

Dual channel Arbitrary and Function Generator R&S AM300

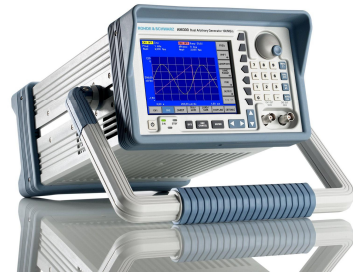
New

100 MSa/s
DC to 50 MHz

The R&S AM 300 integrates functions of an Arbitrary, Function and I/Q generator in one box. With its two channels it is ideal suited for complex test setups in R&D, education and production.

Highlights

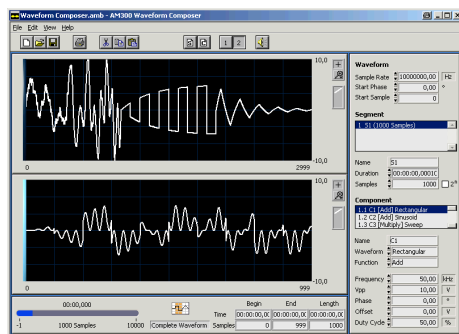
- Two channels with separate adjustable frequency, shape and amplitude
- Adjustable phase deviation between the two channels with 0,01° resolution
- Harmonic distortion (sine 1MHz), typical -80 dBc (0,01%)
- Large color TFT Display for scaled waveform previews including zoom function
- Extremely stable reference frequency (1ppm/year)
- Low jitter clock signals up to 50 MHz
- USB interfaces
- Standard functions: sine, triangle, ramp, exponential, square, noise, pulse
- Frequency range: 35 MHz sine, 50 MHz rectangle
- Modulation: AM, FM, ϕ M, Burst, FSK, PSK
- Broadband I/Q generator for digital modulations like WLAN, W-CDMA, etc.
- 14 Bit vertical resolution



Applications

With numerous different functions, that can easily be combined, various applications e.g. in Automotive, Telecommunications or Military can be covered. The instrument can operate as:

- Signal source with high accuracy and modulation up to 35 MHz
- Generator to simulate sensor signals including overlaid interfering signals
- Test of servo loops (e.g. AGC)
- Generation of two exactly synchronised signals
- Generation of I/Q baseband signals for digital modulation



Easy generation of signals with the Waveform Composer Software

With the graphical Interface of the optional PC-Software you can easily generate arbitrary Signals. The Software supports formats from MathCAD or MathLab as well as recorded Signals, e.g. from an Oscilloscope.

Various signals can be concatenated and edited with a numerous number of functions like addition or multiplication. Waveforms can be stored on a USB memory stick and from there directly loaded into the R&S AM300.



Available from December



Specifications

Please Note: As a highly innovative firm, our products are subject to constant updates and advancements. Please check our webpages at: <http://www.smart.rohde-schwarz.com> for more information about forthcoming applications and downloads.

Channels Number of Channels 2 Phase range -180° to +180° Phase resolution 0.01° Mode separate or outputs added	Signal Characteristics ongoing Exponential Type Rise or fall Arbitrary Edge time < 10 ns Linearity ± 0.1 % (f < 10 kHz)	Sweep Waveforms sine, triangle, ramp, square, exponential and arbitrary ²⁾ Type linear, logarithmic Direction up Start / Stop frequency 10 MHz to max. signal frequency (sine 35 MHz) Sweep time 1 ms to 999 s Trigger single manual, internal, external frequency marker Marker
Waveforms Standard sine, triangle, ramp, square, exponential rise, exponential fall, noise, pulse Arbitrary Waveform length 16 to 262144 (256K) Amplitude resolution 14 Bit Repetition rate 10 µHz to 6.25 MHz Sample rate 10 µHz to 100 MHz Filter bandwidth Cauer 9 th order 35 MHz Bessel 9 th order 37 MHz Bessel 9 th order 75 MHz Cauer 5 th order 40 MHz output filter Non-vol. memory USB memory stick	Output Characteristics Amplitude (into 50Ω) 1 mV _{pp} to 10 V _{pp} Accuracy ± 2% Flatness DC to 30 MHz ± 0.1 dB 30 to 35 MHz ± 0.25 dB Units V _{pp} , dBm, V _{rms} Resolution 0.1 mV or 4 Digits Offset (into 50Ω) Range ± 5V Accuracy ± 1% of setting ± 2 mV + 0.5% of signal amplitude Waveform Output Impedance 50Ω typical (fixed) Protection Short-circuit-protected	System Characteristics Arb Download Times (USB1.1) 256 K points Binary 16 s
Frequency Characteristics Sine 10 µHz to 35 MHz Triangle 10 µHz to 500 kHz Ramp 10 µHz to 500 kHz Square 10 µHz to 500 kHz Square low jitter 10 µHz to 50 MHz Exponential 10 µHz to 500 kHz Noise 35 MHz bandwidth Pulse 10 µHz to 16,667 MHz Arbitrary Sample exact 10 µHz to 6.25 MHz Normal 10 µHz to 35 MHz (sine) Resolution 10 µHz Accuracy Stability < 1 ppm (5° to 45°C) Aging < 1 ppm / year	Modulation ¹⁾ AM Carrier waveforms sine, triangle, ramp, square, exponential, pulse and arbitrary ²⁾ Mod. waveforms sine, square, triangle, ramp, negative ramp, exponential, noise Mod. frequency 10 MHz to 100 kHz Depth 0 to 100% Source Internal FM Carrier waveforms sine, triangle, ramp, square, exponential and arbitrary ²⁾ Mod. waveforms sine, square, triangle, ramp, negative ramp, exponential, noise Mod. frequency 10 MHz to 100 kHz Deviation range DC to 17.5 MHz Source Internal	Trigger characteristics Trigger input Input level TTL compatible Slope rising or falling, selectable Pulse width > 100 ns Input impedance > 1kΩ DC coupled Latency Burst < 100 ns (typical) Sweep < 100 ns (typical)
Sinewave Spectral Purity Harmonic distortion 20 Hz to 1 MHz < 3V _{pp} ≥ 3V _{pp} <-65 dBc <-60 dBc 1 MHz to 5 MHz <-55 dBc <-55 dBc 5 MHz to 35 MHz <-40 dBc <-35 dBc Spurious (non harmonic) DC to 5 MHz <-60 dBc typical -70 dBc 5 to 25 MHz <-45 dBc -55 dBc 25 to 35 MHz <-40 dBc -50 dBc Phase Noise (10 kHz offset) 10 MHz -118 dBc (1 Hz) 35 MHz -117 dBc (1 Hz)	j M Carrier waveforms sine, triangle, ramp, square, exponential and arbitrary ²⁾ Mod. waveforms sine, square, triangle, ramp, negative ramp, exponential, noise Mod. frequency 10 MHz to 100 kHz Deviation range -180° to +180° Source Internal FSK / PSK Carrier waveforms sine, triangle, ramp, square, exponential and arbitrary ²⁾ Mod. waveforms square Internal rate 0.1 MHz to 2 MHz Frequency range 10 µ Hz to 35 MHz Source Internal / External	Clock Reference External Reference Input Frequency 10 MHz, 5 MHz, 2 MHz Frequency deviation 5 * 10 ⁻⁶ Input voltage 0.5 to 2 V into 50 Ω Input impedance 50 Ω Internal Reference Output Frequency 10 MHz Output voltage > 0.5 V into 50 Ω Impedance 50 Ω
Signal Characteristics Squarewave Rise / Fall time < 10 ns (10 µHz to 10 MHz) < 5 ns (10 MHz to 50 MHz) Overshoot < 5% Duty cycle ≤250 kHz 1% to 99% variable 250 kHz to 50 MHz 50% fixed Pulse Period 70 ns to 9999 s Pulse width 20 ns to 9999 s Variable edge time < 10ns Overshoot < 5% Ramp / Triangle Linearity ± 0.1 % (f < 10 kHz) Symmetry 0% to 100%	Burst Waveforms sine, triangle, ramp, square, exponential and arbitrary Burst count 1 to 65535 Start / Stop phase -180° to +180° Internal period 0.5 µs to 9999 s Gate source Internal / External Trigger source single manual, internal, external Trigger delay 0 to 9999 s	Sync Output Channels 2 Level TTL compatible Impedance 50 Ω General Display Type 5.4" active color TFT display Resolution 320 x 240 pixels Power supply Input voltage 100-240 V 50-60 Hz autoranging Power consumption < 35 VA Ambient conditions Operating temp. +5°C to +45°C (EN 60068-2-1/2) Storage temp. -20°C to +70°C Relative humidity 95% at +40°C (EN60068-2-3) Stored states 8 named user configurations Interface USB 1.1 Dimensions 219 x 147 x 350 mm Weight 7.4 Kg Safety EN60068 EMC EN55011, EN61328 Vibration and shock EN60068, MIL-T-28800D

¹⁾ Modulation only available when frequency Ch1 = Ch2 (coupled mode)
²⁾ normal arbitrary mode

Arbitrary / Function Generator R&S AM300	Type	Order-No.
Arbitrary / Functions Generator	R&S AM300	1147.1998.03
PC-software	R&S AM300-K1	included in R&S AM300 package
Waveform Composer	R&S AM300-K2	1147.2013.02
Rack Adapter	R&S ZZA-300	1147.1281.00

Preliminary

