2[:DATA]:FMSD:DATA

Syntax: :DISPlay[:WINDow]:TEXT2[:DATA]:FMSD:DATA <numeric>

:DISPlay[:WINDow]:TEXT2[:DATA]:FMSD:DATA?

Description: Set the secondary parameter to a fixed decimal point display format. The setting does not work when the sub-parameter display is set to the following mode:

1. % tolerance display mode
2. The secondary parameter is D, Q or % display

Parameters:

	<numeric>
Description	The highest bit of secondary parameter decimal point display format
Range	1a 10a 100a 1f 10f 100f 1p 10p 100p 1n 10n 100n 1u 10u

	100u 1m 10m 100m 1 10 100 1k 10k 100k 1M 10M 100M 1G 10G 100G 1T 10T 100T 1P 10P 100P 1E
Initial Value	1n

Return Query: {numeric}<newline><^END>

:DISPlay[:WINDow]:TEXT2[:DATA]:FMSD[:STATe]

Syntax: :DISPlay[:WINDow]:TEXT2[:DATA]:FMSD[:STATe] {ON|OFF|1|0}

:DISPlay[:WINDow]:TEXT2[:DATA]:FMSD[:STATe]?

Description: The sub-parameter decimal point display format control switch.

Parameters:

	Description
ON or 1	Fixed decimal point format display
OFF or 0 (initial value)	Automatic decimal point format display

Return Query: {1|0}<newline><^END>

FEtch sub-system commands

:FETCh?

Syntax: :FETCh?

Description: Obtain the measurement results. If the OVERLOAD or the contact check fails (NO CONTACT), both the primary and secondary measurements are 9.9E37 and the comparator sort result is 11.

Note: If the comparator switch is off, the read out data format is {numeric1}, {numeric2}, and {numeric3}.

{numeric 1}, {numeric 2}, {numeric 3}, and {numeric 4}, data meaning:

{numeric 1}: measurement status (0-2 respectively indicate the following:)

0: No error

1: over load (OVLd)

2: C Filter failed or contact check failed

{numeric 2}: main parameter test result

{numeric 3}: secondary parameter test result

{numeric 4}: comparator sorting result (0-11 respectively indicate the following):

0: OUT_OF_BINS.

1: BIN1.

2: BIN2.

3: BIN3.

4: BIN4.

5: BIN5.

6: BIN6.

7: BIN7.

8: BIN8.

9: BIN9.

10: AUX_BIN.

11: OVLD (Overload) or NC (No contact) [sorting not possible]

Return Query:

{numeric 1},{numeric 2},{numeric 3},{numeric 4}<newline><^END>

MMEMory sub-system commands

:MMEMory:DELeTe[:REGister]

Syntax: :MMEMory:DELeTe[:REGister] <numeric>

Description: delete an internal file

Parameters:

	<numeric>
Description	Internal file serial number
Range	0-39

:MMEMory:LOAD:STATe[:REGister]

Syntax: :MMEMory:LOAD:STATe[:REGister] <numeric>

Description: load an internal file

Parameters:

	<numeric>
Description	Internal file serial number
Range	0-39

:MMEMory:STORe:STATe[:REGister]

Syntax: :MMEMory:STORe:STATe[:REGister]<numeric>

Description: Store settings to an internal file

Parameters:

	<numeric>
Description	Internal file serial number
Range	0-39

READ sub-system commands

:READ?

Syntax: :READ?

Description: Wait for the measurement to end and get the measurement. If the OVERLOAD or the contact check fails (NO CONTACT), the primary and secondary measurements are both 9.9E37 and the comparator sort result is 11.

Note: If the comparator switch is off, the read out data format is {numeric1}, {numeric2}, and {numeric3}.

{numeric 1}, {numeric 2}, {numeric 3}, and {numeric 4} data meaning:

{numeric 1}: measurement status (0-2 respectively indicate the following:)

0: No error

1: Overload (OVLD)

2: C Filter failed or contact check failed

{numeric 2}: main parameter test result

{numeric 3}: secondary parameter test result

{numeric 4}: comparator sorting result (0-11 respectively indicate the following):

0: OUT_OF_BINS.

1: BIN1.

2: BIN2.

3: BIN3.

4: BIN4.

5: BIN5.

6: BIN6.

7: BIN7.

8: BIN8.

9: BIN9.

10: AUX_BIN.

11: OVLD (Overload) or NC (No contact) [sorting not possible]

Return Query:

{numeric 1},{numeric 2},{numeric 3},{numeric 4}<newline><^END>

SENSe sub-system commands

[[:SENSe]:AVERage:COUNT

Syntax: [[:SENSe]:AVERage:COUNT <numeric>

[[:SENSe]:AVERage:COUNT?

Description: Set the average number of times

Parameters:

	<numeric>
Description	average value
Range	1-256
Initial Value	1
Minimum step	1

Return Query: {numeric}<newline><^END>

[[:SENSe]:CORRection:CKIT:STAN1:FORMat

Syntax: [[:SENSe]:CORRection:CKIT :STAN1:FORMat {GB|CPG}

[[:SENSe]:CORRection:CKIT:STAN1:FORMat?

Description: Set user open correction parameter type

Parameters:

	Description
GB(initial value)	The main parameter is set to G, The secondary parameter is B
CPG	The main parameter is set to Cp, The secondary parameter is G

Return Query: {GB|CPG}<newline><^END>

[[:SENSe]:CORRection:CKIT:STAN2:FORMat

Syntax: [[:SENSe]:CORRection:CKIT :STAN2:FORMat {RX|LSRS}

[[:SENSe]:CORRection:CKIT:STAN2:FORMat?

Description: Set the user short correction parameter type

Parameters:

	Description
RX(initial value)	The main parameter is set to R, The secondary parameter is X
LSRS	The main parameter is set to Ls, The secondary parameter is Rs

Return Query: {RX|LSRS}<newline><^END>

[[:SENSe]:CORRection:CKIT:STAN3:FORMat

Syntax:[[:SENSe]:CORRection:CKIT:STAN3:FORMat

{CPD|CPQ|CPG|CPRP|CSD|CSQ|CSRS}

[[:SENSe]:CORRection:CKIT:STAN3:FORMat?

Description: Set the user load correction parameter type

Parameters:

	Description
CPD	The main parameter is set to Cp, The secondary parameter is D
CPQ	The main parameter is set to Cp, The secondary parameter is Q
CPG	The main parameter is set to Cp, The secondary parameter is G
CPRP	The main parameter is set to Cp, The secondary parameter is Rp
CSD	The main parameter is set to Cs, The secondary parameter is D
CSQ	The main parameter is set to Cs, The secondary parameter is Q
CSRS	The main parameter is set to Cs, The secondary parameter is Rs

Return Query: {CPD|CPQ|CPG|CPRP|CSD|CSQ|CSRS}<newline><^END>

[[:SENSe]:CORRection:CKIT:STAN3[:DATA]

Syntax: [[:SENSe]:CORRection:CKIT:STAN3[:DATA] <numeric 1>, <numeric 2>

[[:SENSe]:CORRection:CKIT:STAN3[:DATA]?

Description: Set the standard value of user load correction

Parameters:

	<numeric 1>	<numeric 2>
Description	main parameter	secondary parameter
Range	-999.999 到 999.999	-99.999E9 to 99.999E9
Initial Value	100E-9	0
Unit	F	Determined by parameter type

Return Query: {numeric 1},{numeric 2}<newline><^END>

[[:SENSe]:CORRection:COLLect[:ACQuire]

Syntax: [[:SENSe]:CORRection: COLLect[:ACQuire] {STAN1|STAN2|STAN3}

Description: Perform user open/short/load correction and turn on the corresponding function switch

For user open/short correction, full frequency correction is performed. For user load correction, the correction of the currently set frequency is performed.

Parameters:

	Description
STAN1	Perform user open circuit correction
STAN2	Perform user short circuit correction
STAN3	Perform user load correction

[[:SENSe]:CORRection:COLLect:LOAD:RANGe:AUTO

Syntax: [[:SENSe]:CORRection:COLLect:LOAD:RANGe:AUTO {ON|OFF|1|0}

[[:SENSe]:CORRection:COLLect:LOAD:RANGe:AUTO?

Description: Set the auto range switch when performing user load correction. When the switch is turned off, the current set range is used when performing load correction.

Parameters:

	Description
ON or 1 (initial value)	Turn on the load range automatic switch and use the auto range when performing load correction
OFF or 0	Turn off the load range automatic switch and use the lock range when performing load correction

Return Query: {1|0}<newline><^END>

[[:SENSe]:CORRection:COLLect: STAN3:RANGe:AUTO

Syntax: [[:SENSe]:CORRection:COLLect: STAN3:RANGe:AUTO {ON|OFF|1|0}

[[:SENSe]:CORRection:COLLect: STAN3:RANGe:AUTO?

Description: Set the auto range switch when the user reference calibration standard value is obtained. When the switch is turned off, the current setting range is used when performing load correction.

Parameters:

	Description
ON or 1 (initial value)	Autoranging when measuring load calibration standard values
OFF or 0	Locking range when measuring load calibration standard value

Return Query: {1|0}<newline><^END>

[[:SENSe]:CORRection:DATA

Syntax: [[:SENSe]:CORRection:DATA {STAN1|STAN2|STAN3},<numeric 1>,<numeric 2>

[[:SENSe]:CORRection:DATA? {STAN1|STAN2|STAN3}

Description: Set the user open/short/load correction value corresponding to the current frequency

Parameters:

	Parameters1: {STAN1 STAN2 STAN3}
STAN1	Set or read out the user open correction value
STAN1	Set or read out the user short correction value
STAN1	Set or read out user load correction value

When parameter 1 is STAN1:

	Parameters2: <numeric 1>	Parameters2: <numeric 2>
Description	Primary parameter value	Secondary parameter value
Range	-99.9999E9 到 99.9999E9	-99.9999E9 到 99.9999E9
Initial Value	0	0
Unit	Determined by parameter type	Determined by parameter type

When parameter 1 is STAN2:

	Parameters2: <numeric 1>	Parameters2: <numeric 2>
Description	Primary parameter value	Secondary parameter value
Range	-99.9999E9 到 99.9999E9	-99.9999E9 到 99.9999E9
Initial Value	0	0
Unit	Determined by parameter type	Determined by parameter type

When parameter 1 is STAN3:

	Parameters2: <numeric 1>	Parameters2: <numeric 2>
Description	Primary parameter value	Secondary parameter value
Range	-999.999 到 999.999	-99.9999E9 到 99.9999E9
Initial Value	100E-9	0
Unit	F	Determined by parameter type

Return Query: {numeric 1},{numeric 2}<newline><^END>

[[:SENSe]:CORRection:LOAD[:STATe]

Syntax: [[:SENSe]:CORRection:LOAD[:STATe] {ON|OFF|1|0}

[[:SENSe]:CORRection:LOAD[:STATe]?

Description: Turn load correction on or off.

Parameters:

	Description
ON or 1 (initial value)	Turn on user load correction
OFF or 0	Turn off user load correction

Return Query: {1|0}<newline><^END>

[[:SENSe]:CORRection:MULTiple:CHANnel

Syntax: [[:SENSe]:CORRection:MULTiple:CHANnel <numeric>

[[:SENSe]:CORRection:MULTiple:CHANnel?

Description: Set the channel number in the multi-channel function.

Parameters:

	<numeric>
Description	channel number
Range	0-255
Initial Value	0
Step	1

MAX Used to set the maximum channel number.

MIN is used to set the minimum channel number.

Return Query: {numeric}<newline><^END>

[[:SENSe]:CORRection:MULTiple:CKIT:STAN3[:STATe]

Syntax: [[:SENSe]:CORRection:MULTiple:CKIT:STAN3[:STATe] {ON|OFF|1|0}

[[:SENSe]:CORRection:MULTiple:CKIT:STAN3[:STATe]?

Description: Load reference multi-channel switch

Parameters:

	Description
ON or 1	Multiple Channel
OFF or 0(initial value)	Single Channel

Return Query: {1|0}<newline><^END>

[[:SENSe]:CORRection:MULTiple[:STATe]

Syntax: [[:SENSe]:CORRection:MULTiple[:STATe] {ON|OFF|1|0}

[[:SENSe]:CORRection:MULTiple[:STATe]?

Description: multiple channel switch

Parameters:

	Description
ON or 1	Multi-channel function is turned on
OFF or 0(initial value)	Multi-channel function is turned off

Return Query: {1|0}<newline><^END>

[[:SENSe]:CORRection:OFFSet:DATA

Syntax: [[:SENSe]:CORRection:OFFSet:DATA <numeric 1>,<numeric 2>

[[:SENSe]:CORRection:OFFSet:DATA?

Description:Set the data for the offset correction of the primary and secondary parameters.(OFFSET)

Parameters:

	<numeric 1>	<numeric 2>
--	-------------	-------------

Description	primary parameter offset correction data	secondary parameter offset correction data
Range	-999.999 to 999.999	-99.9999E9 to 99.9999E9
Initial Value	100E-9	0
Unit	F	Determined by parameter type

Return Query: {numeric 1},{numeric 2}<newline><^END>

[[:SENSe]:CORRection:OFFSet[:STATe]

Syntax: [[:SENSe]:CORRection:OFFSet[:STATe] {ON|OFF|1|0}

[[:SENSe]:CORRection:OFFSet[:STATe]?

Description: Turn load correction function on/off

Parameters:

	Description
ON or 1	Turn load correction on
OFF or 0(initial value)	Turn load correction off

Return Query: {1|0}<newline><^END>

[[:SENSe]:CORRection:OPEN[:STATe]

Syntax: [[:SENSe]:CORRection:OPEN[:STATe] {ON|OFF|1|0}

[[:SENSe]:CORRection:OPEN[:STATe]?

Description: Turn open correction function on/off

Parameters:

	Description
ON or 1	Turn open correction on
OFF or 0(initial value)	Turn open correction off

Return Query: {1|0}<newline><^END>

[[:SENSe]:CORRection:SHORT[:STATe]

Syntax: [[:SENSe]:CORRection:SHORT[:STATe]{ON|OFF|1|0}

[[:SENSe]:CORRection:SHORT[:STATe]?

Description: Turn short correction function on/off

Parameters:

	Description
ON or 1	Turn short correction on
OFF or 0(initial value)	Turn short correction off

Return Query: {1|0}<newline><^END>

[[:SENSe]][:FIMPedance]:APERture:TIME

Syntax: [[:SENSe]][:FIMPedance]:APERture:TIME {1|2|4|6|8}

[[:SENSe]][:FIMPedance]:APERture:TIME?

Description: Set measurement speed

Parameters:

	Description
1, 2, 4, 6, 8	Set measurement speed

Return Query: {1|2|4|6|8}<newline><^END>

[[:SENSe]][:FIMPedance]: CONTACT1:VERify[:STATe]

Syntax: [[:SENSe]][:FIMPedance]:CONTACT1:VERify[:STATe] {ON|OFF|1|0}

[[:SENSe]][:FIMPedance]:CONTACT1:VERify[:STATe]?

Description: Control whether or not to use contact inspection

Note: Contact check function is only valid at 100Hz, 120Hz, 1kHz

Parameters:

	Description
ON or 1	Enable contact check function
OFF or 0(initial value)	Turn off contact check

Return Query: {1|0}<newline><^END>

[[:SENSe]][:FIMPedance]: CONTACT1:VERify:THReshold1

Syntax: [[:SENSe]][:FIMPedance]:CONTACT1:VERify:THReshold1
<numeric>

[[:SENSe]][:FIMPedance]:CONTACT1:VERify:THReshold1?

Description: Set/get the THReshold1 of the contact check. THReshold1 is a parameter proportional to the contact resistance of Hp or Hc. It is recommended that users use the default values.

Note: THReshold1 is valid only for the Hp, Hc and Lc terminals at a range of 220uF to 1mF and 1kHz at a frequency of 22HzF to 100uF at a frequency of 100Hz/120Hz. The contact check function does not detect the contact resistance at the Lp terminal at this frequency and range. The contact proportional resistance of the Lc terminal in the contact check function at this frequency and range is set with THReshold1. (Therefore, there is no low end limit at this range).

Parameters:

	<numeric>
Description	The value of THReshold2 is the low-end contact check value.
Range	0-1
Initial Value	0.1
Resolution	0.01

Return Query: {numeric}<newline><^END>

[[:SENSe]][:FIMPedance]:CREJect:LIMit

Syntax: [[:SENSe]][:FIMPedance]:CREJect:LIMit <numeric>

[[:SENSe]][:FIMPedance]:CREJect:LIMit

Description: Set the boundary value of Low C

Parameters:

	<numeric>
Description	boundary value
Range	0-10
Initial Value	0
Unit	%

MAX is used to set the maximum boundary value. MIN is used to set the minimum boundary value.

Return Query: {numeric}<newline><^END>

[[:SENSe]][:FIMPedance]:CREJect[:STATe]

Syntax: [[:SENSe]][:FIMPedance]:CREJect[:STATe] {ON|OFF|1|0}

[[:SENSe]][:FIMPedance] :CREJect[:STATe]?

Description: Turn on or off LOW C function

Parameters:

	Description
ON or 1	Turn on LOW C function
OFF or 0(initial value)	Turn off LOW C function

Return Query: {1|0}<newline><^END>

[[:SENSe]][:FIMPedance]:RANGe:AUTO

Syntax: [[:SENSe]][:FIMPedance]:RANGe:AUTO {ON|OFF|1|0}

[[:SENSe]][:FIMPedance]:RANGe:AUTO?

Description: Set the range to be automatic or hold.

Parameters:

	Description
ON or 1 (initial value)	Set range auto
OFF or 0	Set range hold

Return Query: {1|0}<newline><^END>

[[:SENSe]][:FIMPedance]:RANGe[:UPPer]

Syntax: [[:SENSe]][:FIMPedance]:RANGe[:UPPer]

{1p|2.2p|4.7p|10p|22p|47p|100p|220p|470p|1n|2.2n|4.7n|10n|22n|47n|100n|220n|470n|1μ|2.2μ|4.7μ|10μ|22μ|47μ|100μ|220μ|470μ|1m}

[[:SENSe]][:FIMPedance]:RANGe[:UPPer]?

Description: Set the measurement range

Parameters:

	<numeric>
Description	measurement range
Range	100Hz: 10nF-1mF
	120Hz: 10nF-1mF
	1kHz: 100pF-100uF
	10kHz: 100pF-10uF
	100kHz: 10pF-100nF
	1MHz: 1pF-1nF
Initial Value	100uF

MAX is used to set the maximum range. MIN is used to set the minimum range.

Return Query:

```
{1pF|2.2pF|4.7pF|10pF|22pF|47pF|100pF|220pF|470pF|1nF|2.2nF|4.7nF|10nF|22nF|47nF|100nF|220nF|470nF|1uF|2.2uF|4.7uF|10uF|22uF|47uF|100uF|220uF|470uF|1mF}
<newline><^END>
```

SOURce sub-system commands

:SOURce:FREQuency[:CW]

Syntax: :SOURce:FREQuency[:CW] <numeric> [Hz|kHz|MHz]

:SOURce:FREQuency[:CW]?

Description: Set the measurement frequency.

Parameters:

	Description
Range	ST2638: 100Hz, 120Hz, 1kHz, 10kHz, 100kHz, 1MHz
	ST2638A: 100Hz, 120Hz, 1kHz, 10kHz, 100kHz
Initial Value	1kHz

Return Query: {100|120|1E3|10E3|100E3|1E6}<newline><^END>

:SOURce:VOLTage:ALC[:STATe]

Syntax: :SOURce:VOLTage:ALC[:STATe] {ON|OFF|1|0}

:SOURce:VOLTage:ALC[:STATe]?

Description: Turn on or off signal level compensation (SLC) function

Parameters:

	Description
ON or 1	Turn on signal level compensation (SLC) function
OFF or 0(initial value)	Turn off signal level compensation (SLC) function

Return Query: {1|0}<newline><^END>

:SOURce:VOLTage[:LEVel][:IMMediate][:AMPLitude]

Syntax: :SOURce:VOLTage[:LEVel][:IMMediate][:AMPLitude] <numeric>[mV|V]

:SOURce:VOLTage[:LEVel][:IMMediate][:AMPLitude]?

Description: Set the measurement signal level value

Parameters:

	<numeric>
Description	measurement signal level value
Range	100m-1
Initial Value	1
Unit	V
Step	10m

MAX is used to set the maximum measured signal level value. MIN is used to set the minimum measurement signal level value.

Return Query: {numeric}<newline><^END>

LIST sub-system commands

:LIST:MODE

Syntax: :LIST:MODE {SEQuence|STEPped}

:LIST:MODE?

Description: Set list sweep mode

Parameters:

	Description
SEQuence	Continuous mode
STEPped	Single step mode

Return Query: {SEQuence|STEPped}<newline><<^END>

:LIST:BEEP

Syntax: :LIST: BEEP {OFF|PASS|FAIL}

:LIST: BEEP?

Description: Set the list sweep alarm mode.

Parameters:

	Description
OFF	Turn off the list sweep beep
PASS	Pass beep
FAIL	Fail beep

Return Query: {OFF|PASS|FAIL}<newline><<^END>

:LIST:FREquency

Syntax: :LIST: FREquency

<numeric1>,<numeric2>,<numeric3>,<numeric4>,<numeric5>,<numeric6>,<numeric7>,<numeric8>,<numeric9> [Hz|kHz|MHz]

:LIST:BEEP?

Description: Set the sweep list frequency

Parameters:

	Description
Range	ST2638: 100Hz, 120Hz, 1kHz, 10kHz, 100kHz, 1MHz
	ST2638A: 100Hz, 120Hz, 1kHz, 10kHz, 40kHz, 100kHz

Return Query:

<numeric1>,<numeric2>,<numeric3>,<numeric4>,<numeric5>,<numeric6>,<numeric7>,<numeric8>,<numeric9><newline><^END>

:LIST:VOLTage

Syntax: :LIST: VOLTage

<numeric1>,<numeric2>,<numeric3>,<numeric4>,<numeric5>,<numeric6>,<numeric7>,<numeric8>,<numeric9> [mV|V]

:LIST: VOLTage?

Description: Set the sweep list voltage.

Parameters:

	Description
Range	0-1V
Step	10mV

Return Query

<numeric1>,<numeric2>,<numeric3>,<numeric4>,<numeric5>,<numeric6>,<numeric7>,<numeric8>,<numeric9><newline><^END>

:LIST:VOLTage

Syntax: :LIST: VOLTage

<numeric1>,<numeric2>,<numeric3>,<numeric4>,<numeric5>,<numeric6>,<numeric7>,<numeric8>,<numeric9> [mA|A]

:LIST: VOLTage?

Description: Set the sweep list voltage.

Parameters:

	Description
Range	0-3A

Return Query:

<numeric1>,<numeric2>,<numeric3>,<numeric4>,<numeric5>,<numeric6>,<numeric7>,<numeric8>,<numeric9><newline><^END>

:LIST:BAND[1-10]

Syntax: :LIST:BAND[1-10] {A|B|OFF},<low>,<high>

:LIST:BAND[1-10]?

Description: Set the limit value for the list sweep measurement limit function. When A or B is a parameter, both the lower and upper limits should be entered. If you do not enter either one, an error occurs. In the off state, you can select <low>, <high>.

Parameters:

	Description
A	Set the limit test target to A (primary parameter)
B	Set the limit test target to B (secondary parameter)
OFF (default value)	Set the limit test target to off

	<low>,<high>
default value	In the off state, for <low>, <high>, the query returns -9.9E37, 9.9E37 respectively
Unit	Depends on test function

Return Query: {A|B|OFF},<low>,<high><newline><^END>

:LIST CLear

Syntax: :LIST CLear

Description: Clear sweep list.

STATus sub-system commands

:STATus:OPERation:CONDition?

Syntax: :STATus:OPERation:CONDition?

Description: Read out the value of Operation Status Condition register.

Return Query: {numeric}<newline><^END>

:STATus:OPERation:ENABLE

Syntax: :STATus:OPERation:ENABLE <numeric>

:STATus:OPERation:ENABLE?

Description: Set the value of the Operation Status Enable register.

Parameters:

	<numeric>
Description	Operation status enable register value
Range	0-32767
Initial Value	0
Step	1

Return Query: {numeric}<newline><^END>

:STATus:OPERation[:EVENT]?

Syntax: :STATus:OPERation[:EVENT]?

Description: Read out the value of the Operation Status Event register.

Return Query: {numeric}<newline><^END>

:STATus:OPERation:UPDate

Syntax: :STATus:OPERation:UPDate {ON|OFF|1|0}

:STATus:OPERation:UPDate?

Description: Enable/disable updating the value of the Operation Status Event register. Disable can shorten EOM time.

Parameters:

	Description
ON or 1	Update the value of the operational status event register
OFF or 0(initial value)	Do not update the value of the operational status event register

Return Query: {1|0}<newline><^END>

:STATus:PRESet

Syntax: :STATus:PRESet

Description: Initialize the operation status register and query the value of the Questionable Status register

SYSTem sub-system commands

:SYSTem:BEEPer:STATe

Syntax: :SYSTem:BEEPer:STATe {ON|OFF|1|0}

:SYSTem:BEEPer:STATE?

Description: Turn on or off system beep output function.

Parameters:

	Description
ON or 1	Turn on system beep output function
OFF or 0(initial value)	Turn off system beep output function

Return Query: {1|0}<newline><^END>

:SYSTem:BEEPer:TONE

Syntax: :SYSTem:BEEPer:TONE <numeric>

:SYSTem:BEEPer:TONE?

Description: Select the system beep tone.

Parameters:

	Description
Range	1-4
Initial Value	1
Step	1

Return Query: {1|2|3|4}<newline><^END>

:SYSTem:COMMunicate:GPIB[:SELF]:ADDRess

Syntax: :SYSTem:COMMunicate:GPIB[:SELF]:ADDRess <numeric>

:SYSTem:COMMunicate:GPIB[:SELF]:ADDRess?

Description: Set GPIB address

Parameters:

	Description
Range	0-30
Initial Value	8
Step	1

Return Query: {numeric}<newline><^END>

:SYSTem:COMMunicate:LAN[:SELF]:ADDResS

Syntax: :SYSTem:COMMunicate:LAN[:SELF]:ADDResS <String>

:SYSTem:COMMunicate:LAN[:SELF]:ADDResS?

Description: Set a static IP address.

Parameters:

	Description
Initial Value	"192.168.1.29"

Return Query: {"string"}<newline><^END>

:SYSTem:COMMunicate:LAN[:SELF]:CURRent:ADDResS?

Syntax: :SYSTem:COMMunicate:LAN[:SELF]:CURRent:ADDResS?

Description: Query the current IP address value.

Return Query: {"string"}<newline><^END>

:SYSTem:COMMunicate:LAN[:SELF]:CURRent:DGATeway?

Syntax: :SYSTem:COMMunicate:LAN[:SELF]:CURRent:DGATeway?

Description: Query the default gateway.

Return Query: {"string"}<newline><^END>

:SYSTem:COMMunicate:LAN[:SELF]:CURRent:SMASk?

Syntax: :SYSTem:COMMunicate:LAN[:SELF]:CURRent:SMASk?

Description: Query the subnet mask.

Return Query: {"string"}<newline><^END>

:SYSTem:COMMunicate :LAN[:SELF]:DGATeway

Syntax: :SYSTem:COMMunicate:LAN[:SELF]:DGATeway <String>

:SYSTem:COMMunicate:LAN[:SELF]:DGATeway?

Description: Set the static default gateway address.

Parameters:

	Description
Initial Value	"192.168.1.1"

Return Query: {"string"}<newline><^END>

:SYSTEM:COMMunicate :LAN[:SELF]:PRESet

Syntax: :SYSTEM:COMMunicate: LAN[:SELF]:PRESet

Description: Reset the network settings.

:SYSTEM:COMMunicate :LAN[:SELF]:SMASK

Syntax: :SYSTEM:COMMunicate:LAN[:SELF]:SMASK <String>

:SYSTEM:COMMunicate:LAN[:SELF]:SMASK?

Description: Set a static subnet mask.

Parameters:

	Description
Initial Value	"255.255.255.0"

Return Query: {"string"}<newline><^END>

:SYSTEM:DATE

Syntax: :SYSTEM:DATE <year>,<month>,<day>

:SYSTEM:DATE?

Description: Set the system date.

Parameters:

	<year>
Range	2000-2098
Unit	years
Step	1

	<month>
Range	1-12
Unit	months

Step	1
------	---

	<day>
Range	1-31 (Maximum dependent month)
Unit	days
Step	1

Return Query: {"string"}<newline><^END>

string: {year, month, day}

:SYSTEM:FSHift

Syntax: :SYSTEM:FSHift <numeric>

:SYSTEM:FSHift?

Description: Set the offset of the 1MHz measurement frequency.

Parameters:

	<numeric>
Description	Frequency shift value
Range	-2 - 2
Initial Value	0
Unit	%
Step	1

Return Query: {numeric}<newline><^END>

:SYSTEM:KLOCK

Syntax: :SYSTEM:KLOCK {ON|OFF|1|0}

:SYSTEM:KLOCK?

Description: Lock or unlock the keyboard.

Parameters:

	Description
ON or 1	Lock the keyboard
OFF or 0	Unlock the keyboard

Return Query: {1|0}<newline><^END>

:SYSTEM:PRESet

Syntax: :SYSTEM:PRESet

Description: Clear the instrument settings.

:SYSTEM:TIME

Syntax: :SYSTEM:TIME <hour>,<minute>,<second>

:SYSTEM:TIME?

Description: Set the system time.

Parameters:

	<hour>
Range	0-23
Unit	hours
Step	1

	<minute>
Range	0-59
Unit	minutes
Step	1

	<second>
Range	0-59
Unit	seconds
Step	1

Return Query: {"string"}<newline><^END>

string: {hour, minute, second}

TRIGger sub-system commands

:TRIGger[:SEQ1]:DELay

Syntax: :TRIGger[:SEQ1]:DELay <numeric>[mS|S]

:TRIGger[:SEQ1]:DELay?

Description: Set the source delay.

Parameters:

	<numeric>
Description	source delay
Range	0-1
Initial Value	0
Unit	s(second)
Step	100u

Return Query: {numeric}<newline><^END>

:TRIGger[:SEQ1][:IMMEDIATE]

Syntax: :TRIGger[:SEQ1][:IMMEDIATE]

Description: Trigger the instrument to perform a measurement.

:TRIGger[:SEQ1]:SLOPe

Syntax: :TRIGger[:SEQ1]:SLOPe {POSitive|NEGative}

:TRIGger[:SEQ1]:SLOPe?

Description: Set the external trigger pulse polarity.

Parameters:

	Description
POSitive(initial value)	positive edge trigger
NEGative	negative edge trigger

Return Query: {POSitive|NEGative}<newline><^END>

:TRIGger[:SEQ1]:SOURce

Syntax: :TRIGger[:SEQ1]:SOURce {INTernal|MANual|EXTernal|BUS}

:TRIGger[:SEQ1]:SOURce?

Description: Set the trigger source.

Parameters:

	Description
INTernal(initial value)	internal trigger
MANual	manual trigger
EXTernal	External trigger
BUS	bus trigger

Return Query: {INT|MAN|EXT|BUS}<newline><^END>

:TRIGger[:SEQ2]:DELay

Syntax: :TRIGger[:SEQ2]:DELay <numeric>[mS|S]

:TRIGger[:SEQ2]:DELay?

Description: Set the source delay.

Parameters:

	<numeric>
Description	Measurement delay
Range	0-1
Initial Value	0
Unit	s(second)
Step	100u

Return Query: {numeric}<newline><^END>

Appendix D SCPI directory table

The following table is divided by instruction function to facilitate retrieval. The detailed syntax of the corresponding instruction should be viewed in the corresponding section of the IEEE command or SCPI command.

Function	Set up or execute a item		SCPI commands
Measurement conditions	Reset		:SYSTem:PRESet , *RST
	Measurement function setting	primary parameter	:CALCulate1:FORMat
		secondary parameter	:CALCulate2:FORMat
	measurement signal setting	frequency	:SOURce:FREQuency[:C W]
		1MHz frequency shift	:SYSTem:FSHift
		level	:SOURce:VOLTage[:LEVel][:IMMediate][:AM PLitude]
		(SLC)	:SOURce:VOLTage:ALC[: STATe]
		Output mode	:SOURce:VOLTage:MODE
		Range setting	auto
		range	[:SENSe][:FIMPedance]: APERture[:MODE]
	Average setting	average	[:SENSe]:AVERage:COU Nt
	Cable length setting		:CALibration:CABLe[:LEN Gth]
	Source delay setting		:TRIGger[:SEQ1]:DELay
	Trigger delay setting		:TRIGger:SEQ2:DELay

Function	Set up or execute a item	SCPI commands	
User correction	Open circuit correction ON/OFF	[:SENSe]:CORRection:OPEN[:STATe]	
	short circuit correction ON/OFF	[:SENSe]:CORRection:SHORt[:STATe]	
	Load correction ON/OFF	[:SENSe]:CORRection:LOAD[:STATe]	
	open circuit correction parameter type	[:SENSe]:CORRection:CKIT:STAN1:FORMat	
	short circuit correction parameter type	[:SENSe]:CORRection:CKIT:STAN2:FORMat	
	Load reference	reference	[:SENSe]:CORRection:CKIT:STAN3[:DATA]
		Reference type	[:SENSe]:CORRection:CKIT:STAN3:FORMat
	Load correction range		[:SENSe]:CORRection:COLLect:LOAD:RANGe:AUTO [:SENSe]:CORRection:COLLect:STAN3:RANGe:AUTO
	Correct data	measurement	[:SENSe]:CORRection:COLLect[:ACQuire]
		Setting and query	[:SENSe]:CORRection:DATA
Offset ON/OFF		[:SENSe]:CORRection:OFFSet[:STATe]	
Offset data		[:SENSe]:CORRection:OFFSet:DATA	
scan(multi-channels correction)	ON/OFF	[:SENSe]:CORRection:MULTiple[:STATe]	
	Channel number setting		[:SENSe]:CORRection:MULTiple:CHANnel
	Channel mode setting		[:SENSe]:CORRection:MULTiple:CKIT:STAN3[:STATe]

Function	Set up or execute a item	SCPI commands
Trigger	trigger	*TRG

			:TRIGger[:SEQ1][:IMMediate]
	External trigger pulse edge mode setting		:TRIGger[:SEQ1]:SLOPe
	Trigger delay setting		:TRIGger:SEQ2:DELaY
Measurement data	Query data	Measurement result	:FETCh?
		Data buffer zone	:DATA[:DATA]
		Measurement signal monitoring result	:DATA[:DATA]
	Data buffer zone setting	Fill target parameter	:DATA:FEED[:SOURce] :DATA:FEED:BUF1 :DATA:FEED:BUF2
		Control (filled/unfilled)	:DATA:FEED:CONTRol[:STATe] :DATA:FEED:CONTRol:BUF1[:STATe] :DATA:FEED:CONTRol:BUF2[:STATe] :DATA:FEED:CONTRol:BUF3[:STATe]
		Buffer zone size	:DATA:POINts[:DATA] :DATA:POINts:BUF1 :DATA:POINts:BUF2 :DATA:POINts:BUF3

Function	Set up or execute a item	SCPI commands	
Comparators	ON/OFF	:CALCulate1:COMParator[:STATe]	
	Clear limit list	:CALCulate1:COMParator:CLear	
	primary parameter limit range setting	ON/OFF	:CALCulate1:COMParator:PRIMary:BIN{1-9}:STATe
		Range setting	:CALCulate1:COMParator:PRI

			Mary:BIN{1-9}{:LIMIT}
		Comparators setting	:CALCulate1:COMParator:MODE
		Nominal value	:CALCulate1:COMParator:PRIMARY:NOMinal
secondary parameter limit range setting		ON/OFF	:CALCulate1:COMParator:SECONDARY:STATE
		Range setting	:CALCulate1:COMParator:SECONDARY:LIMit
Auxiliary function ON/OFF			:CALCulate1:COMParator:AUX Bin
Low C function		ON/OFF	[[:SENSe][:FIMPedance]:CREJECT[:STATE]
		Limit setting	[[:SENSe][:FIMPedance]:CREJECT:LIMit
Bin count function		ON/OFF	:CALCulate1:COMParator:COUNT[:STATE]
		reset count value	:CALCulate1:COMParator:COUNT:DATA?
		query count value	:CALCulate1:COMParator:COUNT:OVLD?
		query(OVERLOAD) count value	:CALCulate1:COMParator:COUNT:OVLD?
		Query each channel count value	:CALCulate1:COMParator:COUNT:MULTiple:DATA?
		Query each channel's OVERLOAD count value	:CALCulate1:COMParator:COUNT:MULTiple:OVLD?
Measurement signal monitoring	Current monitoring	Query monitoring current value	:DATA[:DATA]
	Voltage monitoring	Query monitoring voltage value	:DATA[:DATA]

List Sweep	Set list sweep mode	:LIST:MODE
	Clear list seep mode	:LIST CLEAr
	Set list sweep beep	:LIST:BEEP
	Set list item	:LIST:FREquency :LIST:VOLtage :LIST:CURRent
	Set list boundary value	:LIST:BAND[1-10]

Function	Set up or execute a item		SCPI commands	
Load/save internal files	Store		:MMEMory:STORe:STATe[:REGister]	
	Load		:MMEMory:LOAD:STATe[:REGister]	
	Delete		:MMEMory:DELeTe[:REGister]	
Display	ON/OFF		:DISPlay[:WINDow][:STATe]	
	Decimal format display settings	ON/OFF	:DISPlay[:WINDow]:TEXT1[:DATA]:FMSD[:STATe] :DISPlay[:WINDow]:TEXT2[:DATA]:FMSD[:STATe]	
		Format setting	:DISPlay[:WINDow]:TEXT1[:DATA]:FMSD:DATA :DISPlay[:WINDow]:TEXT2[:DATA]:FMSD:DATA	
	Tolerance measurement mode setting	Primary parameters	ON/ OFF	:CALCulate1:MATH:STATe
			mode	:CALCulate1:MATH:EXPRession:NAM E
			setting	:CALCulate1:MATH:EXPRession:CATalog?
		Secondary parameters	ON/ OFF	:CALCulate2:MATH:STATe
mode			:CALCulate2:MATH:EXPRession:NAM E	
setting			:CALCulate2:MATH:EXPRession:CATalog?	

		reference	:DATA:REfERENCE1:DATA :DATA:REfERENCE2:DATA :DATA[:DATA] :DATA:REfERENCE1:FILL :DATA:REfERENCE2:FILL
	Page display setting		:DISPlay:PAGE
Keyboard lock	ON/OFF		:SYSTem:KLOCK
Beeper	ON/OFF		:CALCulate1:COMParator:BEEPer[:S TATe] :SYSTem:BEEPer:STATe
	mode		:SYSTem:BEEPer:TONE
	Beeper ON		:SYSTem:BEEPer[:IMMediate]
	Comparator beeper condition		:CALCulate1:COMParator:BEEPer:C ONDition

Function	Set up or execute a item		SCPI commands
External Interface	GPIB address		:SYSTem:COMMunicate:GPIB[:SELF]: :ADDReSS
	Network setting	IP address	:SYSTem:COMMunicate:LAN[:SELF]: ADDReSS
		Default gateway	:SYSTem:COMMunicate:LAN[:SELF]: DGATeway
		Subnet mask	:SYSTem:COMMunicate:LAN[:SELF]: SMASK
	Network current state	IP address	:SYSTem:COMMunicate:LAN[:SELF]: CURRent:ADDReSS?
		Default gateway	:SYSTem:COMMunicate:LAN[:SELF]: CURRent:DGATeway?
		Subnet mask	:SYSTem:COMMunicate:LAN[:SELF]: CURRent:SMASK?
	Internal clock	Date	:SYSTem:DATE

	Time		:SYSTem:TIME
Function	Set up or execute a item		SCPI commands
status report	Clear		*CLS
	Query status byte register		*STB?
	Set the service request enable register		*SRE
	Standard event status register	Query register value	*ESR?
		Set the OPC bit	*OPC
		Set enable register	*ESE
	Operation status register	preset	:STATus:PRESet
		Query condition register	:STATus:OPERation:CONDition?
		Set enable register	:STATus:OPERation:ENABLe
		Query event register	:STATus:OPERation[:EVENt]?

Appendix E Status reporting system

Basic status register model

The ST2638/ST2638A has the following status reporting system to detect the status of the instrument.

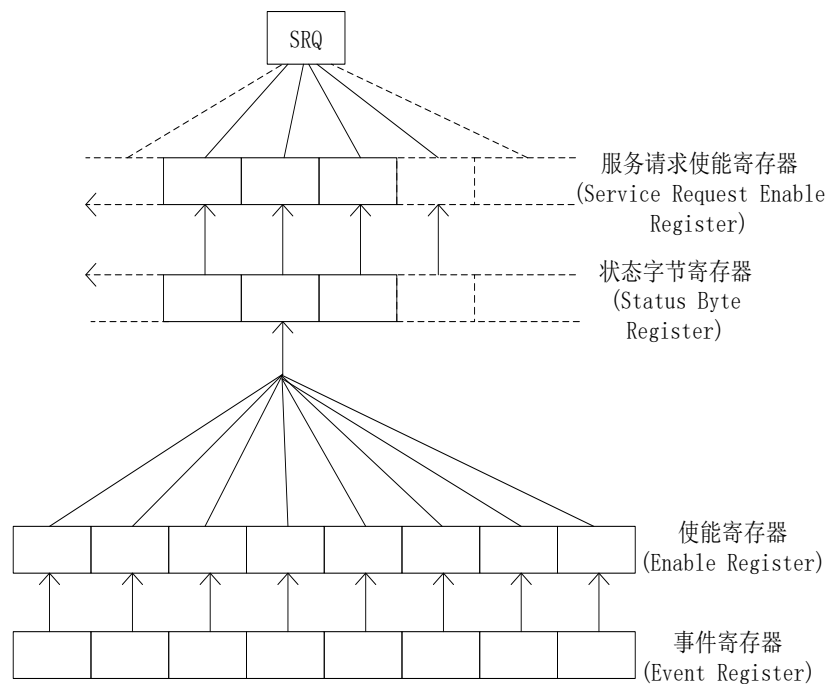


Figure E-1 Basic Status Register Model

As shown in the figure above, when the instrument meets certain conditions, the bit corresponding to the event register is set to "1". Therefore, you can query the event register to get the current state of the instrument.

When the bit corresponding to the event register is set to "1" and the corresponding register corresponding to the time register is also "1", the summary bit of the status byte register is also set to "1". You can query the value of the status byte register by serial point name.

When the corresponding bit of the service request enable register is also set to "1", the instrument generates a service request signal SRQ. When the controller queries the SRQ signal, the instrument ST2638/ST2638A requests the service.

Event register

The event register reflects the current state of the instrument in time. The ST2638/ST2638A has two event registers:

1. Standard event status register.
2. Operational status event register.

Enable register corresponding to the event register:

3. Standard event status enable register.
4. Operation status enable register.

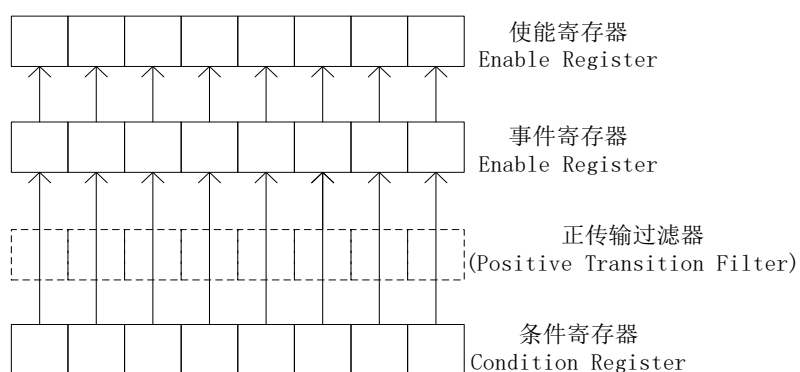


Figure E-2 Transmission Filter and Condition Register

Status register structure

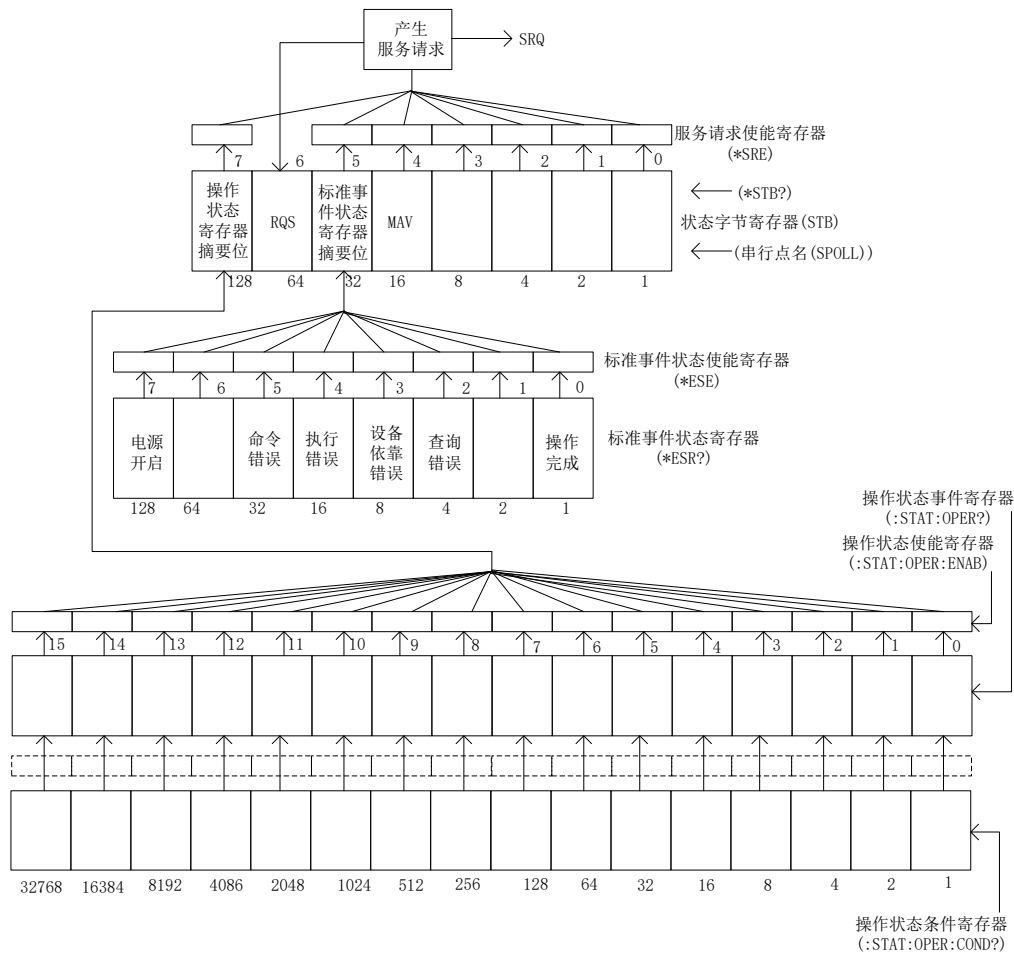


Figure E-3 Status Report System Structure

Bin #	Name	Description
0-3	Reserved bit	Always 0
4	MAV(Message valid bit)	Set to "1" when the output queue contains data, and set to "0" when reading out data in the output queue
5	Standard event status register summary bit	When a bit in the status event register is set to "1", the relocation is set to "1"
6	RQS(Service request bit)	This bit is set to "1" when a service request is generated , when the service request is responded (serial roll call), this bit is set to "0"

7	Operation status register summary bit	This bit is set to "1" when the operation status enable register corresponding enable bit is enabled and the operation status register corresponding bit is set to "1".
---	---------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Schedule E-1 Status Byte Register (STB) Status Bit Definition

Bin#	Name	Description
0	Operation completed	Set "1" when all instruction operations are completed
1	Reserved bit	Always 0
2	Queue error	When the data is queried, the output queue is found to be empty. The position is "1".
3	Device relies on error	This bit is "1" when an error occurs other than an instruction error, a query error, or an execution error.
4	Execution error	This position is "1" when the SCPI command parameter exceeds the instrument range
5	Command error	This position is "1" when the instrument encounters a command syntax error
6	Reserved bit	Always 0
7	Power on	This position is "1" when the instrument is normally powered on.

Schedule E-2 Status bit definition for the event status register

Bin#	Name	Description	
		Condition register	Even register
0	Reserved bit	Always 0	Always 0
1	(wait/)Set up	Set "1" while waiting for setting up the test signal	等待建立测试信号时间过去后置"1" Set "1" when waiting for setting up the test signal time is over

2	Range finding	Set "1" when rang finding	Set "1" when the range is completed
3	Analog measurement	Set "1" during the analog measurement	Set "1" when the analog measurement is completed
4	measurement	Set "1" during the measurement	Set "1" when the measurement is completed
5	Waiting for trigger	Set "1" while waiting for trigger	Set "1" when ready to receive the trigger signal
6	Reserved bit	Always 0	Always 0
7	User correction	Set "1" when user correction is being performed	Set "1" when user correction is completed
8	Data Buffer1	Set "1" when data memory Buffer1 is not full	Set "1" when data memory Buffer1 is full
9	Data Buffer2	Set "1" when data memory Buffer2 is not full	Set "1" when data memory Buffer2 is full
10	Data Buffer3	Set "1" when data memory Buffer3 is not full	Set "1" when data memory Buffer3 is full
11-15	Reserved bit	Always 0	Always 0

Schedule E-3 Status bit definition for the operation status register