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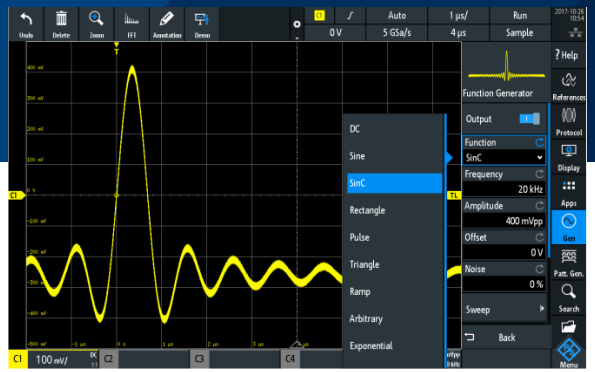
# R&S®RTx-B6 [1]: ARBITRARY WAVEFORM AND 4 BIT PATTERN GENERATOR




| Key specifications | R&S®RTB2000 | R&S®RTM3000 / R&S®RTA4000 |
|---|---|---|
| Resolution, sample rate | 14 bit, 250 Msample/s | 14 bit, 250 Msample/s |
| Amplitude, high Z; 50 Ω | 20 mV to 5 V (Vpp); 10 mV to 2.5 V (Vpp) | 20 mV to 10 V (Vpp); 10 mV to 5 V (Vpp) |
| DC offset, high Z; 50 Ω | ±5 V; ±2.5 V | ±5 V; ±2.5 V |
| Signal forms frequency ranges (sine) | 0.1 Hz to 25 MHz | 0.1 Hz to 25 MHz |
| Signal forms frequency ranges (pulse/rectangle) | 0.1 Hz to 10 MHz | 0.1 Hz to 10 MHz |
| Signal forms frequency ranges (ramp/triangle) | 0.1 Hz to 1 MHz | 0.1 Hz to 1 MHz |
| Signal forms frequency ranges (noise) | max. 25 MHz | max. 25 MHz |
| Signal forms frequency ranges (arbitrary) | max. 10 Msample/s; 32k points | max. 10 Msample/s; 32k points |

| Your benefit | Features |
|---|---|
| X-in-one instrument | The integrated generator saves space on the test bench and provides both standard and arbitrary stimulus to the DUT |
| Choose from a wide range of waveforms to be generated | The integrated arbitrary waveform generator provides stimulus output of sine, SinC sine, rectangle, pulse, triangle, ramp, arbitrary and exponential rise/fall and noise waveforms to your device under test. For all waveforms, you can set the frequency, amplitude, offset and noise |
| Variety of modulation types | The modulation feature supports AM, FM, ASK and FSK modulations with modulation shapes of sine, rectangle, triangle and ramp |
| Support of different pattern types | The integrated 4 bit pattern generator provides output of square wave, counter, arbitrary, manual and bus specific patterns as well as PWM signals (for R&S®RTM3000 / R&S®RTA4000) |

## Customize your oscilloscope with the arbitrary waveform generator option

The integrated R&S®RTx-B6 waveform and pattern generator (up to 50 Mbit/s) is useful for implementing prototype hardware and for educational purposes.

### Integrated arbitrary waveform generator

Produce signals for device stimulus up to 25 MHz. High sample rate (250 Msample/s) and resolution (14 bit) allow accurate signal reproduction. In addition, the R&S®RTx-B6 offers a variety of modulation and swept mode capabilities.

### 4 bit pattern generator with predefined patterns

Waveforms and patterns can be imported as CSV files or copied from oscilloscope waveforms. Before playing signals back, the user can preview them to quickly check signal correctness. Predefined patterns for e.g. $I^2C$, SPI, UART and CAN/LIN can be used.

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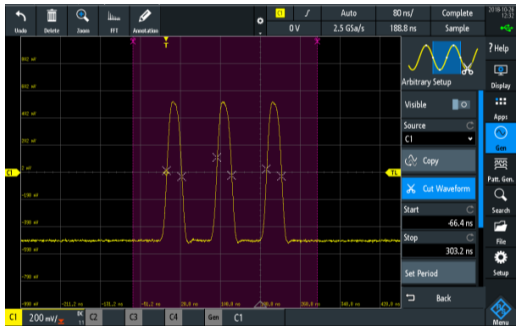
## Test your device with native signals



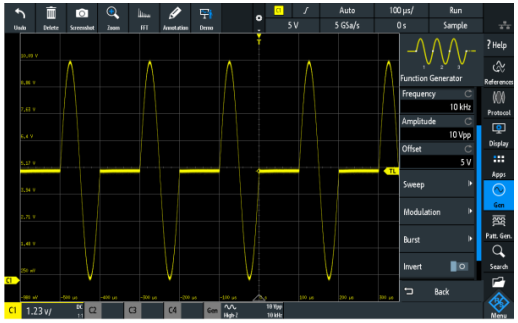
Testing your device with real-world signals opens up a new method to test the margins of your design. The R&S®RTx-B6 arbitrary waveform generator lets you cut waveforms (move the purple lines on the display to set the start and stop) and load them into the arbitrary waveform generator. This allows you to select a portion of a captured oscilloscope waveform in the arbitrary setup.

## Display complex customized waveforms

```
R&S ARB Generator File
// --- Waveform description -----------------
//
//  This file describes a sine wave:
//    Frequency: 1kHz
//
//  There is a high frequency sine wave on to
//
// ------------------------------------------
//
Rate=5e6
0
0.0020027
0.0039585
0.0058235
0.0075595
```

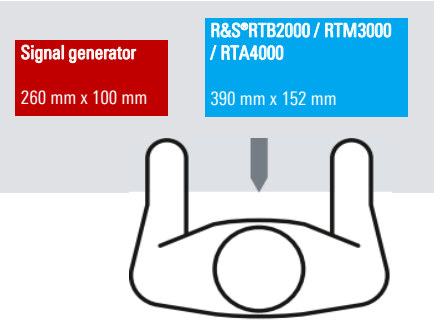
The R&S®RTx-B6 arbitrary waveform generator displays complex custom waveforms via the generator output. With 14 bit resolution and a sampling rate of 10 Msample/s, the R&S®RTx-B6 gives you the flexibility to display and measure the waveforms you need. Easily create and edit waveforms via MATLAB® and Excel and load them into the generator output of the oscilloscope to display them.

## Easy configuration and fast response



The R&S®RTx-B6 arbitrary waveform generator offers various user options, providing more flexibility for your applications. Besides different types of waveforms, the frequency, amplitude or offset can be set. For each waveform, you can configure the sweep and modulation type and add different burst signals.

## Save space on the test bench




With a depth of less than 16 cm and a weight of only 2.5 kg to 3.3 kg, the R&S®RTB2000, R&S®RTM3000 and R&S®RTA4000 have a compact and handy format. With the R&S®RTx-B1 arbitrary waveform and 4 bit pattern generator option installed, even more space is saved as the instrument offers the functionality of an entry level signal generator in a single instrument. The small footprint leaves plenty of space on the workbench.

## Model configuration information

| Base model | Order No. |
|---|---|
| R&S®RTB2002 oscilloscope, 70 MHz, 2 channels | 1333.1005.02 |
| R&S®RTB2004 oscilloscope, 70 MHz, 4 channels | 1333.1005.04 |
| R&S®RTM3002 oscilloscope, 100 MHz, 2 channels | 1335.8794.02 |
| R&S®RTM3004 oscilloscope, 100 MHz, 4 channels | 1335.8794.04 |
| R&S®RTA4004 oscilloscope, 200 MHz, 4 channels | 1335.7700.04 |
| **Software option** | **Order No.** |
| R&S®RTB-B6 arbitrary waveform and 4 bit pattern generator | 1333.1111.02 |
| R&S®RTM-B6 arbitrary waveform and 4 bit pattern generator | 1335.8994.02 |
| R&S®RTA-B6 arbitrary waveform and 4 bit pattern generator | 1335.7830.02 |
| **Application bundle** | **Order No.** |
| R&S®RTB-PK1 consists of the following options: -K1, -K2, -K3, -K15, -K36, -B6 | 1333.1092.02 |
| R&S®RTM-PK1 consists of the following options: -K1, -K2, -K3, -K5, -K6, -K7, -K15, -K31, -K36, -K37, -B6 | 1335.8942.02 |
| R&S®RTM-PK1US consists of the following options: -K1, -K2, -K3, -K5, -K6, -K7, -K15, -K31, -K36, -K37, -B6 | 1335.9190.02 |
| R&S®RTA-PK1 consists of the following options: -K1, -K2, -K3, -K5, -K6, -K7, -K31, -K36, -K37, -B6 | 1335.7775.02 |
| R&S®RTA-PK1US consists of the following options: -K1, -K2, -K3, -K5, -K6, -K7, -K31, -K36, -K37, -B6 | 1335.7998.02 |

All options can be retrofitted