Keysight N6461A/N6461B UHS-II Compliance Test Application

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Programmer's Reference

Notices

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In This Book

This book is your guide to programming the Keysight Technologies N6461A/N6461B UHS-II 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 11, Chapter 3, “Test Names and IDs,” starting on page 17, and Chapter 4, “Instruments,” starting on page 25, provide information specific to programming the N6461A/N6461B UHS-II 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, and 4 for changes.

Contents

1 Introduction to Programming

This chapter introduces the basics for remote programming a compliance application. The programming commands provide the means of remote control. Basic operations that you can do remotely with a computer and a compliance 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 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/scope-apps-sw". The N6461A/N6461B UHS-II Compliance Test Application uses Remote Interface Revision 3.40. 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.

Licensing

To enable programming of compliance applications on your oscilloscope, please visit "www.keysight.com/find/scope-apps" to purchase an N5452A remote programming option license.

2 Configuration Variables and Values

The following table contains a description of each of the N6461A/N6461B UHS-II 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
Confgure	Clock/Data Align method	ClockAlign	CENTER, EDGE	Select the clock align method when using explicit clock recovery.
Confgure	Common Mode Connection Type	RefClkCommonModeConnectionType	5, 6	Identifies the channels to process. For Direct Connect, connect the first channel to the + signal and the second channel to the - signal.
Confgure	Common Mode Connection Type	TxCommonModeConnectionType	5, 6	Identifies the channels to process. For Direct Connect, connect the first channel to the + signal and the second channel to the - signal.
Confgure	Device Connection Type	DeviceTxConnectionType	1, 2, 3, 4, 5, 6	Identifies the channels to process. For Direct Connect, connect the first channel to the + signal and the second channel to the - signal.
Confgure	Differential 0101 waveform file name	DiffWfmFileClk	(Accepts user-defined text), None	This variable use to store the directory of the differential clock waveform file.
Confgure	Differential clock waveform file name	DiffClkWfmFile	(Accepts user-defined text), None	This variable use to store the directory of the differential clock waveform file.
Confgure	Differential waveform file name	DiffWfmFilePRBS	(Accepts user-defined text), None	This variable use to store the directory of the differential data waveform file.

Table 2 Configuration Variables and Values (continued)

GUI Location	Label	Variable	Values	Description
Confgure	Host Connection (Ref Clk Jitter)	HostRefClkJittTxConnection Type	5, 6	(Limited availability*) Identifies the channels to process.
Confgure	Host Connection Type	HostTxConnectionType	11, 12, 13, 14	(Limited availability*) Identifies the channels to process.
Confgure	Num Clock UI	NumClockUI	(Accepts user-defined text), 1.0E+6, 700.0E+3, 500.0E+3, 400.0E+3, 350.0E+3, 300.0E+3, 250.0E+3, 200.0E+3, 150.0E+3, 100.0E+3, 50.0E+3	This is the number of clock unit intervals processed when calculating clock jitter. For compliance testing, this measurement requires 1,000,000 UI to guarantee the proper bit error rate (10E-6 BER) as specified in the PCI Express Base Specification Rev. 1.1. The allowed values for this control are between 1000 and 3,000,000 UIs.
Confgure	Number of UI	NumUI	(Accepts user-defined text), 1.0E+6, 700.0E+3, 500.0E+3, 400.0E+3, 350.0E+3, 300.0E+3, 250.0E+3, 200.0E+3, 100.0E+3, 50.0E+3	This is the minimum number of unit intervals used in the Eye-Width, TJ at BER-12, Maximum DJ , RMS RJ and Template tests.
Confgure	Offline Clk Signal Type	ClkOfflineInput	(Accepts user-defined text), None, SingleEnded, Differential	This variable use to store the directory of the single ended negative clock waveform file.
Confgure	Offline Data Signal Type	DataOfflineInput	(Accepts user-defined text), None, SingleEnded, Differential	This variable use to store the directory of the single ended negative clock waveform file.
Confgure	PLL Specification	PLLSpecification	JTF, OJTF	Select the PLL's response in terms of JTF(Jitter Transfer Function) or OJTF(Observed Jitter Transfer Function). This is applicable for both Second Order PLL Clock Recovery Method and Explicit Second Order PLL Clock Recovery Method.
Confgure	RJ Bandwidth	RJBW	NARR, WIDE	Select the RJ bandwidth.

Table 2 Configuration Variables and Values (continued)

GUI Location	Label	Variable	Values	Description
Confgure	RJ DJ ISI Filter Lag	RJDJISILag	(Accepts user-defined text), 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25	Select or enter the RJ DJ ISI Filter Lag.
Confgure	RJ DJ ISI Filter Lead	RJDJISILead	(Accepts user-defined text), 0, -1, -2, -3, -4, -5, -6, -7, -8, -9	Select or enter the RJ DJ ISI Filter Lead.
Confgure	RJ DJ Jitter BER Level	RJDJBER	E6, E7, E8, E9, E10, E11, E12, E13, E14, E15, E16, E17, E18	Select the RJ DJ Jitter BER level.
Confgure	RJ DJ Pattern Length	RJDJPattLength	ARBITRARY, AUTO	Select the RJ DJ Pattern Length.
Confgure	RJ Method	RJMethod	SPECtral, BothReportSpectral, BothReportTailFit	Select the RJ Method.
Confgure	Reference Clk Connection Type	RefClkTxConnectionType	1, 2, 3, 4, 5, 6	Identifies the channels to process. For Direct Connect, connect the first channel to the + signal and the second channel to the - signal.
Confgure	Sample Rate, GSa/s	SRate	40.0E+9, 20.0E+9, 10.0E+9	Specify the sample rate to use for all tests.
Confgure	Sample rate, GSa/s	ClockSR	40.0E+9, 20.0E+9, 10.0E+9, 5.0E+9, 2.0E+9, 1.0E+9	Select the sample rate to acquire reference clock signal.
Confgure	Signal Check	EnableSignalCheck	1.0, 0.0	When signal check 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.
Confgure	Single ended negative 0101 waveform file name	DNWfmFileClk	(Accepts user-defined text), None	This variable use to store the directory of the single ended negative clock waveform file.

Table 2 Configuration Variables and Values (continued)

GUI Location	Label	Variable	Values	Description
Confgure	Single ended negative clock waveform file name	ClkDNWfmFile	(Accepts user-defined text), None	This variable use to store the directory of the single ended negative clock waveform file.
Confgure	Single ended negative waveform file name	DNWfmFilePRBS	(Accepts user-defined text), None	This variable use to store the directory of the single ended negative data waveform file.
Confgure	Single ended positive 0101 waveform file name	DPWfmFileClk	(Accepts user-defined text), None	This variable use to store the directory of the single ended positive clock waveform file.
Confgure	Single ended positive clock waveform file name	ClkDPWfmFile	(Accepts user-defined text), None	This variable use to store the directory of the single ended positive clock waveform file.
Confgure	Single ended positive waveform file name	DPWfmFilePRBS	(Accepts user-defined text), None	This variable use to store the directory of the single ended positive data waveform file.
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 <= 100	Specify N using the 'Minimum required margin %' control.
Set Up	DataRate	DeviceDataRate	1.56Gbps, 780Mbps (Range B), 780Mbps (Range A), 390Mbps	Signal data rate.
Set Up	Device ID	DeviceIDPcbo	(Accepts user-defined text), (Select or Type), (Select or Type), (Select or Type), (Select or Type)	Device Identifier of the DUT
Set Up	Embed Enable	EmbedEnable	0.0, 1.0	Enable the embed or de-embed of the input signal.
Set Up	Offline Enable	OfflineEnable	0.0, 1.0	Enable the use of saved waveform to perform the tests.
Set Up	PLL Multiplier	PLLMultiplierOpt	x15, x30	Select the PLL Multiplier factor of the Host system.
Set Up	RefClk Tests	TestPoint_RefClk	0.0, 1.0	Select tests peformed at the reference clock lane.

Table 2 Configuration Variables and Values (continued)

GUI Location	Label	Variable	Values	Description
Set Up	Reference Clock	RefClkOpt	Clean Clk, SSC	Select the reference clock to use in the tests.
Set Up	Transmitter Tests	TestPoint_Transmitter	0.0, 1.0	Select tests performed at the data transmitter lane.
Set Up	Type of DUT	DUTTypeOpt	Host, Device	Select the type of DUT to use.
Set Up	User Comments	UserCommentTxt	(Accepts user-defined text)	Optional user comments displayed in the test report.
*Limited availability: Availability of this setting depends upon the oscilloscope model and installed license options.				

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();
```

Here are the actual Test names and IDs used by this application:

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
Frequency (RefClk)	1501	When host transmitting reference clock signal, the measured reference clock frequency must be within the specification as specified in Table 4-1, Section 4.2.2, UHS-II Specification, Rev 1.0.
Maximum Differential Voltage, Vdiff (RefClk)	1502	When host transmitting reference clock signal, the measured reference clock differential signals voltage, Vdiff at TP2 with differential termination of 100 ohm must within the specification as specified in Table 4-7: RCLK Output Requirements for Host transmitter at TP2, Section 4.3.2.1, UHS-II Specification, Rev 1.0.
Minimum Differential Voltage, Vdiff (RefClk)	15021	When host transmitting reference clock signal, the measured reference clock differential signals voltage, Vdiff at TP2 with differential termination of 100 ohm must within the specification as specified in Table 4-7: RCLK Output Requirements for Host transmitter at TP2, Section 4.3.2.1, UHS-II Specification, Rev 1.0.
Please select test point in Set Up tab	9999	
RefClk, Common Mode Voltage, Vcm (Host)	1505	When host transmitting reference clock signal, the measured reference clock common mode voltage, Vcm reference to local GND at TP2 with differential termination of 100 ohm must within the specification as specified in Table 4-7: RCLK Output Requirements for Host transmitter at TP2, Section 4.3.2.1, UHS-II Specification, Rev 1.0.
RefClk, Differential Signal Fall Time, Tf (Host)	1504	When host transmitting reference clock signal, the measured reference clock differential signals fall time, Tf from 20% to 80% of voltage swing at TP2 must within the specification as specified in Table 4-7: RCLK Output Requirements for Host transmitter at TP2, Section 4.3.2.1, UHS-II Specification, Rev 1.0.
RefClk, Differential Signal Rise Time, Tr (Host)	1503	When host transmitting reference clock signal, the measured reference clock differential signals rise time, Tr from 20% to 80% of voltage swing at TP2 must within the specification as specified in Table 4-7: RCLK Output Requirements for Host transmitter at TP2, Section 4.3.2.1, UHS-II Specification, Rev 1.0.

Table 4 Test IDs and Names (continued)

Name	TestID	Description
RefClk, Duty Cycle, Tckh (Host)	1507	When host transmitting reference clock signal, the measured reference clock differential signals duty cycle, Tckh at TP2 must within the specification as specified in Table 4-7: RCLK Output Requirements for Host transmitter at TP2, Section 4.3.2.1, UHS-II Specification, Rev 1.0.
RefClk, Total Jitter, Tj (Host)	1506	When host transmitting reference clock signal, the measured reference clock differential signals downstream total jitter, Tj at TP2 must within the specification as specified in Table 4-7: RCLK Output Requirements for Host transmitter at TP2, Section 4.3.2.1, UHS-II Specification, Rev 1.0.
RefClk, Total Jitter, Tj (Host) (New Method)	1509	When host transmitting reference clock signal, the measured reference clock differential signals downstream total jitter, Tj at TP2 must within the specification as specified in Table 4-7: RCLK Output Requirements for Host transmitter at TP2, Section 4.3.2.1, UHS-II Specification, Rev 1.0.
Tx, Common Mode Voltage noise, Vcm_noise (Device)	2111	When device transmitter transmitting signal, the measured common mode voltage, Vcm reference to local GND at TP2 with differential termination of 100 ohm must within the specification as specified in Table 4-10: D0, D1 Output Requirement at TP2 for Device transmitter , Section 4.3.2.3, UHS-II Specification, Rev 1.0.
Tx, Common Mode Voltage source, Vcm_source (Device)	2110	When device transmitter transmitting signal, the measured common mode voltage, Vcm reference to local GND at TP2 with differential termination of 100 ohm must within the specification as specified in Table 4-10: D0, D1 Output Requirement at TP2 for Device transmitter , Section 4.3.2.3, UHS-II Specification, Rev 1.0.
Tx, Common Mode Voltage, Vcm (Host)	1105	When host transmitter transmitting signal, the measured common mode voltage, Vcm reference to local GND at TP2 with differential termination of 100 ohm must within the specification as specified in Table 4-6: D0, D1 Output Requirements for Host transmitter at TP2, Section 4.3.2.1, UHS-II Specification, Rev 1.0.
Tx, Differential Eye-mask Template (Device)	2101	When device transmitter transmitting signal, the measured differential signals at TP2 must meet Eye-mask template as specified in (4)Eye-mask for Device Transmitter at TP2 of Figure 4-6: Eye-mask templates, Section 4.3.3, UHS-II Specification, Rev 1.0.

Table 4 Test IDs and Names (continued)

Name	TestID	Description
Tx, Differential Eye-mask Template (Host)	1101	When host transmitter transmitting signal, the measured differential signals at TP2 must meet Eye-mask template as specified in (2)Eye-mask for Host Transmitter at TP2 of Figure 4-6: Eye-mask templates, Section 4.3.3, UHS-II Specification, Rev 1.0.
Tx, Differential Signal Fall Time, Tf (Device, Range A)	21041	When device transmitter transmitting signal, the measured differential signals fall time, Tf from 20% to 80% of voltage swing at TP2 must within the specification as specified in Table 4-10: D0, D1 Output Requirement at TP2 for Device transmitter, Section 4.3.2.3, UHS-II Specification, Rev 1.0.
Tx, Differential Signal Fall Time, Tf (Device, Range B)	21042	When device transmitter transmitting signal, the measured differential signals fall time, Tf from 20% to 80% of voltage swing at TP2 must within the specification as specified in Table 4-10: D0, D1 Output Requirement at TP2 for Device transmitter, Section 4.3.2.3, UHS-II Specification, Rev 1.0.
Tx, Differential Signal Fall Time, Tf (Host, Range A)	11041	When host transmitter transmitting signal, the measured differential signals fall time, Tf from 20% to 80% of voltage swing at TP2 must within the specification as specified in Table 4-6: D0, D1 Output Requirements for Host transmitter at TP2, Section 4.3.2.1, UHS-II Specification, Rev 1.0.
Tx, Differential Signal Fall Time, Tf (Host, Range B)	11042	When host transmitter transmitting signal, the measured differential signals fall time, Tf from 20% to 80% of voltage swing at TP2 must within the specification as specified in Table 4-6: D0, D1 Output Requirements for Host transmitter at TP2, Section 4.3.2.1, UHS-II Specification, Rev 1.0.
Tx, Differential Signal Rise Time, Tf (Host, Range A)	11031	When host transmitter transmitting signal, the measured differential signals rise time, Tf from 20% to 80% of voltage swing at TP2 must within the specification as specified in Table 4-6: D0, D1 Output Requirements for Host transmitter at TP2, Section 4.3.2.1, UHS-II Specification, Rev 1.0.
Tx, Differential Signal Rise Time, Tf (Host, Range B)	11032	When host transmitter transmitting signal, the measured differential signals rise time, Tf from 20% to 80% of voltage swing at TP2 must within the specification as specified in Table 4-6: D0, D1 Output Requirements for Host transmitter at TP2, Section 4.3.2.1, UHS-II Specification, Rev 1.0.

Table 4 Test IDs and Names (continued)

Name	TestID	Description
Tx, Differential Signal Rise Time, Tr (Device, Range A)	21031	When device transmitter transmitting signal, the measured differential signals rise time, Tr from 20% to 80% of voltage swing at TP2 must within the specification as specified in Table 4-10: D0, D1 Output Requirement at TP2 for Device transmitter, Section 4.3.2.3, UHS-II Specification, Rev 1.0.
Tx, Differential Signal Rise Time, Tr (Device, Range B)	21032	When device transmitter transmitting signal, the measured differential signals rise time, Tr from 20% to 80% of voltage swing at TP2 must within the specification as specified in Table 4-10: D0, D1 Output Requirement at TP2 for Device transmitter, Section 4.3.2.3, UHS-II Specification, Rev 1.0.
Tx, EIDL State Common Mode Voltage noise, Vcm_pd_noise (Device)	2114	When device transmitter in EIDL state, the measured common mode voltage, Vcm_pd reference to local GND at TP2 must within the specification as specified in Table 4-10: D0, D1 Output Requirement at TP2 for Device transmitter, Section 4.3.2.3, UHS-II Specification, Rev 1.0.
Tx, EIDL State Common Mode Voltage, Vcm_pd (Device)	2113	When device transmitter in EIDL state, the measured common mode voltage, Vcm_pd reference to local GND at TP2 must within the specification as specified in Table 4-10: D0, D1 Output Requirement at TP2 for Device transmitter, Section 4.3.2.3, UHS-II Specification, Rev 1.0.
Tx, EIDL State Common Mode Voltage, Vcm_pd (Host)	1107	When host transmitter in EIDL state, the measured common mode voltage, Vcm_pd reference to local GND at TP2 must within the specification as specified in Table 4-6: D0, D1 Output Requirements for Host transmitter at TP2, Section 4.3.2.1, UHS-II Specification, Rev 1.0.
Tx, EIDL State Differential Voltage, Vdiff_pd (Device)	2106	When device transmitter in EIDL state, the measured differential signals voltage, Vdiff_pd reference to local GND at TP2 must within the specification as specified in Table 4-10: D0, D1 Output Requirement at TP2 for Device transmitter, Section 4.3.2.3, UHS-II Specification, Rev 1.0.
Tx, EIDL State Differential Voltage, Vdiff_pd (Host)	1106	When host transmitter in EIDL state, the measured differential signals voltage, Vdiff_pd reference to local GND at TP2 must within the specification as specified in Table 4-6: D0, D1 Output Requirements for Host transmitter at TP2, Section 4.3.2.1, UHS-II Specification, Rev 1.0.

Table 4 Test IDs and Names (continued)

Name	TestID	Description
Tx, EIDL State Total Common Mode Voltage, Vcm_pd_total (Device)	2115	When device transmitter in EIDL state, the measured common mode voltage, Vcm_pd reference to local GND at TP2 must within the specification as specified in Table 4-10: D0, D1 Output Requirement at TP2 for Device transmitter, Section 4.3.2.3, UHS-II Specification, Rev 1.0.
Tx, Inter Skew, SKinter (Device)	2109	When both device transmitter transmitting signal in half duplex mode, the measured time skew between D0 and D1, SKinter at TP2 must within the specification as specified in Table 4-10: D0, D1 Output Requirement at TP2 for Device transmitter, Section 4.3.2.3, UHS-II Specification, Rev 1.0.
Tx, Inter Skew, SKinter (Host)	1110	When both host transmitter transmitting signal in half duplex mode, the measured time skew between D0 and D1, SKinter at TP2 must within the specification as specified in Table 4-6: D0, D1 Output Requirements for Host transmitter at TP2, Section 4.3.2.1, UHS-II Specification, Rev 1.0.
Tx, Maximum Differential Voltage, Vdiff (Device)	2102	When device transmitter transmitting signal, the measured differential signals voltage, Vdiff at TP2 with differential termination of 100 ohm must within the specification as specified in Table 4-10: D0, D1 Output Requirement at TP2 for Device transmitter, Section 4.3.2.3, UHS-II Specification, Rev 1.0.
Tx, Maximum Differential Voltage, Vdiffmax (Host)	1102	When host transmitter transmitting signal, the measured differential signals voltage, Vdiffmax [| VDp - VDn |] at TP2 must within the specification as specified in Table 4-6: D0, D1 Output Requirements for Host transmitter at TP2, Section 4.3.2.1, UHS-II Specification, Rev 1.0.
Tx, Minimum Differential Voltage, Vdiff (Device)	21021	When device transmitter transmitting signal, the measured differential signals voltage, Vdiff at TP2 with differential termination of 100 ohm must within the specification as specified in Table 4-10: D0, D1 Output Requirement at TP2 for Device transmitter, Section 4.3.2.3, UHS-II Specification, Rev 1.0.
Tx, Minimum Differential Voltage, Vdiffmin (Host)	11021	When host transmitter transmitting signal, the measured differential signals voltage, Vdiffmax [| VDp - VDn |] at TP2 must within the specification as specified in Table 4-6: D0, D1 Output Requirements for Host transmitter at TP2, Section 4.3.2.1, UHS-II Specification, Rev 1.0.

Table 4 Test IDs and Names (continued)

Name	TestID	Description
Tx, Total Common Mode Voltage, Vcm_total (Device)	2112	When device transmitter transmitting signal, the measured common mode voltage, Vcm reference to local GND at TP2 with differential termination of 100 ohm must within the specification as specified in Table 4-10: D0, D1 Output Requirement at TP2 for Device transmitter , Section 4.3.2.3, UHS-II Specification, Rev 1.0.
Tx, Total Jitter, Tj (Device)	2108	When device transmitter transmitting signal, the measured differential signals upstream total jitter, Tj at TP2 must within the specification as specified in Table 4-10: D0, D1 Output Requirement at TP2 for Device transmitter, Section 4.3.2.3, UHS-II Specification, Rev 1.0.
Tx, Total Jitter, Tj (Host)	1108	When device transmitter transmitting signal, the measured differential signals upstream total jitter, Tj at TP2 must within the specification as specified in Table 4-6: D0, D1 Output Requirements for Host transmitter at TP2, Section 4.3.2.1, UHS-II Specification, Rev 1.0.

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
JBert	JBert
scope	scope

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