

LabVIEW driver history for the R&S® MXO Oscilloscopes

MXO4



MXO5



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1 Supported Instruments

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

Which instruments are supported?		
Instrument	Supported Firmware	Remarks
MXO4	1.4.2.2	
MXO5	2.0	

2 Revision History

2.1 Version 1.4.1 / 11 – 2023

- * Added support for MXO5
- * New Core 7.8.0
- * Simplified OPC-Sync mechanism for queries.

- * New:
 - OPC Sync Query Mechanism.vi

2.2 Version 1.4.0 / 09 – 2023

- * Added support for MXO4 FW 1.4.x
- * New Core 7.6.0
- * Extended number of channels from 4 to 8

- * New:
 - Filter (Class)
 - LIN (Class)
 - Trigger (Class)
 - Results (Class)
 - Is Waiting For Trigger.vi
 - Is Measurement Complete.vi
 - Wait For WaitingForTrigger.vi
 - Wait For MeasurementComplete.vi
 - Configure Trigger State Digital State Operator.vi
 - Configure Trigger State Digital Channel State.vi
 - Configure Trigger Pattern State Source.vi
 - Configure Trigger Pattern Digital State Operator.vi
 - Configure Trigger Pattern Digital Channel State.vi
 - Configure Protocol I2C Show Symbols.vi
 - Configure Protocol I2C Symbol List File.vi
 - Configure Protocol UART Bit Order.vi
 - Query Protocol UART Results Word End.vi
 - Configure Protocol CAN Transceiver Mode.vi
 - Configure Protocol CAN SIC Settings.vi
 - Configure Protocol CAN FAST Settings.vi
 - Configure Protocol CAN Show Symbols.vi

- Configure Protocol CAN Symbol List File.vi
- Enable Protocol CAN Filter.vi
- Enable Protocol CAN Filter Frame.vi
- Enable Protocol CAN Filter Frame Field.vi
- Enable Protocol CAN Filter Error.vi
- Configure Protocol CAN Filter Field Operator.vi
- Configure Protocol CAN Filter Field Data.vi
- Configure Protocol CAN Filter Field Index.vi
- Query Protocol CAN Results Frame Symbol.vi
- Configure Protocol LIN Standard.vi
- Configure Protocol LIN Source.vi
- Configure Protocol LIN Settings.vi
- Configure Protocol LIN Polarity.vi
- Configure Protocol LIN Bit Rate.vi
- Enable Protocol LIN Filter.vi
- Enable Protocol LIN Filter Frame.vi
- Enable Protocol LIN Filter Field.vi
- Enable Protocol LIN Filter Error.vi
- Configure Protocol LIN Filter Field Operator.vi
- Configure Protocol LIN Filter Field Data.vi
- Configure Protocol LIN Filter Field Index.vi
- Configure Protocol LIN Trigger Type.vi
- Configure Protocol LIN Trigger Error Types.vi
- Configure Protocol LIN Trigger Data Operator.vi
- Configure Protocol LIN Trigger Data Pattern.vi
- Configure Protocol LIN Trigger Data Position.vi
- Configure Protocol LIN Trigger Identifier.vi
- Query Protocol LIN Results Frame Count.vi
- Query Protocol LIN Results Frame State.vi
- Query Protocol LIN Results Frame Bounds.vi
- Query Protocol LIN Results Frame Data.vi
- Query Protocol LIN Results Frame Bitrate.vi
- Query Protocol LIN Results Frame Checksum.vi
- Query Protocol LIN Results Frame Identifier.vi
- Query Protocol LIN Results Frame Byte Count.vi
- Query Protocol LIN Results Frame Byte.vi
- Query Protocol LIN Results Frame Byte Formatted Value.vi
- Query Protocol LIN Results Frame Byte Label.vi
- Abort Reference Waveform.vi
- Enable Generator Modulation.vi
- Abort Waveform Save.vi
- Configure Display Backlight Brightness.vi
- Configure Display Backlight Dimm On User Inactivity.vi
- Display Clear Results.vi
- Configure Status Register Trigger Action Enabled.vi
- Configure Status Register Trigger Action Transition.vi
- Query Status Register Trigger Action.vi
- Configure Status Register Trigger Edge Enabled.vi
- Configure Status Register Trigger Edge Transition.vi
- Query Status Register Trigger Edge.vi
- OPC Sync Write Enable.vi
- OPC Sync Query Enable.vi

* Updated:

- Configure Protocol Type.vi - Added LIN
- Query Protocol I2C Results Decode Table.vi - State data types added
- Query Protocol CAN Results Frame.vi - Added frame type values
- Query Protocol CAN Results BRS.vi - Field attribute fixed
- Query Protocol CAN Results ESI.vi - Field attribute fixed

- Query Protocol CAN-XL Results Acceptance.vi - Field attribute fixed
- Query Protocol CAN-XL Results PCRC.vi - Field attribute fixed
- Query Protocol CAN-XL Results SBC.vi - Field attribute fixed
- Query Protocol CAN-XL Results Service Data Unit.vi - Field attribute fixed
- Query Protocol CAN-XL Results SEC.vi - Field attribute fixed
- Query Protocol CAN-XL Results VCID.vi - Field attribute fixed

* Deleted:

- Configure Screenshot Filename.vi - use Configure Screenshot File Path.vi instead

2.3 Version 1.3.2 / 05 – 2023

* Added support for MXO44 FW 1.3.2

* New:

- Status Reporting (Class)
- Configure Horizontal Roll.vi
- Query Horizontal Roll Status.vi
- Configure Acquisition Roll Mode Off Screen Capture.vi
- Query Acquisition Roll Mode Points.vi
- Measurement Fit To Screen.vi
- Configure Measurement Autoscale.vi
- Configure Measurement Track.vi
- Query Spectrum Peak List Current.vi
- Query Spectrum Peak List Count.vi
- Configure Spectrum Peak List Labels.vi
- Configure Spectrum Peak List Sort.vi
- Configure Spectrum Peak List Display Peaks.vi
- Query Protocol CAN Decoded Frames.vi
- Configure Protocol CAN-XL Bitrate.vi
- Configure Protocol CAN-XL Sample Point.vi
- Configure Protocol CAN-XL Trigger SEC.vi
- Configure Protocol CAN-XL Trigger AF.vi
- Configure Protocol CAN-XL Trigger SDT.vi
- Configure Protocol CAN-XL Trigger VCID.vi
- Query Protocol CAN Results BRS.vi
- Query Protocol CAN Results ESI.vi
- Query Protocol CAN-XL Results Acceptance.vi
- Query Protocol CAN-XL Results PCRC.vi
- Query Protocol CAN-XL Results SBC.vi
- Query Protocol CAN-XL Results Service Data Unit.vi
- Query Protocol CAN-XL Results SEC.vi
- Query Protocol CAN-XL Results VCID.vi
- Configure Logic Position.vi
- Configure Logic Size Of The Display.vi
- Configure Logic Digital Channel Vertical Position.vi
- Configure Logic Digital Channel Size Of The Display.vi
- Configure Frequency Response Analysis Autoscale.vi
- Frequency Response Analysis Calibration Start.vi
- Query Frequency Response Analysis Calibration Result.vi
- Configure Frequency Response Analysis Calibration State.vi
- Generator Save.vi
- Generator Recall.vi
- Generator Arbitrary Waveform Run Single.vi
- Configure Status Register Generator Temperature Enabled.vi

- Configure Status Register Generator Temperature Transition.vi
- Query Status Register Generator Temperature.vi
- Configure Status Register Generator G Overload Enabled.vi
- Configure Status Register Generator G Overload Transition.vi
- Query Status Register Generator G Overload.vi
- Load Waveform Generator Settings.vi
- Store Waveform Generator Settings.vi
- Configure Screenshot Filename.vi
- Configure Results Export FRA.vi
- Fetch Measurement Track Data Header.vi
- Fetch Measurement Track Data.vi
- Read Measurement Track Data.vi
- Configure Status Register Channel Warn Overload Enabled.vi
- Configure Status Register Channel Warn Overload Transition.vi
- Query Status Register Channel Warn Overload.vi
- Configure Status Register Channel PPS Enabled.vi
- Configure Status Register Channel PPS Transition.vi
- Query Status Register Channel PPS.vi

* Updated:

- Clear Measurement Statistics Results.vi - help fixed
- Configure Spectrum Scale Magnitude Unit.vi - Magnitude Unit values updated
- Query Protocol I2C Results Decode Table.vi - State values updated
- Configure Protocol CAN Trigger Frame Type.vi - Type values updated
- Configure Protocol CAN Trigger Data.vi - Data Pattern values updated
- Query Protocol CAN Results Frame.vi - State, Type values updated
- Configure Screenshot Color Settings.vi - removed Printer Color Set
- Configure Screenshot File Path.vi - changed attribute from RSMXO_ATTR_SCREENSHOT_DESTINATION to RSMXO_ATTR_SCREENSHOT_FILENAME

* Deleted:

- Measurement Clear.vi
- Configure Protocol CAN Trigger Standard.vi
- Configure Protocol CAN Trigger Byte Order.vi
- Query Protocol CAN Results Symbolic Label.vi
- Query Protocol CAN Results Standard.vi

2.4 Version 1.2.0 / 04 – 2023

- * Support for MXO44 FW 1.2.x
- * Added support for CAN Protocol (K520)
- * Added support for Frequency Response Analysis (K36)
- * Removed Repeated capability TriggerRepCap from UART/SPI/I2C Trigger settings.
- * New Core 7.5.0

* New:

- Vertical > Probe > Probe Information (Class)
- Vertical > Probe > Active Voltage Probes (Class)
- Vertical > Probe > Current Probes (Class)
- Trigger > Sequence (Class)
- Trigger > State (Class)
- Trigger > Pattern (Class)
- Gate (Class)
- Protocol > CAN (Class)
- Frequency Response Analysis (Class)

- Save/Recall > File Management (Class)
- Save/Recall > Directory Management (Class)
- Save/Recall > Results (Class)
- Status Reporting (Class)
- Configure Vertical Range.vi
- Configure Probe Predefined Type.vi
- Query Probe Impedance.vi
- Query Probe Capacitance.vi
- Query Probe Part Number.vi
- Query Probe Production Date.vi
- Query Probe Serial Number.vi
- Query Probe Software Version.vi
- Configure Probe CM Offset.vi
- Configure Probe RTZA15 Attenuator Enabled.vi
- Configure Probe Display.vi
- Configure Probe Sound Enabled.vi
- Configure Probe Bandwidth Limit Enabled.vi
- Configure Probe Voltage Range.vi
- Configure Probe Meter Enabled.vi
- Probe Meter Set To Offset.vi
- Configure Probe AC Coupling Enabled.vi
- Configure Probe Manual Gain.vi
- Query Probe Predefined Gain.vi
- Configure Probe Zero Adjust.vi
- Probe DeGauss.vi
- Probe Save To Probe.vi
- Query Probe Results Positive.vi
- Query Probe Results Negative.vi
- Configure Trigger Sequence Type.vi
- Configure Trigger Sequence Delay.vi
- Configure Trigger Sequence B Event Count.vi
- Configure Trigger Sequence Reset Settings.vi
- Configure Trigger State Slope.vi
- Configure Trigger State Operator.vi
- Configure Trigger State Channel.vi
- Configure Trigger Pattern Operator.vi
- Configure Trigger Pattern Channel.vi
- Configure Trigger Edge Level.vi
- Query Acquisition Current.vi
- Query Acquisition Average.vi
- Query Measurement Count.vi
- Configure Measurement Source 1.vi
- Configure Measurement Source 2.vi
- Configure Measurement Gate.vi
- Configure Measurement Envelope.vi
- Measurement Clear.vi
- Enable Measurement Statistics All Events.vi
- Configure Measurement Statistics Maximum Events.vi
- Configure Measurement Amplitude Time Edges Slope.vi
- Configure Measurement Amplitude Time Delay To Trigger.vi
- Query Results Event Count.vi
- Get Results Event Start.vi
- Get Results Event Stop.vi
- Get Results Event Value.vi
- Configure Gate Enabled.vi
- Configure Gate Display.vi
- Configure Gate Coupling Mode.vi
- Configure Gate Mode.vi
- Configure Gate Absolute Bounds.vi

- Configure Gate Relative Bounds.vi
- Configure Gate Cursor.vi
- Configure Gate Zoom Diagram.vi
- Cursor Disable All.vi
- Query Cursor Count.vi
- Configure Cursor Envelope.vi
- Configure Cursor Envelope 2.vi
- Configure Cursor Peak Search Threshold.vi
- Configure Cursor Peak Search Excursion.vi
- Configure Math Vertical Scale Mode.vi
- Query Math Signal Type.vi
- Configure Math Envelope Waveform Selection.vi
- Configure Protocol CAN Source.vi
- Configure Protocol CAN Type.vi
- Configure Protocol CAN Settings.vi
- Configure Protocol CAN Nominal Bit Rate.vi
- Configure Protocol CAN FD Settings.vi
- Configure Protocol CAN Trigger Type.vi
- Configure Protocol CAN Trigger Frame Type.vi
- Configure Protocol CAN Trigger Identifier Type.vi
- Configure Protocol CAN Trigger Identifier.vi
- Configure Protocol CAN Trigger Data.vi
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- Configure Protocol CAN Trigger Stuff Count Error Enabled.vi
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- Configure Protocol CAN Trigger Byte Order.vi
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- Query Protocol CAN Results Identifier.vi
- Query Protocol CAN Results ACK State.vi
- Query Protocol CAN Results ACK Value.vi
- Query Protocol CAN Results Byte State.vi
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- Query Protocol CAN Results DLC Value.vi
- Query Protocol CAN Results Bit Stuffing Error Position.vi
- Query Protocol CAN Results Form Error.vi
- Query Protocol CAN Results Data Bytes Number.vi
- Query Protocol CAN Results Data.vi
- Query Protocol CAN Results Pattern Data.vi
- Query Protocol CAN Results Symbolic Data.vi
- Query Protocol CAN Results Symbolic Data Export.vi
- Query Protocol CAN Results Symbolic Label.vi
- Query Protocol CAN Results Stuff Count Field.vi
- Query Protocol CAN Results Standard.vi
- Enable Frequency Response Analysis.vi
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- Configure Frequency Response Analysis Sweep Bounds.vi
- Configure Frequency Response Analysis Points Mode.vi
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- Configure Frequency Response Analysis Phase Settings.vi
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- Query Frequency Response Analysis Gain Margin.vi
- Query Frequency Response Analysis Phase Margin.vi
- Query Frequency Response Analysis Gain Data.vi
- Query Frequency Response Analysis Phase Data.vi
- Query Frequency Response Analysis Frequency Data.vi
- Query Frequency Response Analysis Marker Results.vi
- Configure Reference Waveform Vertical Offset.vi
- Save Instrument Settings File.vi
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- Query Drives Catalog.vi
- Query Memory Catalog Size.vi
- Query Memory Catalog.vi
- Delete File.vi
- Copy File.vi
- Move File.vi
- Configure File Attribute.vi
- Configure Default Directory.vi
- Create Directory.vi
- Delete Directory.vi
- Query Directory Catalog Size.vi
- Query Directory Catalog.vi
- Configure Results Export Settings.vi
- Configure Results Export File Name.vi
- Results Export Save To File.vi
- Configure System Date.vi
- Query System Date.vi
- Configure System Time.vi
- Query System Time.vi
- Add Smart Grid Layout.vi
- Query Smart Grid Layout Count.vi
- Configure Smart Grid Layout Active.vi
- Add Smart Grid Diagram.vi
- Query Smart Grid Diagram Count.vi
- Configure Smart Grid Diagram Source.vi
- Enable Auto Power Up.vi
- Configure Autosave Settings.vi
- Status Register Reset.vi
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- Configure Status Register Channel Negative Clipping Transition.vi
- Query Status Register Channel Negative Clipping.vi
- Configure Status Register Channel Positive Clipping Enabled.vi
- Configure Status Register Channel Positive Clipping Transition.vi

- Query Status Register Channel Positive Clipping.vi
- Configure Status Register Channel Overload Enabled.vi
- Configure Status Register Channel Overload Transition.vi
- Query Status Register Channel Overload.vi
- Query Status Register Channel Warn Overload Event.vi
- Configure Status Register Measurement Imprecise Enabled.vi
- Configure Status Register Measurement Imprecise Transition.vi
- Query Status Register Measurement Imprecise.vi
- Configure Status Register Measurement Limit Enabled.vi
- Configure Status Register Measurement Limit Transition.vi
- Query Status Register Measurement Limit.vi
- Configure Status Register Measurement Margin Enabled.vi
- Configure Status Register Measurement Margin Transition.vi
- Query Status Register Measurement Margin.vi
- Configure Protocol UART Trigger Data Position.vi
- Run Single Acquisition No Wait.vi

* Deleted:

- Save/Recall > Report (Class)
- Configure Cursor Result Dialog Default.vi
- Configure Generator Source.vi
- Configure Probe Meter Visibility.vi
- Configure Screenshot Orientation.vi
- Configure Spectrum Scale Vertical Offset.vi
- Determine Protocol Threshold.vi
- Execute Self Test.vi
- Trigger Edge Ground.vi
- Query Self Test State.vi
- Use Horizontal Reference Clock External.vi
- Query with OPC sync.vi

* Updated:

- Protocol > SPI > Trigger (Class) - Trigger repcap removed, breaking change
- Protocol > I2C > Trigger (Class) - Trigger repcap removed, breaking change
- Protocol > UART > Trigger (Class) - Trigger repcap removed, breaking change
- Configure Vertical Bandwidth.vi - Values added
- Enable Horizontal Reference Clock 10 MHz Output.vi - Long command updated
- Configure Trigger Source.vi - Source values updated
- Configure Trigger Setup And Hold Clock Source.vi - Source values updated
- Configure Measurement Source.vi - Source values updated
- Clear Measurement Statistics Results.vi - Repcap removed, breaking change
- Configure Measurement Amplitude Time Delay Slope.vi - Command updated, repcap added
- Configure Cursor Source.vi - Source values updated
- Configure Cursor Secondary Source.vi - Source values updated
- Configure Spectrum Source.vi - Source control updated
- Configure Math Vertical Axis.vi - Scale parameter long command updated
- Configure Protocol Type.vi - CAN protocol added
- Configure Protocol Display Settings.vi - Formats added
- Configure Protocol I2C SDA Source.vi - Source values updated
- Configure Protocol I2C SCL Source.vi - Source values updated
- Configure Protocol I2C Filter Condition.vi - Condition parameter updated
- Configure Protocol I2C Filter Index.vi - Index updated
- Configure Protocol I2C Trigger Address Settings.vi - Address type parameter updated
- Configure Protocol I2C Trigger Data.vi - Data parameter updated
- Configure Protocol SPI MOSI Source.vi - Source values updated
- Configure Protocol SPI MISO Source.vi - Source values updated
- Configure Protocol SPI SCLK Source.vi - Source values updated
- Configure Protocol SPI CS Source.vi - Source values updated
- Configure Protocol SPI Filter Index.vi - Index parameter updated

- Configure Protocol SPI Filter Condition.vi - Condition parameter updated
- Configure Protocol SPI Trigger Data.vi - Data parameter removed
- Configure Protocol UART TX Source.vi - Source values updated
- Configure Protocol UART RX Source.vi - Source values updated
- Configure Protocol UART Filter Index.vi - Index parameter updated
- Configure Protocol UART Filter Condition.vi - Condition parameter updated
- Configure Protocol UART Trigger Data.vi - Data parameter updated
- Configure Protocol UART Trigger Operator.vi - Operator parameter updated
- Configure Logic Bus Data Format.vi - Data format values added
- Configure Reference Waveform Setup.vi - Source values updated
- Configure Generator Modulation Setup.vi - State parameter removed, breaking change
- Configure Screenshot Color Settings.vi - Display Color, Hardcopy Output parameters removed, breaking change
- Configure Screenshot File Path.vi - Hardcopy Output parameter removed, breaking change
- Save Screenshot.vi - Hardcopy Output parameter removed, breaking change
- Save Screenshot Next.vi - Hardcopy Output parameter removed, breaking change
- Configure Waveform Export Settings.vi - Source values updated
- Configure Bitpattern Format.vi - Format values added
- Configure Results Maximum Count.vi - Measurement types fixed
- Show Results Labels.vi - Measurement types fixed
- Show Results Frequency.vi - Measurement types fixed
- Fetch Measurement Reliability.vi - Measurement types fixed
- Configure Generator Arbitrary Signal Source.vi - Generator rep cap removed, breaking change
- Configure Generator Arbitrary Waveform Source.vi - Generator rep cap removed, breaking change
- Run Single Acquisition.vi - added 'Timeout in ms' parameter, breaking change
- Execute Alignment.vi - added 'Timeout in ms' parameter, breaking change

* Modified attributes:

- RSMXO_ATTR_PROTOCOL_I2C_TRIGGER_ADDRESS - Trigger repcap removed
- RSMXO_ATTR_PROTOCOL_I2C_TRIGGER_ADDRESS_MAX - Trigger repcap removed
- RSMXO_ATTR_PROTOCOL_I2C_TRIGGER_ADDRESS_MIN - Trigger repcap removed
- RSMXO_ATTR_PROTOCOL_I2C_TRIGGER_ADDRESS_NACK - Trigger repcap removed
- RSMXO_ATTR_PROTOCOL_I2C_TRIGGER_ADDRESS_TYPE - Trigger repcap removed
- RSMXO_ATTR_PROTOCOL_I2C_TRIGGER_DATA - Trigger repcap removed
- RSMXO_ATTR_PROTOCOL_I2C_TRIGGER_DATA_MIN - Trigger repcap removed
- RSMXO_ATTR_PROTOCOL_I2C_TRIGGER_DATA_POSITION - Trigger repcap removed
- RSMXO_ATTR_PROTOCOL_I2C_TRIGGER_DATA_READ_NACK - Trigger repcap removed
- RSMXO_ATTR_PROTOCOL_I2C_TRIGGER_DATA_WRITE_NACK - Trigger repcap removed
- RSMXO_ATTR_PROTOCOL_I2C_TRIGGER_R_W_BIT - Trigger repcap removed
- RSMXO_ATTR_PROTOCOL_I2C_TRIGGER_TYPE - Trigger repcap removed
- RSMXO_ATTR_PROTOCOL_UART_TRIGGER_DATA - Trigger repcap removed, range table updated
- RSMXO_ATTR_PROTOCOL_UART_TRIGGER_DATA_POSITION - Trigger repcap removed
- RSMXO_ATTR_PROTOCOL_UART_TRIGGER_OPERATOR - Trigger repcap removed, range table updated
- RSMXO_ATTR_PROTOCOL_UART_TRIGGER_PATTERN - Trigger repcap removed
- RSMXO_ATTR_PROTOCOL_UART_TRIGGER_SOURCE - Trigger repcap removed
- RSMXO_ATTR_PROTOCOL_UART_TRIGGER_TYPE - Trigger repcap removed
- RSMXO_ATTR_PROTOCOL_SPI_TRIGGER_DATA - Trigger repcap removed
- RSMXO_ATTR_PROTOCOL_SPI_TRIGGER_DATA_PATTERN - Trigger repcap removed
- RSMXO_ATTR_PROTOCOL_SPI_TRIGGER_DATA_POSITION - Trigger repcap removed
- RSMXO_ATTR_PROTOCOL_SPI_TRIGGER_SEARCH_MODE - Trigger repcap removed
- RSMXO_ATTR_PROTOCOL_SPI_TRIGGER_TYPE - Trigger repcap removed
- RSMXO_ATTR_GENERATOR_ARBITRARY_WAVEFORM_SOURCE - Repcap removed
- RSMXO_ATTR_GENERATOR_ARBITRARY_SIGNAL_SOURCE - Repcap removed
- RSMXO_ATTR_MEASUREMENT_STATISTICS_CLEAR_RESULTS - Repcap removed
- RSMXO_ATTR_MEASUREMENT_AMPLITUDE_TIME_DELAY_SLOPE - Command updated, repcap added

- RSMXO_ATTR_HORIZONTAL_REFERENCE_CLOCK_OUTPUT_10_MHZ_ENABLED - Command updated, added OPC-sync
- RSMXO_ATTR_VERTICAL_BANDWIDTH - 2 GHz value added
- RSMXO_ATTR_MATH_VERTICAL_SCALE - Long command updated
- RSMXO_ATTR_TRIGGER_SOURCE - Added new source value
- RSMXO_ATTR_TRIGGER_SETUP_AND_HOLD_CLOCK_SOURCE - Added new source value
- RSMXO_ATTR_CURSOR_SOURCE - Source range table updated
- RSMXO_ATTR_CURSOR_SOURCE_2 - Source range table updated
- RSMXO_ATTR_SPECTRUM_SOURCE - Source range table updated
- RSMXO_ATTR_REFERENCE_WAVEFORM_SOURCE - Source range table updated
- RSMXO_ATTR_WAVEFORM_EXPORT_SOURCE - Source range table updated
- RSMXO_ATTR_PROTOCOL_I2C_SCL_SOURCE - Source range table updated
- RSMXO_ATTR_PROTOCOL_I2C_SDA_SOURCE - Source range table updated
- RSMXO_ATTR_PROTOCOL_SPI_MISO_SOURCE - Source range table updated
- RSMXO_ATTR_PROTOCOL_SPI_MOSI_SOURCE - Source range table updated
- RSMXO_ATTR_PROTOCOL_SPI_SCLK_SOURCE - Source range table updated
- RSMXO_ATTR_PROTOCOL_SPI_CS_SOURCE - Source range table updated
- RSMXO_ATTR_PROTOCOL_UART_RX_SOURCE - Source range table updated
- RSMXO_ATTR_PROTOCOL_UART_TX_SOURCE - Source range table updated
- RSMXO_ATTR_PROTOCOL_SPI_FILTER_CONDITION - Range table fixed
- RSMXO_ATTR_PROTOCOL_UART_FILTER_CONDITION - Range table fixed
- RSMXO_ATTR_PROTOCOL_I2C_FILTER_CONDITION - Range table fixed
- RSMXO_ATTR_PROTOCOL_SPI_FILTER_INDEX - Value added to the range table
- RSMXO_ATTR_PROTOCOL_I2C_FILTER_INDEX - Value added to the range table
- RSMXO_ATTR_PROTOCOL_UART_FILTER_INDEX - Value added to the range table
- RSMXO_ATTR_PROTOCOL_TYPE - CAN protocol added
- RSMXO_ATTR_PROTOCOL_DATA_FORMAT - Formats added
- RSMXO_ATTR_REMOTE_BITPATTERN_FORMAT - Formats added
- RSMXO_ATTR_LOGIC_BUS_DATA_FORMAT - Formats added
- RSMXO_ATTR_MEASUREMENT_TYPE - Measurement types fixed
- RSMXO_ATTR_TRIGGER_HYSTERESIS_MODE - OPC-sync added
- RSMXO_ATTR_TRIGGER_HYSTERESIS_SIZE_MODE - OPC-sync added
- Vertical Show Channel (RSMXO_ATTR_VERTICAL_SHOW_CHANNEL) - Added OPC-sync
- Vertical Scale (RSMXO_ATTR_VERTICAL_SCALE) - Removed range table
- Vertical Offset (RSMXO_ATTR_VERTICAL_OFFSET) - Removed range table
- Vertical Skew (RSMXO_ATTR_VERTICAL_SKEW) - Removed range table
- Vertical Position (RSMXO_ATTR_VERTICAL_POSITION) - Removed range table
- Vertical Coupling (RSMXO_ATTR_VERTICAL_COUPLING) - Added OPC-sync
- Vertical Invert Channel (RSMXO_ATTR_VERTICAL_INVERT_CHANNEL) - Added OPC-sync
- Vertical Bandwidth (RSMXO_ATTR_VERTICAL_BANDWIDTH) - Added OPC-sync
- Vertical External Attenuation Scale (RSMXO_ATTR_VERTICAL_EXTERNAL_ATTENUATION_SCALE) - Added OPC-sync
- Vertical External Attenuation (RSMXO_ATTR_VERTICAL_EXTERNAL_ATTENUATION) - Removed range table, added OPC-sync
- Vertical Power Calculation Impedance (RSMXO_ATTR_VERTICAL_POWER_CALCULATION_IMPEDANCE) - Removed range table
- Probe Vertical Unit (RSMXO_ATTR_PROBE_VERTICAL_UNIT) - Added OPC-sync
- Probe Auto Attenuation (RSMXO_ATTR_PROBE_AUTO_ATTENUATION) - Removed range table
- Probe Manual Attenuation (RSMXO_ATTR_PROBE_MANUAL_ATTENUATION) - Removed range table
- Probe Set Offset To Mean (RSMXO_ATTR_PROBE_SET_OFFSET_TO_MEAN) - Added OPC-sync
- Probe Auto Zero (RSMXO_ATTR_PROBE_AUTO_ZERO) - Added OPC-sync
- Horizontal Time Scale (RSMXO_ATTR_HORIZONTAL_TIME_SCALE) - Removed range table, added OPC-sync
- Horizontal Timebase Range (RSMXO_ATTR_HORIZONTAL_TIMEBASE_RANGE) - Added OPC-sync
- Zoom State (RSMXO_ATTR_ZOOM_STATE) - Added OPC-sync
- Trigger Glitch Width (RSMXO_ATTR_TRIGGER_GLITCH_WIDTH) - Removed range table
- Trigger Width Width (RSMXO_ATTR_TRIGGER_WIDTH_WIDTH) - Removed range table

- Trigger Runt Width (RSMXO_ATTR_TRIGGER_RUNT_WIDTH) - Removed range table
- Trigger Window Width (RSMXO_ATTR_TRIGGER_WINDOW_WIDTH) - Removed range table
- Trigger Interval Width (RSMXO_ATTR_TRIGGER_INTERVAL_WIDTH) - Removed range table
- Trigger Setup And Hold Hold Time (RSMXO_ATTR_TRIGGER_SETUP_AND_HOLD_HOLD_TIME) - Removed range table
- Trigger Setup And Hold SetupTime (RSMXO_ATTR_TRIGGER_SETUP_AND_HOLD_SETUPTIME) - Removed range table
- Trigger Holdoff Events (RSMXO_ATTR_TRIGGER_HOLDOFF_EVENTS) - Removed range table
- Trigger Holdoff Minimum Time (RSMXO_ATTR_TRIGGER_HOLDOFF_MINIMUM_TIME) - Removed range table
- Trigger Holdoff Maximum Time (RSMXO_ATTR_TRIGGER_HOLDOFF_MAXIMUM_TIME) - Removed range table
- Trigger Filter RF Reject BW (RSMXO_ATTR_TRIGGER_FILTER_RF_REJECT_BW) - Removed range table
- Trigger Action Delay (RSMXO_ATTR_TRIGGER_ACTION_DELAY) - Removed range table
- Acquisition High Definition Bandwidth (RSMXO_ATTR_ACQUISITION_HIGH_DEFINITION_BANDWIDTH) - Removed range table
- Acquisition History Display Time (RSMXO_ATTR_ACQUISITION_HISTORY_DISPLAY_TIME) - Removed range table
- Measurement Enabled (RSMXO_ATTR_MEASUREMENT_ENABLED) - Added OPC-sync
- Measurement Type (RSMXO_ATTR_MEASUREMENT_TYPE) - Added OPC-sync
- Measurement Statistics Enabled (RSMXO_ATTR_MEASUREMENT_STATISTICS_ENABLED) - Added OPC-sync
- Measurement Statistics Clear Results (RSMXO_ATTR_MEASUREMENT_STATISTICS_CLEAR_RESULTS) - Added OPC-sync
- Reference Level Mode (RSMXO_ATTR_REFERENCE_LEVEL_MODE) - Added OPC-sync
- Reference Level Absolute Lower (RSMXO_ATTR_REFERENCE_LEVEL_ABSOLUTE_LOWER) - Removed range table
- Reference Level Absolute Middle (RSMXO_ATTR_REFERENCE_LEVEL_ABSOLUTE_MIDDLE) - Removed range table
- Reference Level Absolute Upper (RSMXO_ATTR_REFERENCE_LEVEL_ABSOLUTE_UPPER) - Removed range table
- Measurement Results Statistics Current (RSMXO_ATTR_MEASUREMENT_RESULTS_STATISTICS_CURRENT) - Added OPC-sync
- Measurement Results Statistics Max (RSMXO_ATTR_MEASUREMENT_RESULTS_STATISTICS_MAX) - Added OPC-sync
- Measurement Results Statistics Min (RSMXO_ATTR_MEASUREMENT_RESULTS_STATISTICS_MIN) - Added OPC-sync
- Measurement Results Statistics Mean (RSMXO_ATTR_MEASUREMENT_RESULTS_STATISTICS_MEAN) - Added OPC-sync
- Measurement Results Statistics RMS (RSMXO_ATTR_MEASUREMENT_RESULTS_STATISTICS_RMS) - Added OPC-sync
- Measurement Results Statistics Standard Deviation (RSMXO_ATTR_MEASUREMENT_RESULTS_STATISTICS_STANDARD_DEVIATION) - Added OPC-sync
- Cursor Show (RSMXO_ATTR_CURSOR_SHOW) - Added OPC-sync
- Cursor Style (RSMXO_ATTR_CURSOR_STYLE) - Added OPC-sync
- Cursor Source (RSMXO_ATTR_CURSOR_SOURCE) - Added OPC-sync
- Cursor Source 2 Enabled (RSMXO_ATTR_CURSOR_SOURCE_2_ENABLED) - Added OPC-sync
- Cursor Source 2 (RSMXO_ATTR_CURSOR_SOURCE_2) - Added OPC-sync
- Cursor X1 Position (RSMXO_ATTR_CURSOR_X1_POSITION) - Added OPC-sync
- Cursor X2 Position (RSMXO_ATTR_CURSOR_X2_POSITION) - Added OPC-sync
- Cursor Y1 Position (RSMXO_ATTR_CURSOR_Y1_POSITION) - Added OPC-sync
- Cursor Y2 Position (RSMXO_ATTR_CURSOR_Y2_POSITION) - Added OPC-sync
- Cursor Track Waveform (RSMXO_ATTR_CURSOR_TRACK_WAVEFORM) - Added OPC-sync
- Cursor Advanced X Coupling (RSMXO_ATTR_CURSOR_ADVANCED_X_COUPLING) - Added OPC-sync
- Cursor Advanced Y Coupling (RSMXO_ATTR_CURSOR_ADVANCED_Y_COUPLING) - Added OPC-sync

- Cursor Advanced Show In All Diagrams
(RSMXO_ATTR_CURSOR_ADVANCED_SHOW_IN_ALL_DIAGRAMS) - Added OPC-sync
- Cursor Advanced Result Dialog Default
(RSMXO_ATTR_CURSOR_ADVANCED_RESULT_DIALOG_DEFAULT) - Added OPC-sync
- Cursor Advanced Show Label (RSMXO_ATTR_CURSOR_ADVANCED_SHOW_LABEL) - Added OPC-sync
- Cursor Peak Search Center Frequency
(RSMXO_ATTR_CURSOR_PEAK_SEARCH_CENTER_FREQUENCY) - Added OPC-sync
- Cursor Peak Search Absolute Peak
(RSMXO_ATTR_CURSOR_PEAK_SEARCH_ABSOLUTE_PEAK) - Added OPC-sync
- Cursor Peak Search Next (RSMXO_ATTR_CURSOR_PEAK_SEARCH_NEXT) - Added OPC-sync
- Cursor Peak Search Next Peak Left
(RSMXO_ATTR_CURSOR_PEAK_SEARCH_NEXT_PEAK_LEFT) - Added OPC-sync
- Cursor Peak Search Next Peak Right
(RSMXO_ATTR_CURSOR_PEAK_SEARCH_NEXT_PEAK_RIGHT) - Added OPC-sync
- Cursor Peak Search Set Center To Cursor
(RSMXO_ATTR_CURSOR_PEAK_SEARCH_SET_CENTER_TO_CURSOR) - Added OPC-sync
- Cursor Results Delta Y Inverse (RSMXO_ATTR_CURSOR_RESULTS_DELTA_Y_INVERSE) - Added OPC-sync
- Spectrum Display Enabled (RSMXO_ATTR_SPECTRUM_DISPLAY) - Added OPC-sync
- Spectrum Source (RSMXO_ATTR_SPECTRUM_SOURCE) - Added OPC-sync
- Spectrum RBW (RSMXO_ATTR_SPECTRUM_RBW) - Removed range table
- Spectrum Span RBW Ratio (RSMXO_ATTR_SPECTRUM_SPAN_RBW_RATIO) - Removed range table
- Spectrum Traces Normal Enabled (RSMXO_ATTR_SPECTRUM_TRACES_NORMAL_ENABLED) - Added OPC-sync
- Spectrum Traces Min Hold Enabled (RSMXO_ATTR_SPECTRUM_TRACES_MIN_HOLD_ENABLED) - Added OPC-sync
- Spectrum Traces Max Hold Enabled
(RSMXO_ATTR_SPECTRUM_TRACES_MAX_HOLD_ENABLED) - Added OPC-sync
- Spectrum Traces Average Enabled (RSMXO_ATTR_SPECTRUM_TRACES_AVERAGE_ENABLED) - Added OPC-sync
- Spectrum Preset (RSMXO_ATTR_SPECTRUM_PRESET) - Added OPC-sync
- Spectrum Window Type (RSMXO_ATTR_SPECTRUM_WINDOW_TYPE) - Added OPC-sync
- Spectrum Scale Vertical Range (RSMXO_ATTR_SPECTRUM_SCALE_VERTICAL_RANGE) - Removed range table
- Spectrum Scale Vertical Maximum (RSMXO_ATTR_SPECTRUM_SCALE_VERTICAL_MAXIMUM) - Removed range table
- Spectrum Scale Vertical Scale (RSMXO_ATTR_SPECTRUM_SCALE_VERTICAL_SCALE) - Removed range table, added OPC-sync
- Spectrum Scale Vertical Offset (RSMXO_ATTR_SPECTRUM_SCALE_VERTICAL_OFFSET) - Removed range table, added OPC-sync
- Spectrum Gate Start (RSMXO_ATTR_SPECTRUM_GATE_START) - Removed range table
- Spectrum Gate Stop (RSMXO_ATTR_SPECTRUM_GATE_STOP) - Removed range table
- Spectrum Gate Position (RSMXO_ATTR_SPECTRUM_GATE_POSITION) - Removed range table
- Spectrum Gate Width (RSMXO_ATTR_SPECTRUM_GATE_WIDTH) - Removed range table
- Spectrum Peak List Show Table (RSMXO_ATTR_SPECTRUM_PEAK_LIST_SHOW_TABLE) - Added OPC-sync
- Spectrum Peak List Frame Type (RSMXO_ATTR_SPECTRUM_PEAK_LIST_FRAME_TYPE) - Added OPC-sync
- Spectrum Peak List Threshold (RSMXO_ATTR_SPECTRUM_PEAK_LIST_THRESHOLD) - Added OPC-sync
- Spectrum Peak List Peak Excursion
(RSMXO_ATTR_SPECTRUM_PEAK_LIST_PEAK_EXCURSION) - Added OPC-sync
- Spectrum Peak List Max Results (RSMXO_ATTR_SPECTRUM_PEAK_LIST_MAX_RESULTS) - Added OPC-sync
- Spectrum Peak List Result Mode (RSMXO_ATTR_SPECTRUM_PEAK_LIST_RESULT_MODE) - Added OPC-sync

- Spectrum Peak List Source (RSMXO_ATTR_SPECTRUM_PEAK_LIST_SOURCE) - Added OPC-sync
- Math Display (RSMXO_ATTR_MATH_DISPLAY) - Added OPC-sync
- Math Expression (RSMXO_ATTR_MATH_EXPRESSION) - Added OPC-sync
- Math Vertical Scale (RSMXO_ATTR_MATH_VERTICAL_SCALE) - Removed range table, added OPC-sync
- Math Vertical Offset (RSMXO_ATTR_MATH_VERTICAL_OFFSET) - Removed range table, added OPC-sync
- Protocol Serial Bus Enabled (RSMXO_ATTR_PROTOCOL_SERIAL_BUS_ENABLED) - Added OPC-sync
- Protocol Type (RSMXO_ATTR_PROTOCOL_TYPE) - Added OPC-sync
- Protocol Show Decode Table (RSMXO_ATTR_PROTOCOL_SHOW_DECODE_TABLE) - Added OPC-sync
- Protocol Data Format (RSMXO_ATTR_PROTOCOL_DATA_FORMAT) - Added OPC-sync
- Protocol Zoom Coupling (RSMXO_ATTR_PROTOCOL_ZOOM_COUPLING) - Added OPC-sync
- Protocol Show Threshold Lines (RSMXO_ATTR_PROTOCOL_SHOW_THRESHOLD_LINES) - Added OPC-sync
- Protocol Determine Threshold (RSMXO_ATTR_PROTOCOL_DETERMINE_THRESHOLD) - Added OPC-sync
- Protocol Set Reference Levels (RSMXO_ATTR_PROTOCOL_SET_REFERENCE_LEVELS) - Added OPC-sync
- Protocol I2C SDA Source (RSMXO_ATTR_PROTOCOL_I2C_SDA_SOURCE) - Added OPC-sync
- Protocol I2C SCL Source (RSMXO_ATTR_PROTOCOL_I2C_SCL_SOURCE) - Added OPC-sync
- Protocol I2C Filter Enabled (RSMXO_ATTR_PROTOCOL_I2C_FILTER_ENABLED) - Added OPC-sync
- Protocol I2C Filter Frame Enabled (RSMXO_ATTR_PROTOCOL_I2C_FILTER_FRAME_ENABLED) - Added OPC-sync
- Protocol I2C Filter Field Enabled (RSMXO_ATTR_PROTOCOL_I2C_FILTER_FIELD_ENABLED) - Added OPC-sync
- Protocol I2C Trigger Type (RSMXO_ATTR_PROTOCOL_I2C_TRIGGER_TYPE) - Added OPC-sync
- Protocol I2C Trigger Address Type (RSMXO_ATTR_PROTOCOL_I2C_TRIGGER_ADDRESS_TYPE) - Added OPC-sync
- Protocol SPI MOSI Source (RSMXO_ATTR_PROTOCOL_SPI_MOSI_SOURCE) - Added OPC-sync
- Protocol SPI MISO Source (RSMXO_ATTR_PROTOCOL_SPI_MISO_SOURCE) - Added OPC-sync
- Protocol SPI SCLK Source (RSMXO_ATTR_PROTOCOL_SPI_SCLK_SOURCE) - Added OPC-sync
- Protocol SPI CS Source (RSMXO_ATTR_PROTOCOL_SPI_CS_SOURCE) - Added OPC-sync
- Protocol SPI Timeout (RSMXO_ATTR_PROTOCOL_SPI_TIMEOUT) - Added OPC-sync
- Protocol SPI Filter Enabled (RSMXO_ATTR_PROTOCOL_SPI_FILTER_ENABLED) - Added OPC-sync
- Protocol SPI Filter Frame Enabled (RSMXO_ATTR_PROTOCOL_SPI_FILTER_FRAME_ENABLED) - Added OPC-sync
- Protocol SPI Filter Field Enabled (RSMXO_ATTR_PROTOCOL_SPI_FILTER_FIELD_ENABLED) - Added OPC-sync
- Protocol SPI Trigger Type (RSMXO_ATTR_PROTOCOL_SPI_TRIGGER_TYPE) - Added OPC-sync
- Protocol UART Polarity (RSMXO_ATTR_PROTOCOL_UART_POLARITY) - Added OPC-sync
- Protocol UART RX Source (RSMXO_ATTR_PROTOCOL_UART_RX_SOURCE) - Added OPC-sync
- Protocol UART TX Source (RSMXO_ATTR_PROTOCOL_UART_TX_SOURCE) - Added OPC-sync
- Protocol UART Timeout (RSMXO_ATTR_PROTOCOL_UART_TIMEOUT) - Added OPC-sync
- Protocol UART Filter Enabled (RSMXO_ATTR_PROTOCOL_UART_FILTER_ENABLED) - Added OPC-sync
- Protocol UART Filter Frame Enabled (RSMXO_ATTR_PROTOCOL_UART_FILTER_FRAME_ENABLED) - Added OPC-sync
- Protocol UART Filter Field Enabled (RSMXO_ATTR_PROTOCOL_UART_FILTER_FIELD_ENABLED) - Added OPC-sync
- Protocol UART Filter Error Enabled (RSMXO_ATTR_PROTOCOL_UART_FILTER_ERROR_ENABLED) - Added OPC-sync
- Protocol UART Trigger Type (RSMXO_ATTR_PROTOCOL_UART_TRIGGER_TYPE) - Added OPC-sync

- Protocol UART Trigger Source (RSMXO_ATTR_PROTOCOL_UART_TRIGGER_SOURCE) - Added OPC-sync
- Protocol Export Save (RSMXO_ATTR_PROTOCOL_EXPORT_SAVE) - Added OPC-sync
- Logic State (RSMXO_ATTR_LOGIC_STATE) - Added OPC-sync
- Logic Show Digital Signals (RSMXO_ATTR_LOGIC_SHOW_DIGITAL_SIGNALS) - Added OPC-sync
- Logic Technology (RSMXO_ATTR_LOGIC_TECHNOLOGY) - Added OPC-sync
- Logic Level Coupling (RSMXO_ATTR_LOGIC_LEVEL_COUPLING) - Added OPC-sync
- Logic Skew (RSMXO_ATTR_LOGIC_SKEW) - Added OPC-sync
- Logic Clear (RSMXO_ATTR_LOGIC_CLEAR) - Added OPC-sync
- Logic Bus Show (RSMXO_ATTR_LOGIC_BUS_SHOW) - Added OPC-sync
- Logic Bus Data Format (RSMXO_ATTR_LOGIC_BUS_DATA_FORMAT) - Added OPC-sync
- Logic Bit State (RSMXO_ATTR_LOGIC_BIT_STATE) - Added OPC-sync
- Logic Bus Clocked Enabled (RSMXO_ATTR_LOGIC_BUS_CLOCKED_ENABLED) - Added OPC-sync
- Logic Bus Clocked Source (RSMXO_ATTR_LOGIC_BUS_CLOCKED_SOURCE) - Added OPC-sync
- Digital Channel State (RSMXO_ATTR_DIGITAL_CHANNEL_STATE) - Added OPC-sync
- Reference Waveform Show (RSMXO_ATTR_REFERENCE_WAVEFORM_SHOW) - Added OPC-sync
- Reference Waveform Source (RSMXO_ATTR_REFERENCE_WAVEFORM_SOURCE) - Added OPC-sync
- Reference Waveform Name (RSMXO_ATTR_REFERENCE_WAVEFORM_NAME) - Added OPC-sync
- Reference Waveform Create/Update (RSMXO_ATTR_REFERENCE_WAVEFORM_CREATE_UPDATE) - Added OPC-sync
- Reference Waveform Reset (RSMXO_ATTR_REFERENCE_WAVEFORM_RESET) - Added OPC-sync
- Reference Waveform Save (RSMXO_ATTR_REFERENCE_WAVEFORM_SAVE) - Added OPC-sync
- Reference Waveform Open (RSMXO_ATTR_REFERENCE_WAVEFORM_OPEN) - Added OPC-sync
- Reference Waveform Clear (RSMXO_ATTR_REFERENCE_WAVEFORM_CLEAR) - Added OPC-sync
- Reference Waveform Vertical Mode (RSMXO_ATTR_REFERENCE_WAVEFORM_VERTICAL_MODE) - Added OPC-sync
- Reference Waveform Vertical Reset (RSMXO_ATTR_REFERENCE_WAVEFORM_VERTICAL_RESET) - Added OPC-sync
- Reference Waveform Vertical Scale (RSMXO_ATTR_REFERENCE_WAVEFORM_VERTICAL_SCALE) - Removed range table
- Reference Waveform Vertical Position (RSMXO_ATTR_REFERENCE_WAVEFORM_VERTICAL_POSITION) - Removed range table
- Reference Waveform Rescale Vertical Enabled (RSMXO_ATTR_REFERENCE_WAVEFORM_RESCALE_VERTICAL_ENABLED) - Added OPC-sync
- Reference Waveform Rescale Vertical Scale Factor (RSMXO_ATTR_REFERENCE_WAVEFORM_RESCALE_VERTICAL_SCALE_FACTOR) - Removed range table
- Reference Waveform Rescale Vertical Offset (RSMXO_ATTR_REFERENCE_WAVEFORM_RESCALE_VERTICAL_OFFSET) - Removed range table
- Reference Waveform Rescale Horizontal Mode (RSMXO_ATTR_REFERENCE_WAVEFORM_RESCALE_HORIZONTAL_MODE) - Added OPC-sync
- Reference Waveform Rescale Horizontal Enable (RSMXO_ATTR_REFERENCE_WAVEFORM_RESCALE_HORIZONTAL_ENABLE) - Added OPC-sync
- Reference Waveform Rescale Horizontal Scale Factor (RSMXO_ATTR_REFERENCE_WAVEFORM_RESCALE_HORIZONTAL_SCALE_FACTOR) - Removed range table
- Reference Waveform Rescale Horizontal Offset (RSMXO_ATTR_REFERENCE_WAVEFORM_RESCALE_HORIZONTAL_OFFSET) - Removed range table
- Generator State (RSMXO_ATTR_GENERATOR_STATE) - Added OPC-sync
- Generator Source (RSMXO_ATTR_GENERATOR_SOURCE) - Added OPC-sync

- Generator Inversion Enabled (RSMXO_ATTR_GENERATOR_INVERSION_ENABLED) - Added OPC-sync
- Generator Function Type (RSMXO_ATTR_GENERATOR_FUNCTION_TYPE) - Added OPC-sync
- Generator Frequency (RSMXO_ATTR_GENERATOR_FREQUENCY) - Added OPC-sync
- Generator Amplitude (RSMXO_ATTR_GENERATOR_AMPLITUDE) - Removed range table, added OPC-sync
- Generator Offset (RSMXO_ATTR_GENERATOR_OFFSET) - Removed range table, added OPC-sync
- Generator Symmetry (RSMXO_ATTR_GENERATOR_SYMMETRY) - Added OPC-sync
- Generator Period (RSMXO_ATTR_GENERATOR_PERIOD) - Removed range table
- Generator Pulse Width (RSMXO_ATTR_GENERATOR_PULSE_WIDTH) - Removed range table
- Generator Noise DC Level (RSMXO_ATTR_GENERATOR_NOISE_DC_LEVEL) - Removed range table
- Generator DC Level (RSMXO_ATTR_GENERATOR_DC_LEVEL) - Removed range table
- Generator Low Voltage (RSMXO_ATTR_GENERATOR_LOW_VOLTAGE) - Removed range table
- Generator User Load (RSMXO_ATTR_GENERATOR_USER_LOAD) - Added OPC-sync
- Generator Default Setup (RSMXO_ATTR_GENERATOR_DEFAULT_SETUP) - Added OPC-sync
- Generator Copy Settings (RSMXO_ATTR_GENERATOR_COPY_SETTINGS) - Added OPC-sync
- Generator Sweep State (RSMXO_ATTR_GENERATOR_SWEEP_STATE) - Added OPC-sync
- Generator Sweep Type (RSMXO_ATTR_GENERATOR_SWEEP_TYPE) - Added OPC-sync
- Generator Sweep Start Frequency (RSMXO_ATTR_GENERATOR_SWEEP_START_FREQUENCY) - Removed range table
- Generator Sweep Stop Frequency (RSMXO_ATTR_GENERATOR_SWEEP_STOP_FREQUENCY) - Removed range table
- Generator Sweep Time (RSMXO_ATTR_GENERATOR_SWEEP_TIME) - Removed range table
- Generator Modulation State (RSMXO_ATTR_GENERATOR_MODULATION_STATE) - Added OPC-sync
- Generator Modulation Type (RSMXO_ATTR_GENERATOR_MODULATION_TYPE) - Added OPC-sync
- Generator Modulation Carrier Frequency (RSMXO_ATTR_GENERATOR_MODULATION_CARRIER_FREQUENCY) - Removed range table
- Generator Modulation AM Frequency (RSMXO_ATTR_GENERATOR_MODULATION_AM_FREQUENCY) - Removed range table
- Generator Modulation AM Signal Type (RSMXO_ATTR_GENERATOR_MODULATION_AM_SIGNAL_TYPE) - Added OPC-sync
- Generator Modulation PWM Frequency (RSMXO_ATTR_GENERATOR_MODULATION_PWM_FREQUENCY) - Removed range table
- Generator Modulation PWM Signal Type (RSMXO_ATTR_GENERATOR_MODULATION_PWM_SIGNAL_TYPE) - Added OPC-sync
- Generator Modulation FM Frequency (RSMXO_ATTR_GENERATOR_MODULATION_FM_FREQUENCY) - Removed range table
- Generator Modulation FM Signal Type (RSMXO_ATTR_GENERATOR_MODULATION_FM_SIGNAL_TYPE) - Added OPC-sync
- Generator Modulation FSK Frequency 1 (RSMXO_ATTR_GENERATOR_MODULATION_FSK_FREQUENCY_1) - Removed range table
- Generator Modulation FSK Frequency 2 (RSMXO_ATTR_GENERATOR_MODULATION_FSK_FREQUENCY_2) - Removed range table
- Generator Modulation FSK Rate (RSMXO_ATTR_GENERATOR_MODULATION_FSK_RATE) - Removed range table
- Generator Arbitrary Waveform Source (RSMXO_ATTR_GENERATOR_ARBITRARY_WAVEFORM_SOURCE) - Added OPC-sync
- Generator Arbitrary Waveform Open (RSMXO_ATTR_GENERATOR_ARBITRARY_WAVEFORM_OPEN) - Added OPC-sync
- Generator Arbitrary Run Mode (RSMXO_ATTR_GENERATOR_ARBITRARY_RUN_MODE) - Added OPC-sync
- Generator Arbitrary Sample Rate (RSMXO_ATTR_GENERATOR_ARBITRARY_SAMPLE_RATE) - Removed range table
- Generator Arbitrary Signal Source (RSMXO_ATTR_GENERATOR_ARBITRARY_SIGNAL_SOURCE) - Added OPC-sync

- Generator Synchronisation Start (RSMXO_ATTR_GENERATOR_SYNCHRONISATION_START) - Added OPC-sync
- Generator Synchronisation Enable (RSMXO_ATTR_GENERATOR_SYNCHRONISATION_ENABLE) - Added OPC-sync
- Generator Synchronisation Amplitude Parameters (RSMXO_ATTR_GENERATOR_SYNCHRONISATION_AMPLITUDE_PARAMETERS) - Added OPC-sync
- Generator Synchronisation Frequency Parameters (RSMXO_ATTR_GENERATOR_SYNCHRONISATION_FREQUENCY_PARAMETERS) - Added OPC-sync
- Generator Synchronisation Phase Shift (RSMXO_ATTR_GENERATOR_SYNCHRONIZE_PHASE_SHIFT) - Added OPC-sync
- Saveset Include Preview Image (RSMXO_ATTR_SAVESET_INCLUDE_PREVIEW_IMAGE) - Added OPC-sync
- Report Save (RSMXO_ATTR_REPORT_SAVE) - Added OPC-sync
- Screenshot Save (RSMXO_ATTR_SCREENSHOT_SAVE) - Added OPC-sync
- Screenshot Save Next (RSMXO_ATTR_SCREENSHOT_SAVE_NEXT) - Added OPC-sync
- Waveform Export Source (RSMXO_ATTR_WAVEFORM_EXPORT_SOURCE) - Added OPC-sync
- Waveform Export Mode (RSMXO_ATTR_WAVEFORM_EXPORT_MODE) - Added OPC-sync
- Waveform Export Manual Start (RSMXO_ATTR_WAVEFORM_EXPORT_MANUAL_START) - Removed range table, added OPC-sync
- Waveform Export Manual Stop (RSMXO_ATTR_WAVEFORM_EXPORT_MANUAL_STOP) - Removed range table, added OPC-sync
- Waveform Export Save To File (RSMXO_ATTR_WAVEFORM_EXPORT_SAVE_TO_FILE) - Added OPC-sync
- Remote Display Update Enabled (RSMXO_ATTR_REMOTE_DISPLAY_UPDATE_ENABLED) - Added OPC-sync
- Remote Display Message Enabled (RSMXO_ATTR_REMOTE_DISPLAY_MESSAGE_ENABLED) - Added OPC-sync
- Grid Show (RSMXO_ATTR_GRID_SHOW) - Added OPC-sync
- Display Signal Style (RSMXO_ATTR_DISPLAY_SIGNAL_STYLE) - Added OPC-sync
- Vertical Range (RSMXO_ATTR_VERTICAL_RANGE) - Range table removed
- Trigger Sequence B Event Count (RSMXO_ATTR_TRIGGER_SEQUENCE_B_EVENT_COUNT) - Range table removed
- Trigger Event Level (RSMXO_ATTR_TRIGGER_EVENT_LEVEL) - Range table removed
- Trigger Width Delta (RSMXO_ATTR_TRIGGER_WIDTH_DELTA) - Range table removed
- Trigger Runt Delta (RSMXO_ATTR_TRIGGER_RUNT_DELTA) - Range table removed
- Trigger Runt Lower Limit (RSMXO_ATTR_TRIGGER_RUNT_LOWER_LIMIT) - Range table removed
- Trigger Runt Upper Limit (RSMXO_ATTR_TRIGGER_RUNT_UPPER_LIMIT) - Range table removed
- Trigger Window Delta (RSMXO_ATTR_TRIGGER_WINDOW_DELTA) - Range table removed
- Trigger Window Lower Limit (RSMXO_ATTR_TRIGGER_WINDOW_LOWER_LIMIT) - Range table removed
- Trigger Window Upper Limit (RSMXO_ATTR_TRIGGER_WINDOW_UPPER_LIMIT) - Range table removed
- Trigger Interval Delta (RSMXO_ATTR_TRIGGER_INTERVAL_DELTA) - Range table removed
- Trigger Slew Rate Delta (RSMXO_ATTR_TRIGGER_SLEW_RATE_DELTA) - Range table removed
- Trigger Slew Rate Lower Limit (RSMXO_ATTR_TRIGGER_SLEW_RATE_LOWER_LIMIT) - Range table removed
- Trigger Slew Rate Upper Limit (RSMXO_ATTR_TRIGGER_SLEW_RATE_UPPER_LIMIT) - Range table removed
- Trigger Edge Level (RSMXO_ATTR_TRIGGER_EDGE_LEVEL) - Range table removed
- Trigger Holdoff Time (RSMXO_ATTR_TRIGGER_HOLDOFF_TIME) - Range table removed
- Trigger Hysteresis Absolute (RSMXO_ATTR_TRIGGER_HYSTERESIS_ABSOLUTE) - Range table removed
- Trigger Hysteresis Relative Percentage (RSMXO_ATTR_TRIGGER_HYSTERESIS_RELATIVE_PERCENTAGE) - Range table removed
- Trigger Hysteresis Relative Divs (RSMXO_ATTR_TRIGGER_HYSTERESIS_RELATIVE_DIVS) - Range table removed

- Trigger Action Pulse Length (RSMXO_ATTR_TRIGGER_ACTION_PULSE_LENGTH) - Range table removed
- Acquisition N-Single Average Count (RSMXO_ATTR_ACQUISITION_N_SINGLE_AVERAGE_COUNT) - Range table removed
- Reference Level Relative Lower (RSMXO_ATTR_REFERENCE_LEVEL_RELATIVE_LOWER) - Range table removed
- Reference Level Relative Middle (RSMXO_ATTR_REFERENCE_LEVEL_RELATIVE_MIDDLE) - Range table removed
- Reference Level Relative Upper (RSMXO_ATTR_REFERENCE_LEVEL_RELATIVE_UPPER) - Range table removed
- Reference Level Relative Hysteresis (RSMXO_ATTR_REFERENCE_LEVEL_RELATIVE_HYSTERESIS) - Range table removed
- Spectrum Center (RSMXO_ATTR_SPECTRUM_CENTER) - Range table removed
- Spectrum Span (RSMXO_ATTR_SPECTRUM_SPAN) - Range table removed
- Spectrum Start (RSMXO_ATTR_SPECTRUM_START) - Range table removed
- Spectrum Stop (RSMXO_ATTR_SPECTRUM_STOP) - Range table removed
- Spectrum Peak List Threshold (RSMXO_ATTR_SPECTRUM_PEAK_LIST_THRESHOLD) - Range table removed
- Protocol SPI Timeout (RSMXO_ATTR_PROTOCOL_SPI_TIMEOUT) - Range table removed
- Protocol UART Timeout (RSMXO_ATTR_PROTOCOL_UART_TIMEOUT) - Range table removed
- Logic Skew (RSMXO_ATTR_LOGIC_SKEW) - Range table removed
- Logic Bit Skew (RSMXO_ATTR_LOGIC_BIT_SKEW) - Range table removed
- Digital Channel Skew (RSMXO_ATTR_DIGITAL_CHANNEL_SKEW) - Range table removed
- Frequency Response Analysis Start (RSMXO_ATTR_FREQUENCY_RESPONSE_ANALYSIS_START) - Range table removed
- Frequency Response Analysis Stop (RSMXO_ATTR_FREQUENCY_RESPONSE_ANALYSIS_STOP) - Range table removed
- Frequency Response Analysis Points Total (RSMXO_ATTR_FREQUENCY_RESPONSE_ANALYSIS_POINTS_TOTAL) - Range table removed
- Frequency Response Analysis Points Logarithmic (RSMXO_ATTR_FREQUENCY_RESPONSE_ANALYSIS_POINTS_LOGARITHMIC) - Range table removed
- Frequency Response Analysis Amplitude (RSMXO_ATTR_FREQUENCY_RESPONSE_ANALYSIS_AMPLITUDE) - Range table removed
- Frequency Response Analysis Delay Time (RSMXO_ATTR_FREQUENCY_RESPONSE_ANALYSIS_DELAY_TIME) - Range table removed
- Frequency Response Analysis Amplitude Profile Amplitude (RSMXO_ATTR_FREQUENCY_RESPONSE_ANALYSIS_AMPLITUDE_PROFILE_AMPLITUDE) - Range table removed
- Frequency Response Analysis Gain Vertical Scale (RSMXO_ATTR_FREQUENCY_RESPONSE_ANALYSIS_GAIN_VERTICAL_SCALE) - Range table removed
- Frequency Response Analysis Gain Vertical Offset (RSMXO_ATTR_FREQUENCY_RESPONSE_ANALYSIS_GAIN_VERTICAL_OFFSET) - Range table removed
- Frequency Response Analysis Phase Vertical Offset (RSMXO_ATTR_FREQUENCY_RESPONSE_ANALYSIS_PHASE_VERTICAL_OFFSET) - Range table removed
- Frequency Response Analysis Amplitude Vertical Scale (RSMXO_ATTR_FREQUENCY_RESPONSE_ANALYSIS_AMPLITUDE_VERTICAL_SCALE) - Range table removed
- Frequency Response Analysis Amplitude Vertical Offset (RSMXO_ATTR_FREQUENCY_RESPONSE_ANALYSIS_AMPLITUDE_VERTICAL_OFFSET) - Range table removed
- Generator Modulation Carrier Period (RSMXO_ATTR_GENERATOR_MODULATION_CARRIER_PERIOD) - Range table removed
- Generator Modulation FM Deviation (RSMXO_ATTR_GENERATOR_MODULATION_FM_DEVIATION) - Range table removed

- Screenshot Invert Color (RSMXO_ATTR_SCREENSHOT_INVERT_COLOR) - Removed repeated capability HardcopyOutput
- Screenshot Destination (RSMXO_ATTR_SCREENSHOT_DESTINATION) - Removed repeated capability HardcopyOutput
- Screenshot Printer Color Set (RSMXO_ATTR_SCREENSHOT_PRINTER_COLOR_SET) - Removed repeated capability HardcopyOutput
- Screenshot File Extension (RSMXO_ATTR_SCREENSHOT_FILE_EXTENSION) - Removed repeated capability HardcopyOutput
- Screenshot Save (RSMXO_ATTR_SCREENSHOT_SAVE) - Removed repeated capability HardcopyOutput
- Screenshot Save Next (RSMXO_ATTR_SCREENSHOT_SAVE_NEXT) - Removed repeated capability HardcopyOutput
- Display Persistence Time (RSMXO_ATTR_DISPLAY_PERSISTENCE_TIME) - Range table removed

* Removed attributes:

- RSMXO_ATTR_CURSOR_ADVANCED_RESULT_DIALOG_DEFAULT
- RSMXO_ATTR_EXECUTE_SELF_TEST
- RSMXO_ATTR_GENERATOR_MODULATION_STATE
- RSMXO_ATTR_GENERATOR_SOURCE
- RSMXO_ATTR_PROBE_METER_VISIBILITY
- RSMXO_ATTR_PROTOCOL_DETERMINE_THRESHOLD
- RSMXO_ATTR_REPORT_COMMENT
- RSMXO_ATTR_REPORT_CUSTOM_LOGO_FILE
- RSMXO_ATTR_REPORT_FILE_NAME
- RSMXO_ATTR_REPORT_LANGUAGE
- RSMXO_ATTR_REPORT_LOGO_TYPE
- RSMXO_ATTR_REPORT_PAPER_SIZE
- RSMXO_ATTR_REPORT_SAVE
- RSMXO_ATTR_REPORT_USER_NAME
- RSMXO_ATTR_SCREENSHOT_DISPLAY_COLOR
- RSMXO_ATTR_SCREENSHOT_ORIENTATION
- RSMXO_ATTR_SELF_TEST_STATE
- RSMXO_ATTR_SPECTRUM_SCALE_VERTICAL_OFFSET
- RSMXO_ATTR_TRIGGER_EDGE_GROUND_ENABLED

2.5 Version 1.1.0 / 11 – 2022

- * Support for MXO 1.1.0 FW
- * Initial Release

3 Installation of the LabVIEW driver

Before you start the installer, close your LabVIEW application.

3.1 Installation on a Windows machine

The driver is distributed as WinZip self-extracting executable file. Installer supported operation systems: Win7, Win8, Win10.

Preconditions:

- LabVIEW 2015 or newer installed
- Any VISA installed – R&S VISA 5.12.3 or newer / NI VISA 18.0 or newer

When you start the driver WinZip installer, it performs the following steps:

1. Unpacking of the driver's **instr.lib** and **user.lib** directories content as well as the **Installer.vi** into a temporary folder: `C:\temp\rsmxo-1v2015-1.3.2`
The driver is compiled in LabVIEW 2015 64-bit. From there you can copy it to another location or run the **Installer.vi** manually later. The content of the temporary folder is not deleted after the installation is finished. Starting the same installation again will overwrite all the data in that temporary folder.
2. After unpacking, the **Installer.vi** automatically starts in the **last opened version of LabVIEW**. In case you have more than one version of LabVIEW installed on your machine, make sure that the last opened LabVIEW version is the one in which you want to install the driver. If that is not the case, cancel the installation, open and close your desired LabVIEW version and run the installer again. You can have the driver installed parallel for more LabVIEW versions by repeating the installation process for each desired version.
3. On the installer options page you can change the location of the **instr.lib** part of the driver. **user.lib** part must be placed in the default location, otherwise the Express VI configuration will not properly function.
Hitting **Next** button will first delete the old driver (if it existed), copy the new driver and mass-compile it.
4. If you have an older rsidr_toolbox, the installer updates it to the last version.
5. The LabVIEW is closed and after starting it again, the driver is ready for use.

3.2 Installation on a non-Windows machine

In case you would like to install the driver on a non-Windows machine, use a Windows machine to start the driver's WinZip self-extracting executable file. **This machine does not need to have LabVIEW installed.**

After the **Step 1** (see the chapter 2.1), copy the content of the temporary folder to your target machine and start the **Installer.vi** manually.

From that point onwards, the installation process is the same as described in Steps 2, 3, 4 and 5.

4 Customer support

Technical support – where and when you need it

For quick, expert help with any Rohde & Schwarz product, contact our customer support center. A team of highly qualified engineers provides support and works with you to find a solution to your query on any aspect of the operation, programming or applications of Rohde & Schwarz products.

Contact information

Contact our customer support center at www.rohde-schwarz.com/support or follow this QR code:

