

# Driver history for the R&S®UPV Audio Analyzer Driver Documentation

## **Products:**

- | R&S®UPV Audio Analyzer
- | R&S®UPZ Audio Switcher

Driver history notes for LabVIEW,  
LabWindows/CVI.and VXPlug&Play  
drivers for VEE, C++, C#, Visual Basic,  
Visual Basic.NET etc.

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# 1. Driver history for LabVIEW

Driver history for LabVIEW		
Revision	Date	Note
2.4.0	08/2008	<p>Driver update for UPV firmware version 2.4</p> <p>New Features:</p> <ul style="list-style-type: none"> <li>- Added Analog 8 Channel option</li> <li>- Added Analog 16 Channel option</li> <li>- Added USI Dual Channel option</li> <li>- Added USI 8 Channel option</li> <li>- Added Speach Quality Measurements (PESQ)</li> </ul> <p>-Modified VIs:</p> <ul style="list-style-type: none"> <li>• RSUPV Configure Generator Digital.vi - removed argument Source Mode</li> <li>• RSUPV Set Analyzer Instrument.vi, RSUPV Get Analyzer Instrument - added new instrument types (Analog Multichannel and USI instruments)</li> <li>• RSUPV Set Analyzer Channel Input Range.vi, RSUPV Set Analyzer Channel Input Range Value.vi, RSUPV Get Analyzer Channel Input Range Value.vi - range of Channel is now 1 to 16</li> <li>• RSUPV Set Analyzer FFT Avg Count.vi - changed range</li> <li>• RSUPV Set Analyzer Waveform Monitor Trigger Source.vi, RSUPV Get Analyzer Waveform Monitor Trigger Source.vi, RSUPV Set Analyzer Record Trigger Source.vi, RSUPV Get Analyzer Record Trigger Source.vi - added Gen Burst</li> <li>• RSUPV Set Generator Filter.vi, RSUPV Get Generator Filter.vi, RSUPV Set Analyzer Prefilter.vi, RSUPV Get Analyzer Prefilter.vi, RSUPV Set Analyzer Filter.vi, RSUPV Get Analyzer Filter.vi - added AES 17 and C Weighting</li> <li>• RSUPV Set Measurement Mode.vi, RSUPV Get Measurement Mode.vi - added Wait</li> <li>• RSUPV Set Generator Instrument.vi, RSUPV Get Generator Instrument.vi - added USI Dual Chan instrument</li> </ul> <p>- New VIs:</p> <ul style="list-style-type: none"> <li>• RSUPV Set Generator Output State.vi, RSUPV Get Generator Output State.vi</li> <li>• RSUPV Set Analyzer FFT Undersample State.vi, RSUPV Get Analyzer FFT Undersample State.vi</li> <li>• RSUPV Set Analyzer FFT Comp Factor.vi, RSUPV Get Analyzer FFT Comp Factor.vi</li> <li>• RSUPV Set Display Normalization.vi, RSUPV Get Display Normalization.vi</li> <li>• RSUPV Set Display Normalize Value.vi, RSUPV Get Display Normalize Value.vi</li> <li>• RSUPV Get Protocol Analysis Error.vi</li> <li>• RSUPV Set Display Cursor Move To.vi</li> <li>• RSUPV Set Measurement Timeout.vi, RSUPV Get Measurement Timeout.vi</li> <li>• RSUPV Read Measurement Result Min Max.vi</li> <li>• RSUPV Read Axis Data.vi</li> <li>• RSUPV Read Axis Data Count.vi</li> <li>• RSUPV Set Hardcopy Size.vi, RSUPV Get Hardcopy Size.vi</li> <li>• RSUPV Set Window Style.vi, RSUPV Get Window Style.vi</li> </ul>

Driver history for LabVIEW		
Revision	Date	Note
1.4.0	03/2007	<p>Driver update for UPV firmware version 1.4</p> <p>Added support for USB interface</p> <p>- New VIs:</p> <p>RSUPV Set Digital Generator Add Impairment.vi  RSUPV Get Digital Generator Add Impairment.vi  RSUPV Configure Generator I2S.vi  RSUPV Set I2S Generator Sync To.vi  RSUPV Get I2S Generator Sync To.vi  RSUPV Set I2S Generator Word Length.vi  RSUPV Get I2S Generator Word Length.vi  RSUPV Set I2S Generator Sample Frequency.vi  RSUPV Get I2S Generator Sample Frequency.vi  RSUPV Set I2S Generator MClk Ratio.vi  RSUPV Get I2S Generator MClk Ratio.vi  RSUPV Set I2S Generator Audio Bits.vi  RSUPV Get I2S Generator Audio Bits.vi  RSUPV Set I2S Generator Format.vi  RSUPV Get I2S Generator Format.vi  RSUPV Set I2S Generator Fsync Shape.vi  RSUPV Get I2S Generator Fsync Shape.vi  RSUPV Set I2S Generator Fsync Polarity.vi  RSUPV Get I2S Generator Fsync Polarity.vi  RSUPV Set I2S Generator Word Offset.vi  RSUPV Get I2S Generator Word Offset.vi  RSUPV Set Generator Phase File.vi  RSUPV Set Generator Play Scale Pk To FS.vi  RSUPV Get Generator Play Scale Pk To FS.vi  RSUPV Set Generator Play Channel.vi  RSUPV Get Generator Play Channel.vi  RSUPV Set Generator Play Mode.vi  RSUPV Get Generator Play Mode.vi  RSUPV Set Generator Play Time.vi  RSUPV Get Generator Play Time.vi  RSUPV Set Generator Play Shape File.vi  RSUPV Set Generator Play Analyzer Loop Channel.vi  RSUPV Get Generator Play Analyzer Loop Channel.vi  RSUPV Set Generator Play Analyzer Loop Gain.vi  RSUPV Get Generator Play Analyzer Loop Gain.vi  RSUPV Set Generator Amplitude Variation.vi</p>

Driver history for LabVIEW		
Revision	Date	Note
		RSUPV Get Generator Amplitude Variation.vi
		RSUPV Set Generator AV Modulation Frequency.vi
		RSUPV Get Generator AV Modulation Frequency.vi
		RSUPV Set Generator Variation.vi
		RSUPV Get Generator Variation.vi
		RSUPV Set I2S Analyzer Word Length.vi
		RSUPV Get I2S Analyzer Word Length.vi
		RSUPV Set I2S Analyzer Format.vi
		RSUPV Get I2S Analyzer Format.vi
		RSUPV Set I2S Analyzer Fsync Slope.vi
		RSUPV Get I2S Analyzer Fsync Slope.vi
		RSUPV Set I2S Analyzer Word Offset.vi
		RSUPV Get I2S Analyzer Word Offset.vi
		RSUPV Set I2S Analyzer Input.vi
		RSUPV Get I2S Analyzer Input.vi
		RSUPV Set I2S Analyzer Channel Mode.vi
		RSUPV Get I2S Analyzer Channel Mode.vi
		RSUPV Set I2S Analyzer Sample Frequency.vi
		RSUPV Get I2S Analyzer Sample Frequency.vi
		RSUPV Set Analyzer Level Meas Bandwidth.vi
		RSUPV Get Analyzer Level Meas Bandwidth.vi
		RSUPV Set Analyzer Level Meas Bandwidth Value.vi
		RSUPV Get Analyzer Level Meas Bandwidth Value.vi
		RSUPV Set Analyzer Level Meas Frequency Mode.vi
		RSUPV Get Analyzer Level Meas Frequency Mode.vi
		RSUPV Set Analyzer Level Meas Frequency Value.vi
		RSUPV Get Analyzer Level Meas Frequency Value.vi
		RSUPV Set Analyzer Level Meas Frequency Factor.vi
		RSUPV Get Analyzer Level Meas Frequency Factor.vi
		RSUPV Set Analyzer Level Meas Frequency Start.vi
		RSUPV Get Analyzer Level Meas Frequency Start.vi
		RSUPV Set Analyzer Level Meas Frequency Stop.vi
		RSUPV Get Analyzer Level Meas Frequency Stop.vi
		RSUPV Set Analyzer Level DC Meas Time.vi
		RSUPV Get Analyzer Level DC Meas Time.vi
		RSUPV Set Analyzer Bargraph State.vi
		RSUPV Get Analyzer Bargraph State.vi
		RSUPV Set Analyzer Waveform Monitor Meas Mode.vi
		RSUPV Get Analyzer Waveform Monitor Meas Mode.vi
		RSUPV Set Analyzer Waveform Monitor Compression Factor.vi
		RSUPV Get Analyzer Waveform Monitor Compression Factor.vi
		RSUPV Set Analyzer Waveform Monitor Trace Length.vi

Driver history for LabVIEW		
Revision	Date	Note
		RSUPV Get Analyzer Waveform Monitor Trace Length.vi
		RSUPV Set Analyzer Waveform Monitor Trigger Source.vi
		RSUPV Get Analyzer Waveform Monitor Trigger Source.vi
		RSUPV Set Analyzer Waveform Monitor Trigger Level.vi
		RSUPV Get Analyzer Waveform Monitor Trigger Level.vi
		RSUPV Set Analyzer Waveform Monitor Trigger Slope.vi
		RSUPV Get Analyzer Waveform Monitor Trigger Slope.vi
		RSUPV Set Analyzer Waveform Monitor Pretrigger.vi
		RSUPV Get Analyzer Waveform Monitor Pretrigger.vi
		RSUPV Set Analyzer Waveform Monitor Autotrigger.vi
		RSUPV Get Analyzer Waveform Monitor Autotrigger.vi
		RSUPV Set Analyzer SN Meas Mode.vi
		RSUPV Get Analyzer SN Meas Mode.vi
		RSUPV Set Analyzer SN Meas Time.vi
		RSUPV Get Analyzer SN Meas Time.vi
		RSUPV Set Analyzer NOCT Meas Mode.vi
		RSUPV Get Analyzer NOCT Meas Mode.vi
		RSUPV Set Analyzer Record File.vi
		RSUPV Set Analyzer Record Length.vi
		RSUPV Get Analyzer Record Length.vi
		RSUPV Get Analyzer Record File Length.vi
		RSUPV Set Analyzer Record Trigger Source.vi
		RSUPV Get Analyzer Record Trigger Source.vi
		RSUPV Set Analyzer Record Trigger Level.vi
		RSUPV Get Analyzer Record Trigger Level.vi
		RSUPV Set Analyzer Record Trigger Slope.vi
		RSUPV Get Analyzer Record Trigger Slope.vi
		RSUPV Set Analyzer Record Pretrigger.vi
		RSUPV Get Analyzer Record Pretrigger.vi
		RSUPV Set Protocol Analysis State.vi
		RSUPV Get Protocol Analysis State.vi
		RSUPV Set Protocol Analysis Display State.vi
		RSUPV Get Protocol Analysis Display State.vi
		RSUPV Set Protocol Analysis Display Mode.vi
		RSUPV Get Protocol Analysis Display Mode.vi
		RSUPV Set Protocol Analysis Highlight.vi
		RSUPV Get Protocol Analysis Highlight.vi
		RSUPV Set Protocol Analysis Persistence.vi
		RSUPV Get Protocol Analysis Persistence.vi
		RSUPV Set Protocol Analysis View Mode.vi
		RSUPV Get Protocol Analysis View Mode.vi
		RSUPV Get Protocol Analysis Channel Byte.vi

Driver history for LabVIEW		
Revision	Date	Note
		RSUPV Set Aux Audio Monitor.vi
		RSUPV Get Aux Audio Monitor.vi
		RSUPV Set Aux Phone State.vi
		RSUPV Get Aux Phone State.vi
		RSUPV Set Aux Phone Permanent State.vi
		RSUPV Get Aux Phone Permanent State.vi
		RSUPV Set Aux Trigger Input Enable.vi
		RSUPV Get Aux Trigger Input Enable.vi
		RSUPV Set Aux Trigger Input Mode.vi
		RSUPV Get Aux Trigger Input Mode.vi
		RSUPV Set Aux Trigger Input Edge.vi
		RSUPV Get Aux Trigger Input Edge.vi
		RSUPV Set Aux Trigger Output Enable.vi
		RSUPV Get Aux Trigger Output Enable.vi
		RSUPV Set Aux Trigger Output Mode.vi
		RSUPV Get Aux Trigger Output Mode.vi
		RSUPV Set Aux Trigger Output Frequency.vi
		RSUPV Get Aux Trigger Output Frequency.vi
		RSUPV Set Aux Trigger Output Edge.vi
		RSUPV Get Aux Trigger Output Edge.vi
		RSUPV Set Switcher State.vi
		RSUPV Get Switcher State.vi
		RSUPV Set Switcher Tracking.vi
		RSUPV Get Switcher Tracking.vi
		RSUPV Set Switcher Offset.vi
		RSUPV Get Switcher Offset.vi
		RSUPV Set Switcher Input.vi
		RSUPV Get Switcher Input.vi
		RSUPV Set Switcher Output.vi
		RSUPV Get Switcher Output.vi
		RSUPV Set Protocol Generator Coding Mode.vi
		RSUPV Get Protocol Generator Coding Mode.vi
		RSUPV Set Protocol Generator CRC.vi
		RSUPV Get Protocol Generator CRC.vi
		RSUPV Set Protocol Generator Validity.vi
		RSUPV Get Protocol Generator Validity.vi
		RSUPV Set Protocol Generator All Bits To Zero.vi
		RSUPV Set Protocol Generator Channel Byte.vi
		RSUPV Get Protocol Generator Channel Byte.vi
		RSUPV Set Protocol Generator Channels.vi
		RSUPV Get Protocol Generator Channels.vi
		RSUPV Set Display Data List Filter.vi

Driver history for LabVIEW		
Revision	Date	Note
		RSUPV Get Display Data List Filter.vi
		RSUPV Set Display Scan Offset.vi
		RSUPV Get Display Scan Offset.vi
		RSUPV Set Display Sweep Y-Source.vi
		RSUPV Get Display Sweep Y-Source.vi
		RSUPV Set Display FFT Graph Y-Source.vi
		RSUPV Get Display FFT Graph Y-Source.vi
		RSUPV Set Display Waveform Y-Source.vi
		RSUPV Get Display Waveform Y-Source.vi
		RSUPV Set Display Bargraph Y-Source.vi
		RSUPV Get Display Bargraph Y-Source.vi
		RSUPV Set Display Y-Source File.vi
		RSUPV Set Display Trace Update.vi
		RSUPV Get Display Trace Update.vi
		RSUPV Set Display Reference.vi
		RSUPV Get Display Reference.vi
		RSUPV Set Display Reference Value.vi
		RSUPV Get Display Reference Value.vi
		RSUPV Set Display Reference File.vi
		RSUPV Set Display Copy Reference Settings.vi
		RSUPV Get Display Copy Reference Settings.vi
		RSUPV Set Display Copy Scaling Settings.vi
		RSUPV Get Display Copy Scaling Settings.vi
		RSUPV Set Display Unit Function Track.vi
		RSUPV Get Display Unit Function Track.vi
		RSUPV Set Display Unit.vi
		RSUPV Get Display Unit.vi
		RSUPV Set Display Unit Auto.vi
		RSUPV Get Display Unit Auto.vi
		RSUPV Set Display Unit User String.vi
		RSUPV Get Display Unit User String.vi
		RSUPV Set Display Y-Axis Spacing.vi
		RSUPV Get Display Y-Axis Spacing.vi
		RSUPV Set Display Y-Axis Top.vi
		RSUPV Get Display Y-Axis Top.vi
		RSUPV Set Display Y-Axis Bottom.vi
		RSUPV Get Display Y-Axis Bottom.vi
		RSUPV Set Display Copy Limit Settings.vi
		RSUPV Get Display Copy Limit Settings.vi
		RSUPV Set Display Limit State.vi
		RSUPV Get Display Limit State.vi
		RSUPV Set Display Limit Source.vi



Driver history for LabVIEW		
Revision	Date	Note
		RSUPV Get Display Limit Source.vi
		RSUPV Set Display Limit Source Value.vi
		RSUPV Get Display Limit Source Value.vi
		RSUPV Set Display Limit Source Filename.vi
		RSUPV Get Display Limit Source Filename.vi
		RSUPV Set Display Limit Shift.vi
		RSUPV Get Display Limit Shift.vi
		RSUPV Set Display Limit Shift Parallel.vi
		RSUPV Get Display Limit Shift Parallel.vi
		RSUPV Set Display Limit Shift Symmetrical.vi
		RSUPV Get Display Limit Shift Symmetrical.vi
		RSUPV Set Display Sweep Graph X-Source.vi
		RSUPV Get Display Sweep Graph X-Source.vi
		RSUPV Set Display Sweep Graph X-Axis.vi
		RSUPV Get Display Sweep Graph X-Axis.vi
		RSUPV Set Display X-Axis Reference Value.vi
		RSUPV Get Display X-Axis Reference Value.vi
		RSUPV Set Display X-Axis Scaling.vi
		RSUPV Get Display X-Axis Scaling.vi
		RSUPV Set Display X-Axis Spacing.vi
		RSUPV Get Display X-Axis Spacing.vi
		RSUPV Set Display X-Axis Left.vi
		RSUPV Get Display X-Axis Left.vi
		RSUPV Set Display X-Axis Right.vi
		RSUPV Get Display X-Axis Right.vi
		RSUPV Set Display Cursor State.vi
		RSUPV Get Display Cursor State.vi
		RSUPV Set Display Cursor Mode.vi
		RSUPV Get Display Cursor Mode.vi
		RSUPV Get Display Cursor Amplitude.vi
		RSUPV Set Display Cursor Move To.vi
		RSUPV Set Display Cursor X Position.vi
		RSUPV Get Display Cursor X Position.vi
		RSUPV Set Display Cursor Y Position.vi
		RSUPV Get Display Cursor Y Position.vi
		RSUPV Set Display Cursor Movement.vi
		RSUPV Get Display Cursor Movement.vi
		RSUPV Set Display Marker Mode.vi
		RSUPV Get Display Marker Mode.vi
		RSUPV Set Display Marker Harmonics.vi
		RSUPV Get Display Marker Harmonics.vi
		RSUPV Set Display Marker Move To.vi

Driver history for LabVIEW		
Revision	Date	Note
		RSUPV Set Display Marker X Position.vi
		RSUPV Get Display Marker X Position.vi
		RSUPV Set Display Store Trace As.vi
		RSUPV Get Display Store Trace As.vi
		RSUPV Set Display Trace Select.vi
		RSUPV Get Display Trace Select.vi
		RSUPV Set Display Normalization Frequency.vi
		RSUPV Get Display Normalization Frequency.vi
		RSUPV Set Display Modify Equ.vi
		RSUPV Get Display Modify Equ.vi
		RSUPV Set Display Limit Offset.vi
		RSUPV Get Display Limit Offset.vi
		RSUPV Set Display Limit Offset Value.vi
		RSUPV Get Display Limit Offset Value.vi
		RSUPV Set Display Store Trace To File.vi
		RSUPV Get Display Store Trace To File.vi
		RSUPV Measurement Control.vi
		RSUPV Read Trace Data Sets.vi
		RSUPV Write Trace Data Sets.vi
		RSUPV Read Trace Data Set Count.vi
		RSUPV Read Trace Data List.vi
		RSUPV Read Trace Data List Count.vi
		RSUPV Set Hardcopy Source.vi
		RSUPV Get Hardcopy Source.vi
		RSUPV Set Hardcopy Destination.vi
		RSUPV Get Hardcopy Destination.vi
		RSUPV Set Hardcopy Orientation.vi
		RSUPV Get Hardcopy Orientation.vi
		RSUPV Set Hardcopy Store Mode.vi
		RSUPV Get Hardcopy Store Mode.vi
		RSUPV Set Hardcopy File Name.vi
		RSUPV Get Hardcopy File Name.vi
		RSUPV Set Hardcopy Header Footer State.vi
		RSUPV Get Hardcopy Header Footer State.vi
		RSUPV Set Hardcopy Define Header.vi
		RSUPV Get Hardcopy Define Header.vi
		RSUPV Set Hardcopy Define Footer.vi
		RSUPV Get Hardcopy Define Footer.vi
		RSUPV Hardcopy Immediate.vi
		RSUPV Set Memory String.vi
		RSUPV Get Memory String.vi
		RSUPV Store Memory Data Numeric.vi

Driver history for LabVIEW		
Revision	Date	Note
		RSUPV Store Memory Data Binary.vi RSUPV Reset Memory Buffers.vi RSUPV System Shutdown.vi
1.0.2	02/2006	Modifications - Changed help of rsupv_init() for LAN Interface
1.0.1	04/2005	Modifications  - I/O conversion specification fixed: Input: "%le" Output: "%.12f" - System locale are set to default "C"
1.0	01/2005	Created.

## 2 Driver history for LabWindows/CVI and VXIplug&play drivers for VEE, C++, C#, Visual Basic, Visual Basic.NET etc

History for LabWindows/CVI and VXIplug&play drivers for VEE, C++, C#, Visual Basic, Visual Basic.NET etc		
Revision	Date	Note
		<p>Driver update for UPV firmware version 2.4</p> <p>New features:</p> <ul style="list-style-type: none"> <li>- Added Analog 8 Channel option</li> <li>- Added Analog 16 Channel option</li> <li>- Added USI Dual Channel option</li> <li>- Added USI 8 Channel option</li> <li>- Added Speach Quality Measurements (PESQ)</li> </ul> <p>- Modified functions:</p> <ul style="list-style-type: none"> <li>• rsupv_ConfigureGeneratorDigital - removed argument Source Mode</li> <li>• rsupv_SetAnalyzerInstrument, rsupv_GetAnalyzerInstrument - added new instrument types (Analog Multichannel and USI instruments)</li> <li>• rsupv_SetAnalyzerChannelInputRange, rsupv_GetAnalyzerChannelInputRange, rsupv_SetAnalyzerChannelInputRangeValue, rsupv_GetAnalyzerChannelInputRangeValue - range of Channel is now 1 to 16</li> <li>• rsupv_SetAnalyzerFFTAvgCount - changed range</li> <li>• rsupv_SetAnalyzerWaveformMonitorTriggerSource, rsupv_GetAnalyzerWaveformMonitorTriggerSource, rsupv_SetAnalyzerRecordTriggerSource, rsupv_GetAnalyzerRecordTriggerSource - added Gen Burst</li> <li>• rsupv_SetGeneratorFilter, rsupv_GetGeneratorFilter, rsupv_SetAnalyzerPrefilter, rsupv_GetAnalyzerPrefilter, rsupv_SetAnalyzerFilter, rsupv_GetAnalyzerFilter - added AES 17 and C Weighting</li> <li>• rsupv_SetMeasurementMode, rsupv_GetMeasurementMode - added Wait</li> <li>• rsupv_SetGeneratorInstrument, rsupv_GetGeneratorInstrument - added USI Dual Chan instrument</li> </ul> <p>- New functions:</p> <ul style="list-style-type: none"> <li>• rsupv_SetGeneratorOutputState, rsupv_GetGeneratorOutputState</li> <li>• rsupv_SetAnalyzerFFTUndersampleState, rsupv_GetAnalyzerFFTUndersampleState</li> <li>• rsupv_SetAnalyzerFFTCompFactor, rsupv_GetAnalyzerFFTCompFactor</li> <li>• rsupv_SetDisplayNormalization, rsupv_GetDisplayNormalization</li> <li>• rsupv_SetDisplayNormalizeValue, rsupv_GetDisplayNormalizeValue</li> <li>• rsupv_GetProtocolAnalysisError</li> <li>• rsupv_SetDisplayCursorMoveTo</li> <li>• rsupv_SetMeasurementTimeout, rsupv_GetMeasurementTimeout</li> <li>• rsupv_ReadMeasurementResultMinMax</li> </ul>

History for LabWindows/CVI and VXIplug&play drivers for VEE, C++, C#, Visual Basic, Visual Basic.NET etc		
Revision	Date	Note
		<ul style="list-style-type: none"> <li>• rsupv_ReadAxisData</li> <li>• rsupv_ReadAxisDataCount</li> <li>• rsupv_SetHardcopySize, rsupv_GetHardcopySize</li> <li>• rsupv_SetWindowState, rsupv_GetWindowState</li> </ul>
1.4.0	03/2007	<p>Driver update for UPV firmware version 1.4</p> <p>Added support for USB interface</p> <p>New Functions:</p> <ul style="list-style-type: none"> <li>rsupv_SetDigitalGeneratorAddImpairment</li> <li>rsupv_GetDigitalGeneratorAddImpairment</li> <li>rsupv_ConfigureGeneratorI2S</li> <li>rsupv_SetI2SGeneratorSyncTo</li> <li>rsupv_GetI2SGeneratorSyncTo</li> <li>rsupv_SetI2SGeneratorWordLength</li> <li>rsupv_GetI2SGeneratorWordLength</li> <li>rsupv_SetI2SGeneratorSampleFrequency</li> <li>rsupv_GetI2SGeneratorSampleFrequency</li> <li>rsupv_SetI2SGeneratorMClkRatio</li> <li>rsupv_GetI2SGeneratorMClkRatio</li> <li>rsupv_SetI2SGeneratorAudioBits</li> <li>rsupv_GetI2SGeneratorAudioBits</li> <li>rsupv_SetI2SGeneratorFormat</li> <li>rsupv_GetI2SGeneratorFormat</li> <li>rsupv_SetI2SGeneratorFsyncShape</li> <li>rsupv_GetI2SGeneratorFsyncShape</li> <li>rsupv_SetI2SGeneratorFsyncPolarity</li> <li>rsupv_GetI2SGeneratorFsyncPolarity</li> <li>rsupv_SetI2SGeneratorWordOffset</li> <li>rsupv_GetI2SGeneratorWordOffset</li> <li>rsupv_SetGeneratorPhaseFile</li> <li>rsupv_SetGeneratorPlayScalePkToFS</li> <li>rsupv_GetGeneratorPlayScalePkToFS</li> <li>rsupv_SetGeneratorPlayChannel</li> <li>rsupv_GetGeneratorPlayChannel</li> <li>rsupv_SetGeneratorPlayMode</li> <li>rsupv_GetGeneratorPlayMode</li> <li>rsupv_SetGeneratorPlayTime</li> <li>rsupv_GetGeneratorPlayTime</li> <li>rsupv_SetGeneratorPlayShapeFile</li> <li>rsupv_SetGeneratorPlayAnalyzerLoopChannel</li> </ul>

History for LabWindows/CVI and VXIplug&play drivers for VEE, C++, C#, Visual Basic, Visual Basic.NET etc		
Revision	Date	Note
		rsupv_GetGeneratorPlayAnalyzerLoopChannel rsupv_SetGeneratorPlayAnalyzerLoopGain rsupv_GetGeneratorPlayAnalyzerLoopGain rsupv_SetGeneratorAmplitudeVariation rsupv_GetGeneratorAmplitudeVariation rsupv_SetGeneratorAVModulationFrequency rsupv_GetGeneratorAVModulationFrequency rsupv_SetGeneratorVariation rsupv_GetGeneratorVariation rsupv_SetI2SAnalyzerWordLength rsupv_GetI2SAnalyzerWordLength rsupv_SetI2SAnalyzerFormat rsupv_GetI2SAnalyzerFormat rsupv_SetI2SAnalyzerFsyncSlope rsupv_GetI2SAnalyzerFsyncSlope rsupv_SetI2SAnalyzerWordOffset rsupv_GetI2SAnalyzerWordOffset rsupv_SetI2SAnalyzerInput rsupv_GetI2SAnalyzerInput rsupv_SetI2SAnalyzerChannelMode rsupv_GetI2SAnalyzerChannelMode rsupv_SetI2SAnalyzerSampleFrequency rsupv_GetI2SAnalyzerSampleFrequency rsupv_SetAnalyzerLevelMeasBandwidth rsupv_GetAnalyzerLevelMeasBandwidth rsupv_SetAnalyzerLevelMeasBandwidthValue rsupv_GetAnalyzerLevelMeasBandwidthValue rsupv_SetAnalyzerLevelMeasFrequencyMode rsupv_GetAnalyzerLevelMeasFrequencyMode rsupv_SetAnalyzerLevelMeasFrequencyValue rsupv_GetAnalyzerLevelMeasFrequencyValue rsupv_SetAnalyzerLevelMeasFrequencyFactor rsupv_GetAnalyzerLevelMeasFrequencyFactor rsupv_SetAnalyzerLevelMeasFrequencyStart rsupv_GetAnalyzerLevelMeasFrequencyStart rsupv_SetAnalyzerLevelMeasFrequencyStop rsupv_GetAnalyzerLevelMeasFrequencyStop rsupv_SetAnalyzerLevelDCMeasTime rsupv_GetAnalyzerLevelDCMeasTime rsupv_SetAnalyzerBargraphState rsupv_GetAnalyzerBargraphState

History for LabWindows/CVI and VXIplug&play drivers for VEE, C++, C#, Visual Basic, Visual Basic.NET etc		
Revision	Date	Note
		rsupv_SetAnalyzerWaveformMonitorMeasMode rsupv_GetAnalyzerWaveformMonitorMeasMode rsupv_SetAnalyzerWaveformMonitorCompressionFactor rsupv_GetAnalyzerWaveformMonitorCompressionFactor rsupv_SetAnalyzerWaveformMonitorTraceLength rsupv_GetAnalyzerWaveformMonitorTraceLength rsupv_SetAnalyzerWaveformMonitorTriggerSource rsupv_GetAnalyzerWaveformMonitorTriggerSource rsupv_SetAnalyzerWaveformMonitorTriggerLevel rsupv_GetAnalyzerWaveformMonitorTriggerLevel rsupv_SetAnalyzerWaveformMonitorTriggerSlope rsupv_GetAnalyzerWaveformMonitorTriggerSlope rsupv_SetAnalyzerWaveformMonitorPretrigger rsupv_GetAnalyzerWaveformMonitorPretrigger rsupv_SetAnalyzerWaveformMonitorAutotrigger rsupv_GetAnalyzerWaveformMonitorAutotrigger rsupv_SetAnalyzerSNMeasMode rsupv_GetAnalyzerSNMeasMode rsupv_SetAnalyzerSNMeasTime rsupv_GetAnalyzerSNMeasTime rsupv_SetAnalyzerNOCTMeasMode rsupv_GetAnalyzerNOCTMeasMode rsupv_SetAnalyzerRecordFile rsupv_SetAnalyzerRecordLength rsupv_GetAnalyzerRecordLength rsupv_GetAnalyzerRecordFileLength rsupv_SetAnalyzerRecordTriggerSource rsupv_GetAnalyzerRecordTriggerSource rsupv_SetAnalyzerRecordTriggerLevel rsupv_GetAnalyzerRecordTriggerLevel rsupv_SetAnalyzerRecordTriggerSlope rsupv_GetAnalyzerRecordTriggerSlope rsupv_SetAnalyzerRecordPretrigger rsupv_GetAnalyzerRecordPretrigger rsupv_SetProtocolAnalysisState rsupv_GetProtocolAnalysisState rsupv_SetProtocolAnalysisDisplayState rsupv_GetProtocolAnalysisDisplayState rsupv_SetProtocolAnalysisDisplayMode rsupv_GetProtocolAnalysisDisplayMode rsupv_SetProtocolAnalysisHighlight

History for LabWindows/CVI and VXIplug&play drivers for VEE, C++, C#, Visual Basic, Visual Basic.NET etc		
Revision	Date	Note
		rsupv_GetProtocolAnalysisHighlight rsupv_SetProtocolAnalysisPersistence rsupv_GetProtocolAnalysisPersistence rsupv_SetProtocolAnalysisViewMode rsupv_GetProtocolAnalysisViewMode rsupv_GetProtocolAnalysisChannelByte rsupv_SetAuxAudioMonitor rsupv_GetAuxAudioMonitor rsupv_SetAuxPhoneState rsupv_GetAuxPhoneState rsupv_SetAuxPhonePermanentState rsupv_GetAuxPhonePermanentState rsupv_SetAuxTriggerInputEnable rsupv_GetAuxTriggerInputEnable rsupv_SetAuxTriggerInputMode rsupv_GetAuxTriggerInputMode rsupv_SetAuxTriggerInputEdge rsupv_GetAuxTriggerInputEdge rsupv_SetAuxTriggerOutputEnable rsupv_GetAuxTriggerOutputEnable rsupv_SetAuxTriggerOutputMode rsupv_GetAuxTriggerOutputMode rsupv_SetAuxTriggerOutputFrequency rsupv_GetAuxTriggerOutputFrequency rsupv_SetAuxTriggerOutputEdge rsupv_GetAuxTriggerOutputEdge rsupv_SetSwitcherState rsupv_GetSwitcherState rsupv_SetSwitcherTracking rsupv_GetSwitcherTracking rsupv_SetSwitcherOffset rsupv_GetSwitcherOffset rsupv_SetSwitcherInput rsupv_GetSwitcherInput rsupv_SetSwitcherOutput rsupv_GetSwitcherOutput rsupv_SetProtocolGeneratorCodingMode rsupv_GetProtocolGeneratorCodingMode rsupv_SetProtocolGeneratorCRC rsupv_GetProtocolGeneratorCRC rsupv_SetProtocolGeneratorValidity



History for LabWindows/CVI and VXIplug&play drivers for VEE, C++, C#, Visual Basic, Visual Basic.NET etc		
Revision	Date	Note
		rsupv_GetProtocolGeneratorValidity rsupv_SetProtocolGeneratorAllBitsToZero rsupv_SetProtocolGeneratorChannelByte rsupv_GetProtocolGeneratorChannelByte rsupv_SetProtocolGeneratorChannels rsupv_GetProtocolGeneratorChannels rsupv_SetDisplayDataListFilter rsupv_GetDisplayDataListFilter rsupv_SetDisplayScanOffset rsupv_GetDisplayScanOffset rsupv_SetDisplaySweepYSource rsupv_GetDisplaySweepYSource rsupv_SetDisplayFFTGraphYSource rsupv_GetDisplayFFTGraphYSource rsupv_SetDisplayWaveformYSource rsupv_GetDisplayWaveformYSource rsupv_SetDisplayBargraphYSource rsupv_GetDisplayBargraphYSource rsupv_SetDisplayYSourceFile rsupv_SetDisplayTraceUpdate rsupv_GetDisplayTraceUpdate rsupv_SetDisplayReference rsupv_GetDisplayReference rsupv_SetDisplayReferenceValue rsupv_GetDisplayReferenceValue rsupv_SetDisplayReferenceFile rsupv_SetDisplayCopyReferenceSettings rsupv_GetDisplayCopyReferenceSettings rsupv_SetDisplayCopyScalingSettings rsupv_GetDisplayCopyScalingSettings rsupv_SetDisplayUnitFunctionTrack rsupv_GetDisplayUnitFunctionTrack rsupv_SetDisplayUnit rsupv_GetDisplayUnit rsupv_SetDisplayUnitAuto rsupv_GetDisplayUnitAuto rsupv_SetDisplayUnitUserString rsupv_GetDisplayUnitUserString rsupv_SetDisplayYAxisSpacing rsupv_GetDisplayYAxisSpacing rsupv_SetDisplayYAxisTop

History for LabWindows/CVI and VXIplug&play drivers for VEE, C++, C#, Visual Basic, Visual Basic.NET etc		
Revision	Date	Note
		rsupv_GetDisplayYAxisTop rsupv_SetDisplayYAxisBottom rsupv_GetDisplayYAxisBottom rsupv_SetDisplayCopyLimitSettings rsupv_GetDisplayCopyLimitSettings rsupv_SetDisplayLimitState rsupv_GetDisplayLimitState rsupv_SetDisplayLimitSource rsupv_GetDisplayLimitSource rsupv_SetDisplayLimitSourceValue rsupv_GetDisplayLimitSourceValue rsupv_SetDisplayLimitSourceFilename rsupv_GetDisplayLimitSourceFilename rsupv_SetDisplayLimitShift rsupv_GetDisplayLimitShift rsupv_SetDisplayLimitShiftParallel rsupv_GetDisplayLimitShiftParallel rsupv_SetDisplayLimitShiftSymmetrical rsupv_GetDisplayLimitShiftSymmetrical rsupv_SetDisplaySweepGraphXSource rsupv_GetDisplaySweepGraphXSource rsupv_SetDisplaySweepGraphXAxis rsupv_GetDisplaySweepGraphXAxis rsupv_SetDisplayXAxisReferenceValue rsupv_GetDisplayXAxisReferenceValue rsupv_SetDisplayXAxisScaling rsupv_GetDisplayXAxisScaling rsupv_SetDisplayXAxisSpacing rsupv_GetDisplayXAxisSpacing rsupv_SetDisplayXAxisLeft rsupv_GetDisplayXAxisLeft rsupv_SetDisplayXAxisRight rsupv_GetDisplayXAxisRight rsupv_SetDisplayCursorState rsupv_GetDisplayCursorState rsupv_SetDisplayCursorMode rsupv_GetDisplayCursorMode rsupv_GetDisplayCursorAmplitude rsupv_SetDisplayCursorMoveTo rsupv_SetDisplayCursorXPosition rsupv_GetDisplayCursorXPosition

History for LabWindows/CVI and VXIplug&play drivers for VEE, C++, C#, Visual Basic, Visual Basic.NET etc		
Revision	Date	Note
		rsupv_SetDisplayCursorYPosition rsupv_GetDisplayCursorYPosition rsupv_SetDisplayCursorMovement rsupv_GetDisplayCursorMovement rsupv_SetDisplayMarkerMode rsupv_GetDisplayMarkerMode rsupv_SetDisplayMarkerHarmonics rsupv_GetDisplayMarkerHarmonics rsupv_SetDisplayMarkerMoveTo rsupv_SetDisplayMarkerXPosition rsupv_GetDisplayMarkerXPosition rsupv_SetDisplayStoreTraceAs rsupv_GetDisplayStoreTraceAs rsupv_SetDisplayTraceSelect rsupv_GetDisplayTraceSelect rsupv_SetDisplayNormalizationFrequency rsupv_GetDisplayNormalizationFrequency rsupv_SetDisplayModifyEqu rsupv_GetDisplayModifyEqu rsupv_SetDisplayLimitOffset rsupv_GetDisplayLimitOffset rsupv_SetDisplayLimitOffsetValue rsupv_GetDisplayLimitOffsetValue rsupv_SetDisplayStoreTraceToFile rsupv_GetDisplayStoreTraceToFile rsupv_MeasurementControl rsupv_ReadTraceDataSets rsupv_WriteTraceDataSets rsupv_ReadTraceDataSetCount rsupv_ReadTraceDataList rsupv_ReadTraceDataListCount rsupv_SetHardcopySource rsupv_GetHardcopySource rsupv_SetHardcopyDestination rsupv_GetHardcopyDestination rsupv_SetHardcopyOrientation rsupv_GetHardcopyOrientation rsupv_SetHardcopyStoreMode rsupv_GetHardcopyStoreMode rsupv_SetHardcopyFileName rsupv_GetHardcopyFileName

History for LabWindows/CVI and VXIplug&play drivers for VEE, C++, C#, Visual Basic, Visual Basic.NET etc		
Revision	Date	Note
		rsupv_SetHardcopyHeaderFooterState rsupv_GetHardcopyHeaderFooterState rsupv_SetHardcopyDefineHeader rsupv_GetHardcopyDefineHeader rsupv_SetHardcopyDefineFooter rsupv_GetHardcopyDefineFooter rsupv_HardcopyImmediate rsupv_SetMemoryString rsupv_GetMemoryString rsupv_StoreMemoryDataNumeric rsupv_StoreMemoryDataBinary rsupv_ResetMemoryBuffers rsupv_SystemShutdown  Modified Functions: rsupv_SetGeneratorInstrument rsupv_GetGeneratorInstrument rsupv_ConfigureGeneratorAnalog rsupv_SetGeneratorOutputType rsupv_GetGeneratorOutputType rsupv_SetGeneratorBandwidth rsupv_GetGeneratorBandwidth rsupv_SetGeneratorVoltageRange rsupv_SetGeneratorCrestFactor rsupv_GetGeneratorCrestFactor rsupv_SetGeneratorCrestFactorValue rsupv_GetGeneratorCrestFactorValue rsupv_SetGeneratorSweepXAxis rsupv_GetGeneratorSweepXAxis rsupv_SetGeneratorSweepZAxis rsupv_GetGeneratorSweepZAxis rsupv_SetGeneratorSweepSpacing rsupv_GetGeneratorSweepSpacing rsupv_SetGeneratorSweepStart rsupv_GetGeneratorSweepStart rsupv_SetGeneratorSweepStop rsupv_GetGeneratorSweepStop rsupv_SetGeneratorSweepPoints rsupv_GetGeneratorSweepPoints rsupv_SetGeneratorSweepSteps rsupv_GetGeneratorSweepSteps

History for LabWindows/CVI and VXIplug&play drivers for VEE, C++, C#, Visual Basic, Visual Basic.NET etc		
Revision	Date	Note
		rsupv_SetGeneratorFilter rsupv_GetGeneratorFilter rsupv_SetGeneratorEqualizerFile rsupv_SetGeneratorFunction rsupv_GetGeneratorFunction rsupv_SetGeneratorRandomShape rsupv_GetGeneratorRandomShape rsupv_SetAnalyzerInstrument rsupv_GetAnalyzerInstrument rsupv_SetAnalyzerChannelInputRange rsupv_GetAnalyzerChannelInputRange rsupv_GetAnalyzerChannelInputRangeValue rsupv_SetDigitalAnalyzerAudioInput rsupv_SetAnalyzerSampleFrequency rsupv_GetAnalyzerSampleFrequency rsupv_SetAnalyzerStartCondition rsupv_GetAnalyzerStartCondition rsupv_SetAnalyzerFunction rsupv_GetAnalyzerFunction rsupv_ConfigureAnalyzerSweep rsupv_SetAnalyzerLevelMeasTime rsupv_GetAnalyzerLevelMeasTime rsupv_ConfigureAnalyzerPeakMeasurement rsupv_SetAnalyzerPeakMeasIntervalTime rsupv_GetAnalyzerPeakMeasIntervalTime rsupv_ConfigureAnalyzerFundamental rsupv_SetAnalyzerTHDFundamental rsupv_SetAnalyzerTHDNFrequencyLimUpp rsupv_SetAnalyzerLevelMonitor rsupv_SetAnalyzerPrefilter rsupv_GetAnalyzerPrefilter rsupv_SetAnalyzerFilter rsupv_GetAnalyzerFilter rsupv_SetAnalyzerNotchFrequency rsupv_ConfigureAudioMonitoring rsupv_SetAuxSpeaker rsupv_GetAuxSpeaker rsupv_SetAuxPhoneOutput rsupv_GetAuxPhoneOutput rsupv_SetAuxAnalogOutput rsupv_GetAuxAnalogOutput

History for LabWindows/CVI and VXIplug&play drivers for VEE, C++, C#, Visual Basic, Visual Basic.NET etc		
Revision	Date	Note
		rsupv_SetAnalyzerFrequencyPhaseReferenceValue rsupv_ReadMeasurementResult rsupv_SetDigitalGeneratorSampleFrequency rsupv_GetDigitalGeneratorSampleFrequency rsupv_SetAnalyzerPhaseUnit rsupv_GetAnalyzerPhaseUnit rsupv_error_query - SENS:DATA? sent prior to SYST:ERR? to switch to other parser - fixes the error read out bug rsupv_StartMeasurementWaitOPC
1.0.2	02/2006	Modifications - Changed help of rsupv_init() for LAN Interface
1.0.1	04/2005	Modifications - I/O conversion specification fixed: Input: "%le" Output: "%.12f" - System locale are set to default "C"
1.0	01/2005	Created.

## 3 IVI-COM driver

History for IVI-COM driver		
Revision	Date	Note
2.4.0.0	08/2008	<p>Driver update for UPV firmware version 2.4</p> <p>New features:</p> <ul style="list-style-type: none"> <li>Added Analog 8 Channel option</li> <li>Added Analog 16 Channel option</li> <li>Added USI Dual Channel option</li> <li>Added USI 8 Channel option</li> <li>Added Speach Quality Measurements (PESQ)</li> </ul> <p>Modified functions:</p> <ul style="list-style-type: none"> <li>IRsUpvAnalogAnalyzer - added new repeated capabilities</li> <li>IRsUpvAnalyzerConfiguration.SelectInstrument - added new instrument types (Analog Multichannel and USI instruments)</li> <li>IRsUpvAnalyzerFunctionFFT.Window - changed command for Hanning enum</li> <li>IRsUpvAnalyzerFunctionFFTMeasurement.AverageCount - changed range</li> <li>IRsUpvAnalyzerFunction.Function - added DIM, PESQ</li> <li>IRsUpvAnalyzerFunctionDistortionMeasurementsTHDN.RejectBandwidth</li> <li>IRsUpvAnalyzerFunctionFilters.Prefilter - added AES 17 and C Weighting</li> <li>IRsUpvAnalyzerFunctionFiltersDigitalFilter.AnalyzerFilter - added AES 17 and C Weighting</li> <li>IRsUpvAnalyzerFunctionLevelMeasurements.MeasTime</li> <li>IRsUpvAnalyzerFunctionLevelMeasurements.DCMeasTime</li> <li>IRsUpvAnalyzerFunctionLevelMeasurementsRMSSelective.FrequencyMode - added enum Frequency</li> <li>IRsUpvAnalyzerFunctionOfflineAnalysis.TriggerSource - added Gen Burst</li> <li>IRsUpvAnalyzerFunctionSNMeasurements.MeasurementTime</li> <li>IRsUpvAnalyzerFunctionSweep.SweepControl - deleted enums (MSweep, MLISt)</li> <li>IRsUpvAnalyzerFunctionWaveform.TriggerSource - added Gen Burst</li> <li>IRsUpvAnalyzerTrigger.StartCondition - added new enum values</li> <li>IRsUpvDigitalGenerator.SourceMode - deleted enum (ADATa)</li> <li>IRsUpvFilterEqualizer.Filter - added AES 17 and C Weighting</li> <li>IRsUpvGeneratorConfiguration.SelectInstrument - added new instrument type (USI Dual Channel instrument)</li> <li>IRsUpvMeasurements.Mode - added Wait</li> <li>IRsUpvMeasurementsConfigurationChannel.Reference - added new enum values</li> <li>IRsUpvSignalsDIM.SquareToSine - added DIMS</li> <li>IRsUpvSignalsRandom.Shape - added new enum File</li> </ul> <p>New properties and methods:</p> <ul style="list-style-type: none"> <li>IRsUpvAnalogAnalyzer.ACDCCoupling</li> <li>IRsUpvAnalogAnalyzer.Range</li> <li>IRsUpvAnalyzerConfiguration.ReferenceChannel</li> <li>IRsUpvAnalyzerFunctionProtocolAnalysis.QueryProtocolError</li> <li>IRsUpvAnalyzerTrigger.TrigerChannel</li> </ul>

History for IVI-COM driver		
Revision	Date	Note
		IRsUpvDigitalGenerator.SyncOutput IRsUpvDigitalGenerator.SyncTo IRsUpvGeneratorConfiguration.OutputEnabled IRsUpvMeasurements.Timeout IRsUpvMeasurementsConfigurationChannel.FrequencyReference IRsUpvMeasurementsConfigurationChannel.MeasChannel IRsUpvMeasurementsConfigurationChannel.PhaseReference IRsUpvMeasurementsConfigurationChannel.ReadMeasurementResult IRsUpvMeasurementsConfigurationChannel.ReadMeasurementResultMax IRsUpvMeasurementsConfigurationChannel.ReadMeasurementResultMin IRsUpvMeasurementsResultsBarGraph.ReadBarGraphAxisData IRsUpvMeasurementsResultsBarGraph.ReadBarGraphAxisDataCount IRsUpvMeasurementsResultsFFT.ReadBarGraphAxisData IRsUpvMeasurementsResultsFFT.ReadBarGraphAxisDataCount IRsUpvMeasurementsResultsSweep.ReadBarGraphAxisData IRsUpvMeasurementsResultsSweep.ReadBarGraphAxisDataCount
1.0.0.0	10/2007	Created.

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