

# IVI.NET driver history for the R&S® Power Supplies NGL / NGM / NGP / NGU

**Products:**

| R&S®NGL



| R&S®NGU



| R&S®NGM



| R&S®NGP



Driver history for IVI.NET - C#, Visual Basic .NET

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# 1 Supported Instruments

In the following table, the supported R&S instruments and firmware versions are listed:

<b>Which instruments are supported?</b>		
<b>Current revision of instrument driver supports these instruments and firmware versions:</b>		
<b>Instrument</b>	<b>Supported Firmware</b>	<b>Remarks</b>
NGL20x	3.034	
NGM20x	3.034	
NGP8xx	2.011	
NGUx01	3.047	First supported firmware

## 2 IVI.NET driver history

RsNgx Instrument Driver		
Driver history for C#, Visual Basic .NET		
Revision	Date	Note
1.3.1	04/2021	* Fixed dependency on local decimal point settings
1.3.0	03/2021	<p>* Added support for new instrument NGU</p> <p>* Update for firmware version 3.0</p> <p>* New properties/methods:</p> <ul style="list-style-type: none"> <li>- RsNgx.Configuration.SourcePriorityMode</li> <li>- RsNgx.Configuration.ModulationGain</li> <li>- RsNgx.Configuration.ModulationGainValue</li> <li>- RsNgx.Configuration.NumberOfPowerLineCycles</li> <li>- RsNgx.Configuration.Voltage.CurrentNegative</li> <li>- RsNgx.Configuration.Voltage.CurrentNegativeValue</li> <li>- RsNgx.Configuration.Voltage.Negative</li> <li>- RsNgx.Configuration.Voltage.NegativeValue</li> <li>- RsNgx.Measurement.MeasurementCurrentStatisticsData()</li> <li>- RsNgx.Measurement.MeasurementPowerStatisticsData()</li> <li>- RsNgx.Measurement.MeasurementVoltageStatisticsData()</li> <li>- RsNgx.Measurement.FastLog.Target</li> <li>- RsNgx.Measurement.Energy.Unit</li> <li>- RsNgx.Arbitrary.Restore</li> <li>- RsNgx.Arbitrary.Start</li> <li>- RsNgx.Arbitrary.Stop</li> <li>- RsNgx.DigitalIO.FaultSignal</li> <li>- RsNgx.DigitalIO.OutputSignal()</li> <li>- RsNgx.BatterySimulator.CurrentLimitEndOfCharge</li> <li>- RsNgx.BatterySimulator.CurrentLimitEndOfDischarge</li> <li>- RsNgx.BatterySimulator.CurrentLimitRegularChargeLevel</li> <li>- RsNgx.BatterySimulator.ModelCurrentLimitEndOfCharge</li> <li>- RsNgx.BatterySimulator.ModelCurrentLimitEndOfDischarge</li> <li>- RsNgx.BatterySimulator.ModelCurrentLimitRegularChargeLevel</li> <li>- RsNgx.System.Communications.USBClass</li> </ul> <p>* Modified Range Tables:</p> <ul style="list-style-type: none"> <li>- OutputChannel - RSNGX_ATTR_TRIGGER_OUTPUT_CHANNEL, RSNGX_ATTR_TRIGGER_OPERATION_MODE_CHANNEL, RSNGX_ATTR_TRIGGER_DIO_CHANNEL</li> <li style="padding-left: 20px;">New items: Any</li> <li>- DigitalIOFaultMode - RSNGX_ATTR_DIGITAL_IO_FAULT_MODE</li> <li style="padding-left: 20px;">New items: Output</li> </ul>

RsNgx Instrument Driver		
Driver history for C#, Visual Basic .NET		
Revision	Date	Note
		<ul style="list-style-type: none"> <li>- FastLogSampleRate - RSNGX_ATTR_FAST_LOG_SAMPLE_RATE</li> <li style="padding-left: 20px;">New items: sampleRate50K, sampleRate10K, sampleRate1K, sampleRate100</li> <li>- FastLogSampleRate - RSNGX_ATTR_FAST_LOG_SAMPLE_RATE</li> <li style="padding-left: 20px;">Deleted items: sampleRate125K, sampleRate62K5, sampleRate31K25, sampleRate15K625, sampleRate7K812, sampleRate3K906, sampleRate1K953, sampleRate976, sampleRate488, sampleRate244, sampleRate122, sampleRate61, sampleRate30, sampleRate15</li> </ul>
1.2.1	03/2021	<ul style="list-style-type: none"> <li>* New Core version 2.14.1</li> <li>* Class driver fix for channel repeated capability</li> </ul>
1.2.0	03/2020	<ul style="list-style-type: none"> <li>* Added support for new instrument NGP800</li> <li>* New Core version 2.9.0</li> <li> </li> <li>* New properties/methods:</li> <li>- RsNgx.Configuration.ResetProtectionTrippedState</li> <li>- RsNgx.Configuration.Output.RemoteSenseDetection</li> <li>- RsNgx.Configuration.Output.QueryRemoteSenseDetection</li> <li>- RsNgx.Configuration.OCPSettings.Fuse.Enabled</li> <li>- RsNgx.Configuration.OCPSettings.Fuse.DelayTime</li> <li>- RsNgx.Configuration.OCPSettings.Fuse.DelayAtOutputOn</li> <li>- RsNgx.Configuration.OCPSettings.Fuse.Link</li> <li>- RsNgx.Configuration.OCPSettings.Fuse.LinkedFusesCSV</li> <li>- RsNgx.Configuration.OCPSettings.Fuse.IsLinked()</li> <li>- RsNgx.Configuration.OCPSettings.Fuse.Unlink</li> <li>- RsNgx.Configuration.OCPSettings.Fuse.IsTripped</li> <li>- RsNgx.Configuration.OCPSettings.Fuse.OCPFuseReset</li> <li>- RsNgx.Configuration.Tracking.Enabled</li> <li>- RsNgx.Configuration.Tracking.Channels.Enabled</li> <li>- RsNgx.Configuration.Tracking.Channels.SoftEnabled</li> <li>- RsNgx.Measurement.Logging.Location</li> <li>- RsNgx.Arbitrary.Block.Selected</li> <li>- RsNgx.Arbitrary.Block.ClearFile</li> <li>- RsNgx.Arbitrary.Block.WriteData()</li> <li>- RsNgx.Arbitrary.Block.ReadData()</li> <li>- RsNgx.Arbitrary.Block.FileName()</li> <li>- RsNgx.Arbitrary.Block.RepetitionRate</li> <li>- RsNgx.Arbitrary.Block.NumberOfDataPoints</li> <li>- RsNgx.Arbitrary.Sequence.EndpointBehavior</li> <li>- RsNgx.Arbitrary.Sequence.NumberOfPoints</li> <li>- RsNgx.Arbitrary.Sequence.TransferTableAttr</li> <li>- RsNgx.Arbitrary.Sequence.TransferTable()</li> <li>- RsNgx.Arbitrary.Sequence.RepetitionRate</li> <li>- RsNgx.AnalogInput.Enabled</li> </ul>

RsNgx Instrument Driver		
Driver history for C#, Visual Basic .NET		
Revision	Date	Note
		<ul style="list-style-type: none"> <li>- RsNgx.AnalogInput.Type</li> <li>- RsNgx.AnalogInput.TriggeredConditionEnabled</li> <li>- RsNgx.AnalogInput.TriggerPin</li> <li>- RsNgx.AnalogInput.QueryTriggerPinCSV</li> <li>- RsNgx.AnalogInput.QueryAnalogInputTriggerPin()</li> <li>- RsNgx.Adjustment.AnalogIn.State</li> <li>- RsNgx.Adjustment.AnalogIn.Date</li> <li>- RsNgx.Adjustment.AnalogIn.Count</li> <li>- RsNgx.Adjustment.AnalogIn.StartAttr</li> <li>- RsNgx.Adjustment.AnalogIn.Start()</li> <li>- RsNgx.Adjustment.AnalogIn.QueryStart</li> <li>- RsNgx.Adjustment.AnalogIn.AdjustmentValue</li> <li>- RsNgx.Adjustment.AnalogIn.HighVoltage</li> <li>- RsNgx.Adjustment.AnalogIn.LowVoltage</li> <li>- RsNgx.Adjustment.AnalogIn.End</li> <li>- RsNgx.Adjustment.AnalogIn.Cancel</li> <li>- RsNgx.Adjustment.AnalogIn.Save</li> <li>- RsNgx.Adjustment.AnalogIn.FactoryRestore</li> <li>- RsNgx.Adjustment.Channel.State</li> <li>- RsNgx.Adjustment.Channel.Date</li> <li>- RsNgx.Adjustment.Channel.Count</li> <li>- RsNgx.Adjustment.Channel.Temperature</li> <li>- RsNgx.Adjustment.Channel.Start</li> <li>- RsNgx.Adjustment.Channel.CurrentValue</li> <li>- RsNgx.Adjustment.Channel.CurrentMax</li> <li>- RsNgx.Adjustment.Channel.CurrentMin</li> <li>- RsNgx.Adjustment.Channel.VoltageValue</li> <li>- RsNgx.Adjustment.Channel.VoltageMax</li> <li>- RsNgx.Adjustment.Channel.VoltageMin</li> <li>- RsNgx.Adjustment.Channel.End</li> <li>- RsNgx.Adjustment.Channel.Cancel</li> <li>- RsNgx.Adjustment.Channel.Save</li> <li>- RsNgx.Adjustment.Channel.FactoryRestore</li> <li>- RsNgx.DigitalTriggerIO.Enabled</li> <li>- RsNgx.DigitalTriggerIO.Lines.Enabled</li> <li>- RsNgx.DigitalTriggerIO.Lines.Direction</li> <li>- RsNgx.DigitalTriggerIO.Lines.Mode()</li> <li>- RsNgx.DigitalTriggerIO.Lines.LineChannel</li> <li>- RsNgx.DigitalTriggerIO.Lines.Logic</li> <li>- RsNgx.DigitalTriggerIO.Lines.DIOEnabled</li> <li>- RsNgx.InstrumentSettings.Sound.CCModeContinuousBeepEnabled</li> </ul>

RsNgx Instrument Driver		
Driver history for C#, Visual Basic .NET		
Revision	Date	Note
		<ul style="list-style-type: none"> <li>- RsNgx.InstrumentSettings.Sound.ProtectionTrippedBeepEnabled</li> <li>- RsNgx.InstrumentSettings.Sound.Beep</li> <li>- RsNgx.System.TouchEnabled</li> <li>- RsNgx.System.Communications.GPIBInterfaceInfo</li> <li>- RsNgx.System.Communications.AvailableSystemInterface</li> <li>- RsNgx.System.Communications.Socket.SocketDHCPEnabled</li> <li>- RsNgx.System.Communications.Socket.IPAddress</li> <li>- RsNgx.System.Communications.Socket.Gateway</li> <li>- RsNgx.System.Communications.Socket.Mask</li> <li>- RsNgx.System.Communications.Socket.Apply</li> <li>- RsNgx.System.Communications.WLAN.Enabled</li> <li>- RsNgx.System.Communications.WLAN.ConnectionEnabled</li> <li>- RsNgx.System.Communications.WLAN.SSID</li> <li>- RsNgx.System.Communications.WLAN.Password</li> <li>- RsNgx.System.Communications.WLAN.DHCPEnabled</li> <li>- RsNgx.System.Communications.WLAN.IPAddress</li> <li>- RsNgx.System.Communications.WLAN.Gateway</li> <li>- RsNgx.System.Communications.WLAN.Mask</li> <li>- RsNgx.System.Communications.WLAN.Apply</li> </ul> <p>* Modified properties/methods:</p> <ul style="list-style-type: none"> <li>- RsNgx.Configuration.SelectChannel - new range: &lt;1;4&gt;</li> <li>- RsNgx.Arbitrary.FunctionFileName() - Location parameter range table name changed, not the enum name</li> <li>- RsNgx.Arbitrary.TransferTable - Range table updated</li> <li>- RsNgx.InstrumentSettings.Sound.BeeperEnabled - Moved from System to InstrumentSettings.Sound</li> </ul> <p>* Modified Repeated Capabilities:</p> <ul style="list-style-type: none"> <li>- Channel - Identifiers ("CH1,CH2,CH3,CH4", "CH1,CH2")</li> <li>- Channel - Command Values ("1,2,3,4", "1,2")</li> </ul> <p>* Modified Range Tables:</p> <ul style="list-style-type: none"> <li>- RsNgx_rngChannel - RSNGX_ATTR_SELECT_CHANNEL, RSNGX_ATTR_ARBITRARY_TRANSFER_TABLE, RSNGX_ATTR_ARBITRARY_SEQUENCE_TRANSFER_TABLE</li> </ul> <p style="text-align: right;">Range changed to &lt;1;4&gt;</p>
1.1.0.0	07/2019	<p>* Update for firmware version 2.0</p> <p>* New properties/methods:</p> <ul style="list-style-type: none"> <li>- RsNgx.Configuration.Output.Mode</li> <li>- RsNgx.Configuration.Output.TriggerEnabled</li> </ul>

RsNgx Instrument Driver		
Driver history for C#, Visual Basic .NET		
Revision	Date	Note
		<ul style="list-style-type: none"> <li>- RsNgx.Configuration.Output.TriggeredBehavior</li> <li>- RsNgx.Configuration.RangeDVMSetting.Enabled</li> <li>- RsNgx.Configuration.RangeDVMSetting.VoltageAutorangeEnabled</li> <li>- RsNgx.Configuration.RangeDVMSetting.SelectVoltageRange</li> <li>- RsNgx.Configuration.RangeDVMSetting.CurrentAutorangeEnabled</li> <li>- RsNgx.Configuration.RangeDVMSetting.SelectCurrentRange</li> <li>- RsNgx.Configuration.OCPSettings.Enabled</li> <li>- RsNgx.Configuration.OCPSettings.Reset</li> <li>- RsNgx.Configuration.OCPSettings.InitialDelay</li> <li>- RsNgx.Configuration.OCPSettings.Delay</li> <li>- RsNgx.Configuration.OCPSettings.Link</li> <li>- RsNgx.Configuration.OCPSettings.IsLinked()</li> <li>- RsNgx.Configuration.OCPSettings.Unlink</li> <li>- RsNgx.Configuration.OCPSettings.Tripped</li> <li>- RsNgx.Measurement.StatisticsData()</li> <li>- RsNgx.Measurement.ResetStatistics</li> <li>- RsNgx.Measurement.Count</li> <li>- RsNgx.Measurement.FastLog.Enabled</li> <li>- RsNgx.Measurement.FastLog.Triggered</li> <li>- RsNgx.Measurement.FastLog.WriteTo</li> <li>- RsNgx.Measurement.FastLog.SampleRate</li> <li>- RsNgx.Measurement.FastLog.ReadFastLogDataFromInstrument()</li> <li>- RsNgx.Measurement.FastLog.WriteDuration</li> <li>- RsNgx.Measurement.FastLog.Partition</li> <li>- RsNgx.DigitalIO.Enabled()</li> <li>- RsNgx.DigitalIO.QueryState()</li> <li>- RsNgx.DigitalIO.FaultChannel</li> <li>- RsNgx.DigitalIO.FaultEnabled</li> <li>- RsNgx.DigitalIO.FaultMode</li> <li>- RsNgx.DigitalIO.OutputSource()</li> <li>- RsNgx.DigitalIO.QueryOutputSource()</li> <li>- RsNgx.BatterySimulator.Enabled</li> <li>- RsNgx.BatterySimulator.ResetModel</li> <li>- RsNgx.BatterySimulator.ModelName()</li> <li>- RsNgx.BatterySimulator.LoadModel</li> <li>- RsNgx.BatterySimulator.SaveModel</li> <li>- RsNgx.BatterySimulator.TransferModel()</li> <li>- RsNgx.BatterySimulator.InitialSoC</li> <li>- RsNgx.BatterySimulator.FullCapacity</li> <li>- RsNgx.BatterySimulator.RemainingCapacity</li> <li>- RsNgx.BatterySimulator.Status</li> </ul>



RsNgx Instrument Driver		
Driver history for C#, Visual Basic .NET		
Revision	Date	Note
		<ul style="list-style-type: none"> <li>- RsNgx.BatterySimulator.ModelData()</li> <li>- RsNgx.BatterySimulator.QueryModelData()</li> <li>- RsNgx.BatterySimulator.Current</li> <li>- RsNgx.BatterySimulator.InternalResistance</li> <li>- RsNgx.BatterySimulator.StateOfCharge</li> <li>- RsNgx.BatterySimulator.TerminalVoltage</li> <li>- RsNgx.BatterySimulator.VOCeEmpty</li> <li>- RsNgx.BatterySimulator.VOCFull</li> <li>- RsNgx.BatterySimulator.VOC</li> <li>- RsNgx.BatterySimulator.ModelCapacity</li> <li>- RsNgx.BatterySimulator.CurrentLimit</li> <li>- RsNgx.Trigger.Enabled</li> <li>- RsNgx.Trigger.Source</li> <li>- RsNgx.Trigger.OutputChannel</li> <li>- RsNgx.Trigger.OperationMode</li> <li>- RsNgx.Trigger.OperationModeChannel</li> <li>- RsNgx.Trigger.DIOPin</li> <li>- RsNgx.Trigger.DIOChannel</li> </ul> <p>* Modified properties/methods:</p> <ul style="list-style-type: none"> <li>- RsNgx.Display.Brightness - new range: &lt;0.0;1.0&gt;</li> <li>- RsNgx.Display.FrontPanelKeyBrightness - new range: &lt;0.0;1.0&gt;</li> </ul> <p>* Deleted properties/methods:</p> <ul style="list-style-type: none"> <li>- RsNgx.Configuration.Fuse.Enabled</li> <li>- RsNgx.Configuration.Fuse.InitialDelay</li> <li>- RsNgx.Configuration.Fuse.Delay</li> <li>- RsNgx.Configuration.Fuse.Link</li> <li>- RsNgx.Configuration.Fuse.IsLinked()</li> <li>- RsNgx.Configuration.Fuse.Unlink</li> <li>- RsNgx.Configuration.Fuse.Tripped</li> <li>- RsNgx.Configuration.OverVoltageProtection.Mode</li> <li>- RsNgx.Measurement.Logging.ChannelLoggingEnabled</li> <li>- RsNgx.Arbitrary.Endpoint</li> <li>- RsNgx.HardCopy.ImageFormat</li> </ul> <p>* Modified Range Tables:</p> <ul style="list-style-type: none"> <li>- RsNgx_rngFrontPanelKeyBrightness - RSNGX_ATTR_DISPLAY_FRONT_PANEL_KEY_BRIGHTNESS Range changed to &lt;0.1;1&gt;</li> </ul>
1.1.0.0	02/2019	Initial Release

### **About Rohde & Schwarz**

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### **Environmental commitment**

- Energy-efficient products
- Continuous improvement in environmental sustainability
- ISO 14001-certified environmental management system



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