



# R&S®MXO 5 SERIES OSCILLOSCOPE

## Next generation oscilloscope: evolved for more challenges

The perfect choice for



Hardware debugging  
Serial bus analysis

Power analysis

EMI debugging

Power sequencing

Power integrity

Signal integrity

### Key highlights

- ▶ 100 MHz to 2 GHz bandwidth
- ▶ Acquisition rate of over 4.5 million waveforms/s
- ▶ > 45K FFT/s
- ▶ 12 bit ADC at all sample rates
- ▶ 18 bit architecture with HD mode
- ▶ 500 Mpoints per channel standard memory
- ▶ Precise digital trigger

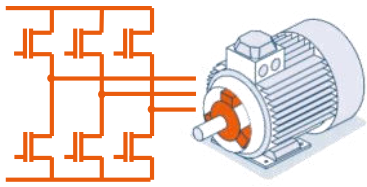
| Your benefit               | Features  |
|----------------------------|---|
| <b>Fast acquisitions</b>   | Capture up to 99% of real-time waveforms with minimal dead time                   |
| <b>Deep record length</b>  | Longer acquisition times without missing signal details                           |
| <b>18-bit architecture</b> | High vertical resolution for high precision signal capture                        |
| <b>Digital trigger</b>     | Trigger that works with up to 18-bit resolution and 0.0001 div sensitivity        |
| <b>SmartGrid and UI</b>    | Highly configurable user interface with intuitive design for fast learning curves |

| Key specifications          | R&S®MXO54   | R&S®MXO58                                    |
|-----------------------------|---|--|
| Bandwidth (MHz)             | 350/500 MHz, 1 GHz and 2 GHz  | 100/200/350/500 MHz, 1 GHz and 2 GHz (≤4 ch) |
| Max. sample rate            | 5 GSamples/s (interleaved)<br>2.5 GSamples/s (all channels)                                 |  |
| Analog channels             | 4 or 8  |  |
| Digital channels            | 16 standard (dedicated connector)   |  |
| Acquisition rate            | 4.5 million acquisitions/s per channel<br>18 million acquisitions/s on 4 channels           |  |
| ADC resolution              | 12-bit ADC – all sample rates   |  |
| Max. vertical resolution    | 18-bit in HD-mode   |  |
| Standard memory depth       | 500 Mpoints per channel (Opt. upgrade to 1 Gpoints)   |  |
| Segmented memory            | Up to 1 million segments with 1 Mpoints capture   |  |
| FFT speed                   | > 45K FFT/s   |  |
| FFT capabilities            | Log-log display, max/min-hold, peak-lists   |  |
| Vertical noise floor        | 130 μVrms at 1 mV/div, 2 GHz bandwidth  |  |
| Vertical offset range       | 5 V at 1 MΩ coupling  |  |
| Arbitrary generator         | 2 channels, 100 MHz with 625 MSamples/s   |  |
| Digital trigger sensitivity | 0.0001  |  |
| Trigger hysteresis          | User selectable   |  |
| Trigger jitter              | < 1 ps (rms) (meas.)  |  |
| Time base accuracy          | ±0.2 ppm  |  |
| Display                     | 15.6" Full-HD display with capacitive touch   |  |
| VESA mount support          | Yes, with adapter R&S®MXO5-Z7   |  |
| Operating system            | Linux   |  |
| Upgradable                  | Bandwidth, protocol trigger and decode, arbitrary waveform generator, analysis capabilities |  |
| Warranty                    | 1 year  |  |



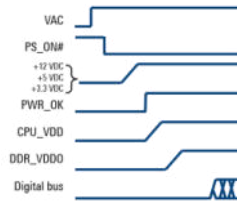
For more information, visit  
[www.rohde-schwarz.com/product/MXO5](http://www.rohde-schwarz.com/product/MXO5)

## Use case (highlights)



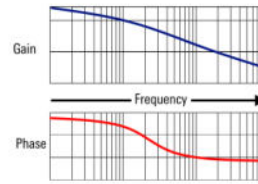
### Inverter and drive train analysis

- ▶ More channels to observe voltage and current signals
- ▶ New WBG devices for faster switching
- ▶ Digital trigger with high sensitivity to detect possible shoot-through events
- ▶ Longer record length for monitoring



### Power sequencing and integrity

- ▶ Record more power rails longer
- ▶ 18-bit HD for high precision and sensitivity on power ripple
- ▶ Record all power up/down sequences
- ▶ Additional spectrum analysis helps identify spectral noise in debugging



### Control loop response of power supply

- ▶ All-in-one tool to observe time and bode plots
- ▶ Start from 0.01 Hz to 100 MHz
- ▶ Amplitude profile and delayed measurement for settling time

## Your go-to tool



Serial protocol trigger and decode



Digital voltmeter



Fast spectrum support log-log scale



Math functions



2 arbitrary generators, 1 MHz to 100 MHz



MSO logic analysis



Power analysis quality and harmonics



Frequency response

Rohde & Schwarz continues to roll out newer capability and functions in future to meet ever changing requirements

## Probe choices

Rohde & Schwarz offers a wide variety of probe choices for your applications including:

- ▶ Active single ended and differential probes
- ▶ High voltage and current probes
- ▶ Power rail probes
- ▶ Logic probes
- ▶ Near field probes



High voltage probes  
▶ page 26



Visit our probe portfolio to find out more

## Warranty

|   |                 |
|---|-----------------|
| Base unit   | 1 year          |
| All other items   | 1 year          |
| Extended warranty (1 year, 2 year, ...)                             | WE1, WE2, ...   |
| Accredited certification coverage (1 year, 2 years, ...)            | ACC1, ACC2, ... |
| Additional service options available for extended warranty coverage |                 |

## Ordering information

### Step 1: Choose your oscilloscope model

| Description                     | Item      |
|---------------------------------|-----------|
| 350 MHz, 4 channel oscilloscope | R&S®MX054 |
| 100 MHz, 8 channel oscilloscope | R&S®MX058 |

**Accessories included:** 700 MHz passive probe (10:1) per channel, accessories bag, quick start guide, power cord

**Languages supported:** English, German, French, Spanish, Italian, Portuguese, Czech, Polish, Russian, simplified and traditional Chinese, Korean and Japanese.

### Step 2: Choose your bandwidth option (Software upgradable)

|   |                |
|---|----------------|
| Upgrade of R&S®MX054 to 500 MHz bandwidth | R&S®MX05-B245  |
| Upgrade of R&S®MX054 to 1 GHz bandwidth   | R&S®MX05-B2410 |
| Upgrade of R&S®MX054 to 2 GHz bandwidth   | R&S®MX05-B2420 |
| Upgrade of R&S®MX058 to 200 MHz bandwidth | R&S®MX05-B282  |
| Upgrade of R&S®MX058 to 350 MHz bandwidth | R&S®MX05-B283  |
| Upgrade of R&S®MX058 to 500 MHz bandwidth | R&S®MX05-B285  |
| Upgrade of R&S®MX058 to 1 GHz bandwidth   | R&S®MX05-B2810 |
| Upgrade of R&S®MX058 to 2 GHz bandwidth   | R&S®MX05-B2820 |

### Step 3: Choose your hardware option

|  |               |
|--|---------------|
| Mixed signal option (MSO) with 16 digital channels | R&S®MX05-B1   |
| Arbitrary waveform generator, 100 MHz, 2 channels  | R&S®MX05-B6   |
| Additional M.2 SSD                                 | R&S®MX05-B19  |
| Memory option 1 Gpoints                            | R&S®MX05-B110 |

### Step 4: Choose your software option

|   |               |
|---|---------------|
| Low speed serial triggering and decode  | R&S®MX05-K510 |
| Automotive serial triggering and decode | R&S®MX05-K520 |
| Power analysis                          | R&S®MX05-K31  |
| Frequency response analysis             | R&S®MX05-K36  |

### Step 5: Choose your accessories

|                    |              |
|--------------------|--------------|
| Front cover        | R&S®MX05-Z1  |
| Soft bag           | R&S®MX05-Z3  |
| Transit case       | R&S®MX05-Z4  |
| Vesa mount adapter | R&S®MX05-Z7  |
| Rackmount kit      | R&S®ZZA-MX05 |

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