

Keysight N6466A/N6466B MOST Electrical Compliance Test Application

Notices

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In This Book

This book is your guide to programming the Keysight Technologies N6466A/N6466B MOST 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 11, **Chapter 3**, “Test Names and IDs,” starting on page 15, and **Chapter 4**, “Instruments,” starting on page 19, provide information specific to programming the N6466A/N6466B MOST 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, and 4 for changes.

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1 Introduction to Programming

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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 where 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"](http://www.keysight.com/find/scope-apps-sw). The N6466A/N6466B MOST Electrical 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.

1 Introduction to Programming

2 Configuration Variables and Values

The following table contains a description of each of the N6466A/N6466B MOST 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	Signal Channel	MOSTCHAN	CHANnel1, CHANnel2, CHANnel3, CHANnel4	The channel connected to the measurement signal. This is used for all live MOST traffic. Select Debug to load waveforms.
Configure	Signal Memory	MOSTCHANWFM	WMEMory1, WMEMory2, WMEMory3, WMEMory4	The waveform memory that you loaded your MOST signal to be measured.
Configure	Use Waveform Files	WFMFiles	Y, N	Select Yes to use loaded .wfm files, No to use real time signals
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	Device ID	pcboOverallDeviceID	(Accepts user-defined text)	This option allow user to key in related test details.
Set Up	Speed Grade	DeviceType	MOST150c, MOST150o, MOST50e	This option allow user to select specific speed grade.
Set Up	User Comment	txtExternalInstrumentAddresses	(Accepts user-defined text)	This option allow user to connect external patgen.

Table 2 Configuration Variables and Values (continued)

GUI Location	Label	Variable	Values	Description
Set Up	User Comment	txtOverallUserComment	(Accepts user-defined text)	This option allow user to key in related test detail.
Set Up	User Description	pcboOverallDeviceDescription	(Accepts user-defined text)	This option allow user to key in test detail.

2 Configuration Variables and Values

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
Extinction Ratio	1206	Extinction Ratio at SP2
Eye Mask - A..D	2101	Eye Mask at SP1E
Eye Mask - A..D	2201	Eye Mask at SP2E
Eye Mask - A..D	2300	Eye Mask at SP3E
Eye Mask - A..D	2400	Eye Mask at SP4E
Eye Mask - A1..H1	101	Eye Mask at SP1
Eye Mask - A1..H1	1101	Eye Mask at SP1
Eye Mask - A2..E2	1203	Eye Mask at SP2
Eye Mask - A2..H2	203	Eye Mask at SP2
Eye Mask - A3..E3	1303	Eye Mask at SP2
Eye Mask - A3..H3	303	Eye Mask at SP3
Eye Mask - A4..H4	401	Eye Mask at SP1
Eye Mask - A4..H4	1401	Eye Mask at SP1
Fall time - tf2	201	Fall time at SP2
Fall time - tf2	1201	Fall time at SP2
Fall time - tf3	301	Fall time at SP3
Fall time - tf3	1301	Fall time at SP3
Overshoot Ao..Ko	1204	Overshoot at SP2
Overshoot Ao..Ko	1304	Overshoot at SP2
Rise time - tr2	200	Rise time at SP2
Rise time - tr2	1200	Rise time at SP2
Rise time - tr3	300	Rise time at SP2
Rise time - tr3	1300	Rise time at SP2
Transferred Jitter	2100	Transferred Jitter at SP1E
Transferred Jitter	2200	Transferred Jitter at SP2E
Transferred Jitter - Jtr1	100	Transferred Jitter at SP1
Transferred Jitter - Jtr1	1100	Transferred Jitter at SP1

Table 4 Test IDs and Names (continued)

Name	TestID	Description
Transferred Jitter - Jtr2	202	Transferred Jitter at SP2
Transferred Jitter - Jtr2	1202	Transferred Jitter at SP2
Transferred Jitter - Jtr3	302	Transferred Jitter at SP3
Transferred Jitter - Jtr3	1302	Transferred Jitter at SP3
Transferred Jitter - Jtr4	400	Transferred Jitter at SP4
Transferred Jitter - Jtr4	1400	Transferred Jitter at SP4
Undershoot Au..Tu	1205	Undershoot at SP2
Undershoot Au..Tu	1305	Undershoot at SP2

3 Test Names and IDs

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
scope	The primary oscilloscope

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