Keysight D9030SATC SATA6G Electrical Compliance Test Application

KEYSIGHT

PROGRAMMER'S REFERENCE

Notices

Revision

Version 1.92.0.0

Edition

March 2024

Available in electronic format only

Published by:
Keysight Technologies, Inc.
1900 Garden of the Gods Road
Colorado Springs, CO 80907 USA

Warranty

The material contained in this document is provided "as is," and is subject to being changed, without notice, in future editions. Further, to the maximum extent permitted by applicable law, Keysight disclaims all warranties, either express or implied, with regard to this manual and any information contained herein, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. Keysight shall not be liable for errors or for incidental or consequential damages in connection with the furnishing, use, or performance of this document or of any information contained herein. Should Keysight and the user have a separate written agreement with warranty terms covering the material in this document that conflict with these terms, the warranty terms in the separate agreement shall control.

Technology License

The hardware and/or software described in this document are furnished under a license and may be used or copied only in accordance with the terms of such license.

U.S. Government Rights

The Software is "commercial computer software," as defined by Federal Acquisition Regulation ("FAR") 2.101. Pursuant to FAR 12.212 and 27.405-3 and Department of Defense FAR Supplement ("DFARS") 227.7202, the U.S. government acquires commercial computer software under the same terms by which the software is customarily provided to the public. Accordingly, Keysight provides the Software to U.S. government customers under its standard commercial license, which is embodied in its End User License Agreement (EULA), a copy of which can be found at www.keysight.com/find/sweula. The license set forth in the EULA represents the exclusive authority by which the U.S. government may use, modify, distribute, or disclose the Software. The EULA and the license set forth therein, does not require or permit, among other things, that Keysight: (1) Furnish technical information related to commercial computer software or commercial computer software documentation that is not customarily provided to the public; or (2) Relinquish to, or otherwise provide, the government rights in excess of these rights customarily provided to the public to use, modify, reproduce, release, perform, display, or disclose commercial computer software or commercial computer software documentation. No additional government requirements beyond those set forth in the EULA shall apply, except to the extent that those terms, rights, or licenses are explicitly required from all providers of commercial computer software pursuant to the FAR and the DFARS and are set forth specifically in writing elsewhere in the EULA. Keysight shall be under no obligation to update, revise or otherwise modify the Software. With respect to any technical data as defined by FAR 2.101, pursuant to FAR 12.211 and 27.404.2 and DFARS 227.7102, the U.S. government acquires no greater than Limited Rights as defined in FAR 27.401 or DFAR 227.7103-5 (c), as applicable in any technical data.

Safety Notices

CAUTION

A **CAUTION** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a **CAUTION** notice until the indicated conditions are fully understood and met.

WARNING

A WARNING notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met.

In This Book

This book is your guide to programming the Keysight Technologies D9030SATC SATA6G Electrical Compliance Test Application.

- Chapter 1, “Introduction to Programming,” starting on page 7, describes compliance application programming basics.
- Chapter 2, “Configuration Variables and Values,” starting on page 9, Chapter 3, “Test Names and IDs,” starting on page 29, Chapter 4, “Instruments,” starting on page 51, and Chapter 5, “Message IDs,” starting on page 53 provide information specific to programming the D9030SATC SATA6G Electrical Compliance Test Application.

How to Use This Book

Programmers who are new to compliance application programming should read all of the chapters in order. Programmers who are already familiar with this may review chapters 2, 3, 4, and 5 for changes.

Contents

1 Introduction to Programming

This chapter introduces the basics for remote programming a compliance/test application. The programming commands provide the means of remote control. Basic operations that you can do remotely with a computer and a compliance/test app running on an oscilloscope include:

- Launching and closing the application.
- Configuring the options.
- Running tests.
- Getting results.
- Controlling when and were dialogs get displayed
- Saving and loading projects.

You can accomplish other tasks by combining these functions.

Remote Programming Toolkit

The majority of remote interface features are common across all the Keysight Technologies, Inc. family of compliance/test applications. Information on those features is provided in the N5452A Compliance Application Remote Programming Toolkit available for download from Keysight here: www.keysight.com/find/rpi. The D9030SATC SATA6G Electrical Compliance Test Application uses Remote Interface Revision 7.20. The help files provided with the toolkit indicate which features are supported in this version.

In the toolkit, various documents refer to "application-specific configuration variables, test information, and instrument information". These are provided in Chapters 2, 3, and 4 of this document, and are also available directly from the application's user interface when the remote interface is enabled (View>Preferences::Remote tab::Show remote interface hints). See the toolkit for more information.

2 Configuration Variables and Values

The following table contains a description of each of the D9030SATC SATA6G Electrical Compliance Test Application options that you may query or set remotely using the appropriate remote interface method. The columns contain this information:

- GUI Location — Describes which graphical user interface tab contains the control used to change the value.
- Label — Describes which graphical user interface control is used to change the value.
- Variable — The name to use with the SetConfig method.
- Values — The values to use with the SetConfig method.
- Description — The purpose or function of the variable.

For example, if the graphical user interface contains this control on the **Set Up** tab:

- Enable Advanced Features

then you would expect to see something like this in the table below:

Table 1 Example Configuration Variables and Values

GUI Location	Label	Variable	Values	Description
Set Up	Enable Advanced Features	EnableAdvanced	True, False	Enables a set of optional features.

and you would set the variable remotely using:

```
ARSL syntax
-----------
arsl -a ipaddress -c "SetConfig 'EnableAdvanced' 'True'"

C# syntax
```

```
---------
remoteAte.SetConfig("EnableAdvanced", "True");
```

Here are the actual configuration variables and values used by this application:

NOTE Some of the values presented in the table below may not be available in certain configurations. Always perform a "test run" of your remote script using the application's graphical user interface to ensure the combinations of values in your program are valid.

NOTE The file, "ConfigInfo.txt", which may be found in the same directory as this help file, contains all of the information found in the table below in a format suitable for parsing.

Table 2 Configuration Variables and Values

GUI Location	Label	Variable	Values	Description
Configure	#Aligns Dword in one Align Sequence	NumberOfAlignInAlignSequence	0, 2	The number of ALIGNS Dwords for each Align Sequence per 256 Test Pattern Dwords to be inserted when the pattern files are generated. Please note that in order to loopback, 2 aligns option should be selected; the DUT would not loopback if 0 align is selected and it is used for debugging purposes.
Configure	#Bits On Screen	RiseFall_BitsOnScreen	2, 8	Select the number of bits to be displayed which occupies 80% of the horizontal range of the screen.
Configure	#Output Refiring per Trigger	PulsegenRefirePerTrigger	(Accepts user-defined text), 1, 3, 10	The number of times the pulse generator channel output refires to improve loopback probability.

Table 2 Configuration Variables and Values (continued)

GUI Location	Label	Variable	Values	Description
Configure	#Suspected Aync COMINIT or Proactive COMRESET Tolerance	AsyncCOMINITTol	(Accepts user-defined text), 00, 01	This applies to 2 cases: 1) Number of Asynchronous COMINIT count to be tolerated when sending out-of-spec COMRESET OOB Gap Lengths/Vthresh to Drive and expecting no response from Drive with the exception of asynchronous COMINIT presence OR 2) Number of Proactive COMRESET count to be tolerated when sending out-of-spec COMINIT OOB Gap Lengths/Vthresh to Host and expecting no response from Host with the exception of proactive retries of COMRESETs.
Configure	Clock Recovery Damping Factor	Jitter_ClkRevDampFactor	(Accepts user-defined text), 0.707, 0.767, 0.860	Select the damping factor of the Second Order PLL Clock Recovery for jitter measurement. This setting only valid for jitter measurement test in UTD 1.3 and above.
Configure	Clock Recovery Loop Bandwidth	Jitter_ClkRevBW	(Accepts user-defined text), 1000000, 1550000, 2100000, 3100000, 4200000, 5000000	Select the loop bandwidth of the Second Order PLL Clock Recovery for jitter measurement. Unit : Hz. This setting only valid for jitter measurement test in UTD 1.3 and above.
Configure	Edge Detection Voltage Threshold (%)	tVoltThresh	(Accepts user-defined text), 25	Set the percentage of amplitude of low passed filter OOB signal (mode) to be used as the voltage level of edge threshold detection during OOB response or reject tests. A typical good setting is set the percentage at the threshold without the disturbance of the low passed filter ripples. Unit : %. This config only applicable when the "Edge Detection Voltage Threshold Mode" config variable is set to "Percentage".

Table 2 Configuration Variables and Values (continued)

GUI Location	Label	Variable	Values	Description
Configure	Edge Detection Voltage Threshold (mV)	tVoltThreshmV	(Accepts user-defined text), 30	Set the voltage level of edge threshold detection during OOB response or reject tests. A typical good setting is set the threshold without the disturbance of the low passed filter ripples. Unit : mV. This config only applicable when the "Edge Detection Voltage Threshold Mode" config variable is set to "Absolute".
Configure	Edge Detection Voltage Threshold Mode	EdgeDetectionVThreshMode	Percentage, Absolute	Select the mode for edge detection voltage threshold.
Configure	FFT Frequency Window, Max (ppm)	ACCommonModeVoltage_FFTWindMax_Gen3	(Accepts user-defined text), 350, 500, 1000, 2000, 5000	Select the maximum FFT frequency window for the Tx AC Common Mode Voltage measurement. Unit : PPM.
Configure	FFT Frequency Window, Min (ppm)	ACCommonModeVoltage_FFTWindMin_Gen3	(Accepts user-defined text), -350, -5350, -5500, -6000, -10000	Select the minimum FFT frequency window for the Tx AC Common Mode Voltage measurement. Unit : PPM.
Configure	Gap Detection Windows Debug	GapDetectWindowsDebugEnable	true, false	Enable the debug of OOB Gap Detection Windows test. If "Enable" is selected, the OOB Gap Detection Windows test will sweep from the starting gap.
Configure	Gap Sweep Size	GapDetectWindowsDebugSweepSize	1, 2, 3, 4, 5	Select the sweep size for the debug of OOB Gap Detection Windows test. Unit: UI.
Configure	ISI Filter Lagging Bit	Jitter_ISILagBit	0.0, 1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0, 11.0, 12.0, 13.0, 14.0, 15.0	Select the number of lagging bits used to calculate the ISI filter for jitter measurement. The lagging bits is greater than or equal to 0. This config only applicable when the "Pattern Length Analysis Mode" config variable is set to "Arbitrary".

Table 2 Configuration Variables and Values (continued)

GUI Location	Label	Variable	Values	Description
Configure	ISI Filter Leading Bit	Jitter_ISILeadBit	0.0, -1.0, -2.0, -3.0, -4.0, -5.0, -6.0, -7.0, -8.0, -9.0, -10.0	Select the number of leading bits used to calculate the ISI filter for jitter measurement. The leading bits is less than or equal to 0. This config only applicable when the "Pattern Length Analysis Mode" config variable is set to "Arbitrary".
Configure	Jitter Result	Jitter_ResultReset	1.0, 0.0	Select to reset or not reset jitter result after the jitter measurement completed.
Configure	M8020A Module	M8020AModule	M1, M2	Select the M8020A module use for pulse generator stimulus.
Configure	OOB Gap and Vthresh Detection Mode	OOBGapVThreshDetectionMode	auto, manual	Selecting Automatic Mode enables the software to automatically test against the various OOB Gap Margins/OOB Voltage Threshold for response or no response validity. Selecting Manual will prompt the user to manually and visually determine if the DUT responds/rejects consistently based on the respective test.
Configure	OOB Low Pass Filter Bandwidth	OOB_LPF_BW	(Accepts user-defined text), 350.0E+6	Select the low pass filter's bandwidth for the OOB signal detector. Unit: Hz.
Configure	OOB Sequence	OOBSequence	OOB_With_D102_ALIGN, OOB_Without_D102_ALIGN, OOB_With_D102_ALIGN_With_LongIdle, OOB_Without_D102_ALIGN_With_LongIdle	OOB stimulus sequence. "OOB Sequence with ALIGN and D10.2 (Long Idle After ASR COMINIT)" and "OOB Sequence without ALIGN and D10.2 (Long Idle After ASR COMINIT)" only applicable when "Host" and "ASR" are selected.
Configure	OOB Trigger Threshold Mode	OOBTriggerThresholdMode	Auto, Manual	OOB signal trigger threshold. If "Auto" is selected, half of the scale is set as trigger level. Else if manual is selected, "OOB Trigger Threshold Voltage" config is set as the absolute trigger level.

Table 2 Configuration Variables and Values (continued)

GUI Location	Label	Variable	Values	Description
Configure	OOB Trigger Threshold Voltage	OOBTriggerThresholdVoltage	400E-3, 300E-3, 200E-3, 150E-3, 120E-3, 100E-3, 80E-3, 60E-3, 40E-3, 20E-3	If the "OOB Trigger Threshold Mode" config is set to "Manual", this config variable is set to the trigger level of the channel. Unit: volt
Configure	OOB Vpp Mismatch Tolerance	OOBMismatchWarningPct	(Accepts user-defined text), 10, 15, 20	This defines the OOB Vpp mismatch tolerance in percentage (%) during setup. Mismatches in amplitudes generally reduces noise immunity, and may affect the app to correctly detect the OOB signal. A lower percentage settings give an early warning to the tester to correct the problems, whereas a higher setting may affect the app to correctly detect the OOB signal.
Configure	Override Default	OverrideJitterDefault	Enable, Disable	This configure group requires the user to use the master config variable "Override Default" to enable overriding the jitter config variables under this section. Select "Enable" to override default jitter settings. All options under the "Override Default" node will be asserted.
Configure	Pattern Check	EnableSignalCheck	1.0, 0.0	Select to enable or disable pattern checking. When pattern checking is enabled, the input signal is pre-tested and verified to be within a reasonable range of timing and voltage limits. This can be useful for detecting problems like cabling errors before a test is run.
Configure	Pattern Length (Pattern Check)	PatternLengthSignalCheck	(Accepts user-defined text), 20, 80	Select pattern length for pattern checking.

Table 2 Configuration Variables and Values (continued)

GUI Location	Label	Variable	Values	Description
Configure	Pattern Length Analysis Mode	Jitter_PatternMode	Default, Periodic, Arbitrary	Select the pattern length analysis mode for jitter measurement, either "Periodic" or "Arbitrary" mode. "Periodic" mode is only for purely periodic and repetitive patterns. The pattern length would be automatically detected. "Arbitrary" mode is for non-periodic patterns. "Default" mode set the pattern length to "Arbitrary" mode for BIST-L and "Periodic" mode for BIST-T.
Configure	Pause In Between Test	PauseBetweenTest	true, false	Select to enable or disable the pause in between the tests. If "Pause" option is selected, the test application will pause for enabling of Far End Retimed Loopback Test Mode whenever it is needed. When choosing "Do not pause" option, Test Application will only pause for enabling of Far End Retimed Loopback Test Mode for the first time.
Configure	RJ Bandwidth	RJBandwidth	Narrow, Wide	Select the RJ bandwidth for jitter measurement.
Configure	RJ Separation Method	Jitter_RJMethod	BOTH, SPECtral	Select the type of method used to separate the RJ component for jitter measurement.
Configure	Rejects Starting Gap UI (Max)	COMINITGapDetectRejectDebugStartGapMax	(Accepts user-defined text), 784	Select the starting gap's UI number for the debug of COMINIT/COMRESET gap detection from inconsistent response to reject (no response). The maximum COMINIT/COMRESET Rejects test will sweep up from the starting gap until the 1st encountered reject (no response). Unit: UI.

Table 2 Configuration Variables and Values (continued)

GUI Location	Label	Variable	Values	Description
Configure	Rejects Starting Gap UI (Max)	COMWAKEGapDetectRejectDebugStartGapMax	(Accepts user-defined text), 259	Select the starting gap's UI number for the debug of COMWAKE gap detection from inconsistent response to reject (no response). The maximum COMWAKE Rejects test will sweep up from the starting gap until the 1st encountered reject (no response). Unit: UI.
Configure	Rejects Starting Gap UI (Min)	COMINITGapDetectRejectDebugStartGapMin	(Accepts user-defined text), 266	Select the starting gap's UI number for the debug of COMINIT/COMRESET gap detection from inconsistent response to reject (no response). The minimum COMINIT/COMRESET Rejects test will sweep down from the starting gap until the 1st encountered reject (no response). Unit: UI.
Configure	Rejects Starting Gap UI (Min)	COMWAKEGapDetectRejectDebugStartGapMin	(Accepts user-defined text), 56	Select the starting gap's UI number for the debug of COMWAKE gap detection from inconsistent response to reject (no response). The minimum COMWAKE Rejects test will sweep down from the starting gap until the 1st encountered reject (no response). Unit: UI.
Configure	Responds Starting Gap UI (Max)	COMINITGapDetectResponseDebugStartGapMax	(Accepts user-defined text), 500	Select the starting gap's UI number for the debug of COMINIT/COMRESET gap detection from response to inconsistent response. The maximum COMINIT/COMRESET Responds test will sweep up from the starting gap until the 1st encountered inconsistent response. Unit: UI.

Table 2 Configuration Variables and Values (continued)

GUI Location	Label	Variable	Values	Description
Configure	Responds Starting Gap UI (Max)	COMWAKEGapDetectResponseDebugStartGapMax	(Accepts user-defined text), 165	Select the starting gap's UI number for the debug of COMWAKE gap detection from response to inconsistent response. The maximum COMWAKE Responds test will sweep up from the starting gap until the 1st encountered inconsistent response. Unit: UI.
Configure	Responds Starting Gap UI (Min)	COMINITGapDetectResponseDebugStartGapMin	(Accepts user-defined text), 460	Select the starting gap's UI number for the debug of COMINIT/COMRESET gap detection from response to inconsistent response. The minimum COMINIT/COMRESET Responds test will sweep down from the starting gap until the 1st encountered inconsistent response. Unit: UI.
Configure	Responds Starting Gap UI (Min)	COMWAKEGapDetectResponseDebugStartGapMin	(Accepts user-defined text), 155	Select the starting gap's UI number for the debug of COMWAKE gap detection from response to inconsistent response. The minimum COMWAKE Responds test will sweep down from the starting gap until the 1st encountered inconsistent response. Unit: UI.
Configure	Retrial on Glitch	DifferentialSkew_RetrialGlitch	(Accepts user-defined text), 1, 3, 5	Maximum number of attempts to measure differential skew in a single trial. Reattempts usually needed when measured skew is too large as sometimes there may be glitches in the captured waveform.
Configure	SSC DFDT Measurement Sample Size	DFDTSamplingCycle	(Accepts user-defined text), 5, 10, 12, 15	The number of SSC cycle(s) to be measured for reporting the SSC DFDT.

Table 2 Configuration Variables and Values (continued)

GUI Location	Label	Variable	Values	Description
Configure	SSC Measurement Method	DebugSSCMeasurementMethod	auto, manual	Selecting Automatic will let the software automatically taking the measurement based on 20%, 50%, 80% measurement. Selecting Manual method allows user to manually place the marker for desired frequency measurement on complicated SSC waveforms.
Configure	SSC Measurement Sample Size	SSCSamplingCycle	(Accepts user-defined text), 5, 10, 20	The number of SSC cycle(s) to be measured for reporting the SSC Modulated Frequency and Frequency Deviation.
Configure	SSC Smoothing Point	DebugTrendSmooth	(Accepts user-defined text), 335, 670, 1342	The number of smoothing points determines the width of the moving-average filter, which in turn determines the bandwidth of the effective low-pass filtering effect of smoothing. A larger number of smoothing points will remove the high-frequency content from the trend beginning at a lower frequency. Bandwidth = 0.4428 * (Fs / N) with Fs = The Sample rate and N = Smoothing Points control value.
Configure	Sample Size	ACCommonModeVoltage_SampleSize	(Accepts user-defined text), 1000, 5000, 10000, 50000	Select the number of UI sample size for the AC Common Mode Voltage test. A larger sample size would yield more confident results but requires longer time to perform. Unit : UI.
Configure	Sample Size	ChannelSpeed_SampleSize	(Accepts user-defined text), 10000, 50000, 100000, 200000, 400000, 500000	Select the number of UI sample size for the Channel Speed, FBaud & Unit Interval and Frequency Long-Term Stability tests. A larger sample size would yield more confident results but requires longer time to perform. Unit : UI.

Table 2 Configuration Variables and Values (continued)

GUI Location	Label	Variable	Values	Description
Configure	Sample Size	DifferentialSkew_SampleSize	(Accepts user-defined text), 1000, 5000, 10000, 15000	Select the number of UI sample size for the Differential Skew test. A larger sample size would yield more confident results but requires longer time to perform. Unit : UI.
Configure	Sample Size	Jitter_DataLength	(Accepts user-defined text), 550000, 600000, 1000000	Select the number of UI sample size for jitter measurement. The application will acquire until it reaches the desired number of UI sample size. For more information about the minimum requirement of the memory depth for jitter measurement, please refer to the Infiniium->Help->Contents->Jitter->Jitter (EZJIT+)->RJ/DJ Record Length Requirements.
Configure	Sample Size	RiseFallImBalance_SampleSize	(Accepts user-defined text), 10000, 50000, 100000, 1000000	Select the number of UI sample size for the Rise/Fall Imbalance test. A larger sample size would yield more confident results but requires longer time to perform. Unit : UI.
Configure	Sample Size	RiseFall_SampleSize	(Accepts user-defined text), 10000, 50000, 100000, 500000	Select the number of UI sample size for the Rise/Fall Time test. A larger sample size would yield more confident results but requires longer time to perform. Unit : UI.
Configure	Sample Size	TxVdiff_SampleSize	(Accepts user-defined text), 500, 1000, 1500, 2000	Select the number of UI sample size for the Differential Output Voltage test. A larger sample size would yield more confident results but requires longer time to perform. Unit : UI.
Configure	Sample Size for HFTP	AmplitudeImbalanceSampleSizeHFTP	(Accepts user-defined text), 10000, 20000	Select the number of UI sample size for the HFTP Amplitude Imbalance test. A larger sample size would yield more confident results but requires longer time to perform. Unit : UI.

Table 2 Configuration Variables and Values (continued)

GUI Location	Label	Variable	Values	Description
Configure	Sample Size for MFTP	AmplitudeImbalanceSampleSizeMFTP	(Accepts user-defined text), 10000, 20000	Select the number of UI sample size for the MFTP Amplitude Imbalance test. A larger sample size would yield more confident results but requires longer time to perform. Unit : UI.
Configure	Sampling Rate (OOB Detection Test)	SampRate_OOBDetectionTest	10.0E9, 5.0E9, 2.0E9, 16.0E9, 8.0E9	Select the sampling rate use for acquiring the waveform for OOB Gap Detection Windows & Signal Detection Threshold tests. Unit: Sa/s.
Configure	Screenshot Sleep Time	Jitter_ScreenshotSleepTime	(Accepts user-defined text), 10000	Set the sleep time in milisecond before the screenshot of the jitter related graph plot. This configuration variable is used to fix the issue of jitter related graph plot not fully updated when the screenshot is being captured. Unit: ms.
Configure	Signal Trigger Level	TriggerThreshold	(Accepts user-defined text), -300.0E-03, -250.0E-03, -200.0E-03, -150.0E-03, -100.0E-03, -50.0E-03, 0.0E-03, 50.0E-03, 100.0E-03, 150.0E-03, 200.0E-03, 250.0E-03, 300.0E-03	Choose the trigger level for the waveform acquisition of all SATA tests. Unit: volt.
Configure	Start Scope Vdiff(V)	VthreshDebugInconsistentToRejectStartVdiff	(Accepts user-defined text), 0.12	This is the start voltage(V) of down sweeping from this defined voltage level voltage to a threshold level that has 1st reject response.
Configure	Start Scope Vdiff(V)	VthreshDebugResponsetoInconsistentStartVdiff	(Accepts user-defined text), 0.21	This is the start voltage(V) of down sweeping from this defined level voltage to a threshold level that has 1st inconsistent response.

Table 2 Configuration Variables and Values (continued)

GUI Location	Label	Variable	Values	Description
Configure	Stimulus Frequency Gen1 (Ghz)	PulsegenStimulusFreqGen1	(Accepts user-defined text), 1.500000000	Gen1 Non-OOB Tests Only: The stimulus frequency enables the user to set the offset of the pulse generator stimulus frequency which correspond to the desired frequency measured using the scope. Unit: GHz.
Configure	Stimulus Frequency Gen2 (Ghz)	PulsegenStimulusFreqGen2	(Accepts user-defined text), 3.000000000	Gen2 Non-OOB Tests Only: The stimulus frequency enables the user to set the offset of the pulse generator stimulus frequency which correspond to the desired frequency measured using the scope. Unit: GHz.
Configure	Stimulus Frequency Gen3 (Ghz)	PulsegenStimulusFreqGen3	(Accepts user-defined text), 6.000000000	Gen3 Non-OOB Tests Only: The stimulus frequency enables the user to set the offset of the pulse generator stimulus frequency which correspond to the desired frequency measured using the scope. This setting only applies to N4903B and M8020A JBERT as stimulus. Unit: GHz.
Configure	Stimulus Spread Spectrum Clocking	PulsegenStimulusSSC	Enabled, Disabled	Non OOB Tests only: Pulse generator stimulus Spread Spectrum Clocking (SSC) if SSC is enabled. Please be sure that the settings can be supported by the DUT. This setting only applies to N4903B and M8020A JBERT as stimulus.
Configure	Stimulus Vpp Output (mVpp)	81134OOBVpp	(Accepts user-defined text), 250, 300, 350, 400, 450, 500, 600, 850	OOB Tests only: Pulsegen Stimulus Peak to Peak Voltage. Please be sure that the settings can be supported by the DUT. Unit: mVolt.
Configure	Stimulus Vpp Output (mVpp)	PulsegenStimulusVppOutpu t	(Accepts user-defined text), 250, 300, 350, 400, 450, 500, 600, 850	Non OOB Tests only: Pulse generator stimulus peak to peak voltage. Please be sure that the settings can be supported by the DUT. Unit: mVolt.

Table 2 Configuration Variables and Values (continued)

GUI Location	Label	Variable	Values	Description
Configure	Test Pattern for Rise/Fall Time	RiseFallPattern	DEFAULT, LBP, LFTP, MFTP, HFTP	Select the test pattern used for Rise Time and Fall Time measurement tests. When DEFAULT is selected, HFTP will used for UTD 1.2 and 1.3, LFTP will be used for UTD 1.4 and above in rise time and fall time measurement.
Configure	Test Time Analysis Logger	TestTimeAnalysisLogger	1.0, 0.0	Option to enable/disable test time analysis logger.
Configure	Threshold for Clock	SSCTestClockThreshold	(Accepts user-defined text), [10, 0, -10]mV, [100, 0, 100]mV, [90, 50, 10]%	Measurement Threshold for clock recovery in SSC tests. Acceptable value in form of [Upper,Mid,Lower]Unit. Upper, Mid, Lower must be real numbers, values such as +90,90,-90.0 are acceptable. Unit must be either %, V or mV.
Configure	Transfer Function (Host, i Interface)	TxEmphasisTransferFunctionIHost	(Accepts user-defined text), None, CIC	Set the path of transfer function file for i interface Tx Emphasis measurement. To use custom transfer file, set the complete path of the transfer file in the textbox above.
Configure	Transfer Function (Host, u Interface)	TxEmphasisTransferFunctionUHost	(Accepts user-defined text), None, CIC	Set the path of transfer function file for u interface Tx Emphasis measurement. To use custom transfer file, set the complete path of the transfer file in the textbox above.
Configure	Use SATA CIC	UseSATACIC	true, false	Select to enable or disable the SATA Compliance Interconnect Channel (CIC) in the Differential Output Voltage and Jitter measurement (applicable to 6.0Gb/s DUT and "i" interface DUT only). CIC intented to be representative of the highest loss interconnects.
Configure	Vthresh Reject Debug	VthreshDebugInconsistentToReject	Enable, Disable	If "Enable" is selected, it will down sweep from defined voltage level voltage to a threshold level that has 1st encountered rejected response.

Table 2 Configuration Variables and Values (continued)

GUI Location	Label	Variable	Values	Description
Configure	Vthresh Response Debug	VthreshDebugResponsetoInconsistent	Enable, Disable	If "Enable" is selected, it will down sweep from defined voltage level to a threshold level that has the 1st encountered inconsistent response.
Run Tests	Event	RunEvent	(None), Fail, Margin < N, Pass	Names of events that can be used with the StoreMode=Event or RunUntil RunEventAction options
Run Tests	RunEvent=Margin < N: Minimum required margin %	RunEvent_Margin < N_MinPercent	Any integer in range: 0 <= value <= 99	Specify N using the 'Minimum required margin %' control.
Set Up	BIST Mode	BISTMode	BIST-T, BIST-L	With BIST-T, the app will request the tester to configure the DUT manually to output the appropriate pattern to the scope for measurement. With BIST-L, the app will send the appropriate stimulus pattern to the DUT (with 2 aligns inserted per 256 Dwords) for it to be retimed and echo back to the scope for measurement. With BIST-T, the app will request the tester to configure the DUT manually to output the appropriate pattern to the scope for measurement. With BIST-L, the app will send the appropriate stimulus pattern to the DUT (with 2 aligns inserted per 256 Dwords) for it to be retimed and echo back to the scope for measurement.
Set Up	BIST Mode Automation (M8020A)	BISTModeAutomationM8020A	0.0, 1.0	Enable or disable the BIST mode automation for M8020A. Enable or disable the BIST mode automation for M8020A.
Set Up	BIST Mode Automation (N4903B)	BISTModeAutomationN4903B	0.0, 1.0	Enable or disable the BIST mode automation for N4903B. Enable or disable the BIST mode automation for N4903B.
Set Up	Device Description	DeviceDescription	(Accepts user-defined text)	Edit DUT description. Edit DUT description.

Table 2 Configuration Variables and Values (continued)

GUI Location	Label	Variable	Values	Description
Set Up	Device ID	DeviceID	(Accepts user-defined text)	Edit DUT identifier. Edit DUT identifier.
Set Up	Device Type	DeviceType	Drive, Host	Select the device type of the DUT, either 'Drive' or 'Host'. Select the device type of the DUT, either 'Drive' or 'Host'.
Set Up	Emphasis Enable	EmphasisEnable	0.0, 1.0	Check if the DUT supports for transmitter emphasis. Check if the DUT supports for transmitter emphasis.
Set Up	Generation	Generation	Gen I, Gen II, Gen III	Select DUT's data speed generation. Select DUT's data speed generation.
Set Up	Hide Info Tests	HideInfoTest	0.0, 1.0	ECheck to hide all the informative tests. Check to hide all the informative tests.
Set Up	Host ASR	HostASR	0.0, 1.0	Check if the host supports ASR. This setting has no effect for drive. It affects host OOB tests. Check if the host supports ASR. This setting has no effect for drive. It affects host OOB tests.
Set Up	Interface	Interface	i, m, x, u	Select DUT's interface. Select DUT's interface.
Set Up	SSC Modulation	SSCModulation	0.0, 1.0	Check if the DUT supports for SSC modulation. Check if the DUT supports for SSC modulation.
Set Up	Stimulus Device	optPulseGen	81134A, N4903B, M8020A, None	Select stimulus device. Select stimulus device.

Table 2 Configuration Variables and Values (continued)

GUI Location	Label	Variable	Values	Description
Set Up	Stimulus Instrument Connection (Remote)	optConnection	none, PPG_IP, PPG_Sicl, JBERT_IP, JBERT_Sicl, M8020A_IP, M8020A_Sicl	REMOTE ONLY: Determine whether tests that require stimulus instrument availability are loaded in the test tree. If the remote user desires to use 81134A as stimulus, the value 'PPG_IP' or 'PPG_Sicl' is applicable for setting the IP address or Sicl address respectively. If the remote user desires to use N4903B as stimulus, the value 'JBERT_IP' or 'JBERT_Sicl' is applicable for setting the IP address or Sicl address respectively. If the remote user desires to use M8020A as stimulus, the value 'M8020A_IP' or 'M8020A_Sicl' is applicable for setting the IP address or Sicl address respectively. The software will return the state whether the stimulus instrument connection setup has been successful or fail. In any case, the user has to issue a 'none' value again before try to connect to the stimulus instrument for another round. After the software detects that it is remotely controlled, the Automation section in the Set Up tab would be disabled. There is also a Re-enable button to re-enable the Automation section for the user to access the Automation section locally. REMOTE ONLY: Determine whether tests that require stimulus instrument availability are loaded in the test tree. If the remote user desires to use 81134A as stimulus, the value 'PPG_IP' or 'PPG_Sicl' is applicable for setting the IP address or Sicl address respectively. If the remote user desires to use N4903B as

Table 2 Configuration Variables and Values (continued)

GUI Location	Label	Variable	Values	Description
Set Up	Stimulus Instrument Connection (Remote)	optConnection (cont'd)	none, PPG_IP, PPG_Sicl, JBERT_IP, JBERT_Sicl, M8020A_IP, M8020A_Sicl	stimulus, the value 'JBERT_IP' or 'JBERT_Sicl' is applicable for setting the IP address or Sicl address respectively. If the remote user desires to use M8020A as stimulus, the value 'M8020A_IP' or 'M8020A_Sicl' is applicable for setting the IP address or Sicl address respectively. The software will return the state whether the stimulus instrument connection setup has been successful or fail. In any case, the user has to issue a 'none' value again before try to connect to the stimulus instrument for another round. After the software detects that it is remotely controlled, the Automation section in the Set Up tab would be disabled. There is also a Re-enable button to re-enable the Automation section for the user to access the Automation section locally.
Set Up	Stimulus Instrument IP Address (Remote)	cmbIPaddr	(Accepts user-defined text)	REMOTE ONLY: Set the IP address for the stimulus instrument. The IP address or Sicl address must be set explicitly before try to connect to the stimulus instrument. REMOTE ONLY: Set the IP address for the stimulus instrument. The IP address or Sicl address must be set explicitly before try to connect to the stimulus instrument.

Table 2 Configuration Variables and Values (continued)

GUI Location	Label	Variable	Values	Description
Set Up	Stimulus Instrument Sicl Address (Remote)	cmbSicl	(Accepts user-defined text)	REMOTE ONLY: Set the Sicl address for the stimulus instrument. The IP address or Sicl address must be set explicitly before try to connect to the stimulus instrument. REMOTE ONLY: Set the Sicl address for the stimulus instrument. The IP address or Sicl address must be set explicitly before try to connect to the stimulus instrument.
Set Up	UTD Version	UTDVersion	UTD 1.6, UTD 1.5, UTD 1.4.3, UTD 1.4.2, UTD 1.4.1, UTD 1.4, UTD 1.3, UTD 1.1/1.2	Select the UTD version for the compliance tests. Select the UTD version for the compliance tests.
Set Up	User Comment	UserComments	(Accepts user-defined text)	Edit user comments. Edit user comments.

3 Test Names and IDs

The following table shows the mapping between each test's numeric ID and name. The numeric ID is required by various remote interface methods.

- Name — The name of the test as it appears on the user interface **Select Tests** tab.
- Test ID — The number to use with the RunTests method.
- Description — The description of the test as it appears on the user interface **Select Tests** tab.

For example, if the graphical user interface displays this tree in the **Select Tests** tab:

- All Tests
  - Rise Time
  - Fall Time

then you would expect to see something like this in the table below:

Table 3 Example Test Names and IDs

Name	Test ID	Description
Fall Time	110	Measures clock fall time.
Rise Time	100	Measures clock rise time.

and you would run these tests remotely using:

```
ARSL syntax
-----------
arsl -a ipaddress -c "SelectedTests '100,110'"
arsl -a ipaddress -c "Run"

C# syntax
---------
remoteAte.SelectedTests = new int[]{100,110};
remoteAte.Run();
```

KEYSIGHT TECHNOLOGIES

Here are the actual Test names and IDs used by this application. Listed at the end, you may also find:

- Deprecated IDs and their replacements.
- Macro IDs which may be used to select multiple related tests at the same time.

NOTE The file, "TestInfo.txt", which may be found in the same directory as this help file, contains all of the information found in the table below in a format suitable for parsing.

Table 4 Test IDs and Names

Name	TestID	Description
DJ after CIC, HFTP, Clock To Data, fBAUD/1667(Gen1)	21911	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Deterministic Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
DJ after CIC, HFTP, Clock To Data, fBAUD/1667(Gen2)	21711	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Deterministic Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
DJ after CIC, LBP, Clock To Data, fBAUD/1667 (Gen1)	21912	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Deterministic Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
DJ after CIC, LBP, Clock To Data, fBAUD/1667 (Gen2)	21712	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Deterministic Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
DJ after CIC, LFTP, Clock To Data, fBAUD/1667 (Gen1) (Informative)	22134	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Deterministic Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
DJ after CIC, LFTP, Clock To Data, fBAUD/1667 (Gen2)(Informative)	22234	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Deterministic Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.

Table 4 Test IDs and Names (continued)

Name	TestID	Description
DJ after CIC, MFTP, Clock To Data, fBAUD/1667 (Gen1) (Informative)	22133	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Deterministic Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
DJ after CIC, MFTP, Clock To Data, fBAUD/1667 (Gen2)(Informative)	22233	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Deterministic Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
DJ after CIC, SSOP, Clock To Data, fBAUD/1667 (Gen1) (Informative)	22135	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Deterministic Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
DJ after CIC, SSOP, Clock To Data, fBAUD/1667 (Gen2) (Informative)	22235	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Deterministic Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
Deprecated	20112	New:20111
Deprecated	20113	New:20111
Deprecated	20114	New:20111
Deprecated	20122	New:20121
Deprecated	20123	New:20121
Deprecated	20124	New:20121
Differential Output Voltage (Max), LFTP	801502	Maximum Differential Output Voltage, LFTP
Differential Output Voltage (Max), MFTP	801501	Maximum Differential Output Voltage, MFTP
Differential Output Voltage (Min), HFTP	801403	Minimum Differential Output Voltage, HFTP
Differential Output Voltage (Min), LBP	801401	Minimum Differential Output Voltage, LBP
Differential Output Voltage (Min), MFTP	801402	Minimum Differential Output Voltage, MFTP
Find Inter-Burst Gap for COMINIT	800300	
Find Inter-Burst Gap for COMWAKE	800400	
No test selected	0	Dummy test for development purpose.
OOB-01[a] : Drive Rejects Min Vthresh COMRESET	30141	Send repetitive minimum Vthresh level with nominal gap COMRESET signal to Drive, verify that the Drive does not respond consistently with any signal to each stimulus except for user-defined tolerated #Asynchronous Signal Recovery COMINIT.

Table 4 Test IDs and Names (continued)

Name	TestID	Description
OOB-01[a] : Host Rejects Min Vthresh COMINIT	30121	Send repetitive minimum Vthresh level with nominal gap COMINIT signal to Host, verify that: Host without ASR: The Host responds consistently with COMWAKE to each stimulus. Host with ASR: The Host does not respond consistently with any signal to each stimulus except for user-defined tolerated #Proactive COMRESET.
OOB-01[b/d] : Drive Responds to Max Vthresh COMRESET	30131	Send repetitive maximum Vthresh level with nominal gap COMRESET signal to Drive, verify that the Drive responds consistently with COMINIT to each stimulus.
OOB-01[b/d] : Host Responds to Max Vthresh COMINIT	30111	Send repetitive maximum Vthresh level with nominal gap COMINIT signal to Host, verify that: Host without ASR: The Host responds consistently with COMWAKE to each stimulus. Host with ASR: the Host responds consistently with alternate COMINIT/COMWAKE to each stimulus.
OOB-01[c] : Drive Rejects Min Vthresh COMRESET	30142	Send repetitive minimum Vthresh level with nominal gap COMRESET signal to Drive, verify that the Drive does not respond consistently with any signal to each stimulus except for user-defined tolerated #Asynchronous Signal Recovery COMINIT.
OOB-01[c] : Host Rejects Min Vthresh COMINIT	30122	Send repetitive minimum Vthresh level with nominal gap COMINIT signal to Host, verify that: Host without ASR: The Host responds consistently with COMWAKE to each stimulus. Host with ASR: The Host does not respond consistently with any signal to each stimulus except for user-defined tolerated #Proactive COMRESET.
OOB-02 : Drive UI During OOB Signaling	30221	This specifies the operating data period during OOB burst transmission (at Gen1 rate ± 3%).
OOB-02 : Host UI During OOB Signaling	30211	This specifies the operating data period during OOB burst transmission (at Gen1 rate ± 3%).
OOB-03[a] : Drive COMINIT Transmit Burst Length	30321	Send in-spec nominal COMRESET to Drive. Verify Drive responds with 6 bursts of COMINIT signal with burst timing in specification.
OOB-03[a] : Host COMRESET Transmit Burst Length	30311	Verify Host initiates with 6 bursts of COMRESET signal with burst timing in specification.
OOB-03[b] : Drive COMWAKE Transmit Burst Length	30341	Send in-spec nominal COMWAKE to Drive. Verify Drive responds with 6 bursts of COMWAKE signal with burst timing in specification.
OOB-03[b] : Host COMWAKE Transmit Burst Length	30331	Send in-specification nominal COMINIT to Host. Verify Host responds with 6 bursts of COMWAKE signal with burst timing in specification.
OOB-04 : Drive COMINIT Transmit Gap Length	30421	Send in-spec nominal COMRESET to Drive. Verify Drive responds with 6 bursts of COMINIT signal with Inter-burst timing in specification.
OOB-04 : Host COMRESET Transmit Gap Length	30411	Verify Host initiates with 6 bursts of COMRESET signal with Inter-burst timing in specification.

Table 4 Test IDs and Names (continued)

Name	TestID	Description
OOB-05 : Drive COMWAKE Transmit Gap Length	30521	Send in-spec nominal COMWAKE to Drive. Verify Drive responds with 6 bursts of COMWAKE signal with Inter-burst timing in specification.
OOB-05 : Host COMWAKE Transmit Gap Length	30511	Send in-specification nominal COMINIT to Host. Verify Host responds with 6 bursts of COMWAKE signal with burst timing in specification.
OOB-06[a] : Drive Responds to Max In-Spec COMWAKE	30671	Send repetitive max In-Spec COMWAKE Gap Windows signal to Drive, verify that the Drive responds consistently with COMWAKE and SPEED NEGOTIATION to each stimulus.
OOB-06[a] : Host Responds to Max In-Spec COMWAKE	30631	Send repetitive nominal gap COMINIT and max In-Spec COMWAKE signal to Host, verify that the Host responds consistently with COMWAKE and SPEED NEGOTIATION to each stimulus.
OOB-06[b] : Drive Responds to Min In-Spec COMWAKE	30672	Send repetitive min In-Spec COMWAKE Gap Windows signal to Drive, verify that the Drive responds consistently with COMWAKE and SPEED NEGOTIATION to each stimulus.
OOB-06[b] : Host Responds to Min In-Spec COMWAKE	30632	Send repetitive nominal gap COMINIT and min In-Spec COMWAKE signal to Host, verify that the Host responds consistently with COMWAKE and SPEED NEGOTIATION to each stimulus.
OOB-06[c] : Drive Rejects Max Out-Of-Spec COMWAKE	30681	Send repetitive nominal gap COMRESET and max out-of-spec COMWAKE Gap Windows signal to Drive, verify that the Drive responds consistently with COMINIT only to each stimulus.
OOB-06[c] : Host Rejects Max Out-Of-Spec COMWAKE	30641	Send repetitive nominal gap COMINIT and max out-of-Spec COMWAKE sequence to Host, verify that: Host without ASR: The Host responds consistently with COMWAKE only to each stimulus. Host with ASR: The Host responds consistently with alternate COMINIT/COMWAKE only to each stimulus.
OOB-06[d] : Drive Rejects Min Out-Of-Spec COMWAKE	30682	Send repetitive nominal gap COMRESET and min out-of-spec COMWAKE Gap Windows signal to Drive, verify that the Drive responds consistently with COMINIT only to each stimulus.
OOB-06[d] : Host Rejects Min Out-Of-Spec COMWAKE	30642	Send repetitive nominal gap COMINIT and min out-of-Spec COMWAKE sequence to Host, verify that: Host without ASR: The Host responds consistently with COMWAKE only to each stimulus. Host with ASR: The Host responds consistently with alternate COMINIT/COMWAKE only to each stimulus.
OOB-07[a] : Drive Responds to Max In-Spec COMRESET	30651	Send repetitive max In-Spec COMRESET Gap Windows signal to Drive, verify that the Drive responds consistently with COMINIT to each stimulus.
OOB-07[a] : Host Responds to Max In-Spec COMINIT	30611	Send repetitive max In-Spec COMINIT Gap Windows signal to Host, verify that: Host without ASR: The Host responds consistently with COMWAKE to each stimulus. Host with ASR: the Host responds consistently with alternate COMINIT/COMWAKE to each stimulus.

Table 4 Test IDs and Names (continued)

Name	TestID	Description
OOB-07[b] : Drive Responds to Min In-Spec COMRESET	30652	Send repetitive min In-Spec COMRESET Gap Windows signal to Drive, verify that the Drive responds consistently with COMINIT to each stimulus.
OOB-07[b] : Host Responds to Min In-Spec COMINIT	30612	Send repetitive min In-Spec COMINIT Gap Windows signal to Host, verify that: Host without ASR: The Host responds consistently with COMWAKE to each stimulus. Host with ASR: the Host responds consistently with alternate COMINIT-COMWAKE to each stimulus.
OOB-07[c] : Drive Rejects Max Out-Of-Spec COMRESET	30661	Send repetitive max out-of-spec COMRESET Gap Windows signal to Drive, verify that the Drive does not respond consistently with any signal to each stimulus except for user-defined tolerated #Asynchronous Signal Recovery COMINIT.
OOB-07[c] : Host Rejects Max Out-Of-Spec COMINIT	30621	Send repetitive max out-of-spec COMINIT Gap Windows signal to Host, verify that the Host does not respond consistently with any signal to each stimulus except for user-defined tolerated #Proactive COMRESET.
OOB-07[d] : Drive Rejects Min Out-Of-Spec COMRESET	30662	Send repetitive min out-of-spec COMRESET Gap Windows signal to Drive, verify that the Drive does not respond consistently with any signal to each stimulus except for user-defined tolerated #Asynchronous Signal Recovery COMINIT.
OOB-07[d] : Host Rejects Min Out-Of-Spec COMINIT	30622	Send repetitive min out-of-spec COMINIT Gap Windows signal to Host, verify that the Host does not respond consistently with any signal to each stimulus except for user-defined tolerated #Proactive COMRESET.
PHY-01 : Channel Speed, FBaud & Unit Interval (Gen1)	10111	Unit Interval is the operating data period (nominal value architecture specific), excluding jitter. Channel Speed and Fbaud are the reference value showing the nominal rate of data through the channel.
PHY-01 : Channel Speed, FBaud & Unit Interval (Gen2)	10121	Unit Interval is the operating data period (nominal value architecture specific), excluding jitter. Channel Speed and Fbaud are the reference value showing the nominal rate of data through the channel.
PHY-01 : Channel Speed, FBaud & Unit Interval (Gen3)	10131	Unit Interval is the operating data period (nominal value architecture specific), excluding jitter. Channel Speed and Fbaud are the reference value showing the nominal rate of data through the channel.
PHY-02 : Frequency Long-Term Stability (SSC) (Gen1)	10212	This specifies the allowed frequency variation from nominal. When SSC is present, the measurement is a combination of the long term frequency accuracy and a frequency offset due to the SSC modulation.

Table 4 Test IDs and Names (continued)

Name	TestID	Description
PHY-02 : Frequency Long-Term Stability (SSC) (Gen2)	10222	This specifies the allowed frequency variation from nominal. When SSC is present, the measurement is a combination of the long term frequency accuracy and a frequency offset due to the SSC modulation.
PHY-02 : Frequency Long-Term Stability / Accuracy (Gen1)	10211	This specifies the allowed frequency variation from nominal. This does not include frequency variation due to jitter, Spread Spectrum Clocking, or phase noise of the clock source.
PHY-02 : Frequency Long-Term Stability / Accuracy (Gen2)	10221	This specifies the allowed frequency variation from nominal; this does not include frequency variation due to jitter, Spread Spectrum Clocking, or phase noise of the clock source.
PHY-02 : Frequency Long-Term Stability / Accuracy (Gen3)	10231	This specifies the allowed frequency variation from nominal; this does not include frequency variation due to jitter, Spread Spectrum Clocking, or phase noise of the clock source.
PHY-03 : Spread-Spectrum Modulation Frequency	10311	Spread-Spectrum Modulation Frequency specifies the modulation frequency of the Spread Spectrum frequency modulation.
PHY-04[a] : Spread-Spectrum Modulation Deviation (Min)	10411	Spread-Spectrum Modulation Deviation specifies the allowed frequency variation from the nominal Fbaud value when Spread Spectrum Clocking (SSC) is used. This deviation includes the long-term frequency variation of the transmitter clock source, and the SSC frequency modulation on the transmitter output.
PHY-04[b] : Spread-Spectrum Modulation Deviation (Max)	10412	Spread-Spectrum Modulation Deviation specifies the allowed frequency variation from the nominal Fbaud value when Spread Spectrum Clocking (SSC) is used. This deviation includes the long-term frequency variation of the transmitter clock source, and the SSC frequency modulation on the transmitter output.
PHY-04[c] : Spread-Spectrum Modulation DFDT (Min) (Informative)	10511	Spread-Spectrum Modulation DFDT specifies the minimum short term rate of change (slope) of the spread spectrum modulation profile (df/dt) is within the conformance limit.
PHY-04[d] : Spread-Spectrum Modulation DFDT (Max) (Informative)	10512	Spread-Spectrum Modulation DFDT specifies the maximum short term rate of change (slope) of the spread spectrum modulation profile (df/dt) is within the conformance limit.
TJ after CIC, HFTP, Clock To Data, fBAUD/1667 (Gen1)	21811	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TJ after CIC, HFTP, Clock To Data, fBAUD/1667(Gen2)	21611	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.

Table 4 Test IDs and Names (continued)

Name	TestID	Description
TJ after CIC, LBP, Clock To Data, fBAUD/1667 (Gen1)	21812	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TJ after CIC, LBP, Clock To Data, fBAUD/1667 (Gen2)	21612	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TJ after CIC, LFTP, Clock To Data, fBAUD/1667 (Gen1) (Informative)	22124	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TJ after CIC, LFTP, Clock To Data, fBAUD/1667 (Gen2) (Informative)	22224	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TJ after CIC, MFTP, Clock To Data, fBAUD/1667 (Gen1) (Informative)	22123	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TJ after CIC, MFTP, Clock To Data, fBAUD/1667 (Gen2) (Informative)	22223	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TJ after CIC, SSOP, Clock To Data, fBAUD/1667 (Gen1) (Informative)	22125	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TJ after CIC, SSOP, Clock To Data, fBAUD/1667 (Gen2) (Informative)	22225	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-01[a] : Differential Output Voltage (Min) (Gen1, Gen2)	20111	The minimum differential voltage [(TX+) – (TX-)] measured at the transmitter shall comply to the respective electrical specifications. This is measured at mated Serial ATA connector on transmit side including any pre-emphasis.
TSG-01[b] : Differential Output Voltage (Max) (Informative) (Gen1, Gen2)	20121	The maximum differential voltage [(TX+) – (TX-)] measured at the transmitter shall comply to the respective electrical specifications. This is measured at mated Serial ATA connector on transmit side including any pre-emphasis.

Table 4 Test IDs and Names (continued)

Name	TestID	Description
TSG-02[a] : Rise Time (Gen1)	20211	Rise times are measured between 20% and 80% of the signal. The rise requirement tr/f applies to differential transitions (TX+ – TX-), for both normal and OOB signaling.
TSG-02[a] : Rise Time (Gen1) (Informative)	20231	Rise times are measured between 20% and 80% of the signal. The rise requirement tr/f applies to differential transitions (TX+ – TX-), for both normal and OOB signaling. This test change to Informative Test from UTD 1.4.3 and above.
TSG-02[a] : Rise Time (Gen1x)	20212	Rise times are measured between 20% and 80% of the signal. The rise requirement tr/f applies to differential transitions (TX+ – TX-), for both normal and OOB signaling.
TSG-02[a] : Rise Time (Gen1x) (Informative)	20232	Rise times are measured between 20% and 80% of the signal. The rise requirement tr/f applies to differential transitions (TX+ – TX-), for both normal and OOB signaling. This test change to Informative Test from UTD 1.4.3 and above.
TSG-02[a] : Rise Time (Gen2)	20213	Rise times are measured between 20% and 80% of the signal. The rise requirement tr/f applies to differential transitions (TX+ – TX-), for both normal and OOB signaling.
TSG-02[a] : Rise Time (Gen2) (Informative)	20233	Rise times are measured between 20% and 80% of the signal. The rise requirement tr/f applies to differential transitions (TX+ – TX-), for both normal and OOB signaling. This test change to Informative Test from UTD 1.4.3 and above.
TSG-02[a] : Rise Time (Gen3)	20214	Rise times are measured between 20% and 80% of the signal. The rise requirement tr/f applies to differential transitions (TX+ – TX-), for both normal and OOB signaling.
TSG-02[a] : Rise Time (Gen3) (Informative)	20234	Rise times are measured between 20% and 80% of the signal. The rise requirement tr/f applies to differential transitions (TX+ – TX-), for both normal and OOB signaling. This test change to Informative Test from UTD 1.4.3 and above.
TSG-02[b] : Fall Time (Gen1)	20221	Fall times are measured between 20% and 80% of the signal. Fall time requirement tr/f applies to differential transitions (TX+ – TX-), for both normal and OOB signaling.
TSG-02[b] : Fall Time (Gen1) (Informative)	20241	Fall times are measured between 20% and 80% of the signal. Fall time requirement tr/f applies to differential transitions (TX+ – TX-), for both normal and OOB signaling. This test change to Informative Test from UTD 1.4.3 and above.
TSG-02[b] : Fall Time (Gen1x) (Informative)	20242	Fall times are measured between 20% and 80% of the signal. Fall time requirement tr/f applies to differential transitions (TX+ – TX-), for both normal and OOB signaling. This test change to Informative Test from UTD 1.4.3 and above.

Table 4 Test IDs and Names (continued)

Name	TestID	Description
TSG-02[b] : Fall Time (Gen2) (Informative)	20243	Fall times are measured between 20% and 80% of the signal. Fall time requirement tr/f applies to differential transitions (TX+ – TX-), for both normal and OOB signaling. This test change to Informative Test from UTD 1.4.3 and above.
TSG-02[b] : Fall Time (Gen3) (Informative)	20244	Fall times are measured between 20% and 80% of the signal. Fall time requirement tr/f applies to differential transitions (TX+ – TX-), for both normal and OOB signaling. This test change to Informative Test from UTD 1.4.3 and above.
TSG-02[b] : Fall Time(Gen1x)	20222	Fall times are measured between 20% and 80% of the signal. Fall time requirement tr/f applies to differential transitions (TX+ – TX-), for both normal and OOB signaling.
TSG-02[b] : Fall Time(Gen2)	20223	Fall times are measured between 20% and 80% of the signal. Fall time requirement tr/f applies to differential transitions (TX+ – TX-), for both normal and OOB signaling.
TSG-02[b] : Fall Time(Gen3)	20224	Fall times are measured between 20% and 80% of the signal. Fall time requirement tr/f applies to differential transitions (TX+ – TX-), for both normal and OOB signaling.
TSG-03[a] : Differential Skew, HFTP (Gen1, Gen2, Gen3)	20311	TX Differential Skew is the time difference between the single-ended mid-point of the TX+ signal rising/falling edge, and the single-ended mid-point of the TX- signal falling/rising edge. It is an important parameter to control as excessive skew may result in increased high frequency jitter and common mode noise levels seen at the far end of the interconnect.
TSG-03[a] : Differential Skew, HFTP (Gen1, Gen2, Gen3) (Informative)	20331	TX Differential Skew is the time difference between the single-ended mid-point of the TX+ signal rising/falling edge, and the single-ended mid-point of the TX- signal falling/rising edge. It is an important parameter to control as excessive skew may result in increased high frequency jitter and common mode noise levels seen at the far end of the interconnect. This test change to Informative Test from UTD 1.4.3 and above.
TSG-03[a] : Differential Skew, HFTP (Gen2x) (Informative)	20332	TX Differential Skew is the time difference between the single-ended mid-point of the TX+ signal rising/falling edge, and the single-ended mid-point of the TX- signal falling/rising edge. It is an important parameter to control as excessive skew may result in increased high frequency jitter and common mode noise levels seen at the far end of the interconnect. This test change to Informative Test from UTD 1.4.3 and above.
TSG-03[a] : Differential Skew, HFTP(Gen2x)	20312	TX Differential Skew is the time difference between the single-ended mid-point of the TX+ signal rising/falling edge, and the single-ended mid-point of the TX- signal falling/rising edge. It is an important parameter to control as excessive skew may result in increased high frequency jitter and common mode noise levels seen at the far end of the interconnect.

Table 4 Test IDs and Names (continued)

Name	TestID	Description
TSG-03[b] : Differential Skew, MFTP (Gen1, Gen2, Gen3)	20321	TX Differential Skew is the time difference between the single-ended mid-point of the TX+ signal rising/falling edge, and the single-ended mid-point of the TX- signal falling/rising edge. It is an important parameter to control as excessive skew may result in increased high frequency jitter and common mode noise levels seen at the far end of the interconnect.
TSG-03[b] : Differential Skew, MFTP (Gen1, Gen2, Gen3) (Informative)	20341	TX Differential Skew is the time difference between the single-ended mid-point of the TX+ signal rising/falling edge, and the single-ended mid-point of the TX- signal falling/rising edge. It is an important parameter to control as excessive skew may result in increased high frequency jitter and common mode noise levels seen at the far end of the interconnect. This test change to Informative Test from UTD 1.4.3 and above.
TSG-03[b] : Differential Skew, MFTP (Gen2x) (Informative)	20342	TX Differential Skew is the time difference between the single-ended mid-point of the TX+ signal rising/falling edge, and the single-ended mid-point of the TX- signal falling/rising edge. It is an important parameter to control as excessive skew may result in increased high frequency jitter and common mode noise levels seen at the far end of the interconnect. This test change to Informative Test from UTD 1.4.3 and above.
TSG-03[b] : Differential Skew, MFTP(Gen2x)	20322	TX Differential Skew is the time difference between the single-ended mid-point of the TX+ signal rising/falling edge, and the single-ended mid-point of the TX- signal falling/rising edge. It is an important parameter to control as excessive skew may result in increased high frequency jitter and common mode noise levels seen at the far end of the interconnect.
TSG-04[a] : AC Common Mode Voltage, MFTP (Gen1u, Gen2u)	20413	This specifies maximum sinusoidal amplitude of common mode signal measured at the transmitter connector. This parameter is a measure of common mode noise other than the CM spikes during transitions due to TX+/TX- mismatch and skews which are limited by the rise/fall mismatch and other requirements.
TSG-04[a] : AC Common Mode Voltage, MFTP (Gen2)	20411	This specifies maximum sinusoidal amplitude of common mode signal measured at the transmitter connector. This parameter is a measure of common mode noise other than the CM spikes during transitions due to TX+/TX- mismatch and skews which are limited by the rise/fall mismatch and other requirements.
TSG-04[a] : AC Common Mode Voltage, MFTP (Gen3)	20423	This specifies maximum sinusoidal amplitude of common mode signal measured at the transmitter connector. This parameter is a measure of common mode noise other than the CM spikes during transitions due to TX+/TX- mismatch and skews which are limited by the rise/fall mismatch and other requirements.

Table 4 Test IDs and Names (continued)

Name	TestID	Description
TSG-04[a] : AC Common Mode Voltage, MFTP (Gen3u)	20425	This specifies maximum sinusoidal amplitude of common mode signal measured at the transmitter connector. This parameter is a measure of common mode noise other than the CM spikes during transitions due to TX+/TX- mismatch and skews which are limited by the rise/fall mismatch and other requirements.
TSG-04[b] : AC Common Mode Voltage, HFTP (Gen1u, Gen2u)	20414	This specifies maximum sinusoidal amplitude of common mode signal measured at the transmitter connector. This parameter is a measure of common mode noise other than the CM spikes during transitions due to TX+/TX- mismatch and skews which are limited by the rise/fall mismatch and other requirements.
TSG-04[b] : AC Common Mode Voltage, HFTP (Gen2) (Informative)	20412	This specifies maximum sinusoidal amplitude of common mode signal measured at the transmitter connector. This parameter is a measure of common mode noise other than the CM spikes during transitions due to TX+/TX- mismatch and skews which are limited by the rise/fall mismatch and other requirements.
TSG-04[b] : AC Common Mode Voltage, HFTP (Gen3)	20424	This specifies maximum sinusoidal amplitude of common mode signal measured at the transmitter connector. This parameter is a measure of common mode noise other than the CM spikes during transitions due to TX+/TX- mismatch and skews which are limited by the rise/fall mismatch and other requirements.
TSG-04[b] : AC Common Mode Voltage, HFTP (Gen3u)	20426	This specifies maximum sinusoidal amplitude of common mode signal measured at the transmitter connector. This parameter is a measure of common mode noise other than the CM spikes during transitions due to TX+/TX- mismatch and skews which are limited by the rise/fall mismatch and other requirements.
TSG-05 : Rise/Fall Imbalance, HFTP (Gen2)	20511	This specifies the measure of the match in the simultaneous single-ended rise/fall or fall/rise times of the Transmitter. The match in the rise of TX+ and fall of TX- determined by the functions: absolute value(TX+,rise - TX-,fall)/average where average is (TX+,rise + TX-,fall)/2 and all rise and fall times are 20-80%. The match in the fall of TX+ and rise of TX- determined by the function: absolute value(TX+,fall - TX-,rise)/average where average is (TX+,fall + TX-,rise)/2 and all rise and fall times are 20-80%. This test only available for UTD 1.3 and below.
TSG-05 : Rise/Fall Imbalance, MFTP (Gen2)	20512	This specifies the measure of the match in the simultaneous single-ended rise/fall or fall/rise times of the Transmitter. The match in the rise of TX+ and fall of TX- determined by the functions: absolute value(TX+,rise - TX-,fall)/average where average is (TX+,rise + TX-,fall)/2 and all rise and fall times are 20-80%. The match in the fall of TX+ and rise of TX- determined by the function: absolute value(TX+,fall - TX-,rise)/average where average is (TX+,fall + TX-,rise)/2 and all rise and fall times are 20-80%. This test only available for UTD 1.3 and below.

Table 4 Test IDs and Names (continued)

Name	TestID	Description
TSG-06[a] : Amplitude Imbalance, HFTP (Gen1, Gen2)	20611	This specifies the measure of the match in the single-ended amplitudes of the TX+ and TX- signals. The match in the amplitudes of TX+ and TX- determined by the function: absolute value(TX+ amplitude - TX- amplitude)/average where average is (TX+ amplitude + TX- amplitude)/2 and all amplitudes are determined by mode (most prevalent) voltage. This test only available for UTD 1.3 and below.
TSG-06[b] : Amplitude Imbalance, MFTP (Gen1, Gen2)	20612	This specifies the measure of the match in the single-ended amplitudes of the TX+ and TX- signals. The match in the amplitudes of TX+ and TX- determined by the function: absolute value(TX+ amplitude - TX- amplitude)/average where average is (TX+ amplitude + TX- amplitude)/2 and all amplitudes are determined by mode (most prevalent) voltage. This test only available for UTD 1.3.
TSG-07 : TJ at Connector, HFTP, Clock To Data, fBAUD/10 (Gen1) (Informative)	22012	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-07 : TJ at Connector, LBP, Clock To Data, fBAUD/10 (Gen1) (Informative)	22011	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-07 : TJ at Connector, LFTP, Clock To Data, fBAUD/10 (Gen1) (Informative)	22014	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-07 : TJ at Connector, MFTP, Clock To Data, fBAUD/10 (Gen1) (Informative)	22013	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-07 : TJ at Connector, SSOP, Clock To Data, fBAUD/10 (Gen1) (Informative)	22015	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-08 : DJ at Connector, HFTP, Clock To Data, fBAUD/10 (Gen1) (Informative)	22022	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Deterministic Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-08 : DJ at Connector, LBP, Clock To Data, fBAUD/10 (Gen1) (Informative)	22021	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Deterministic Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.

Table 4 Test IDs and Names (continued)

Name	TestID	Description
TSG-08 : DJ at Connector, LFTP, Clock To Data, fBAUD/10 (Gen1) (Informative)	22024	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Deterministic Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-08 : DJ at Connector, MFTP, Clock To Data, fBAUD/10 (Gen1) (Informative)	22023	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Deterministic Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-08 : DJ at Connector, SSOP, Clock To Data, fBAUD/10 (Gen1) (Informative)	22025	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Deterministic Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-09 : TJ at Connector, HFTP, Clock To Data, fBAUD/500 (Gen1)	20911	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-09 : TJ at Connector, LBP, Clock To Data, fBAUD/500 (Gen1)	20912	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-09 : TJ at Connector, LFTP, Clock To Data, fBAUD/500 (Gen1) (Informative)	22104	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-09 : TJ at Connector, MFTP, Clock To Data, fBAUD/500 (Gen1) (Informative)	22103	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-09 : TJ at Connector, SSOP, Clock To Data, fBAUD/500 (Gen1) (Informative)	22105	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-10 : DJ at Connector, HFTP, Clock To Data, fBAUD/500 (Gen1)	21011	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Deterministic Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-10 : DJ at Connector, LBP, Clock To Data, fBAUD/500 (Gen1)	21012	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Deterministic Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.

Table 4 Test IDs and Names (continued)

Name	TestID	Description
TSG-10 : DJ at Connector, LFTP, Clock To Data, fBAUD/500 (Gen1) (Informative)	22114	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Deterministic Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-10 : DJ at Connector, MFTP, Clock To Data, fBAUD/500 (Gen1) (Informative)	22113	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Deterministic Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-10 : DJ at Connector, SSOP, Clock To Data, fBAUD/500 (Gen1) (Informative)	22115	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Deterministic Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-11 : TJ at Connector, HFTP, Clock To Data, fBAUD/500 (Gen2)	21111	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-11 : TJ at Connector, LBP, Clock To Data, fBAUD/500 (Gen2)	21112	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-11 : TJ at Connector, LFTP, Clock To Data, fBAUD/500 (Gen2) (Informative)	22204	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-11 : TJ at Connector, MFTP, Clock To Data, fBAUD/500 (Gen2) (Informative)	22203	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-11 : TJ at Connector, SSOP, Clock To Data, fBAUD/500 (Gen2) (Informative)	22205	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-12 : DJ at Connector, HFTP, Clock To Data, fBAUD/500 (Gen2)	21211	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Deterministic Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-12 : DJ at Connector, LBP, Clock To Data, fBAUD/500 (Gen2)	21212	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Deterministic Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.

Table 4 Test IDs and Names (continued)

Name	TestID	Description
TSG-12 : DJ at Connector, LFTP, Clock To Data, fBAUD/500 (Gen2) (Informative)	22214	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Deterministic Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-12 : DJ at Connector, MFTP, Clock To Data, fBAUD/500 (Gen2) (Informative)	22213	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Deterministic Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-12 : DJ at Connector, SSOP, Clock To Data, fBAUD/500 (Gen2) (Informative)	22215	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Deterministic Jitter. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[a] : RJ before CIC, MFTP, Clock To Data, JTF Defined (Gen3)	21311	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Random Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[a] : RJ before CIC, MFTP, Clock To Data, JTF Defined (Gen3) (Informative)	21312	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Random Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition. This test change to Informative Test from UTD 1.4.3 and above.
TSG-13[b] : TJ before CIC, HFTP, Clock To Data, JTF Defined (Use RJ) (Gen3)	21415	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[b] : TJ before CIC, LBP, Clock To Data, JTF Defined (Use RJ) (Gen3)	21416	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[b] : TJ before CIC, LFTP, Clock To Data, JTF Defined (Use RJ) (Gen3) (Informative)	22414	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[b] : TJ before CIC, MFTP, Clock To Data, JTF Defined (Use RJ) (Gen3) (Informative)	22413	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[b] : TJ before CIC, SSOP, Clock To Data, JTF Defined (Use RJ) (Gen3) (Informative)	22415	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.

Table 4 Test IDs and Names (continued)

Name	TestID	Description
TSG-13[c] : TJ after CIC, HFTP, Clock To Data, JTF Defined (Use RJ) (Gen3)	21515	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[c] : TJ after CIC, LBP, Clock To Data, JTF Defined (Use RJ) (Gen3)	21516	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[c] : TJ after CIC, LFTP, Clock To Data, JTF Defined (Use RJ) (Gen3) (Informative)	22424	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[c] : TJ after CIC, MFTP, Clock To Data, JTF Defined (Use RJ) (Gen3) (Informative)	22423	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[c] : TJ after CIC, SSOP, Clock To Data, JTF Defined (Use RJ) (Gen3) (Informative)	22425	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[d] : TJ after CIC, HFTP, Clock To Data, JTF Defined (BER=1E-12) (Gen3)	21511	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[d] : TJ after CIC, HFTP, Clock To Data, JTF Defined (BER=1E-12) (Gen3) (Informative)	21517	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition. This test change to Informative Test from UTD 1.4.3 and above.
TSG-13[d] : TJ after CIC, LBP, Clock To Data, JTF Defined (BER=1E-12) (Gen3)	21512	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[d] : TJ after CIC, LFTP, Clock To Data, JTF Defined (BER=1E-12) (Gen3) (Informative)	22454	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[d] : TJ after CIC, MFTP, Clock To Data, JTF Defined (BER=1E-12) (Gen3) (Informative)	22453	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.

Table 4 Test IDs and Names (continued)

Name	TestID	Description
TSG-13[d] : TJ after CIC, SSOP, Clock To Data, JTF Defined (BER=1E-12) (Gen3) (Informative)	22455	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[d] : TJ without CIC, HFTP, Clock To Data, JTF Defined (BER=1E-12) (Gen3) (Informative)	23517	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition. This test change to Informative Test from UTD 1.4.3 and above.
TSG-13[d] : TJ without CIC, LBP, Clock To Data, JTF Defined (BER=1E-12) (Gen3)	23512	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[d] : TJ without CIC, LFTP, Clock To Data, JTF Defined (BER=1E-12) (Gen3) (Informative)	23454	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[d] : TJ without CIC, MFTP, Clock To Data, JTF Defined (BER=1E-12) (Gen3) (Informative)	23453	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[d] : TJ without CIC, SSOP, Clock To Data, JTF Defined (BER=1E-12) (Gen3) (Informative)	23455	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[e] : TJ after CIC, HFTP, Clock To Data, JTF Defined (BER=1E-6) (Gen3)	21513	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[e] : TJ after CIC, HFTP, Clock To Data, JTF Defined (BER=1E-6) (Gen3) (Informative)	21518	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition. This test change to Informative Test from UTD 1.4.3 and above.
TSG-13[e] : TJ after CIC, LBP, Clock To Data, JTF Defined (BER=1E-6) (Gen3)	21514	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[e] : TJ after CIC, LFTP, Clock To Data, JTF Defined (BER=1E-6) (Gen3) (Informative)	22464	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.

Table 4 Test IDs and Names (continued)

Name	TestID	Description
TSG-13[e] : TJ after CIC, MFTP, Clock To Data, JTF Defined (BER=1E-6) (Gen3) (Informative)	22463	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[e] : TJ after CIC, SSOP, Clock To Data, JTF Defined (BER=1E-6) (Gen3) (Informative)	22465	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[e] : TJ without CIC, HFTP, Clock To Data, JTF Defined (BER=1E-6) (Gen3) (Informative)	23518	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition. This test change to Informative Test from UTD 1.4.3 and above.
TSG-13[e] : TJ without CIC, LBP, Clock To Data, JTF Defined (BER=1E-6) (Gen3)	23514	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[e] : TJ without CIC, LFTP, Clock To Data, JTF Defined (BER=1E-6) (Gen3) (Informative)	23464	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[e] : TJ without CIC, MFTP, Clock To Data, JTF Defined (BER=1E-6) (Gen3) (Informative)	23463	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-13[e] : TJ without CIC, SSOP, Clock To Data, JTF Defined (BER=1E-6) (Gen3) (Informative)	23465	This specifies the transmitters shall meet the Clock-to-Data jitter measurement specification for Total Jitter with JTF defined. Jitter is the difference in time between a data transition and the associated Reference Clock event, taken as the ideal point for a transition.
TSG-14 : TX Maximum Differential Voltage Amplitude (Gen3)	20125	The maximum differential voltage [(TX+) – (TX-)] measured at the transmitter shall comply to the respective electrical specifications. This is measured at mated Serial ATA connector on transmit side including any pre-emphasis. For Gen3i and Gen3u the maximum differential output voltage is likewise measured at the TX compliance point.
TSG-15 : TX Minimum Differential Voltage Amplitude (BER=1E-12) (Gen3)	20115	The minimum differential voltage [(TX+) – (TX-)] measured at the transmitter shall comply to the respective electrical specifications. This is measured at mated Serial ATA connector on transmit side including any pre-emphasis. The minimum differential output voltage is measured after the Gen3i CIC.

Table 4 Test IDs and Names (continued)

Name	TestID	Description
TSG-15 : TX Minimum Differential Voltage Amplitude (UI=5E6) (Gen3)	20116	The minimum differential voltage [(TX+) – (TX-)] measured at the transmitter shall comply to the respective electrical specifications. This is measured at mated Serial ATA connector on transmit side including any pre-emphasis. The minimum differential output voltage is measured after the Gen3i CIC.
TSG-16[a] : Tx AC Common Mode Voltage, FFT 3GHz (Gen3)	20421	Maximum sinusoidal amplitude of common mode signal measured at the transmitter connector. This parameter is a measure of common mode noise other than the CM spikes during transitions due to TX+/TX- mismatch and skews which are limited by the rise/fall mismatch and other requirements. The 1st and 2nd harmonics frequency of the data rate shall be measured.
TSG-16[b] : Tx AC Common Mode Voltage, FFT 6GHz (Gen3)	20422	Maximum sinusoidal amplitude of common mode signal measured at the transmitter connector. This parameter is a measure of common mode noise other than the CM spikes during transitions due to TX+/TX- mismatch and skews which are limited by the rise/fall mismatch and other requirements. The 1st and 2nd harmonics frequency of the data rate shall be measured.
TSG-17 : Peak-Mode Tx Emphasis, LFTP (Drive) (Gen3)	20723	The emphasis measured at the transmitter shall comply to the respective electrical specifications. If any one of Tx Emphasis tests ("Tx Emphasis, MFTP" and "Peak-Mode Tx Emphasis, LFTP") is pass, this test group is considered as a pass. Hence, only one of these tests is needed to run to be compliant.
TSG-17 : Tx Emphasis, MFTP (Drive) (Gen3)	20722	The emphasis measured at the transmitter shall comply to the respective electrical specifications. If any one of Tx Emphasis tests ("Tx Emphasis, MFTP" and "Peak-Mode Tx Emphasis, LFTP") is pass, this test group is considered as a pass. Hence, only one of these tests is needed to run to be compliant.
TSG-17[b] : Tx Emphasis, MFTP (Host) (Gen3)	20712	The emphasis measured at the transmitter shall comply to the respective electrical specifications.
Trigger and scale COMINIT	800100	
Trigger and scale COMWAKE	800200	
Tx AC Common Mode Voltage Measurement Setup (Gen3)	20429	Maximum sinusoidal amplitude of common mode signal measured at the transmitter connector. This parameter is a measure of common mode noise other than the CM spikes during transitions due to TX+/TX- mismatch and skews which are limited by the rise/fall mismatch and other requirements. The 1st and 2nd harmonics frequency of the data rate shall be measured.
UTD 1.1/1.2 Test	101	Dummy test for development purpose.
UTD 1.3 Test	102	Dummy test for development purpose.
UTD 1.4 Test	103	Dummy test for development purpose.
UTD 1.4.1 Test	104	Dummy test for development purpose.

Table 4 Test IDs and Names (continued)

Name	TestID	Description
UTD 1.4.2 Test	105	Dummy test for development purpose.
UTD 1.4.3 Test	106	Dummy test for development purpose.
UTD 1.5 Test	107	Dummy test for development purpose.
Uses for Development Purpose	500	Dummy test for development purpose.

4 Instruments

The following table shows the instruments used by this application. The name is required by various remote interface methods.

- Instrument Name — The name to use as a parameter in remote interface commands.
- Description — The description of the instrument.

For example, if an application uses an oscilloscope and a pulse generator, then you would expect to see something like this in the table below:

Table 5 Example Instrument Information

Name	Description
scope	The primary oscilloscope.
Pulse	The pulse generator used for Gen 2 tests.

and you would be able to remotely control an instrument using:

```
ARSL syntax (replace [description] with actual parameter)
----------------------------------------------------------------------
arsl -a ipaddress -c "SendScpiCommandCustom 'Command=[scpi
command];Timeout=100;Instrument=pulsegen'"

arsl -a ipaddress -c "SendScpiQueryCustom 'Command=[scpi
query];Timeout=100;Instrument=pulsegen'"


C# syntax (replace [description] with actual parameter)
----------------------------------------------------------------------
SendScpiCommandOptions commandOptions = new SendScpiCommandOptions();
commandOptions.Command = "[scpi command]";
commandOptions.Instrument = "[instrument name]";
commandOptions.Timeout = [timeout];
remoteAte.SendScpiCommand(commandOptions);

SendScpiQueryOptions queryOptions = new SendScpiQueryOptions();
queryOptions.Query = "[scpi query]";
queryOptions.Instrument = "[instrument name]";
```

```
queryOptions.Timeout = [timeout];
remoteAte.SendScpiQuery(queryOptions);
```

Here are the actual instrument names used by this application:

NOTE The file, "InstrumentInfo.txt", which may be found in the same directory as this help file, contains all of the information found in the table below in a format suitable for parsing.

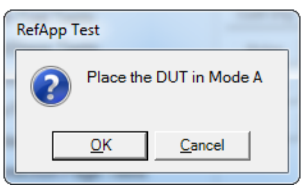
Table 6 Instrument Names

Instrument Name	Description
Infiniium	The primary oscilloscope
pulsegen	81134A Pulse Pattern Generator
JBert	N4903B High Performance Serial BERT
M8020A	M8020A High Performance Serial BERT

5 Message IDs

During the normal course of operation, an application displays multiple message prompts. The application's remote interface exposes a callback capability which enables remote clients to receive the text found in the prompt and to programmatically select the desired response (OK, Cancel, etc.). In order to determine which message is being received, the remote program could parse the message and look for key words. However, because message text is subject to change, a more reliable approach is to use the "message ID" that is attached to the more frequently-seen messages. The following table shows the IDs of the messages that this application may prompt during nominal operation.

For example, if the application may display the following prompt:



then you would expect to see something like this in the table below:

Message	ID	Responses	Usage
DUT mode message	313AEE2F-9EF0-476f-A2EB-29A5C7DE686F	OK=action completed and proceed, Cancel = abort test	App

- Message — A summary of the message in the prompt.
- ID — A unique code that will never change for this prompt, even if the message text changes (assuming the underlying purpose is maintained).
- Responses — The buttons on the prompt and their actions.
- Usage — The scope of the message:
  - "Common" — This message/ID may be used by other apps.

- "App" — This message/ID is unique to this app.
- "<testID>" — This message/ID is unique to this test ID.

A remote client would then structure the code in its message callback handler as shown below to manage message identification:

```
private static void OnSimpleMessage(object sender, MessageEventArgs e)
{
  if (e.ID == "313AEE2F-9EF0-476f-A2EB-29A5C7DE686F")
  {
    // Add code here to set the DUT in Mode A

    e.Response = DialogResult.OK;
  }
}
```

Here are actual message IDs used by this application:

NOTE The file, "MessageInfo.txt", which may be found in the same directory as this help file, contains all of the information found in the table below in a format suitable for parsing.

Table 7 Message IDs

Message	ID	Responses	Usage
Acq Limit: Can't determine minimum bandwidth	25A86458-151E-413D-B890-FC30CFD5ECAA	OK	Instrument
Activating limit will conflict with existing results	31A39751-6019-41de-89DF-59DB239DF978	OK=delete conflicting results, Cancel=cancel activation	Instrument
Already running tests	022467B0-6E08-40eb-B4D4-BBB018FBFBC7	OK	Instrument
App startup aborted	C2B67F67-E5D5-4845-8B63-443781223010	OK	Instrument
Can't set memory depth	FFFF1129-BD83-4318-993E-64C94033CEC4	OK=skip step and continue, Cancel=abort test	Instrument
Channel Setup: Unknown scope channel	CDE944EB-F440-4CB1-AFDC-7596461BCD86	OK	Instrument
Compliance/Debug mode change	9C72A970-8D7D-4b37-9787-48AEEA5DC3F1	OK=change mode, Cancel=abort action	Instrument
Confirmation Required	37437505-160C-4cc8-BA06-093C12994C1E	OK=continue, Cancel=abort test	Instrument
Connection change	879629E6-78FA-4a87-B247-A9DB4F0D7330	Abort=abort run, Retry=connection changed - continue run, Ignore=connection not chagned - continue run	Instrument

Table 7 Message IDs (continued)

Message	ID	Responses	Usage
Debug pause (messages vary)	50B66A97-A6A9-413f-8329-76DFAC492FD6	OK=resume, Cancel=abort run	Instrument
End of run summary	602F9866-F975-42b7-842C-D8447E5E3FCB	OK	Instrument
End of run summary (test aborted)	124580E4-4486-42d4-B908-C6D0FB2AEE93	OK	Instrument
Error during CSV file generation	C88B1C64-8334-4b15-8727-81F5E2BA2ED4	OK	Instrument
Error during app exit	81112706-F720-4787-81D3-B22A9B692B41	OK	Instrument
Expected signal not found	86C74779-322E-4585-A07A-26A2C8FAAC84	Abort=abort test, Retry=retry failed action, Ignore=skip failed step	Instrument
Expected signal not found	7957D5B8-E62D-4224-A7DD-70361E816A43	Retry=retry failed action, Cancel=abort test	Instrument
InfiniiSim: Not available because scope default prevented	B8461A2C-9F5F-4AF3-94C1-DF77080D517A	OK	Instrument
InfiniiSim: Scope doesn't support settings found in project	C9BC2205-8041-448b-AF31-CF602183E989	OK	Instrument
InfiniiSim: Unknown scope channel	4E5ECAF6-867C-47B3-982D-5F07E2090703	OK	Instrument
Measurement Server no Measure Workers declared	54A8428D-8E22-4286-AC88-7495821ABA77	OK=retry, Cancel=abort run	Instrument
No test selected	B5D233AD-9EB4-4ac2-A443-A30A13643978	OK	Instrument
PrecisionProbe and InfiniiSim controllers turned off after config change	B4477006-D6D1-4375-9FF7-D8177FFC1BF9	OK	Instrument
PrecisionProbe/PrecisionCable: Not available because scope default prevented	6E60C9F8-8FBF-419C-B70A-B666FBDE3677	OK	Instrument
PrecisionProbe/PrecisionCable: Scope doesn't support settings found in project	2FC3B6FA-E28C-4700-9F46-4ABBA86A0D90	OK	Instrument
PrecisionProbe/PrecisionCable: Switch Controller is enabled	22F46DA8-89AE-4370-A57C-571DCF5BB87E	OK	Instrument
PrecisionProbe/PrecisionCable: Unknown scope channel	6788685B-9E88-47E6-BAE6-862F5BF3C9BA	OK	Instrument

Table 7 Message IDs (continued)

Message	ID	Responses	Usage
Project loaded as read-only (reason)	98C785F8-D24F-4758-A18D-1CCE61F25371	OK	Instrument
Project loaded with errors	58AD7A02-1E63-4d77-BC6C-6EF3E37AAD5B	OK	Instrument
Project not loaded	B2615E9C-5ED7-4db7-AEAF-2BC25C62B656	OK	Instrument
Project save failed (unauthorized access)	89DCC194-6254-4902-AE63-B7CCD12C8B2A	OK	Instrument
Run paused	FE2CF871-6D4A-4080-8FF9-770075590D9F	OK=resume, Cancel=abort run	Instrument
Setting change requires result deletion	8732A3AB-142C-47e5-86EA-DB737F415DDE	OK=delete results; Cancel=abort change	Instrument
Store mode change requires result deletion	884CDFDE-605E-4d04-B8FD-9B181E7FA468	OK=delete results, Cancel=abort change	Instrument
Switch Matrix controller turned off after config change	FC95EBAA-F33F-4eae-90BB-6A6A8F16E2DF	OK	Instrument
Switch Matrix: Auto mode unavailable after config change	6E5589DC-E073-4818-9E8A-782A75898475	OK	Instrument
Switch Matrix: Auto mode unavailable for model, all settings will be reset	F78BD2E2-BF29-42e0-98F8-23B6CE565B08	OK=go auto do reset, Cancel=abort action	Instrument
Switch Matrix: Confirm Auto mode	D5E1A12E-6218-4416-8451-5F9415D924BF	OK=go auto, Cancel=stay manual	Instrument
Switch Matrix: Obsolete items in settings discarded	0C45BD20-E0C2-481e-A3B6-9C1A26C2103A	OK	Instrument
Switch Matrix: Reconnect drivers	047FE44F-B251-49fa-B3C7-5590317230CD	Yes=use saved addresses, No=prompt for new addresses, Cancel=reset all settings	Instrument
Switch Matrix: Remove all InfiniiSim settings	C5560182-73BE-4901-941E-3DAEC9F07B33	OK=remove, Cancel=abort action	Instrument
Switch Matrix: User cancelled settings load	50F3FB70-AA6B-488e-8CFA-62CDA756F746	OK	Instrument
SwitchMatrix: Correction reset due to application route change	95FEA629-3BE1-4288-BA34-426516018B07	OK=Accept new routing, Cancel=Reset switch matrix settings	Instrument
SwitchMatrix: Instrument already connected to another driver	08556148-4D63-4edd-B894-22916F39849A	OK	Instrument

Table 7 Message IDs (continued)

Message	ID	Responses	Usage
SwitchMatrix: Max num drivers exceeded	7D8994AB-FCC2-4294-87B3-19B972BB6510	OK	Instrument
SwitchMatrix: Reset after drive reconnect fail	CF3E93B6-77FA-4FD7-B656-D286BE1C7C75	OK	Instrument
SwitchMatrix: Reset after drive reconnect fail	D298A4B8-F077-49BE-9CB2-AE6C14FB4705	OK	Instrument
SwitchMatrix: Unexpected multi-SPDT module	2723591D-55A9-44F3-9318-B732995D9427	OK	Instrument
SwitchMatrix: Unknown current switch state	ECE6535B-5C1A-4688-9E45-FB255435CC92	OK	Instrument
SwitchMatrix: Will reset due to requested change	420FCEA9-0FF4-4088-B47A-3189413EA0AD	OK=Allow the reset, Cancel=Abort the original requested change	Instrument
Unknown EEyeLocation parameter	FCA1C61B-D2EA-4671-AD48-9C080A6C6039	OK	Instrument
Upgrade app to open project	794C6148-ADF4-4b24-895D-74D94B76F8AE	OK	Instrument

Index

C

I

M

N

P

R

T

V

W