RIGOL
Innovation or nothing

# Test & Measurement

## Product Catalog


RIGOL TECHNOLOGIES,INC.

# Contents

# Digital Oscilloscope

Digital oscilloscope, an essential electronic equipment for R&D, manufacture and maintenance, is used by electronic engineers to observe various kinds of analog and digital signals.

RIGOL is a leading manufacturer and supplier of digital oscilloscope in China and has made many breakthroughs in the domestic industry. It introduces 5 generations of oscilloscopes since its creation. DS6000 series digital oscilloscope, the first DSO in China featuring 1GHz Bandwidth, was introduced in 2009.

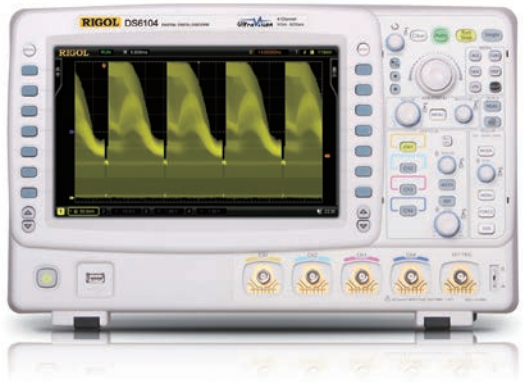
By adopting the innovative technique “UltraVision”, DS6000 realizes deeper memory depth, higher waveform capture rate, real time waveform record and multi-level intensity grading display as well as other functions instead of Application Specific Integrated Circuits (ASIC).

Now RIGOL has developed several series of oscilloscopes (including DS1000D/E, DS1000B, MSO/DS1000Z, MSO/DS2000A, DS4000E, MSO/DS4000 , and DS6000) to meet different customer needs and to improve the testing efficiency

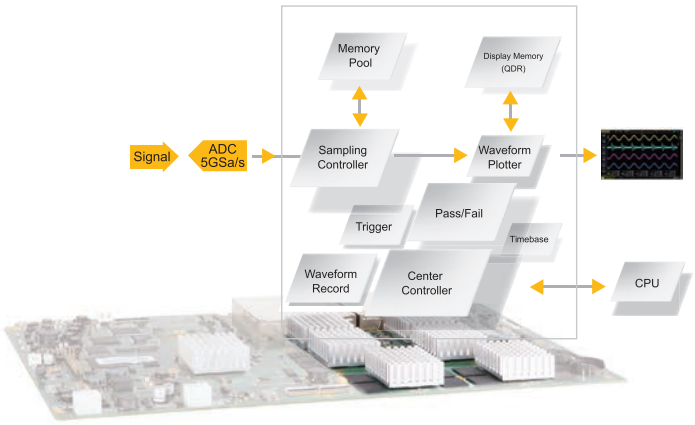
| Series | Analog Channels | Digital Channels (MSO) | Max. Sample Rate | Max. Memory Depth | Bus | Bandwidth Range(MHz) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Analysis | 1000 | 600 | 500 | 350 | 300 | 200 | 100 | 70 | 50 |
| DS6000 | 2 / 4 | -- | 5 Gsa/s | 140 Mpts | ● | ● | ● | | | | | | | |
| MSO/DS4000 | 2 / 4 | 16 | 4 Gsa/s | 140 Mpts | ● | | | ● | ● | | ● | ● | | |
| DS4000E | 4 | -- | 2 Gsa/s | 14 Mpts | ● | | | | | | ● | ● | | |
| MSO/DS2000A | 2 | 16 | 2 Gsa/s | 56 Mpts | ● | | | | | ● | ● | ● | ● | |
| MSO/DS1000Z | 4 | 16 | 1 Gsa/s | 24 Mpts | ● | | | | | | | ● | ● | ● |
| DS1000B | 4 | -- | 2 Gsa/s | 16 Kpts | | | | | | | ● | ● | ● | |
| DS1000D | 2 | 16 | 1 Gsa/s | 1 Mpts | | | | | | | | ● | | ● |
| DS1000E/U | 2 | -- | 1 Gsa/s | 1 Mpts | | | | | | | | ● | ● | ● |

● Standard or Option, could be supported.

# DS6000 Series Digital Oscilloscope



## Innovative UltraVision technique




## Key Features

DS6000 series digital oscilloscope provides up to 1GHz bandwidth, 5GSa/s sample rate. It has the deepest memory depth and fastest waveform capture rate of this class.

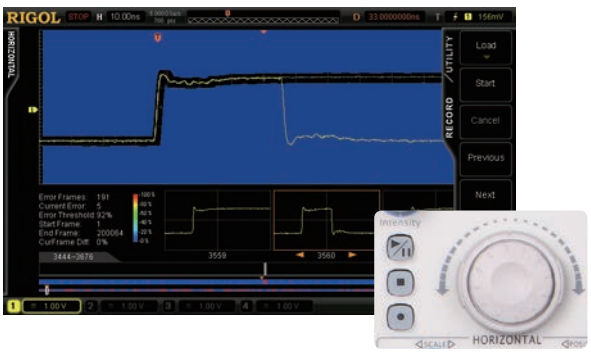
DS6000 series adopt many today's new technologies to achieve high performance, abundant features in the same class. It's designed to aim at the requirements of the largest digital oscilloscope market segment from the communications, semiconductor, computing, aerospace defense, instrumentation, research/education, industrial electronics, consumer electronics and automotive industries with its innovative technology, industry leading specifications, powerful trigger functions and broad analysis capabilities.

- Up to 1 GHz or 600MHz bandwidth
- Standard 140Mpts deep memory
- Up to 180,000 waveforms per second capture rate
- Up to 200,000 frames for waveform record and replay
- Standard serial bus trigger and optional decode

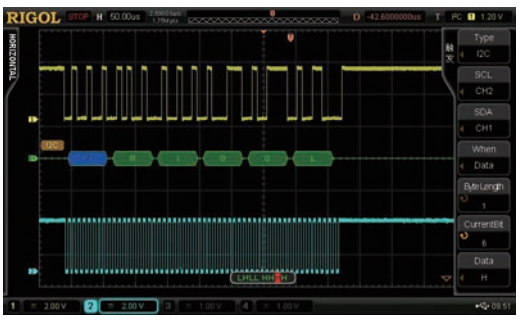
### Up to 180k Waveforms/s Waveform capture rate

### Deeper Memory; Multi-Level intensity grading display

### Real time waveform Record, Replay & Analysis



### Standard trigger and Optional Decoding functions for Serial Bus



## Key Specifications

| Model Number | DS6104 | DS6102 | DS6064 | DS6062 |
|---|---|---|---|---|
| Analog BW | 1GHz | | 600MHz | |
| Channels | 4 | 2 | 4 | 2 |
| Max. Sample rate | 5 GSa/s | | | |
| Max. Memory Depth | 140 Mpts (Std.) | | | |
| Max. Waveform Capture rate | 180,000 wfms/s | | | |
| Time Base Accuracy | ≤ ±4 ppm | | | |
| Time Base Drift | ≤ ±2 ppm/Year | | | |
| Timebase Scale | 500 ps/div to 50 s/div | | 1 ns/div to 50 s/div | |
| Input Impedance | 1MΩ, 50 Ω | | | |
| Vertical Scale | 2 mV/div to 5 V/div(1 MΩ)<br>2 mV/div to 1 V/div(50 Ω) | | | |
| DC Gain Accuracy | ±2% full scale | | | |
| Bandwidth Limit | 20 MHz or 250 MHz | | | |
| Real Time waveform Record, Replay and Analysis function | Max. 200,000 frames(Std.) | | | |
| Std, trigger functions | Edge, Pulse width, Slope, Video, HDTV, Pattern, RS232, I2C, SPI, CAN, USB, FlexRay | | | |
| Serial Bus decording | RS232, I2C, SPI, CAN, FlexRay | | | |
| Math functions | A+B, A-B, A×B, A/B, FFT, Advanced Math, Logic operation | | | |
| Auto Measurements | Vpp, Vamp, Vmax, Vmin, Vtop, Vbase, Vavg, Vrms,Area,Period Area, Overshoot, Preshoot, Freq, Period, Rise Time, Fall Time, +Width, -Width, +Duty, -Duty,<br>Delay A→B rising edge, Delay A→B falling edge, Phase A→B rising edge,Phase A→B falling edge | | | |
| Connectivities | Dual USB HOST, USB DEVICE, LAN, VGA, 10MHz Input/Output, Aux Output(TrigOut, Quick Edge, PassFail, Calibration, GND) | | | |
| Display | 10.1 inches WVGA(800X480) TFT LCD display, 256 intensity grading level | | | |
| Size（W×H×D） | 399.0 mm× 255.3 mm×123.8 mm | | | |
| Weight | 5.345 ± 0.2 kg | | | |

## Ordering Information

| | Description | Order Number |
|---|---|---|
| Model | DS6104 (1GHz, 5GSa/s, 140Mpts, 4-channel) | DS6104 |
| | DS6102 (1GHz, 5GSa/s, 140Mpts, 2-channel) | DS6102 |
| | DS6064 (600MHz, 5GSa/s, 140Mpts, 4-channel) | DS6064 |
| | DS6062 (600MHz, 5GSa/s, 140Mpts, 2-channel) | DS6062 |
| Standard Accessories | 600MHz passive probe x 4 (for DS6104 and DS6064)<br>600MHz passive probe x 2 (for DS6102 and DS6062) | RP5600A |
| | 1.5GHz passive probe x 2 (for DS6104)<br>1.5GHz passive probe x 1 (for DS6102) | RP6150A |
| | USB Cable | CB-USBA-USBB-FF-150 |
| | Front Panel Cover | FPCS-DS6000 |
| | Power Cord | - |
| | Quick Guide | - |
| For probes and optional accessories please refer to “Probes and Accessories Guide”. | | |
| For decoding options please refer to “Bus Analysis Guide”. | | |

# MSO/DS4000 Series Digital Oscilloscope

UltraVision

MSO/DS4000 series is high performance oscilloscope with 100MHz ~ 500MHz bandwidth and up to 4GSa/s sample rate. They also provide deep memory depth and high waveform capture rate. MSO/DS4000 Series is the new mainstream digital scope to meet the customer's applications with its innovative technology, industry leading specifications, powerful trigger functions and broad analysis capabilities.

- Bandwidth 500MHz, 350MHz, 200MHz, 100MHz
- Bandwidth Upgradable
- Real-time sample rate up to 4GSa/s
- Standard Memory depth: Analog channel up to 140Mpts, Digital Channel up to 28Mpts
- Real Time Waveform Record, Replay & Analysis (Std. up to 200,000 frames)
- Support serial bus trigger and decoding
- 9 inch WVGA (800X480), 256-level intensity grading display

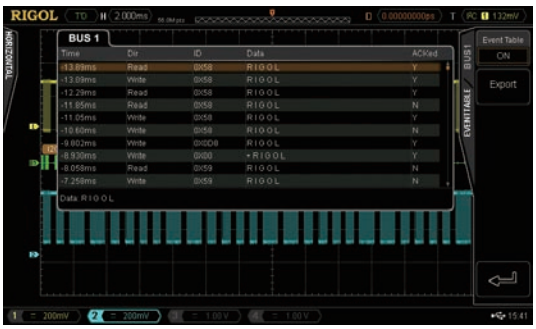
### Up to 110k Waveforms/s Waveform capture rate

### Realtime waveform record, replay, analysis function (std.)

### Deeper Memory with 256-Level intensity grading display

### Mixed Signal Analysis with analog and digital channels

### Serial bus Triggering and Decoding (Support both Analog and Digital channels)



### Serial bus triggering and decoding on digital channels

## Key Specifications

| Model | DS4054 MSO4504 | DS4052 MSO4052 | DS4034 MSO4034 | DS4032 MSO4032 | DS4024 MSO4024 | DS4022 MSO4022 | DS4014 MSO4014 | DS4012 MSO4012 |
|---|---|---|---|---|---|---|---|---|
| Analog BW | 500MHz | | 350MHz | | 200MHz | | 100MHz | |
| Analog Channels | 4 | 2 | 4 | 2 | 4 | 2 | 4 | 2 |
| Digital Channels(MSO) | 16 ( support group operations ) | | | | | | | |
| Max. Sample rate | Analog Channel: Max. 4GSa/s half channel, 2GSa/s per channel; Digital Channel: Max. 1GSa/s per channel | | | | | | | |
| Max. Memory Depth | Analog Channel: Std. up to 140Mpts half channel,70Mpts per channel<br>Digital Channel: Std. up to 28Mpts per channel (only MSO) | | | | | | | |
| Max. Waveform Capture rate | DS: 110,000wfms/s; MSO: 110,000wfms/s (digital channel off); 85,000wfms/s (digital channel on) | | | | | | | |
| Timebase Scale | 1ns/div to 1000s/div | | 2ns/div to 1000s/div | | | | 5ns/div to 1000s/div | |
| Input Impedance | Analog channel: (1MΩ±1%) \|\| (14 pF±3 pF) or 50 Ω±1.5%; Digital channel: (101 kΩ±1%) \|\| (9 pF ± 1 pF) | | | | | | | |
| Vertical Scale | 1 mV/div to 5 V/div (1 MΩ); 1 mV/div to 1 V/div (50 Ω)<br>Threshold per set of 8 channels, User-defined threshold range ±20V in 10mV step | | | | | | | |
| DC Gain Accuracy | ±2% full scale | | | | | | | |
| Real Time waveform Record and Analysis | Analog channel: Up to 200,000 frames(Std.)<br>Digital channel: Up to 64,000 frames(Std.) | | | | | | | |
| Trigger functions | Std:Edge, Pulse width, Runt, Nth Edge, Slope, Video, HDTV, Pattern,RS232/UART,I2C,SPI,CAN,USB,FlexRay;<br>Opt:LIN | | | | | | | |
| Serial Bus decoding | Standard: Parallel; Optional: RS232/UART, I2C, SPI, CAN, LIN, FlexRay (analog and digital channel) | | | | | | | |
| Math functions | Analog channel: A+B, A-B, A×B, A/B, FFT,Digital Filter, Advanced Math, Logic operation;<br>Digital channel: Logic operation | | | | | | | |
| Auto Measurements | Analog channel: 29 types; Digital channel: 12 types | | | | | | | |
| Connectivity | USB Host, USB Device, LAN, VGA, AUX, 10MHz input/output | | | | | | | |
| Display | 9.0 inches WVGA(800X480) TFT LCD display, 256 intensity grading level | | | | | | | |

## Ordering Information

| | Description | Order Number |
|---|---|---|
| Model | DS4012 (100 MHz, 4 GSa/s, 140 Mpts, 2-channel ) | DS4012 |
| | DS4014 (100 MHz, 4 GSa/s, 140 Mpts, 4-channel ) | DS4014 |
| | DS4022 (200 MHz, 4 GSa/s, 140 Mpts, 2-channel ) | DS4022 |
| | DS4024 (200 MHz, 4 GSa/s, 140 Mpts, 4-channel ) | DS4024 |
| | DS4032 (350 MHz, 4 GSa/s, 140 Mpts, 2-channel ) | DS4032 |
| | DS4034 (350 MHz, 4 GSa/s, 140 Mpts, 4-channel ) | DS4034 |
| | DS4052 (500 MHz, 4 GSa/s, 140 Mpts, 2-channel ) | DS4052 |
| | DS4054 (500 MHz, 4 GSa/s, 140 Mpts, 4-channel ) | DS4054 |
| | MSO4012 (100 MHz, 4 GSa/s, 140 Mpts, 2+16 channels MSO ) | MSO4012 |
| | MSO4014 (100 MHz, 4 GSa/s, 140 Mpts, 4+16 channels MSO ) | MSO4014 |
| | MSO4022 (200 MHz, 4 GSa/s, 140 Mpts, 2+16 channels MSO ) | MSO4022 |
| | MSO4024 (200 MHz, 4 GSa/s, 140 Mpts, 4+16 channels MSO ) | MSO4024 |
| | MSO4032 (350 MHz, 4 GSa/s, 140 Mpts, 2+16 channels MSO ) | MSO4032 |
| | MSO4034 (350 MHz, 4 GSa/s, 140 Mpts, 4+16 channels MSO ) | MSO4034 |
| | MSO4052 (500 MHz, 4 GSa/s, 140 Mpts, 2+16 channels MSO ) | MSO4052 |
| | MSO4054 (500 MHz, 4 GSa/s, 140 Mpts, 4+16 channels MSO ) | MSO4054 |
| Standard Accessories | 2 or 4 500MHz passive probe | RP3500A |
| | 1 Set logic analysis probe (MSO models) | RPL2316 |
| | USB Cable | CB-USBA-USBB-FF-150 |
| | Front Panel Cover | FPCS-DS4000 |
| | Power Cord | - |
| | Quick Guide | - |
| Bandwidth Update Option | Bandwidth upgrade from 200 MHz to 350 MHz for MSO/DS402x | BW2T3-MSO/DS4000 |
| | Bandwidth upgrade from 200 MHz to 500 MHz for MSO/DS402x | BW2T5-MSO/DS4000 |
| | Bandwidth upgrade from 350 MHz to 500 MHz for MSO/DS403x | BW3T5-MSO/DS4000 |
| Optional kit | Including:SD-AUTO-DS4000,SD-FlexRay-DS4000,SD-I2C/SPI-DS4000, SD-RS232-DS4000 | BND-MSO/DS4000 |
| For probes and optional accessories please refer to “Probes & Accessories Guide”. | | |
| For decoding options please refer to “Bus Analysis Guide”. | | |

# DS4000E Series Digital Oscilloscope

UltraVision

DS4000E series is high performance and economy general oscilloscope which provides bandwidth from 100MHz to 200MHz, up to2GSa/s sample rate per channel, and up to 14Mpts memory depth all four channels. It is designed for the needs of the design, debugging and testing of the most widely used digital oscilloscope market.

- Bandwidth 100MHz，200MHz
- Real-time sample rate up to 2GSa/s per channel
- Standard memory depth up to 14Mpts per channel
- Standard with 4 analog channels
- Real Time Waveform Record, Replay & Analysis (Std. up to 127,000 frames)
- Support serial bus trigger (Std.) and decoding (Opt.)
- 9 inch WVGA (800×480), 256-level intensity grading display

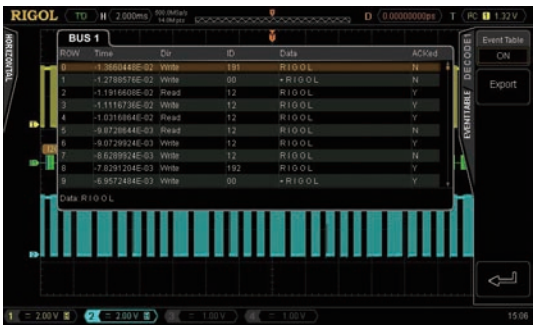
### Up to 60,000 wfms/s Waveform capture rate

### Standard with 4 analog channels

### Deeper memory per channel (Std. 14Mpts)

### Real-time waveform record, replay, analysis function (Std.)

### Support serial bus trigger (Std.) and decoding (Opt.)



### Standard mask test function

## Key Specifications

| Model | DS4024E | DS4014E |
|---|---|---|
| Analog BW | 200MHz | 100MHz |
| Channels (DS) | 4 | |
| Sample rate(Scope channel) | Max. 2GSa/s per channel | |
| Memory Depth(Scope channel) | Std. up to 14 Mpts per channel | |
| Waveform Capture rate | Max. 60,000 wfms/s | |
| Time Base Accuracy | ≤ ±4 ppm | |
| Time Base Drift | ≤ ±2 ppm/Year | |
| Timebase Scale | 2 ns/div to 1 ks/div | 5 ns/div to 1 ks/div |
| Input Impedance | (1 MΩ±1%) \|\| (15 pF±3 pF) or 50 Ω±1.5% | |
| Vertical Scale | 1 mV/div to 5 V/div (1MΩ) or 1 mV/div to 1 V/div (50Ω) | |
| DC Gain Accuracy | ±2% full scale | |
| Bandwidth Limit | 20 MHz/100MHz | 20 MHz |
| Real Time waveform Record, Replay and Analysis function | Max. 127,000 frames(Std.) | |
| Trigger functions | Std:Edge, Pulse width, Runt, Nth Edge, Slope, Video, HDTV, Pattern,RS232/ UART,I2C,SPI,CAN,USB,FlexRay; Opt:LIN | |
| Serial Bus decoding | Standard: Parallel;Option: RS232,I2C,SPI,CAN,LIN,FlexRay | |
| Math functions | Analog channel: A+B,A-B,A×B,A/B,FFT,Digital Filter,Advanced Math,Logic operation | |
| Auto Measurements | 29 types | |
| Connectivities | USB Host, USB Device, LAN, VGA, AUX, 10MHz input/output | |
| Display | 9.0 inches WVGA(800X480) TFT LCD display,256 intensity grading level | |
| Size(W×H×D) | 440.0 mm× 218.0 mm×130.0 mm | |
| Weight | 4.8 kg ± 0.2 kg | |

## Ordering Information

| | Description | Order Number |
|---|---|---|
| Model | DS4014E (100 MHz, 2 GSa/s, 14 Mpts, 4-channel) | DS4014E |
| | DS4024E (200 MHz, 2 GSa/s, 14 Mpts, 4-channel) | DS4024E |
| Standard Accessories | 4 Passive Probes (3500 MHz) | RP3300A |
| | USB Data Cable | CB-USBA-USBB-FF-150 |
| | Front Panel Cover | FPCS-DS4000 |
| | Power Cord conforming to the standard of the country | -- |
| | Quick Guide (Hard Copy) | -- |
| Optional kit | Including:SD-AUTO-DS4000,SD-FlexRay-DS4000,SD-I2C/ SPI-DS4000,SD-RS232-DS4000 | BND-MSO/DS4000 |
| For probes and optional accessories please refer to “Probes & Accessories Guide”. | | |
| For decoding options please refer to “Bus Analysis Guide”. | | |

# MSO/DS2000A Series Digital Oscilloscope

UltraVision

MSO/DS2000A Series is the new mainstream digital scope to meet the customer's applications with its innovative technology. It provides bandwidth from 70MHz to 300MHz, sample rate up to 2GSa/s, and 2+16 channels, targeting for the embedded design and test market with its industry leading specifications, powerful trigger functions and broad analysis capabilities.

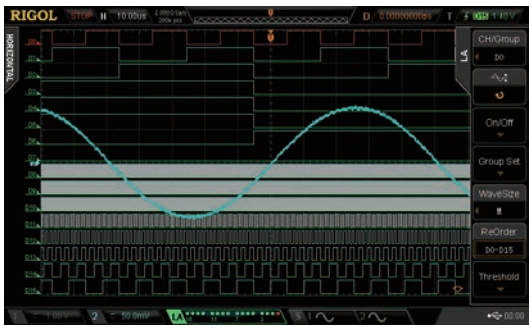
- Bandwidth up to 300MHz, standard with 50Ω input
- Two analog channels and 16 digital channels (MSO)
- Lower noise floor, wider vertical range (500uV/div ~ 10V/div)
- Waveform capture rate up to 50,000 wfms/s
- Built-in 2 CH and 25MHz Waveform generator (-S model)
- A variety of trigger and serial bus decoding functions

### Wider Vertical range, Lower noise floor, Better for small signal capturing

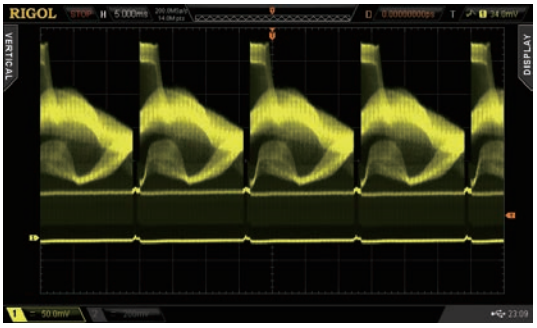
### Serial bus Trigger&Decoding functions

### Realtime waveform record, replay, analysis function (std.)

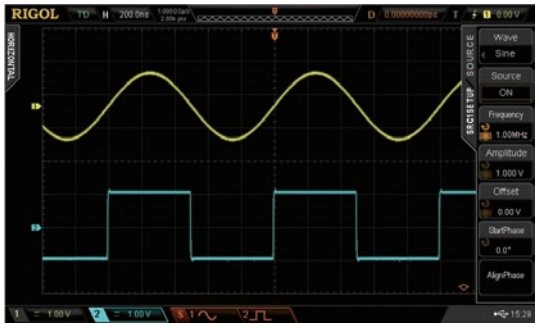
### Easy to be grouped and labeled for digital channels



### 256 level intensity grading display



### Built-in 2CH and 25MHz Source (-S model)



## Key Specifications

| Model | DS2302A<br>MSO2302A | DS2302A-S<br>MSO2302A-S | DS2202A<br>MSO2202A | DS2202A-S<br>MSO2202A-S | DS2102A<br>MSO2102A | DS2102A-S<br>MSO2102A-S | DS2072A<br>MSO2072A | DS2072A-S<br>MSO2072A-S |
|---|---|---|---|---|---|---|---|---|
| Analog BW | 300MHz | | 200MHz | | 100MHz | | 70MHz | |
| Analog Channels | 2 | | | | | | | |
| Digital Channels | 16 ( only MSO ) | | | | | | | |
| Sample rate | Analog Channel: Max. 2 GSa/s single channel, 1 GSa/s dual channel;<br>Digital Channel: 1GSa/s(8 CH), 500MSa/s(16 CH) | | | | | | | |
| Memory Depth | Analog channel: 7Mpts(2 CH) / 14Mpts( 1 CH) std.;28Mpts(2 CH) / 56Mpts( 1 CH) opt.;<br>Digital channel: 7Mpts(16 CH) / 14Mpts(8 CH) std.;14Mpts(16 CH) / 28Mpts(8 CH) opt. | | | | | | | |
| Waveform Capture rate | 50,000wfms/s | | | | | | | |
| Timebase Scale | 1ns/div to 1000s/div | | 2ns/div to 1000s/div | | 5ns/div to 1000s/div | | | |
| Input Impedance | Analog channel: (1MΩ±1% ) \|\| ( 16 pF±3 pF ) or 50Ω±1.5%; Digital channel: ( 101kΩ±1% ) \|\| ( 8 pF±2 pF ) | | | | | | | |
| Vertical Scale | Analog channel: 500 uV/div to 10 V/div(1 MΩ); 500 uV/div to 1 V/div(50 Ω);<br>Digital channel: Threshold per set of 8 channels, User-defined threshold range ±20V in 10mV step | | | | | | | |
| DC Gain Accuracy | ±2% full scale | | | | | | | |
| Waveform Record | Up to 65, 000 Frames | | | | | | | |
| Std. trigger functions | Edge, Pulse width, Runt, Slope, Video, Pattern, Setup/Hold, RS232/UART,I2C,SPI | | | | | | | |
| Opt. trigger functions | Windows, Nth Edge, HDTV, Delay, Time Out, Duration, USB, CAN | | | | | | | |
| Serial Bus decoding | Standard : Parallel Bus ( only MSO ) ; Optional: RS232/UART, I2C, SPI, CAN | | | | | | | |
| Math functions | Analog channel: A+B,A-B,A×B,A/B,FFT,Digital Filter,Advanced Math,Logic operation;Digital channel: Logic operation | | | | | | | |
| Auto Measurements | Analog channel: 29 types; Digital channel: 12 types | | | | | | | |
| Connectivity | USB Host, USB Device, LAN ( LXI ) , AUX, support USB-GPIB ( Opt. ) | | | | | | | |
| Display | 8.0 inches WVGA(800X480) LCD display, 256 intensity grading level | | | | | | | |

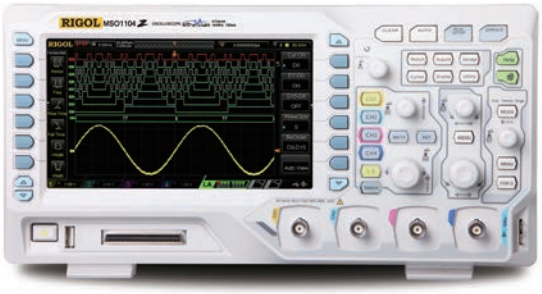
Built in 2CH 25MHz Function/Arb Generator (MSO/DS2xx2A-S)

| Channels | Sample Rate | Vertical Resolution | Max. Output Frequency | Amplitude Range | Waveform Length | Output Waveforms |
|---|---|---|---|---|---|---|
| 2 | 200MSa/s | 14bits | 25MHz | 20mVpp-5Vpp ( High Z ) | 16K | Standard Waveforms: Sine, Square, Ramp, Pulse, Noise, DC |
| | | | | | | Arbitrary Waveforms: Sinc, ExpRise, ExpFall, ECG, Gauss, Lorentz, Haversine ,User Defined |

## Ordering Information

| | Description | Order Number |
|---|---|---|
| Model | DS2072A (70MHz, 2CH Scope) | DS2072A |
| | DS2072A-S (70MHz, 2CH Scope + 25MHz, 2CH Source) | DS2072A-S |
| | MSO2072A (70MHz, 2+16 CH MSO) | MSO2072A |
| | MSO2072A-S (70MHz, 2+16 CH MSO + 25MHz, 2CH Source ) | MSO2072A-S |
| | DS2102A (100MHz, 2CH Scope) | DS2012A |
| | DS2102A-S (100MHz, 2CH Scope + 25MHz, 2CH Source) | DS2012A-S |
| | MSO2102A (100MHz, 2+16 CH MSO) | MSO2012A |
| | MSO2102A-S (100MHz, 2+16 CH MSO + 25MHz, 2CH Source ) | MSO2012A-S |
| | DS2202A (200MHz, 2CH Scope) | DS2022A |
| | DS2202A-S (200MHz, 2CH Scope + 25MHz, 2CH Source) | DS2022A-S |
| | MSO2202A (200MHz, 2+16 CH MSO) | MSO2022A |
| | MSO2202A-S (200MHz, 2+16 CH MSO + 25MHz, 2CH Source ) | MSO2022A-S |
| | DS2302A (300MHz, 2CH Scope) | DS2302A |
| | DS2302A-S (300MHz, 2CH Scope + 25MHz, 2CH Source) | DS2302A-S |
| | MSO2302A (300MHz, 2+16 CH MSO) | MSO2302A |
| | MSO2302A-S (300MHz, 2+16 CH MSO + 25MHz, 2CH Source ) | MSO2302A-S |
| Standard Accessories | 2 Passive Probes (350 MHz) | RP3300A |
| | 1 Set LA probe(MSO only) | RPL2316 |
| | USB Cable | CB-USBA-USBB-FF-150 |
| | Power Cord, Quick Guide, | - |
| Deep Memory Option | Analog channel memory Depth upgraded up to 56Mpts<br>Digital channel(MSO) memory Depth upgraded up to 28Mpts | MEM-DS2000 |
| Advanced Trigger Option | Windows, Nth Edge, HDTV, Delay, Time Out, Duration, USB | AT-DS2000A |
| Optional kit | Including:MEM-DS2000A, AT-DS2000A, SD-DS2000A, CAN-DS2000A | BND-MSO/DS2000A |
| For probes and optional accessories please refer to“Probes & Accessories Guide”. | | |
| For decoding options please refer to “Bus Analysis Guide”. | | |

# MSO/DS1000Z Series Digital Oscilloscope

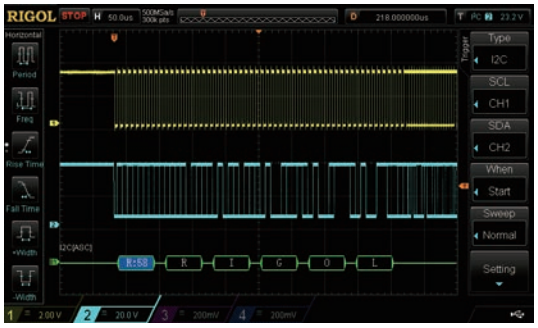


MSO/DS1000Z Series is the high performance, economic level general purpose oscilloscope which provides 4 analog channels, the bandwidth from 50MHz to 100MHz, up to 1GSa/s sample rate, MSO models provides 4+16 channels. It is the new 4 channels mainstream digital oscilloscope to meet the customer's applications with RIGOL's innovative technology "UltraVision". The –PLUS models are MSO function ready, it could be upgraded to MSO with simply add the RPL1116 logic probe set.

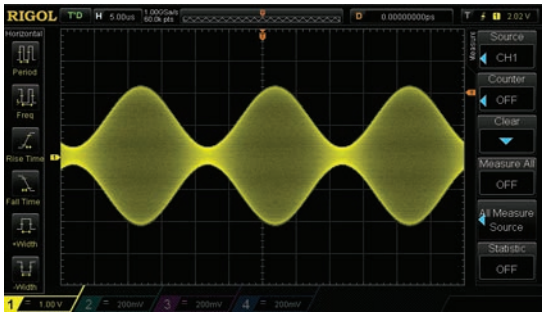
- Analog channel Bandwidth: 100MHz, 70MHz, 50MHz
- 4 analog channels, 16 digital channels (MSO)
- Memory depth up to 12 Mpts (standard)/24 Mpts (optional)
- Various trigger and bus decoding functions
- Built-in dual-channel 25 MHz source (-S model)
- Various interfaces: USB, LAN (LXI), AUX, GPIB (optional)

### Standard wiht 4 analog channels

### Optional Serial Bus trigger and decoding functions



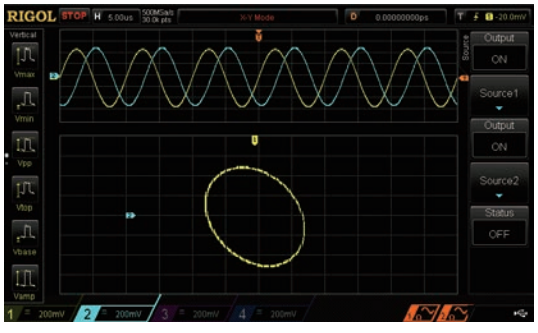
### Intensity graded color display



### Mixed Signal Analysis with analog and digital channels

### Deeper memory(Std.12Mpts,Opt.24Mpts)

### Built-in dual-channel 25 MHz source (-S model)



## Key Specifications

| Model | DS1104Z Plus MSO1104Z | DS1104Z-S Plus MSO1104Z-S | DS1074Z Plus MSO1074Z | DS1074Z-S Plus MSO1074Z-S | DS1054Z |
|---|---|---|---|---|---|
| Analog BW | 100MHz | | 70MHz | | 50MHz |
| Analog Channels | 4 | | | | |
| Digital Channels(MSO) | 16 | | | | -- |
| Max. Sample rate | Analog Channel:1GSa/s (1 CH),500MSa/s(2 CH),250MSa/s (3/4 CH);<br>Digital Channel:1GSa/s (8 CH),500MSa/s(16 CH | | | | |
| Max. Memory Depth | Analog Channel: 12Mpts(1 CH), 6Mpts ( 2 CH), 3Mpts (3/4 CH)Std.; 24Mpts(1 CH), 12Mpts (2 CH), 6MptsV3/4 CH) Opt. Digital Channel: 12Mpts(8 CH) / 6Mpts(16 CH) Std.; 24Mpts(8 CH) / 12Mpts(16 CH) Opt. | | | | |
| Max. Waveform Capture rate | 30,000 wfms/s | | | | |
| Timebase Scale | 5 ns/div to 50 s/div | | | | |
| Input Impedance | Analog Channel：(1MΩ±2%)\|\|(13 pF±3 pF); Digital Channel：(100kΩ±1%)\|\|(8 pF±3 pF) | | | | |
| Vertical Scale | Analog Channel：1 mV/div to 10 V/div<br>Digital Channel：Threshold per set of 8 channels, User-defined threshold range ±15V in 10mV step | | | | |
| DC Gain Accuracy | <10 mV: ±4% full scale ; ≥ 10 mV: ±3% full scale | | | | |
| Real Time waveform Record and Analysis | Up to 60, 000 Frames(Opt.) | | | | |
| Std. trigger functions | Edge, Pulse, Slope, Video, Pattern, Duration, | | | | |
| Opt. trigger functions | Runt, Window, Nth Edge, Delay, Timeout, Setup/Hold, RS232/UART、I2C、SPI | | | | |
| Bus decording | Std: Parallel;  Opt: RS232/UART,I2C,SPI | | | | |
| Math functions | A+B, A-B, A×B, A/B, FFT, A&&B, A\|\|B, A^B, !A, Intg, Diff, Sqrt, Lg, Ln, Exp, Abs, Filter | | | | |
| Auto Measurements | 37 types | | | | |
| Connectivity | USB Host (support USB-GPIB), USB Device, LAN(LXI), AUX (TrigOut/PassFail) | | | | |
| Display | 7.0  inch WVGA(800×480) TFT LCD display,64 intensity grading level | | | | |

MSO/DS1xx4Z-S built-in two channels, 25MHz Function/Arbitrary Waveform Generator

| Channels | Max. Sample Rate | Vertical Resolution | Max. Frequency | Amplitude Output Range | Waveform Length | Output Waveforms |
|---|---|---|---|---|---|---|
| 2 | 200MSa/s | 14bits | 25MHz | 20mVpp-5Vpp (High Z ) | 16K | Sine,Square,Ramp,Pulse,Noise,DC,Sinc, Exponential Rise,Exponential Fall,ECG, Gauss,Lorentz,Haversine,User defined |

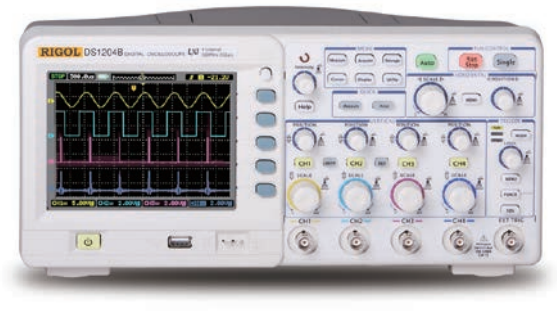
## Ordering Information

| | Description | Order Number |
|---|---|---|
| Model | DS1054Z (50 MHz, 4 analog channels) | DS1054Z |
| | DS1074Z Plus (70 MHz, 4 analog channels, MSO ready) | DS1074Z Plus |
| | DS1074Z-S Plus (70 MHz, 4 analog channels, 2-channel 25 MHz signal source, MSO ready) | DS1074Z-S Plus |
| | MSO1074Z (70 MHz, 4 analog channels, 16 digital channels) | MSO1074Z |
| | MSO1074Z-S (70 MHz, 4 analog channels, 16 digital channels, 2-channel 25 MHz signal source) | MSO1074Z-S |
| | DS1104Z Plus (100 MHz, 4 analog channels, MSO ready) | DS1104Z Plus |
| | DS1104Z-S Plus (100 MHz, 4 analog channels, 2-channel 25 MHz signal source, MSO ready) | DS1104Z-S Plus |
| | MSO1104Z (100 MHz, 4 analog channels, 16 digital channels) | MSO1104Z |
| | MSO1104Z-S (100 MHz, 4 analog channels, 16 digital channels, 2-channel 25 MHz signal source) | MSO1104Z-S |
| Standard Accessories | 4 Passive Probes (150 MHz) | RP2200 |
| | 1 Set LA probe(MSO only) | RPL1116 |
| | USB Cable | CB-USBA-USBB-FF-150 |
| | Power Cord, Quick Guide | - |
| MSO Upgrade option | MSO upgrade package for DS1000Z Plus only, including logic analyzer probe(RPL1116) and model labe | MSO1000Z Upgrade Package |
| Deep Memory Option | Analog channel: 24 Mpts (single channel)/12 Mpts (dual-channel)/6 Mpts (three/four channel);<br>Digital channel: 24 Mpts (8-channel)/12 Mpts (16-channel) | MEM-DS1000Z |
| Waveform Record Option | This option provides the waveform recording and playback function. | REC-DS1000Z |
| Advanced Trigger Option | RS232/UART trigger, I2C trigger, SPI trigger, Runt trigger, Window trigger, Nth edge trigger, delay trigger, timeout trigger, Setup/Hold trigger | AT-DS1000Z |
| Serial Protocol Analysis Option | RS232/UART, I2C and SPI trigger and decoding functions | SA-DS1000Z |

For probes and optional accessories please refer to“Probes & Accessories Guide”.

For decoding options please refer to “Bus Analysis Guide”.

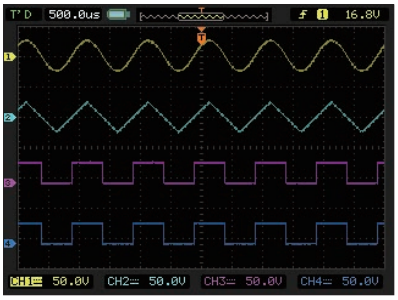
# DS1000B Series Digital Oscilloscope



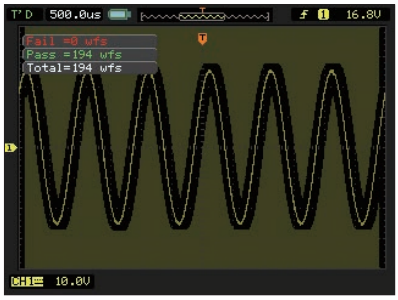

DS1000B series products are four-channel plus an external trigger oscilloscopes which can capture multi-channel signals at the same time to meet the industrial needs.

- Four analog channels
- 2GSa/s real-time sample rate
- Abundant trigger types: edge, video, pulse width, alternate and pattern trigger
- Waveform record and playback
- Standard with Pass/Fail test function
- Standard interfaces: USB Host & Device, LAN(LXI), support PictBridge

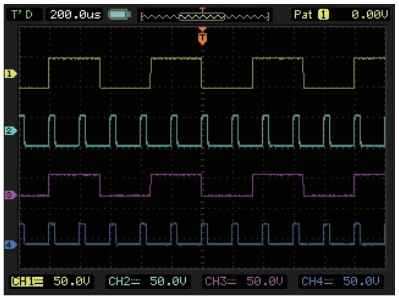
4 independent analog signals channels



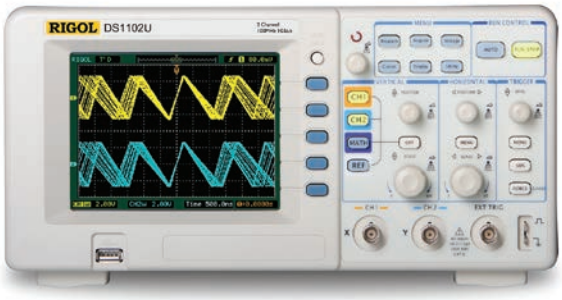

Standard with Pass/Fail test




Advanced pattern trigger



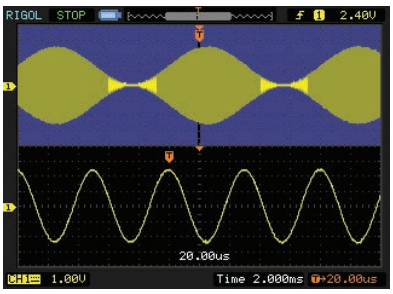

# DS1000D/E/U Series Digital Oscilloscope



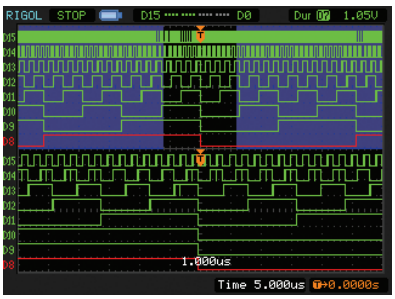

DS1000D/E/U series are the high-performance, economic digital oscilloscopes. They are widely used in the areas of education, training, production line, research and development. DS1000D series provide 2 analog channels plus 16 logic channels to meet mixed signal debug.

- 1GSa/s maximum real-time sample rate
- Up to 1Mpts Memory depth (except U series)
- Abundant trigger types: edge, pulse width, slope, video, alternate, pattern (DS1000D) and duration (DS1000D)
- Standard with Pass/Fail test
- Compact and portable

1 Mpts memory depth




Abundant trigger types




Provide digital logic analysis function (DS1000D)

## Key Specifications

| Model | DS1204B | DS1104B | DS1074B | DS1102E/D | DS1052E/D | DS1102U | DS1072U |
|---|---|---|---|---|---|---|---|
| Bandwidth | 200MHz | 100MHz | 70MHz | 100MHz | 50MHz | 100MHz | 70MHz |
| Channels | 4 + EXT | | | 2 + EXT (DS1000D plus 16 digital channels) | | | |
| Real-time Sample Rate | 2GSa/s (half channel), 1GSa/s (each channel) | | | 1GSa/s single channel, 500MSa/s dual- channel | | | 500MSa/s |
| Memory Depth | 16kpts (half channel), 8kpts (each channel) | | | Max. 1Mpts | | Max. 16kpts | 512kpts |
| Timebase Range | 1ns/div-50s/div | 2ns/div-50s/div | 5ns/div-50s/div | 2ns/div-50s/div | 5ns/div-50s/div | | |
| Input Impedance | 1MΩ‖18pF | | | 1MΩ‖15pF | | | |
| Vertical Scale | 2mV/div-10V/div | | | | | | |
| Rise Time | <1.75ns | <3.5ns | <5ns | <3.5ns | <7ns | <3.5ns | <5.8ns |
| Trigger Types | edge, pulse width, slope, video, alternate | | | edge, pulse width, slope, video, alternate, pattern (DS1000D) and duration (DS1000D) | | | |

Logic analysis specification for DS1xx2D Mix-signal oscilloscope

| Channels | Sample Rate | Memory Depth | Trigger Types | Threshold Level |
|---|---|---|---|---|
| 16 | 200MSa/s per channel | 512k per channel | pattern and duration | TTL=1.4V, CMOS=2.5V, ECL=-1.3V, USER= -8V ~ +8V |

## Ordering Information

| | Description | Order Number |
|---|---|---|
| Model | DS1102E (100MHz, 1Mpts, 2CH) | DS1102E |
| | DS1052E (50MHz, 1Mpts, 2CH) | DS1052E |
| | DS1102U (100MHz, 16kpts, 2CH) | DS1102U |
| | DS1072U (70MHz, 512kpts, 2CH) | DS1072U |
| | DS1102D (100MHz, 2+16 CH) | DS1102D |
| | DS1052D (50MHz, 2+16 CH) | DS1052D |
| | DS1204B (200MHz, 4CH) | DS1204B |
| | DS1104B (100MHz, 4CH) | DS1104B |
| | DS1074B (70MHz, 4CH) | DS1074B |
| Standard Accessories | 1 passive probe (150 MHz) for each analog channel | RP2200 |
| | DS1204B standard with 350Mz 10x passive probes | RP3300A |
| | 1 Set LA probe (DS1000D only) | LA Module |
| | Power Cord | - |
| | Quick Guide | - |

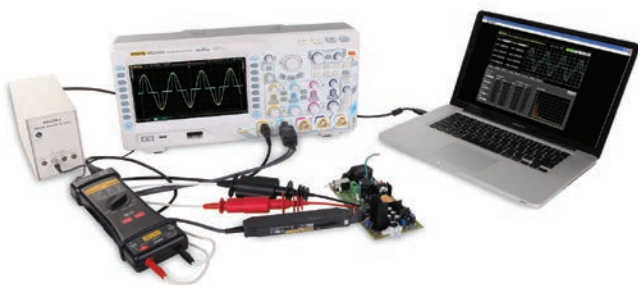
# Bus Analysis Guide

Serial bus like I2C, SPI, UART/RS232, USB are widely used in electronic and telecom products as well as other embedded devices. RIGOL mainstream oscilloscope provides common used bus analysis functions. The scope can trigger the at start frame, end frame, specific address and/or data, as well as error frame. Also, the scope can finish bus decoding functions which can help users to discover errors, debug hardware and accelerate development easily, so as to guarantee quick and high–quality accomplishment of projects.

| Series and Options | Decoding Buses | Channel | I2C | | SPI | | RS232/UART | | CAN | | LIN | | FlexRay | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Trigger | Decod | Trigger | Decod | Trigger | Decod | Trigger | Decod | Trigger | Decod | Trigger | Decod |
| DS6000 Series | 2 | Analog | ● | | ● | | ● | | ● | | | | ● | |
| SD-I2C/SPI-DS6000 | | | | ○ | | ○ | | | | | | | | |
| SD-RS232-SD6000 | | | | | | | | ○ | | | | | | |
| SD-CAN-DS6000 | | | | | | | | | | ○ | | | | |
| SD-FlexRay-DS6000 | | | | | | | | | | | | | | ○ |
| MSO/DS4000 Series | 2 | Analog & Digital | ● | | ● | | ● | | ● | | ● | | ● | |
| SD-I2C/SPI-DS4000 | | | ● | ● | ● | ● | ● | | ● | | ● | | | |
| SD-RS232-SD4000 | | | | | | | | ○ | | | | | | |
| SD-AUTO-DS4000 | | | | | | | | | | ○ | ○ | ○ | | |
| SD-FlexRay-DS4000 | | | | | | | | | | | | | | ○ |
| BND-MSO/DS4000 | | | | ○ | | ○ | | ○ | | ○ | ○ | ○ | | ○ |
| DS4000E Series | 2 | Analog | ● | | ● | | ● | | ● | | ● | | ● | |
| SD-I2C/SPI-DS4000 | | | | ○ | | ○ | | | | | | | | |
| SD-RS232-SD4000 | | | | | | | | ○ | | | | | | |
| SD-AUTO-DS4000 | | | | | | | | | | ○ | ○ | ○ | | |
| SD-FlexRay-DS4000 | | | | | | | | | | | | | | ○ |
| BND-MSO/DS4000 | | | | ○ | | ○ | | ○ | | ○ | ○ | ○ | | ○ |
| MSO/DS2000A Series | 2 | Analog & Digital | ● | | ● | | ● | | | | | | | |
| SD-DS2000 | | | | ○ | | ○ | | ○ | | | | | | |
| CAN-DS2000 | | | | | | | | | ○ | ○ | | | | |
| BND-MSO/DS2000A | | | | ○ | | ○ | | ○ | ○ | ○ | | | | |
| MSO/DS1000Z Series | 2 | Analog & Digital | | | | | | | | | | | | |
| AT-DS1000Z | | | ○ | | ○ | | ○ | | | | | | | |
| SA-DS1000Z | | | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | |

● Standard ○ Option, could be used

# Power Measurement and Analysis



Power supply is an important component of electronic devices. The quality of power supply will have direct influences on the electronic devices. During the design and manufacture of power supply, performance testing becomes more and more important.

Ultra Power Analyzer is a power measurement and analysis software. The software along with RIGOL DS6000/MSO4000/DS4000/DS4000E/MSO2000A/DS2000A series digital oscilloscope, high voltage differential probe, current probe, probe deskew fixture, and passive probe, form a complete power measurement system for power supply design and testing. It can analyze switching power supply efficiency and reliability.

- Power quality analysis
- Current harmonics analysis
- Inrush current analysis
- Power device analysis
- Safe operating area analysis
- Modulation analysis
- Output analysis

Power quality analysis

Safe operating area analysis

Power device switching loss analysis

Output ripple analysis

## Recommended Configuration

| | Description | Order Number |
|---|---|---|
| Scope | DS6000, MSO/DS4000, DS4000E, MSO/DS2000A Series | |
| Probes | High Voltage Differential Probe (depend on bandwidth and voltage range in practical application) | RP1000D Series |
| | Current probe (depend on bandwidth and current range in practical application) | RP1000C Series |
| PC Software | Ultra Power Analyzer | UPA-DS |
| Other Accessories | T2R1000 probe adapter (convert TekProbe to RIGOL standard BNC connector) | T2R1000 |

# Current & Active Probes

RP1000D High Voltage Differential Probe

RP1003C/04C Current Probe

RP7150/7180 Differential Probe

RP1001C/02C Current Probe

RP1018H High Voltage Probe

RP7150S/7080S Single ended Probe

# Probes & Accessories Guide

| Model Number | Descriptions | DS6000 | MSO/DS4000 | DS4000E | MSO/DS2000A | MSO/DS1000Z | DS1000E/U/B | DS1000D |
|---|---|---|---|---|---|---|---|---|
| RP7150 | 1.5GHz Differential/Single ended Probe, 30Vp, CATI | ○ | ○ | ○ | | | | |
| RP7150S | 1.5GHz Single ended Probe, 30Vp, CATI | ○ | ○ | ○ | | | | |
| RP7080 | 800MHz Differential/Single ended Probe, 30Vp, CATI | ○ | ○ | ○ | | | | |
| RP7080S | 800MHz Single ended Probe, 30Vp, CATI | ○ | ○ | ○ | | | | |
| RP6150A | 1.5GHz Low Z Probe | ● | ○ | ○ | | | | |
| RP5600A | 600MHz High Z Probe 10X | ● | ○ | ○ | | | | |
| RP3500A | 500MHz High Z Probe 10X | ○ | ● | ○ | ○ | ○ | ○ | ○ |
| RP3300A | 350MHz High Z Probe 10X | ○ | ○ | ● | ● | ○ | ○ | ○ |
| RP2200 | 150MHz/7MHz High Z Probe, 10X/1X | ○ | ○ | ○ | ○ | ● | ● | ● |
| RP1300H | DC-300MHz, 2000V CATI, 1500V CATII (DC+AC) | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| RP1010H | High Voltage Probe, DC-50MHz, DC:10KV, AC:Pulse≤ 20KVpp,Sine≤ 7KVrms | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| RP1018H | High Voltage Probe, DC-150MHz, DC+AC:18KVp CATII, AC:12KVrms CATII | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| RP1025D | High Voltage Differential Probe, DC-25MHz, Vmax ≤ 1400Vpp | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| RP1050D | High Voltage Differential Probe, DC-50MHz, Vmax ≤ 7000Vpp | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| RP1100D | High Voltage Differential Probe, DC-100MHz, Vmax ≤ 7000Vpp | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| RP1001C | Current Probe,DC-300KHz, DC: ±100A, AC: 200App,70Arms | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| RP1002C | Current Probe,DC-1MHz, DC: ±70A, AC: 140App, 50Arms | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| RP1003C | Current Probe,DC-50MHz, Max. AC Peak: 50A (Non-continuous), 30Arms.<br>Must order power supply RP1000P | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| RP1004C | Current Probe,DC-100MHz, Max. AC Peak: 50A (Non-continuous), 30Arms.<br>Must order power supply RP1000P | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| RP1005C | Current Probe,DC-10MHz, Max.150 Arms, 300 A peak (Non-continuous),<br>500 A peak (@pulse width <=30 ms). Must order power supply RP1000P. | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| RPL2316 | 16-channel logic analysis probe for MSO4000,MSO2000A series | | ● | | ● | | | |
| RPL1116 | 16-channel logic analysis probe for MSO1000Z series | | | | | ● | | |
| LA Module | DS1000D logic analysis probe: one data cable, one logic probe, 20 test clips,20 test leads. | | | | | | | ● |
| T2R1000 | Tekprobe to RIGOL Scope Adapter | ○ | ○ | ○ | | | | |
| RM-DSxxxx | Rack Mount Kit for different series. | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| USB-GPIB | USB-GPIB USB to GPIB Module | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| ARM | ARM Desk Mount Instrument Arm | ○ | | | | | | |
| RT50J | 50 ohm Adapter(1W, 1GHz) | | | | | ○ | ○ | ○ |
| CK-DS6000 | Calibration kit for DS6000 & DS4000 series | ○ | ○ | ○ | | | | |

● Standard ○ Option, could be used

# Spectrum Analyzer


DSA800,DSA800E,DSA700,DSA1000 Series spectrum analyzer are the high performance economic level spectrum analyzers which have compact size and light weight.
The digital IF technology guarantees their reliability and performance. The Maximum measurement frequency is up to 7.5GHz, the Minimum DNAL is -161dBm, the phase noise could be <-98dBc/Hz,the Minimum RBW is 10 Hz.
In order to satisfy different customers' applications, there're lot of standard or optional function and accessories, for example, the pre-amplifier is very helpful for the small signal measurement; the TG models provide the built-in tracking generator, it's easy to do the frequency response measurements for the RF devices; with the help of the VB series bridges and VSWR measurement function, we could measure the reflection performance of the RF devices also.

The Advanced Measurement kit provides the measurement capabilities such as Channel Power, Adjacent Channel Power, Occupied Bandwidth, Emission Bandwidth, C/N Ratio, Harmonic Distortion, Third Order Intermodulation and Pass/Fail test.

The EMI pre-compliance test is very important and very popular for the electronic products, we could provide the EMI test solution including those DSA series plus the EMI filter & quasi-peak detector, Near Field probe and EMI Test system PC software.

For the education customer, we provide the RF Demo Kit include the RF Transmitter (TX1000) and RF Receiver (RX1000), it's very helpful for the students to measure the signal at each stage of the RF circuit.

| | Frequency Range | | | | | | Min. RBW | Phase Noise (10KHz offset) | Software Options | | | Hardware Options | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.5 GHz | 1 GHz | 1.5 GHz | 3 GHz | 3.2 GHz | 7.5 GHz | | | Advanced Meas | EMI | VSWR | Tracking Generator | Preamplifier ( factory installed) |
| DSA705 | ● | | | | | | 100Hz | -80dBc/Hz | ○ | ○ | | | Std. |
| DSA710 | | ● | | | | | 100Hz | -80dBc/Hz | ○ | ○ | | | Std. |
| DSA815/-TG | | | ● | | | | 100Hz | -80dBc/Hz | ○ | ○ | ○ | -TG model | Std. |
| DSA832E/-TG | | | | | ● | | 10Hz | -90dBc/Hz | ○ | ○ | ○ | -TG model | Std. |
| DSA832/-TG | | | | | ● | | 10Hz | -98dBc/Hz | ○ | ○ | ○ | -TG model | PA-DSA832 |
| DSA875/-TG | | | | | | ● | 10Hz | -98dBc/Hz | ○ | ○ | ○ | -TG model | PA-DSA875 |
| DSA1030A/-TG | | | | ● | | | 10Hz | -88dBc/Hz | ● | ● | | -TG model | Std. |
| DSA1030/-TG | | | | ● | | | 100Hz | -80dBc/Hz | ○ | ● | | -TG model | PA-DSA1030 |

● Standard ○ Optional

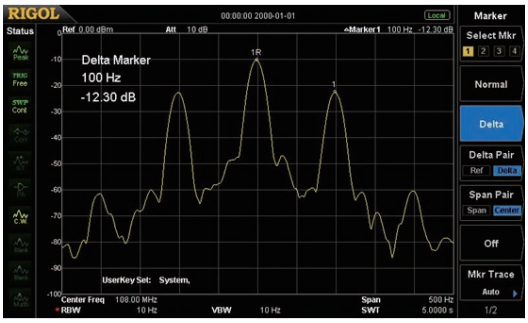
# DSA800 Series Spectrum Analyze

DSA800 series spectrum analyzer are the high performance economic level spectrum analyzers which have compact size and light weight. The digital IF technology guarantees their reliability and performance. The measurement frequency range is up to 7.5GHz.

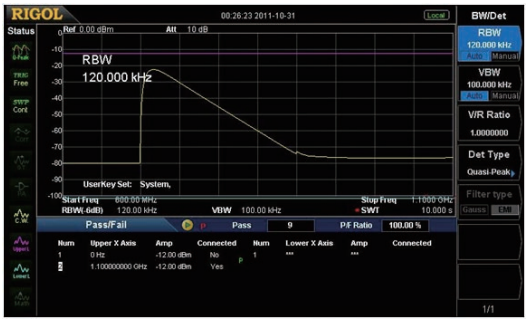
In order to satisfy different customers' applications, there're lots of standard or optional function and accessories, for example, the pre-amplifier, Advanced Measurement kit, TG models, the VB series bridges and VSWR measurement function, ASK/FSK demodulation, EMI pre-compliance test software and so on.

- Frequency range from 9KHz to 7.5GHz
- Min. RBW 10 Hz (100Hz for DSA815)
- Min. Displayed Average Noise Level -161 dBm
- Min. Phase Noise < -98 dBc/Hz @ 10 kHz Offset
- EMI Pre-compliance test
- VSWR Measurement
- ASK/FSK Demodulation(DSA832/875)
- Signal seamless capture mode (DSA815)
- Powerful DSA PC software

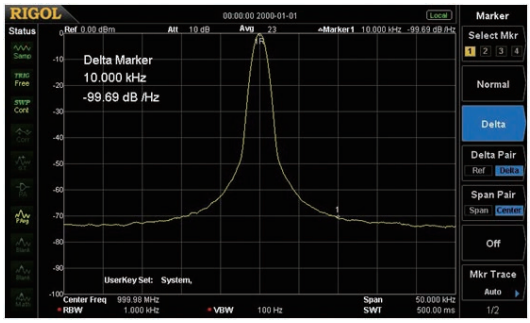
### Distinguish the two nearby signals clearly with the 10 Hz RBW




### EMI kit (EMI filter & Quasi-peak & Pass/Fail)

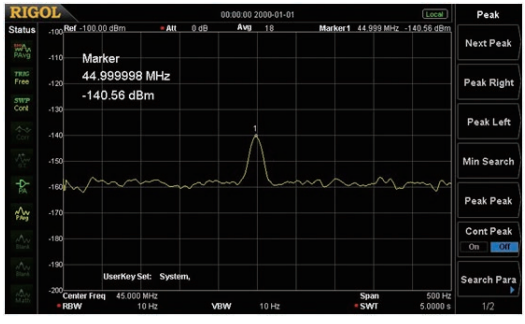



### Phase noise < -98 dBc/Hz @10 kHz offset

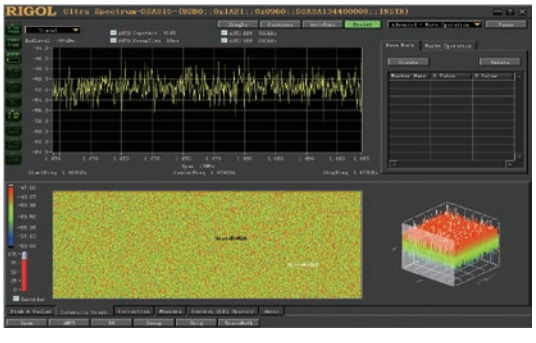



### VSWR measurement


### Measure lower level signal with the preamplifer turn on




### Powerful DSA PC software



## Key Specifications

| | DSA815 | DSA832 | DSA875 |
|---|---|---|---|
| Frequency range | 9kHz - 1.5GHz | 9kHz - 3.2GHz | 9kHz - 7.5GHz |
| Frequency resolution | 1Hz | | |
| Aging rate | < 2ppm/year | < 1ppm/ year | |
| SSB Phase Noise（$f_c$=1GHz） | <-80dBc/Hz@10kHz offset | <-98dBc/Hz@10kHz offset | |
| | <-100dBc/Hz@100kHz offset（typ.） | <-100dBc/Hz@100kHz offset（typ.） | |
| Resolution bandwidth（-3dB） | 100 Hz ~ 1MHz; 1-3-10 step | 10Hz ~ 1MHz; 1-3-10 step | |
| Resolution bandwidth（-6dB） | 200Hz, 9kHz, 120KHz（EMI-DSA800 option） | | |
| Video bandwidth（-3dB） | 1 Hz ~ 3MHz, 1-3-10 step | | |
| Displayed Average Noise Level（DANL） | PA on, RBW=VBW=100Hz, sample detector,trace average≥ 50, tracking generator off, normalized to 1Hz | | |
| 100KHz-1MHz | < -130dBm, < -150dBm (typ.) | < -152dBm, < -155dBm (typ.) | < -152dBm, < -155dBm (typ.) |
| 1MHz-5MHz | < -150dBm, < -155dBm (typ. ) | | |
| 5MHz-1.5GHz | | < -157dBm, < -161dBm (typ.) | < -157dBm, < -161dBm (typ.) |
| 1.5GHz-3.2Ghz | | | |
| 3.2GHz-6GHz | | | < -153dBm, < -157dBm (typ.) |
| 6GHz-7.5GHz | | | < -148dBm, < -152dBm (typ.) |
| Level measurement uncertainty | <1.5dB (nom.) | < 0.8dB (nom.) | |
| TG Frequency range（-TG model） | 100kHz ~ 1.5GHz | 100kHz ~ 3.2GHz | 100kHz ~ 7.5GHz |
| TG Output level range（-TG model） | -20dBm ~ 0dBm | -40dBm ~ 0dBm | |
| TG Output level resolution（-TG model） | 1dB | | |
| Interfaces | LAN（LXI）, USB, USB-GPIB（option） | | |
| **ASK/FSK Modulation Analysis(option for DSA832/875)** | | | |
| Frequency range | 5 MHz to 3.2 GHz | | |
| ASK Symbol rate range | 1 kHz to 100 kHz | | |
| ASK Modulation depth | 5% to 95% | | |
| FSK Symbol rate range | 1 kHz to 20 kHz, 1≤β≤20 (β=frequency deviation/symbol rate) | | |
| | 20 kHz to 50 kHz, 1≤β≤8 | | |
| | 50 kHz to 100 kHz, 1≤β≤4 | | |
| FSK deviation | 1 kHz to 400 kHz | | |

## Ordering Information

| | Description | Order Number |
|---|---|---|
| Model | Spectrum analyzer, 9 kHz to 1.5 GHz (with preamplifer) | DSA815 |
| | Spectrum analyzer, 9 kHz to 1.5 GHz (with preamplifer, with tracking generator, factory installed) | DSA815-TG |
| | Spectrum analyzer, 9 kHz to 3.2 GHz | DSA832 |
| | Spectrum analyzer, 9 kHz to 3.2 GHz (with tracking generator, factory installed) | DSA832-TG |
| | Spectrum analyzer, 9 kHz to 7.5 GHz | DSA875 |
| | Spectrum analyzer, 9 kHz to 7.5 GHz (with tracking generator, factory installed) | DSA875-TG |
| Standard accessories | Quickguide(hardcopy) | - |
| | Power cable | - |
| Options | Preamplifer, 100 kHz to 3.2 GHz (only for DSA832 ) | PA-DSA832 |
| | Preamplifer, 100 kHz to 7.5 GHz (only for DSA875 ) | PA-DSA875 |
| | EMI filter & quasi-peak detector | EMI-DSA800 |
| | Advanced measurement kit | AMK-DSA800 |
| | VSWR measurement kit | VSWR-DSA800 |
| | ASK/FSK Demodulation kit(For DSA832/832-TG/875/875-TG) | DMA-DSA800 |
| | Signal seamless capture mode (For DSA815) | SSC-DSA |
| | DSA PC software | Ultra Spectrum |
| For other optional accessories refers to the "RF accessories selection table". | | |

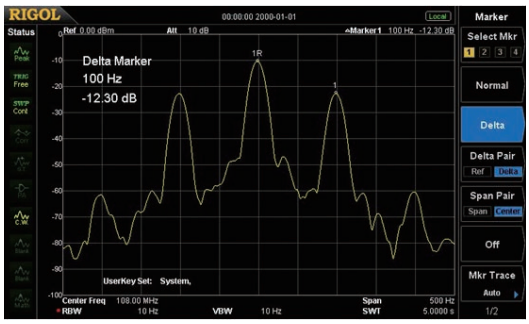
# DSA800E Series Spectrum Analyzer

DSA832E spectrum analyzer is the high performance economic level spectrum analyzer which has compact size and light weight. The digital IF technology guarantees its reliability and performance. The measurement frequency range is from 9KHz to 3.2GHz.

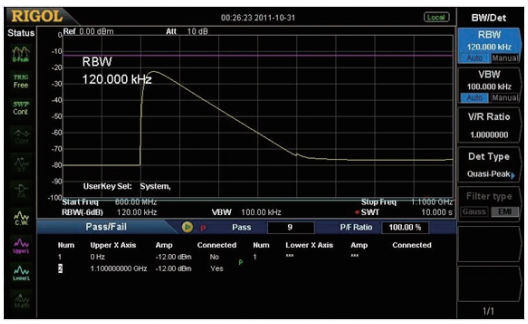
In order to satisfy different customers' applications, there're lots of standard or optional function and accessories, for example, the pre-amplifier, Advanced Measurement kit, TG models, the VB series bridges and VSWR measurement function, ASK/FSK demodulation, EMI pre-compliance test software and so on.

- Frequency range from 9KHz to 3.2 GHz
- Min. RBW 10 Hz
- Min. Displayed Average Noise Level -148 dBm
- Min. Phase Noise < -90 dBc/Hz @ 10 kHz Offset
- EMI Pre-compliance test
- VSWR Measurement
- ASK/FSK Demodulation
- Powerful DSA PC software

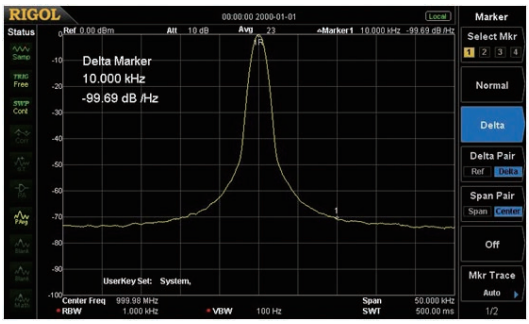
### Distinguish the two nearby signals clearly with the 10 Hz RBW



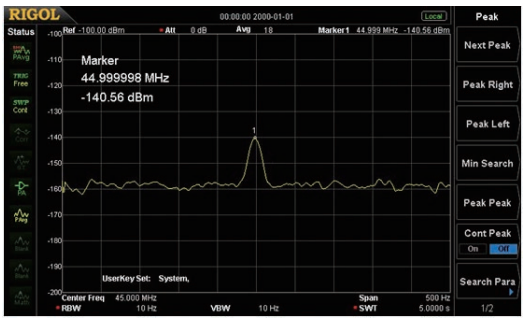

### EMI kit (EMI filter & Quasi-peak & Pass/Fail)



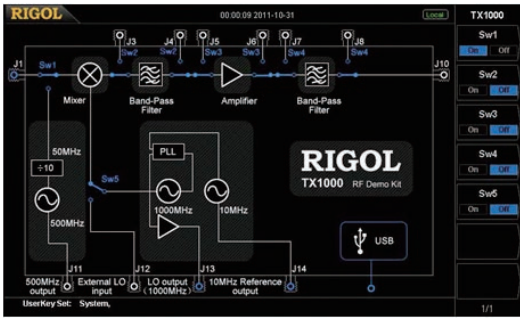

### Phase noise < -90 dBc/Hz @10 kHz offset



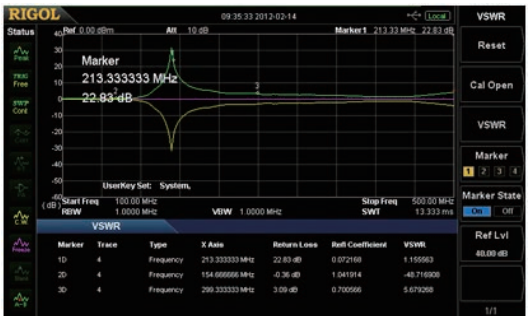

### Measure lower level signal with the preamplifer turn on




### The GUI to control the RF demo kit (Transmitter) directly




### VSWR measurement



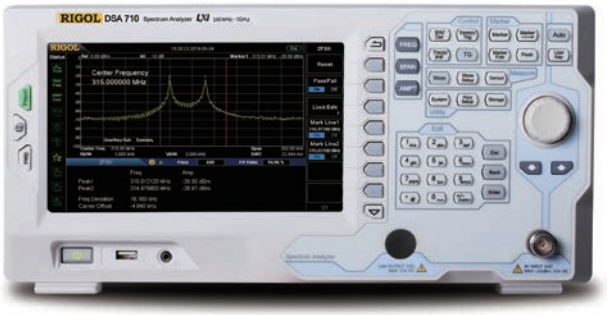
## Key Specifications

| | DSA832E |
|---|---|
| Frequency range | 9 kHz to 3.2 GHz |
| Frequency resolution | 1 Hz |
| Aging rate | <2 ppm/year |
| SSB Phase Noise (fc=1GHz) | <-90dBc/Hz@10kHz offset |
| Resolution bandwidth (-3dB) | 10Hz ~ 1MHz; 1-3-10 step |
| Resolution bandwidth (-6dB) | 200Hz, 9kHz, 120KHz (EMI-DSA800 option) |
| Video bandwidth (-3dB) | 1 Hz ~ 3MHz, 1-3-10 step |
| Max. DC voltage | 50 V |
| Max. CW RF power | attenuation = 30 dB, +20 dBm (100 mW) |
| Max. damage level | +30 dBm (1 W) |
| Displayed Average Noise Level (DANL) | PA ON, RBW=VBW=10Hz, sample detector, trace average ≥ 50 |
| 100 kHz to 1 MHz | <-142 dBm (typ.) |
| 1 MHz to 5 MHz | <-140 dBm, <-143 dBm (typ.) |
| 5 MHz to 3.2 GHz | <-145 dBm, <-148 dBm (typ.) |
| Trace detectors | normal, positive-peak, negative-peak, sample, RMS, voltage average,quasi-peak (with EMI-DSA800 option) |
| Units of level axis | dBm, dBmV, dBμV, nV, μV, mV, V, nW, μW, mW, W |
| Level measurement uncertainty | <1.0 dB (nom.) |
| Tracking Generator (Option) Frequency range | 100 kHz to 3.2 GHz |
| Output level range | -40 dBm to 0 dBm |
| Output level resolution | 1 dB |
| Interface | LAN (LXI), USB, USB-GPIB (option) |
| **ASK/FSK Modulation Analysis(option for DSA832/875)** | |
| Frequency range | 5 MHz to 3.2 GHz |
| ASK Symbol rate range | 1 kHz to 100 kHz |
| ASK Modulation depth | 5% to 95% |
| FSK Symbol rate range | 1 kHz to 20 kHz, 1≤β≤20 (β=frequency deviation/symbol rate) |
| | 20 kHz to 50 kHz, 1≤β≤8 |
| | 50 kHz to 100 kHz, 1≤β≤4 |
| FSK deviation | 1 kHz to 400 kHz |

## Ordering Information

| | Description | Order Number |
|---|---|---|
| Model | spectrum analyzer, 9 kHz to 3.2 GHz | DSA832E |
| | spectrum analyzer, 9 kHz to 3.2 GHz (with tracking generator, factory installed) | DSA832E-TG |
| Standard accessories | quick guide (hard copy) | - |
| | power cable | - |
| Options | preamplifier, 100 kHz to 3.2 GHz | PA-DSA832 |
| | EMI filter & quasi-peak detector | EMI-DSA800 |
| | advanced measurement kit | AMK-DSA800 |
| | VSWR measurement kit | VSWR-DSA800 |
| | DSA PC software | Ultra Spectrum |
| | ASK/FSK demodulation analysis | DMA-DSA800 |
| For other optional accessories refers to the "RF accessories selection table". | | |

# DSA700 Series Spectrum Analyzer

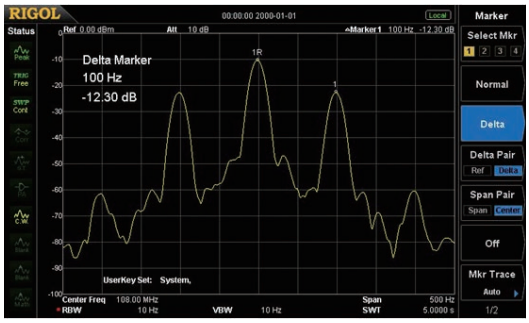


DSA700 series spectrum analyzer are the high performance economic level spectrum analyzers which have compact size and light weight. The digital IF technology guarantees their reliability and performance.

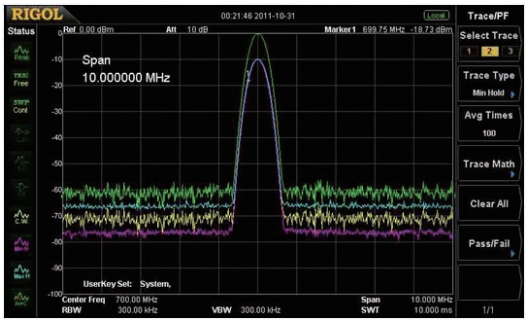
The measurement frequency range is from 100KHz up to 1GHz. In order to satisfy different customers' applications, there're lots of standard or optional function and accessories, for example, the pre-amplifier, Advanced Measurement kit, signal seamless capture mode, EMI pre-compliance test software and so on.

- Frequency range from 9KHz to 1GHz
- Min. RBW 100 Hz
- Min. Displayed Average Noise Level -130 dBm
- Min. Phase Noise < -80 dBc/Hz @ 10 kHz Offset
- EMI Pre-compliance test
- Signal seamless capture mode
- Powerful DSA PC software

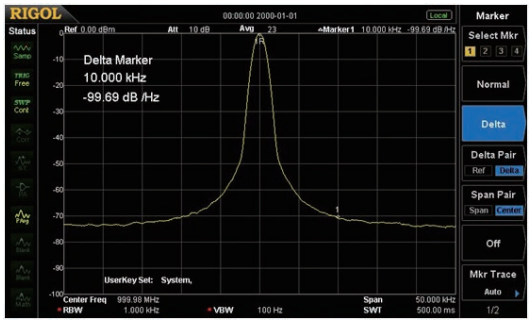
Distinguish the two nearby signals clearly with the 100 Hz RBW



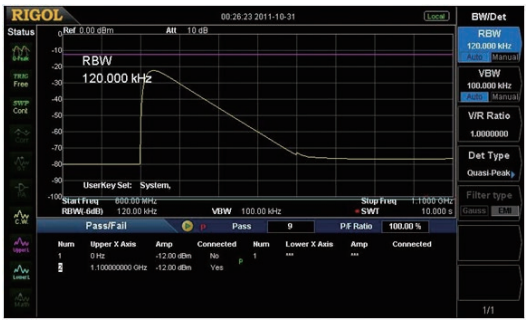

Compare the spectrums with different color trace



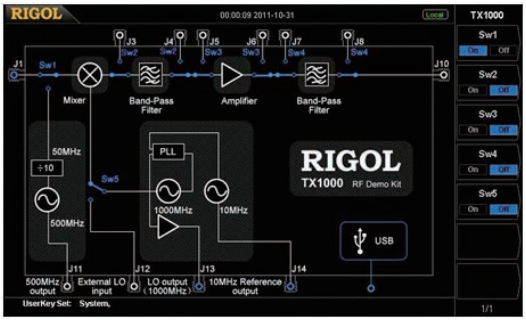

Phase noise < -80 dBc/Hz @10 kHz offset



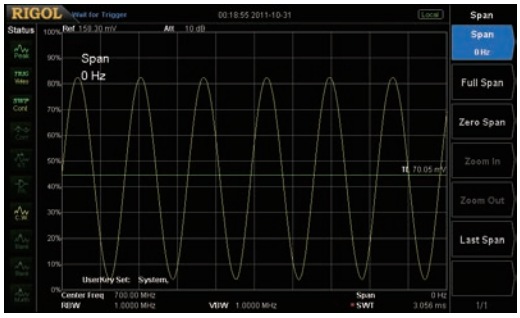

EMI kit (EMI filter & Quasi-peak & Pass/Fail)



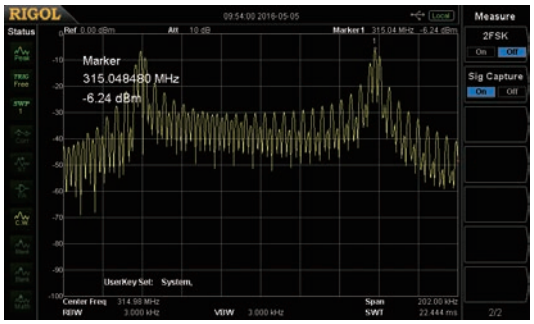

The GUI to control the RF demo kit (Transmitter) directly



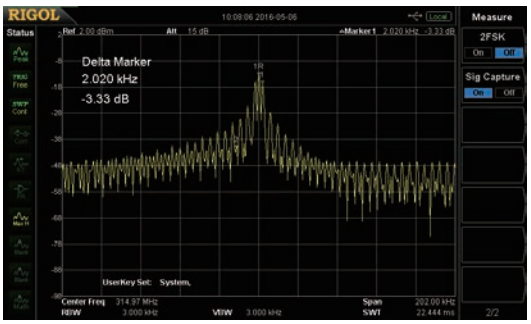

Zero span to demodulate the AM signal



Seamless capture RKE FSK signal




Seamless capture RKE ASK signal




## Key Specifications

| | DSA705 | DSA710 |
|---|---|---|
| Frequency range | 100 kHz to 500 MHz | 100 kHz to 1 GHz |
| Frequency resolution | 1 Hz | |
| Aging rate | <2 ppm/year | |
| SSB Phase Noise (fc=1GHz) | <-80dBc/Hz@10kHz offset | |
| Resolution bandwidth (-3dB) | 100Hz ~ 1MHz; 1-3-10 step | |
| Resolution bandwidth (-6dB) | 200Hz, 9kHz, 120KHz (EMI-DSA800 option) | |
| Video bandwidth (-3dB) | 1 Hz ~ 3MHz, 1-3-10 step | |
| Max. DC voltage | 50 V | |
| Max. CW RF power | attenuation = 30 dB, +20 dBm (100 mW) | |
| Max. damage level | +30 dBm (1 W) | |
| Displayed Average Noise Level (DANL) | PA ON, RBW=VBW=100Hz, sample detector, trace average ≥ 50 | |
| 100 kHz to 1 MHz | <-110 dBm, <-130 dBm (typical) | |
| 1 MHz to 500 MHz | <-120 dBm, <-130 dBm (typical) | |
| 5 MHz to 3.2 GHz | | <-120 dBm, <-130 dBm (typical) |
| Trace detectors | normal, positive-peak, negative-peak, sample, RMS, voltage average,quasi-peak (with EMI-DSA800 option) | |
| Trace functions | clear write, max hold, min hold, average, view, blank | |
| Units of level axis | dBm, dBmV, dBμV, nV, μV, mV, V, nW, μW, mW, W | |
| Level measurement uncertainty | <1.5 dB (nom.) | |
| SSC Measurement bandwidth | 202 kHz | |
| SSC Measurement speed | 650 spectrums/s | |
| Interface | LAN (LXI), USB, USB-GPIB (option) | |

## Ordering Information

| | Description | Order Number |
|---|---|---|
| Model | spectrum analyzer, 100 kHz to 500 MHz (with preamplifer) | DSA705 |
| | spectrum analyzer, 100 kHz to 1 GHz (with preamplifer) | DSA710 |
| Standard accessories | quick guide (hard copy) | -- |
| | power cable | -- |
| Options | EMI filter & quasi-peak detector | EMI-DSA800 |
| | advanced measurement kit | AMK-DSA800 |
| | DSA PC software | Ultra Spectrum |
| | Signal seamless capture | SSC-DSA |
| For other optional accessories refers to the "RF accessories selection table". | | |

# DSA1000/A Series Spectrum Analyzer

(Discontinued, Recommend DSA832E)


DSA1000 series spectrum analyzer are the high performance economic level spectrum analyzers which have compact size and light weight. The digital IF technology guarantees their reliability and performance. The measurement frequency range is up to 3GHz. In order to satisfy different customers' applications, there're lots of standard or optional function and accessories, for example, the pre-amplifier, Advanced Measurement kit, TG models, the VB series bridges, EMI pre-compliance test software and so on.

- 10 Hz Minimum Resolution Bandwidth (100Hz for DSA1030)
- Min. Displayed Average Noise Level -148 dBm
- Min. Phase Noise < -88 dBc/Hz @ 10 kHz Offset
- EMI Pre-compliance test
- Quasi-Peak Detector & EMI Filter (Standard)
- Powerful DSA PC software

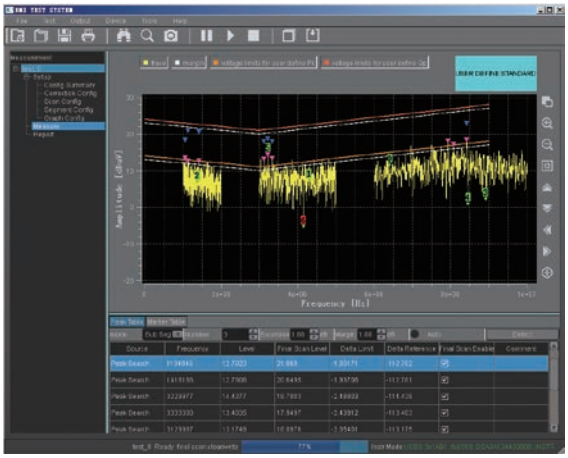
## Key Specifications

| | DSA1030A/DSA1030A-TG | DSA1030/DSA1030-TG |
|---|---|---|
| Frequency range | 9kHz - 3GHz | |
| Aging rate | < 3ppm/year | |
| Phase noise（$f_c$=1GHz） | <-88dBc/Hz@10kHz offset | <-80dBc/Hz@10kHz year |
| Resolution bandwidth（-3dB） | 10Hz ~ 1MHz; 1-3-10 step | 100Hz ~ 1MHz;1-3-10 step |
| Resolution bandwidth（-6dB） | 200Hz, 9kHz, 120KHz,1MHz | |
| Video bandwidth（-3dB） | 1 Hz ~ 3MHz, 1-3-10 step | |
| Displayed Average Noise Level（DANL） | Preamplifer on,RBW=VBW=10Hz, Sample Detector, trace averages≥ 50 | |
| 100kHz-1MHz | < -103dBm | < -93dBm |
| 1MHz-10MHz | < -103dBm, < -143dBm (typ.) | < -93dBm, < -133dBm(typ.) |
| 10MHz-2.5GHz | < -145dBm, < -148dBm (typ.) | < -135dBm, < -138dBm(typ.) |
| 2.5GHz-3.0Ghz | < -133dBm | < -123dBm |
| Preamplifer | Std. | Optional（PA-DSA1030） |
| Level measurement uncertainty | <1.0dB (nom.) | < 1.5dB (nom.) |
| TG Output level range（-TG model） | 10MHz ~ 3GHz | |
| TG Output level resolution（-TG model） | -20dBm ~ 0dBm, 1dB step | |
| Interfaces | LAN（LXI）, USB, VGA, USB-GPIB（option） | |

## Ordering Information

| | Description | Order Number |
|---|---|---|
| Model | Spectrum Analyzer, 9 kHz to 3 GHz, with preamplifer, RBW 10Hz | DSA1030A |
| | Spectrum Analyzer, 9 kHz to 3 GHz, with preamplifer,with track generator,factory installed. RBW 10Hz | DSA1030A-TG |
| | Spectrum Analyzer, 9 kHz to 3 GHz, RBW 100Hz | DSA1030 |
| | Spectrum Analyzer, 9 kHz to 3 GHz, with track generator, factory installed. RBW 100Hz | DSA1030-TG |
| Standard Accessories | Front Panel Cover | - |
| | Quick Guide (Hard Copy) | - |
| | Power Cable | - |
| | USB Cable | CB-USBA-USBB-FF-150 |
| Options | Preamplifer ( for DSA1030 and DSA1030-TG) | PA-DSA1030 |
| | Advanced Measurement Kit ( for DSA1030 and DSA1030-TG) | AMK-DSA1030 |
| | DSA PC Software | Ultra Spectrum |
| For other optinal accessories refers to the RF accessories selection table. | | |

# EMI Test System (S1210)



EMI Test System is a PC application software developed by RIGOL for DSA1000 and DSA800, DSA800E, DSA700 series with the EMI-DSA800 option to do the EMI Pre-compliance tests.

You can perform conduction and radiation tests using S1210 EMI Pre-compliance Software and RIGOL DSA series spectrum analyzer. You can measure the interference voltage on the power cable using the linear impedance stability network (LISN) and perform amplitude correction on the results by loading the correction factor (preamplifier, attenuator, antenna, cable, or correction array) automatically in the radiation test.

This software also provides various functions to facilitate your measurements. You can set various parameters (such as the frequency range, resolution bandwidth, and scan time) via the scan table. After performing a scan, the results can be displayed in log or linear format. You can search for signal peak value and view the results displayed in the peak table. Besides, you can mark and delete the undesired signal, as well as easily recognize signals that do not pass the standard limit line. The software also supports the marker table. In the marker table, you can double click the table to add a marker to mark any frequency point that interests you.

- Provide amplitude correction function.
- Segment scanning and editing for the table to accelerate the measurement speed
- The limit line function can be used to quickly judge the measurement results.
- Provide fast pre-scan and final scan modes.
- Provide peak search function.
- Importing and exporting the peak table
- Frequency axis supports the scale display in linear or log format
- Amplitude axis supports multiple amplitude units
- Provide report generation function

## Rcommended Configuration

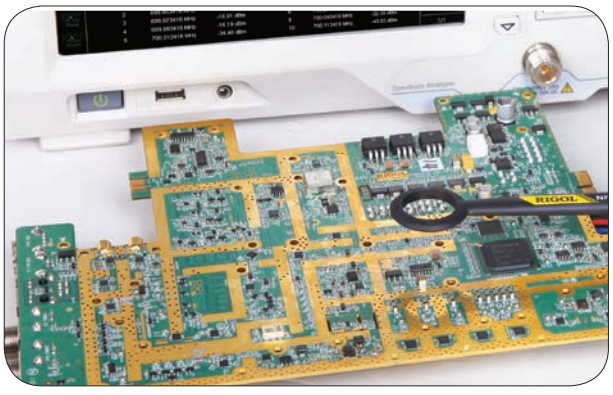
| | Description | Order Number |
|---|---|---|
| Spectrum Analyzer | DSA1000/800/800E/700 series spectrum analyzer | Refer to DSA model numbers |
| | EMI filter & quasi-peak detector of DSA800/800e/700 series spectrum analyzer | EMI-DSA800 |
| EMI Software | EMI Test System Pre-Compliance Test software | S1210 |
| Test Accessories | Near field probe (for near filed radiated EMI testing) | NFP-3 |
| | Line Impedance Stabilization Network (LISN) (for conducted EMI testing) | User-owned |
| | Antenna (for far field radiated EMI testing) | User-owned |

# NFP-3 Near Field Probes

NFP-3 is used with RIGOL DSA series spectrum analyzer for the EMI tests of electronic products. It can be used to test the magnetic field strength and magnetic field coupling channels on the surface of the electronic components as well as the magnetic field environment near the electronic module so as to quickly locate the interference source. NFP-3 includes four models (NFP-3-P1, NFP-3-P2, NFP-3-P3 and NFP-3-P4).

**Measurement Connections**

The connection mode of NFP-3 and spectrum analyzer is as shown in the figure below.



**Connect the spectrum analyzer**

Connect the SMB (M) terminal of NFP-3 and the BNC (F) terminal of the N-BNC

adaptor respectively via the BNC-SMB RF cable; connect the N (M) terminal of the

N-BNC adaptor to the RF input terminal of the spectrum analyzer.

**Connect the device under test**

NFP-3 is used to perform short-distance noncontact measurement on the device

under test. Pay attention to the direction of the probe during measuring.

**Typical Applications**

Locate the EMI radiation interference source. Determine the frequency and relative strength of the spectral component of the interference source.

## Specification

| | |
|---|---|
| Frequency | |
| Frequency Range | 30 MHz to 3 GHz |
| Terminal Type | |
| Terminal Type | SMB (M) |
| Adaptor | N (M)-BNC (F) |
| RF Cable | BNC (M)-SMB (F), 1000 mm |
| Terminal and Adaptor Impedance | 50 Ω |

# Common RF Accessories

DSA Utility Kit

RF CATV Kit

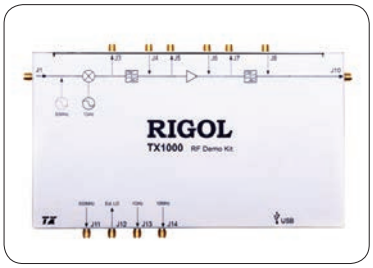
30dB High Power Attenuator

RF Adaptor Kit

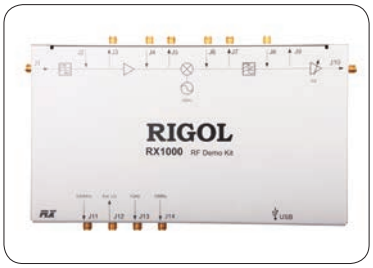
RF Attenuator Kit

VSWR Bridge

RF Cable




RF Demo Kit (Transmitter) TX1000




RF Demo Kit (Receiver) RX1000

# RF Accessories Selection Guide

| Software Options | Descriptions | DSA875/-TG | DSA832/-TG | DSA832E/-TG | DSA815/-TG | DSA710 | DSA705 | DSA1030A/-TG | DSA1030/TG |
|---|---|---|---|---|---|---|---|---|---|
| AMK-DSA800 | Advanced Measurement Kit.Include:T-Power,ACP(Adjacent Channel Power),ChanPwr(Channel Power),OBW(Occupied Bandwidth),EBW(Emission Bandwidth),C/N Ratio,HarmoDist(Harmonic Distortion),TOI(Third Order Inter modulation) | ○ | ○ | ○ | ○ | ○ | ○ | | |
| AMK-DSA1000 | Advanced Measurement Kit.Include:T-Power,ACP(Adjacent Channel Power),ChanPwr(Channel Power),OBW(Occupied Bandwidth),EBW(Emission Bandwidth),C/N Ratio,HarmoDist(Harmonic Distortion),TOI(Third Order Inter modulation) | | | | | | | ● | ○ |
| EMI-DSA800 | EMI filter & quasi-peak detector | ○ | ○ | ○ | ○ | ○ | ○ | ● | ● |
| VSWR-DSA800 | VSWR Measurement Kit.Measurement results include returnloss,reflection coefficient and VSWR.(Work with VSWR bridge) | ○ | ○ | ○ | ○ | | | | |
| S1210 | EMI test PC software for EMI Pre-Compliance testing | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Ultra Spectrum | DSA PC software | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| DMA-DSA800 | ASK/FSK Demodulation function | ○ | ○ | ○ | | | | | |
| SSC-DSA | Signal Seamless Capture function | | | | ○ | ○ | ○ | | |
| **Preamplifier** | | | | | ● | ● | ● | ● | |
| PA-DSA875 | Preamplifier(for DSA875 and DSA875-TG only) | ○ | | | | | | | |
| PA-DSA832 | Preamplifier(for DSA832 and DSA832-TG only) | | ○ | ○ | | | | | |
| PA-DSA1030 | Preamplifier(for DSA1030 and DSA1030-TG only) | | | | | | | | ○ |
| **Optional Accessories** | | | | | | | | | |
| NFP-3 | Near Field Probe,30MHz~3GHz,4pcs | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| DSA Utility Kit | Include: N-SMA Cable, BNC-BNC Cable, N-BNC Adapter, N-SMA Adapter, 75Ω-50Ω Adapter,Antenna2(900MHz/1.8GHz),Antenna2(2.4GHz) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| RF Adaptor Kit | Include:N(F)-N(F) Adaptor(1pcs),N(M)-N(M) Adaptor(1pcs),N(M)-SMA(F) Adaptor(2pcs),N(M)-BNC(F) Adaptor(2pcs),SMA(F)-SMA(F) Adaptor(1pcs),SMA(M)-SMA(M) Adaptor(1pcs),BNC Ttype Adaptor(1pcs),50Ω SMA Load(1pcs),50Ω Impedance Adaptor(1pcs) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| RF CATV Kit | Include:50Ω to 75Ω Adaptor(2pcs) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| RF Attenuator Kit | Include:6dB Attenuator(1pcs),10dB Attenuator(2pcs) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| ATT03301H | 30dB High Power Attenuator,Max.Power 100W | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| CB-NM-NM-75-L-12G | N(M)-N(M)RFCable,upto12.4GHz | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| CB-NM-SMAM-75-L-12G | N(M)-SMA(M) RF Cable,up to 12.4GHz | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| TX1000 | RF Demo Kit(Transmitter) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| RX1000 | RF Demo Kit(Receiver) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| VB1020 | VSWR Bridge (1MHzto2GHz) | ○ | ○ | ○ | ○ | | | ○ | ○ |
| VB1032 | VSWR Bridge (1MHzto3.2GHz) | ○ | ○ | ○ | ○ | | | ○ | ○ |
| VB1040 | VSWR Bridge (800MHzto4GHz) | ○ | ○ | ○ | ○ | | | ○ | ○ |
| VB1080 | VSWR Bridge (2GHzto8GHz) | ○ | ○ | ○ | ○ | | | ○ | ○ |
| RM-DSA800 | Rack Mount Kit(for DSA800 series only) | ○ | ○ | ○ | ○ | ○ | ○ | | |
| RM-DSA1000 | Rack Mount Kit(for DSA1000 series only) | | | | | | | ○ | ○ |
| ARM | Desk Mount Instrument Arm(for DSA1000 series only) | | | | | | | ○ | ○ |
| USB-GPIB | USB to GPIB Interface Converter for Instrument | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| BAG-G1 | Soft Carrying Bag(for DSA800 series only) | ○ | ○ | ○ | ○ | ○ | ○ | | |
| BAG-DSA1000 | Soft Carrying Bag(for DSA1000 series only) | | | | | | | ○ | ○ |

● Standard function ○ Options

# RF Signal Generator

DSG3000 is a high performance RF signal generator which ranges from 9 kHz to 3 GHz/6 GHz. It is designed for the customers who works in the application filed of Wireless Communication, Radar test, Audio/Video Broadcasting, General Purpose, Education, Consumer Electronics etc. DSG3000 provides variety of analog, digital IQ and pulse modulations with high quality signal and stable specifications. It is a desirable choice for replacing of import products.

DSG800 offers outstanding performance at an affordable price point. There are two models available that cover output frequencies from 9 kHz to 1.5 GHz or 9 kHz to 3GHz. Maximum output power is +20 dBm (typical). Phase noise reaches -105 dBc/Hz (typical). DSG800 also provides frequency and level sweep functions, AM/FM/ØM analog modulations as well as powerful pulse modulation function. Compared with similar products, DSG800 occupies the very little workbench space and is light in weight. Due to its outstanding portability, it is the perfect choice for various fields such as education laboratories, industrial production lines, as well as research and development labs.

| | Frequency Range | | | Level Range | Accuracy | Clock Stability | Phase Noise | Std. Modulations | Pulse Train Generator | I/Q Modulation |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1.5GHz | 3GHz | 6GHz | | | | | | | |
| DSG815 | ● | | | -110dBm-+13dBm | ≤ 0.5dB (Typ.) | <2ppm <5ppb (B08 Option ) | <-100dBc/Hz (<-105dBc/Hz Typ.) | AM/FM/ΦM | DSG800-PUM DSG800-PUG (Pulse Modulation + Pulse Train ) | – |
| DSG830 | | ● | | | | | | | | |
| DSG3030 | | ● | | -130dBm-+13dBm | ≤ 0.5dB (Typ.) | <0.5ppm <5ppb (A08 Option ) | <-105dBc/Hz (<-110dBc/Hz Typ.) | AM/FM/ ΦM/ Pulse | PUG-DSG3000 | I/Q-DSG3000 |
| DSG3060 | | | ● | | | | | | | |

# DSG3000 Series RF Signal Generator

DSG3000 is a high performance RF signal generator which ranges from 9 kHz to 3 GHz/6 GHz. It is designed for the customers who works in the application filed of Wireless Communication, Radar test, Audio/Video Broadcasting, General Purpose, Education, Consumer Electronics etc. DSG3000 provides variety of analog, digital IQ and pulse modulations with high quality signal and stable specifications. It is a desirable choice for replacing of import products.

- Plenty of output functions
- Support multiple types of modulations
- Output amplitude level ranges from -130dBm to +13dBm
- Excellent phase noise specification
- Support internal and external I/Q modulation
- Support pulse modulation with 80dB on/off ratio

## Plenty of Output Functions

9kHz~3/6GHz
+25dBm~-140dBm
CW
LF
Sine, Square, Triangle, Ramp, Swp-Sine

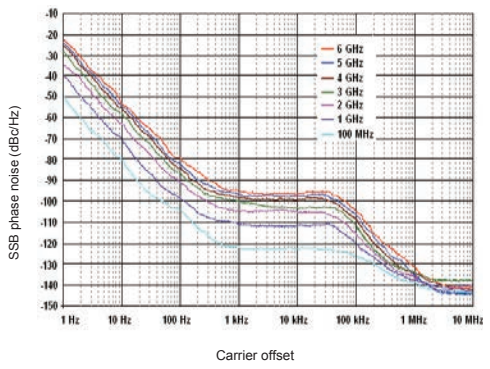
Frequency sweep, Amplitude sweep, Frequency and amplitude sweep
Sweep
PMC
Power meter controller, Test system automatic calibration

## Multiple types of Modulations

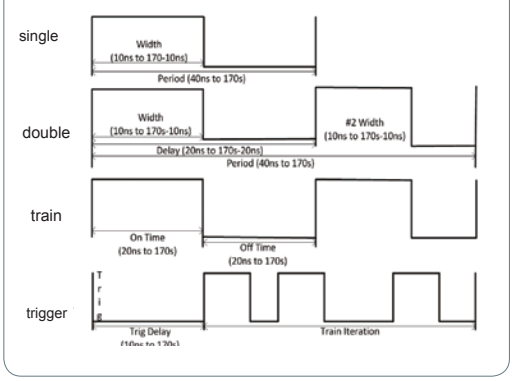
Internal modulation, External modulation
AM
FM
ΦM
Internal modulation, External modulation

Internal modulation, External modulation, Pulse train generator, Pulse generator
Pulse
I/Q
Internal modulation, External modulation, I/Q baseband generator, Baseband output

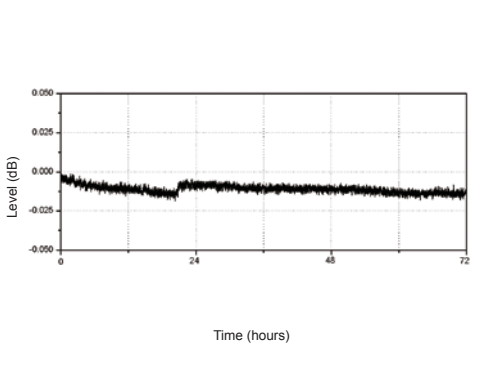
## Excellent Phase Noise Specification



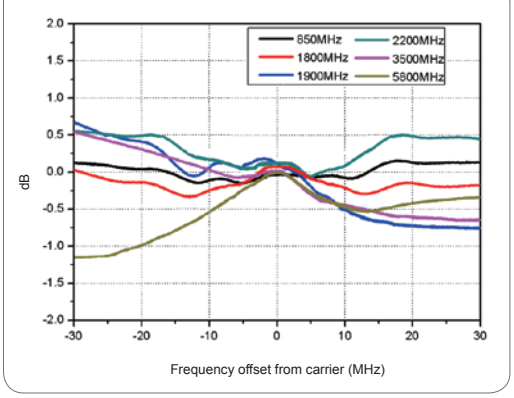

## Pulse Modulation with 80dB on-off ratio




## Excellent Amplitude Repeatability ( 6GHz，0dBm, ALC ON, 25℃ )




## Measured IQ modulation Bandwidth



## Key Specifications

| Model | | DSG3030 | DSG3060 |
|---|---|---|---|
| Frequency range | | 9kHz-3GHz | 9kHz-6GHz |
| Amplitude output level | | -130dBm - +13dBm | |
| Amplitude setting Level | | -140dBm - +25dBm | |
| Level uncertainty | | < 0.5dB typ. | |
| Clock stability | | < 0.5ppm, <5ppb(With option OCXO-A08) | |
| Spectral purity | SSB phase noise | Typ. <-110dBc/Hz@1GHz,20KHz offset | |
| | Harmonic | <-30dBc; non-harmonic: typ. <-64dBc | |
| Sweep | Sweep type | Linear sweep, Step/List sweep, Single/Continue sweep | |
| | Sweep points | 2 ~65535（Step sweep）;1-6001（List sweep） | |
| Modulation type | | AM, FM, PM, Pulse mod, I/Q mod | |
| AM | modulation depth | 0%-100% | |
| | Uncertainty | < setting value x 4% + 1% | |
| | Modulation frequency response | <3dB(10Hz ~ 50kHz m<80%) | |
| FM | Max. deviation | N x 1MHz | |
| | Uncertainty | < setting value x 2% + 20Hz | |
| | Modulation frequency response | <3dB(10Hz ~ 100kHz ) | |
| PM | Max. deviation | 3rad（f ≤ 23.4375MHz）, N x 5rad（f > 23.4375MHz） | |
| | Uncertainty | < setting value x 1% + 0.1rad | |
| | Modulation frequency response | <3dB(10Hz ~ 100kHz) | |
| Pulse modulation | On/off ratio | >80dB(25MHz ≤ f <3GHz),>70dB(3GHz ≤ f ≤ 6GHz) | |
| | Rise/fall time | 10ns typ. | |
| | Pulse mode | Single pulse, dual pulse, pulse train（option PUG-DSG3000） | |
| I/Q modulation | Bandwidth | External modulation: baseband (I or Q): up to 120MHz; RF(I+Q): up to 240MHz | |
| | | External modulation：baseband (I or Q): up to 30MHz; RF(I+Q): up to 60MHz | |
| | EVM | ≤ 0.7%rms( typ., 50MHz ≤ f ≤ 3GHz, output power≤ 4dBm) | |
| | | ≤ 1.2%rms( typ., 3GHz < f ≤ 6GHz, output power≤ 4dBm) | |
| General | Interfaces | Std.: USB,LAN, GPIB | |
| | | 10MHz Ref In/Out, Trigger In | |
| | | I/Q In/Out( install IQ modulation option ), LF Out | |
| | | Ext Mod, Pulse In/Out | |
| | | Signal Valid, Sweep Out | |

## Ordering Information

| | Description | Order Number |
|---|---|---|
| Models | DSG3030 RF Signal Generator, 9kHz-3GHz | DSG3030 |
| | DSG3060 RF Signal Generator, 9kHz-6GHz | DSG3060 |
| Standard Accessories | Power Cable, Quick Guide (Hard Copy) | - |
| | DSG IQ function PC software | Ultra IQ Station |
| Options | Pulse Train Generator | PUG-DSG3000 |
| | High Stable OCXO Reference Clock | OCXO-A08 |
| | I/Q Modulation, Baseband Output | IQ-DSG3000 |
| | Power Meter Controller | PMC-DSG3000 |
| | Rack Mount Kit | RM-DSG3000 |

# DSG800 Series RF Signal Generator

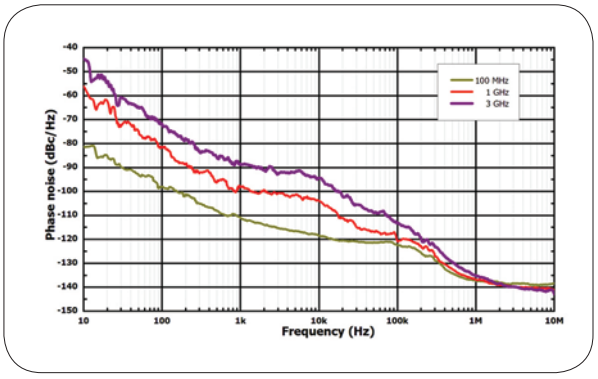
DSG800 establishes a new standard of economical RF signal generator by the unprecedented cost-effective advantage in. Combining with DSA800 economical spectrum analyzer, the product pair provides a screaming solution for RF test and measurement application.

DSG800 offers outstanding performance comparing with the same-level economical RF signal generator. It covers the frequency range from 9 kHz to 1.5 GHz or 3 GHz. Maximum output power is +20 dBm (typical). Phase noise reaches -105 dBc/Hz (typical).

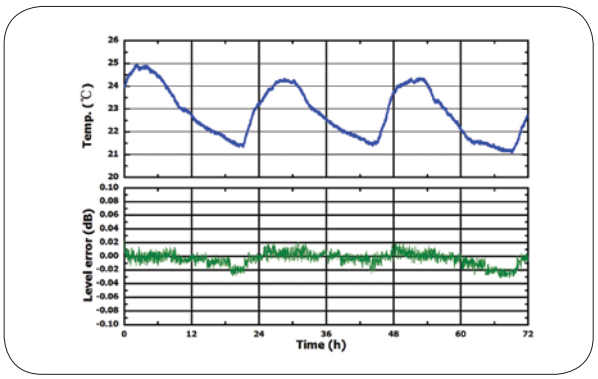
DSG800 provides the frequency and level sweep functions, AM/FM/ØM analog modulations as well as powerful pulse modulation function. Thus DSG800 can be used as an excitation source to output all kinds of high quality signals (including RF, LF, sweep, pulse and a variety of analog modulated signals), and can be used as a reference source.

- Up to -105 dBc/Hz (typical) phase noise
- Up to +20 dBm (typical) maximum output power
- Special digital ALC circuit ensuring its stability and reliability
- Flexible frequency and amplitude sweep functions
- Complete AM/FM/ØM analog modulation functions
- Powerful pulse modulation function
- Prominent portability; Simple and easy to operate

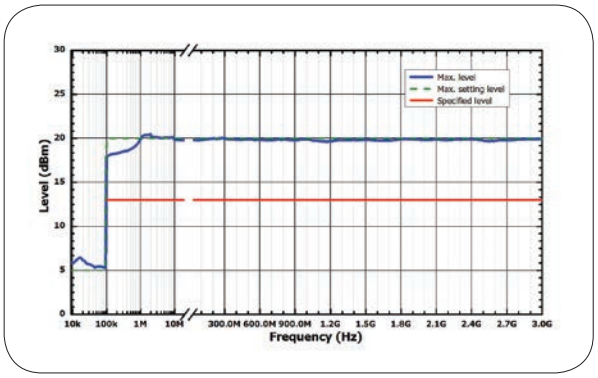
Measured SSB phase noise



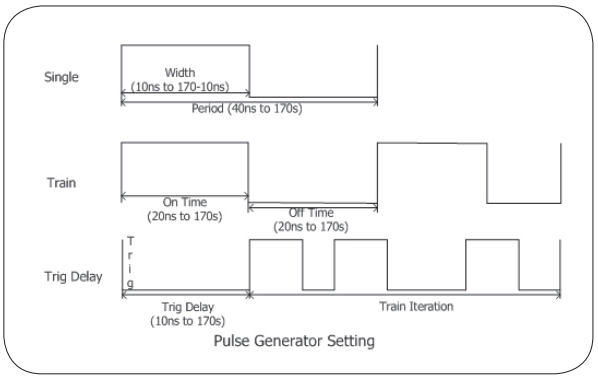

Measured level repeatability @ 1 GHz, 0 dBm




Measured maximum level vs. frequency




Powerful pulse modulation and pulse train generator




## Simultaneous Modulation

| | AM | FM | ØM | Pulse mod. (opt.) |
|---|---|---|---|---|
| AM | — | ○ | ○ | △ |
| FM | ○ | — | × | ○ |
| ØM | ○ | × | — | ○ |
| Pulse mod. (opt.) | △ | ○ | ○ | — |

Note: ○: Compatible; ×: Not compatible; △ : Compatible, but the AM performance will decrease when pulse modulation is turned on.

## Key Specifications

| Models | | DSG815 | DSG830 |
|---|---|---|---|
| Frequency range | | 9kHz-1.5GHz | 9kHz-3GHz |
| Amplitude Output Level | | -110dBm - +13dBm | |
| Amplitude Setting Level | | -110dBm - +20dBm | |
| Level uncertainty | | <0.9dB (< 0.5dB typ.) | |
| Clock stability | | < 2ppm, <5ppb(With option OCXO-B08) | |
| Spectral Purity | SSB phase noise | 100KHz ≤ f ≤ 1.5GHz, <-100dBc/Hz (<-105dBc/Hz typ.)<br>1.5GHz ≤ f ≤ 3GHz, <-94dBc/Hz (<-99dBc/Hz typ.) CW mode, carrier offset =20KHz | |
| | Harmonic | <-30dBc CW mode 1MHz ≤ f ≤ 3GHz, Level≤ +13dBm | |
| | Non-harmonic | 100KHz ≤ f ≤ 1.5GHz, <-60dBc (<-70dBc typ. ); 1.5GHz ≤ f ≤ 3GHz, <-54dBc/Hz(<-64dBc/Hz typ. ) | |
| Sweep | Sweep type | Linear sweep, Step/List sweep, Single/Continue sweep | |
| | Sweep points | 2 ~65535(Step sweep); 1-6001 (List sweep) | |
| Modulation type | | AM, FM, ØM, Pulse mod | |
| AM | modulation depth | 0%-100% | |
| | Uncertainty | < setting value x 4% + 1% | |
| | Modulation frequency response | <3dB(10Hz ~ 100kHz m<80%) | |
| FM | Max. deviation | N x 1MHz | |
| | Uncertainty | < setting value x 2% + 20Hz | |
| | Modulation frequency response | <3dB(10Hz – 100KHz) | |
| PM | Max. deviation | N x 5rad | |
| | Uncertainty | < setting value x 1% + 0.1rad | |
| | Modulation frequency response | <3dB(10Hz – 100kHz) | |
| Pulse modulation | On/off ratio | >70dB(100kHz ≤ f <3GHz) | |
| | Rise/fall time | <50ns, 10ns (typ.) | |
| | Pulse mode | Single pulse, pulse train (option DSG800-PUG) | |
| General | Interfaces | Std.: USB, LAN | |
| | | Front Panel: RF output, Internal modulation generator (LF) output | |
| | | Rear Panel: External trigger input, Signal valid output, Pulse input or output | |
| | | External modulating signal input, 10MHz input/output | |

## Ordering Information

| | Description | Order Number |
|---|---|---|
| Models | DSG830 RF Signal Generator, 9kHz-3GHz | DSG830 |
| | DSG815 RF Signal Generator, 9kHz-1.5GHz | DSG815 |
| Standard Accessories | Power Cable, Quick Guide (Hard Copy) | - |
| Options | Pulse Modulation, Pulse Generator | DSG800-PUM |
| | Pulse Train Generator (DSG800-PUM Included) | DSG800-PUG |
| | High Stable Reference Clock | OCXO-B08 |
| | Rack Mount Kit (For one Instrument) | RM-1-DG1000Z |
| | Rack Mount Kit (For two Instrument) | RM-2-DG1000Z |

# Function/Arbitrary Waveform Generator

RIGOL's Function / Arbitrary Waveform generator adopts the latest Direct Digital Frequency Synthesis technology (DDS) to generate accurate and stable regular waveforms (such as sine waves and square waves) as well as the Analog or Digital modulated signals. What's more, the generator also provides arbitrary waveform function which allows engineers to generate any desired waveforms either using the UltraWave arbitrary waveform editing software or using the oscilloscope to capture the actual signal and then downloading it to the generator. The digital sampling technology and the Direct Digital Frequency Synthesis technology enable engineers to generate any desired waveform for circuit verification design.

RIGOL has introduced a complete range of Function / Arbitrary Waveform generators in the past years includes DG1022, DG1000Z, DG2000, DG3000, DG4000 and DG5000 series with up to 350MHz frequency, 1 GSa/s sample rate, 14 bits vertical resolution, 128M points arbitrary waveform memory. The rich features let RIGOL's generators to be the excellent circuit debug tools for engineers.

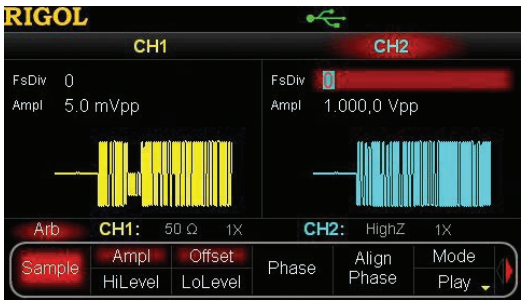
| | Max. Output Frequency（MHz） | | | | | | | | | | Channels | Max. Sample rate | Max. Arb Memory Depth | Modulation Types |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 350 | 250 | 200 | 160 | 100 | 70 | 60 | 30 | 25 | 20 | | | | |
| DG5000 | ● | ● | | | ● | ● | | | | | 1/2 | 1Gsa/s | 128M | AM,FM,PM,ASK,FSK,PSK,PWM,IQ |
| DG4000 | | | ● | ● | ● | | ● | | | | 2 | 500Msa/s | 16K | AM,FM,PM,ASK,FSK,PSK,BPSK,QPSK, 3FSK,4FSK,OSK,PWM |
| DG1000Z | | | | | | | ● | ● | | | 2 | 200Msa/s | 8M (16M option) | AM,FM,PM,ASK,FSK,PSK,PWM |
| DG1022A | | | | | | | | | ● | | 2 | 100Msa/s | 4K | AM,FM,PM,FSK |
| DG1022 | | | | | | | | | | ● | 2 | 100Msa/s | 4K | AM,FM,PM,FSK |

# DG5000 Series Function/Arbitrary Waveform Generator

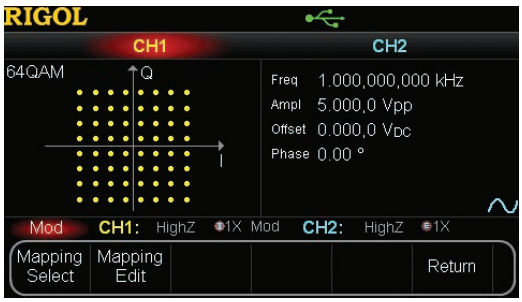
DG5000 is a multifunctional generator that combines many functions in one, including Function Generator, Arbitrary Waveform Generator, IQ Baseband Source/IQ IF Source, Frequency Hopping Source (optional) and Pattern Generator (optional).DG5000 can provide stable, precise, pure and low distortion signal by adopting the Direct Digital Synthesizer (DDS) technology. It provides single and dual-channel models. The dual-channel model, with two channels having complete equivalent functions and precisely adjustable phase deviation between the two channels, is a real dual-channel signal generator.

- Arb function with 1 GSa/s sample rate, 14 bits vertical resolution
- Support internal and external IQ modulation
- Whole range of Analog/Digital modulation functions (Standard))
- Various Sweep Types (standard)
- Intuitive Constellation setup and display
- Support Frequency Hopping function (option)
- Complete connectivity, support Parallel Bus output (Option)

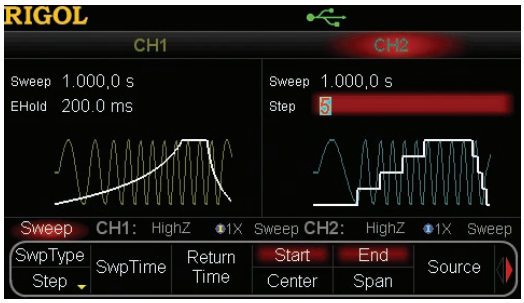
### Arb function with 1 GSa/s sample rate, 14 bits vertical resolution



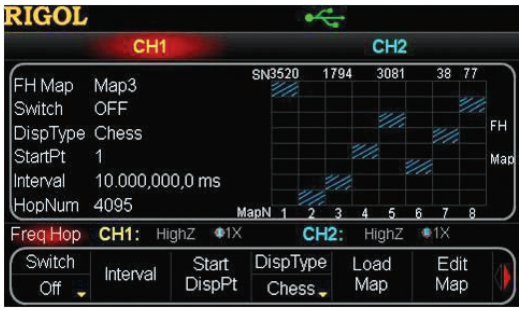

### Intuitive Constellation setup and display



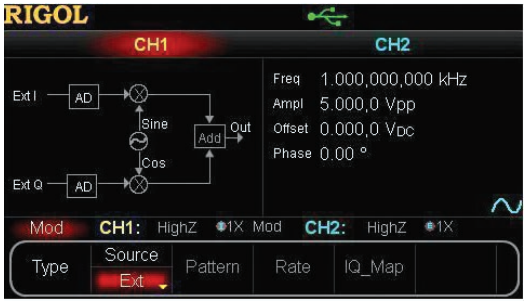

### Various Sweep Types (standard)




### Support Frequency Hopping function (option）




### Support internal and external IQ modulation




### Complete connectivity, support Parallel Bus output (Option)

## Key Specifications

| Model | DG5351/2 | DG5251/2 | DG5101/2 | DG5071/2 |
|---|---|---|---|---|
| Channel | 1/2 | 1/2 | 1/2 | 1/2 |
| Maximum Frequency | 350MHz | 250MHz | 100MHz | 70MHz |
| Sample Rate | 1GSa/s | | | |
| Waveforms | Standard Waveforms: Sine, Square, Ramp, Pulse, Noise<br>Arbitrary Waveforms: Sinc, Exponential Rise, Exponential Fall, ECG, Gauss, HaverSine, Lorentz, Dual-Tone, DC, User defined | | | |
| Frequency Characteristics | | | | |
| Sine | 1uHz-350MHz | 1uHz-250MHz | 1uHz-100MHz | 1uHz-70MHz |
| Square | 1uHz-120MHz | 1uHz-120MHz | 1uHz-100MHz | 1uHz-70MHz |
| Ramp | 1uHz-5MHz | 1uHz-5MHz | 1uHz-3MHz | 1uHz-3MHz |
| Pulse | 1uHz-50MHz | | | |
| Noise | 250MHz | | | |
| Arb | 1uHz-50MHz | | | |
| Waveform Length | 128M (std.) | | | |
| Sine Wave Spectrum Purity | Total Harmonic Distortion: <0.5%(10Hz-20KHz,0dBm);<br>Phase Noise: <-110dBc@10MHz (0dBm,10KHz offset) | | | |
| Square Rise/Fall Time | <2.5ns | <2.5ns | <3ns | <4ns |
| Jitter (rms) | ≤ 30MHz: 10ppm+500ps, >30MHz: 500ps | | | |
| Amplitude (into 50 Ω) | ≤ 100MHz: 5mVpp-10Vpp; ≤ 300MHz:5mVpp-5Vpp; ≤ 350MHz:5mV-2Vpp | | | |
| IQ Modulation | 4QAM,8QAm,16QAM,32QAM,64QAM,BPSK,QPSK,OQPSK,8PSK,16PSK,user;<br>Code Rate: 1bps to 1Mbps; Carrier Waveform: Sine (max.200MHz) | | | |
| FH Characteristic | FH Bandwidth 1.5MHz-250MHz; FH Rate: 1 Hop/s to 12.5M Hop/s; Frequency Point Numbers:4096 | | | |
| Burst Characteristics | Carrier Frequency 1uHz-120MHz, Burst Count: 1 to 1 000 000 or Infinite | | | |

## Ordering Information

| | Description | Order Number |
|---|---|---|
| Model | DG5352 (350 MHz, dual-channel, 128Mpts) | DG5352 |
| | DG5351 (350 MHz, single-channel, 128Mpts) | DG5351 |
| | DG5252 (250 MHz, dual-channel, 128Mpts) | DG5252 |
| | DG5251 (250 MHz, single-channel, 128Mpts) | DG5251 |
| | DG5102 (100 MHz, dual-channel, 128Mpts) | DG5102 |
| | DG5101 (100 MHz, single-channel, 128Mpts) | DG5101 |
| | DG5072 (70MHz, dual-channel, 128Mpts) | DG5072 |
| | DG5071 (70MHz, single-channel, 128Mpts) | DG5071 |
| Standard Accessories | USB Cable | CB-USBA-USBB-FF-150 |
| | BNC Cable (1 meter) | CB-BNC-BNC-MM-100 |
| | SMB(F) to BNC(M) Cable (1 meter) | CB-SMB-BNC-FM-100 |
| | Power Cord | - |
| | Quick Guide (Hard Copy) | - |
| Options | Frequency Hopping Module | FH-DG5000 |
| | Logic Signal Output Module | DG-POD-A |
| | Power Amplifier | PA1011 |
| | 40 dB Attenuator | RA5040K |
| | Rack Mount Kit | RM-DG5000 |

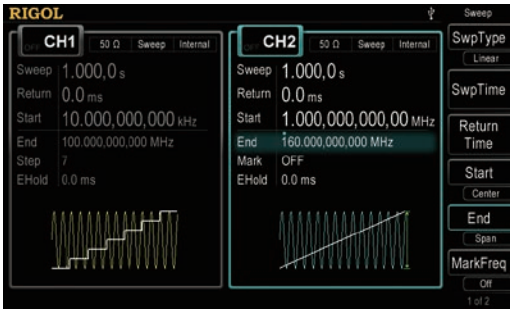
# DG4000 Series Function/Arbitrary Waveform Generator

DG4000 series is a multifunctional generator that combines many functions in one, including Function Generator, Arbitrary Waveform Generator, Pulse Generator, Harmonic Generator, Analog/Digital Modulator and Counter. DG4000 can provide stable, precise, pure and low distortion signal by adopting the Direct Digital Synthesizer (DDS) technology. All the models have two channels with complete equivalent functions and precisely phase adjustable, they are the real dual-channel signal generator.

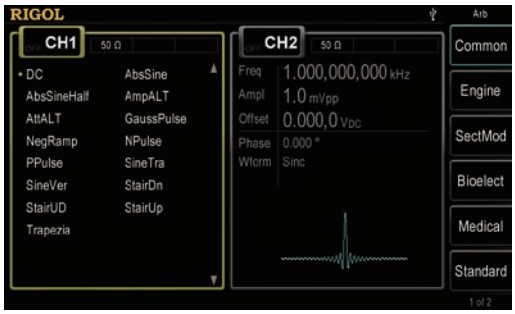
- 7 inch color LCD
- Arbitrary waveform function and built-in 150 waveform
- Abundant analog and digital modulation function
- Various Sweep modes
- Noise and Burst modes
- Up to 16 orders customized Harmonic generation function

### Standard 2 identical channels with frequency and phase coupling

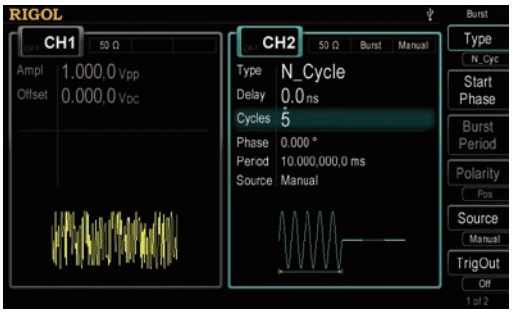

### Various Sweep modes



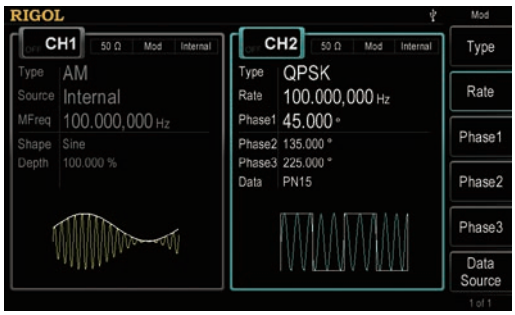

### Arbitrary waveform function and built-in 150 waveform



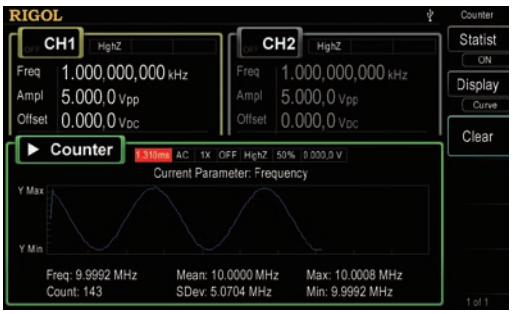

### Noise and Burst modes




### Abundant analog and digital modulation function




### Standard 7digits/s counter with statistic analysis



## Key Specifications

| Model | DG4202 | DG4162 | DG4102 | DG4062 |
|---|---|---|---|---|
| Channel | 2 | | | |
| Maximum Frequency | 200MHz | 160MHz | 100MHz | 60MHz |
| Sample Rate | 500Msa/s | | | |
| Waveforms | Standard Waveforms: Sine, Square, Ramp, Pulse, Noise, Harmonics ( up to 16 orders)<br>Arbitrary Waveforms: Sinc, Exponential Rise, Exponential Fall, ECG, Gauss, HaverSine, Lorentz, Dual-Tone, DC, etc. up to 150 waveforms | | | |
| Waveform Length | 16K | | | |
| Vertical Resolution | 14bits | | | |
| Sine | 1uHz-200MHz | 1uHz-160MHz | 1uHz-100MHz | 1uHz-60MHz |
| Square | 1uHz-60MHz | 1uHz-50MHz | 1uHz-40MHz | 1uHz-25MHz |
| Ramp | 1uHz-5MHz | 1uHz-4MHz | 1uHz-3MHz | 1uHz-1MHz |
| Pulse/arb | 1uHz-50MHz | 1uHz-40MHz | 1uHz-25MHz | 1uHz-15MHz |
| Noise（-3dB） | 120MHz | 120MHz | 80MHz | 60MHz |
| Sine Wave Spectrum Purity | Total Harmonic Distortion：<0.1%(10Hz-20KHz,0dBm); Phase Noise：≤ -115dBc@10MHz (0dBm,10KHz offset) | | | |
| Square Rise/Fall Time | <8ns | <8ns | <10ns | <12ns |
| Jitter (rms) | ≤ 5MHz: 2ppm+500ps, >5MHz : 500ps | | | |
| Amplitude (into 50 Ω) | ≤ 20MHz：1mVpp-10Vpp; ≤ 60MHz:1mVpp-5Vpp; ≤ 120MHz:1mV-2.5Vpp; ≤ 200MHz:1mV-1Vpp | | | |
| Modulation Type | AM, FM, PM, ASK, FSK, PSK, BPSK, QPSK, 3FSK, 4FSK, OSK, PWM | | | |
| Work Mode | Continue, Burst, Sweep, Modulation | | | |
| Burst Characteristics | Carrier Frequency 2mHz-100MHz, Burst Count：1 to 1 000 000 or Infinite; trigger source: internal, external, manual | | | |

## Ordering Information

| | Description | Order Number |
|---|---|---|
| Model | DG4202 (200 MHz, dual-channel) | DG4202 |
| | DG4162 (160 MHz, dual-channel) | DG4162 |
| | DG4102 (100 MHz, dual- channel) | DG4102 |
| | DG4062 ( 60 MHz, dual-channel) | DG4062 |
| Standard Accessories | USB Cable | CB-USBA-USBB-FF-150 |
| | BNC Cable (1 meter) | CB-BNC-BNC-MM-100 |
| | Power Cord | - |
| | Quick Guide (Hard Copy) | - |
| Optional Accessories | DG4 PC Software(Advanced functions) | Ultra Station-adv |
| | 40 dB Attenuator | RA5040K |
| | Rack Mount Kit | RM-DG4000 |
| | USB-GPIB Module | USB-GPIB |

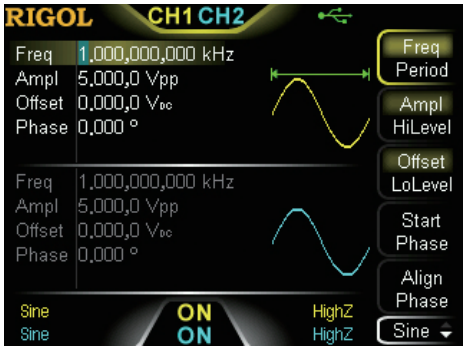
# DG1000Z Series Function/Arbitrary Waveform Generator

DG1000Z series function/arbitrary waveform generator is a multi-functional generator that combines many functions in one, including Function Generator, Arbitrary Waveform Generator, Noise Generator, Pulse Generator, Harmonics Generator, Analog/Digital Modulator and Counter.

The maximum output frequency (Sine) of DG1000Z is 30MHz or 60MHz. It provides 2 full functional channels with precisely phase adjustable. The standard interfaces are USB and LAN.

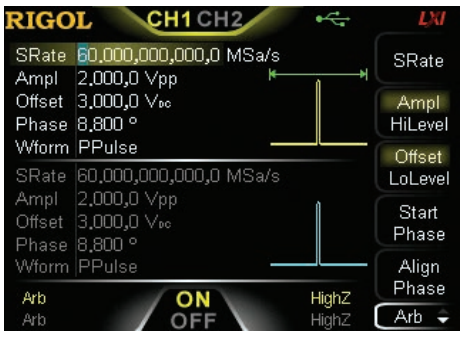
- Innovative SiFi technology
- Up to 160 built-in waveforms
- Multiple analog and digital modulations
- Standard harmonic generator
- Waveform summing function
- Standard 7 digits/s full function frequency counter

### Standard 2 full functional channels

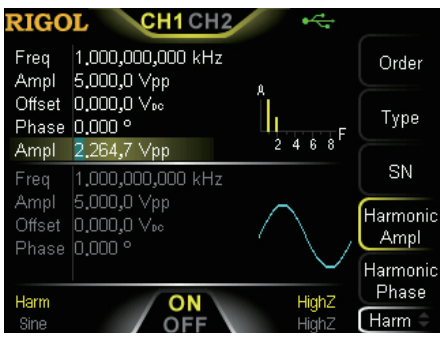



### Multiple analog and digital modulations

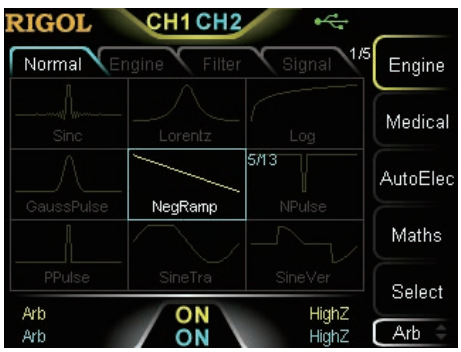

### Arbitrary waveform function with innovative SiFi technology



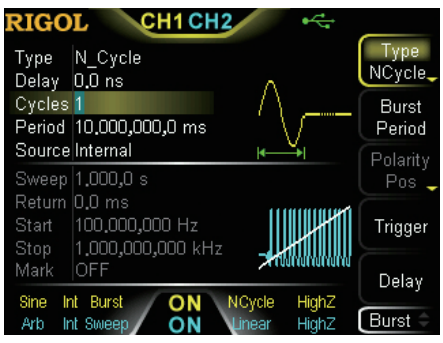

### Standard harmonic generator




### Up to 160 built-in waveforms




### Burst function



## Key Specifications

| Model | DG1062Z | DG1032Z |
|---|---|---|
| Channel | 2 | |
| Maximum Frequency | 60MHz | 30MHz |
| Sample Rate | 200Msa/s | |
| Waveforms | Waveforms Standard Waveforms: Sine, Square, Ramp, Pulse, Noise, Harmonics ( up to 8 orders) Arbitrary Waveforms: Sinc, Exponential Rise, Exponential Fall, ECG, Gauss, HaverSine, Lorentz, Dual-Tone, DC, etc. up to 160 waveforms | |
| Waveform Length | 8Mpts, optional 16Mpts | |
| Vertical Resolution | 14bits | |
| Sine | 1uHz-60MHz | 1uHz-30MHz |
| Square | 1uHz-25MHz | 1uHz-15MHz |
| Ramp | 1uHz-1MHz | 1uHz-500KHz |
| Pulse | 1uHz-25MHz | 1uHz-15MHz |
| Arb/Harmonics | 1uHz-20MHz | 1uHz-10MHz |
| Noise（-3dB） | 60MHz | 30MHz |
| Sine Wave Spectrum Purity | Total Harmonic Distortion：<0.075%(10Hz-20KHz,0dBm); Phase Noise：<-125dBc@10MHz (0dBm,10KHz offset) | |
| Square Rise/Fall Time | <10ns | |
| Jitter (rms) | ≤ 5MHz：2ppm+200ps, >5MHz：200ps | |
| Amplitude (into 50 Ω) | ≤10MHz：1 mVpp-10Vpp; ≤30MHz:1 mVpp-5Vpp; ≤60MHz:1 mV-2.5Vpp | |
| Modulation Type | AM,FM,PM,ASK,FSK,PSK,PWM | |
| Work Mode | Continue, Burst, Sweep, Modulation | |
| Burst Characteristics | Carrier Frequency 2mHz-60MHz (or 30MHz), Burst Count：1 to 1 000 000 or Infinite; trigger source: internal, external, manual | |
| Standard Interfaces | USB, LAN（LXI-C）, USB-GPIB（option） | |

## Ordering Information

| | Description | Order Number |
|---|---|---|
| Model | DG1062Z (60MHz, Dual-channel) | DG1062Z |
| | DG1032Z (30MHz, Dual-channel) | DG1032Z |
| Standard Accessories | USB Cable | CB-USBA-USBB-FF-150 |
| | BNC Cable (1 meter) | CB-BNC-BNC-MM-100 |
| | Power Cord | - |
| | Quick Guide | - |
| Optional Accessories | 16Mpts Memory for Arb | ARB16M-DG1000Z |
| | 40dB Attenuator | RA5040K |
| | 10W Power Amplifier | PA1011 |
| | Rack Mount Kit (for single instrument) | RM-1-DG1000Z |
| | Rack Mount Kit (for dual instruments) | RM-2-DG1000Z |
| | USB-GPIB module | USB-GPIB |

# DG1000 Series Function/Arbitrary Waveform Generators


DG1000 Series function/arbitrary waveform generators use Direct Digital Synthesis (DDS) technology and can generate accurate, stable, clean, low distortion signals. It provides dual channel with 5 standard waveforms and built-in 48 arbitrary waveforms.

- 1μHz frequency resolution
- 2mV minimum range (50 Ohm)
- Dual channel output synchronously
- 48 built-in arbitrary waveforms
- 200 MHz built-in frequency counter

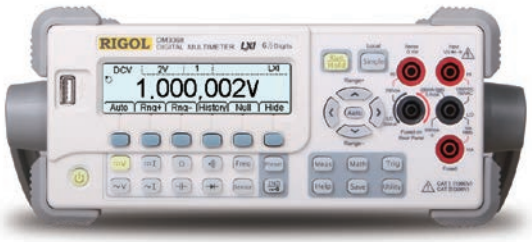
## Key Specifications

| Model | DG1022A | | | DG1022 | | |
|---|---|---|---|---|---|---|
| Channel | 2 | | | | | |
| Maximum Frequency | 25MHz | | | 20MHz | | |
| Sample Rate | 100Msa/s | | | | | |
| Waveforms | Sine, Square, Ramp / Triangular, Pulse, Noise, Arb（built-in 48 waveforms） | | | | | |
| Waveform Length | CH1：4Kpts；CH2：1Kpts | | | | | |
| Vertical Resolution | CH1：14bits；CH2：10bits | | | | | |
| Waveform Characteristics<br>DG1022A<br>DG1022 | Sine | Square | Pulse | Ramp | Noise | Arb |
| | 1uHz-25MHz<br>1uHz-20MHz | 1uHz-5MHz | 500uHz-5MHz<br>500uHz-3MHz | 1uHz-500KHz<br>1uHz-150kHz | 5MHz（-3dB） | 1uHz-5MHz |
| Sine Wave Spectrum Purity | Total Harmonic Distortion：<0.2%(10Hz-20KHz,0dBm);<br>Phase Noise：<-108dBc@10MHz (0dBm,10KHz offset) | | | | | |
| Square Rise/Fall Time | <20ns | | | | | |
| Amplitude (into 50 Ω) | CH1：≤ 20MHz：2mVpp-10Vpp; >25MHz:2mVpp-5Vpp; CH2：2mV - 3Vpp | | | | | |
| Modulation Type | AM,FM,PM,FSK | | | | | |
| Work Mode | Continue, Burst, Sweep, Modulation | | | | | |
| Burst Characteristics | Burst Count：1 to 50 000 or Infinite; gated; trigger source: internal, external, manual | | | | | |

## Ordering Information

| | Description | Order Number |
|---|---|---|
| Model | DG1022A (25 MHz, dual-channel) | DG1022A |
| | DG1022 (20MHz, dual-channel) | DG1022 |
| Standard Accessories | BNC Cable (1 meter) | CB-BNC-BNC-MM-100 |
| | Power Cord | - |
| | Quick Guide | - |
| Optional Accessories | USB Cable | CB-USBA-USBB-FF-150 |
| | 40dB Attenuator | RA5040K |
| | 10W Power Amplifier | PA1011 |
| | BNC to Alligator Clamp | CB-BNC-AC-100-L |

# Digital Multimeter

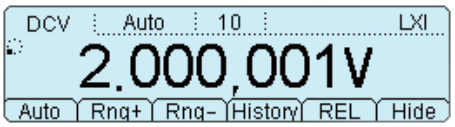



DM3000 series Digital multimeters (DM3068, DM3058, DM3058E ) are the products designed with multi-functions, high-precision, high performance and automatic measurements, they are integrated with the features of high-speed data acquisition, high precision, high statability, support any type of sensors, complete interfaces.

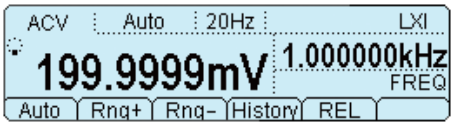
They have complete interface includes RS-232, USB, LAN (LXI-C) and GPIB, they support the U disk storage. It's easy to be connected to the PC by the USB or LAN. They have been optimized for the production line automatic measurements with the PASS/FAIL control, unified power management, pre-programmed configurations, configuration setup cloning, fast measurement speed and noise immunity to improve the productivity.DM3000 series Digital multimeters are widely used in the areas of Research, Production line tests, Education, Quality Assurance, Service/ Maintenance, etc.

- 6 ½ (DM3068) or 5 ½ (DM3058/E) digits readings resolution
- Max. 10A Current Measurement Range
- Dual Measurements Display
- Support temperature sensors (TC,RTD and THERM) and user defined any sensor
- Statistical analysis; Real-time Trend and Histogram display functions (DM3068)
- Abundant interfaces; Command compatible with main stream DMMs

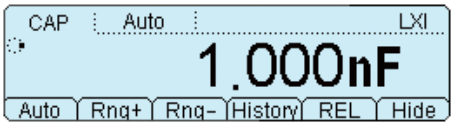
### Real 6½ digits readings resolution (DM3068)



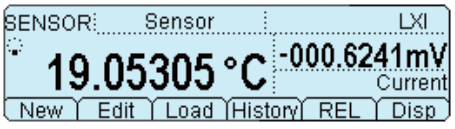

### Easy to measure AC signal with double display



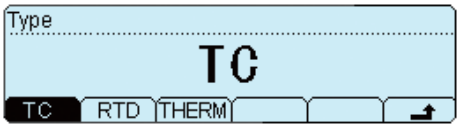

### Standard Capacitor measurement function



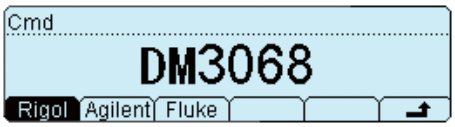

### “Any sensor” function



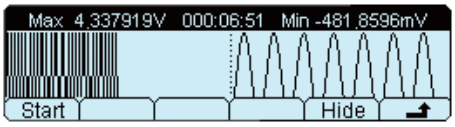

### Support multiple temperature sensors



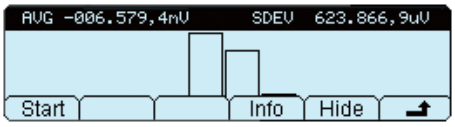

### Support multiple commands



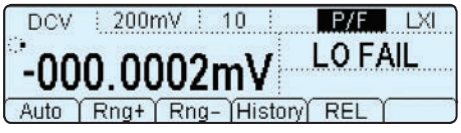

### Trend display



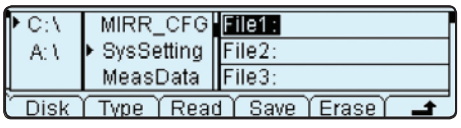

### Histogram display




### Pass/Fail test




### Clone all configurations from one instrumemt to another



## Key Specifications

| Function | Range | 1Year Accuracy Specifications ± ( % of reading + % of range) (Tcal 23℃ ±5℃ ) | |
|---|---|---|---|
| | | DM3068 | DM3058/E |
| DC Voltage | 200.000mV ~ 1000.00V | 0.0035 + 0.0006 | 0.015 + 0.003 |
| DC Current | 200.000uA ~ 10.0000A | 0.030 + 0.003 | 0.055 + 0.005 |
| AC Voltage (RMS) | 200.000mV ~ 750.000V | 0.06 + 0.04 | 0.2 + 0.05 |
| AC Current (RMS) | 200.0000uA ~ 10.00000A[1] | 0.10 + 0.04 | 0.30+ 0.10 |
| Resistance | 200.000Ω ~ 100.000MΩ | 0.010 + 0.001 | 0.020 + 0.003 |
| Diode Test | 2.000V/1mA | 0.010 + 0.020 | 0.05 + 0.01 |
| Continuity Test | 2000.0Ω/1mA | 0.010 + 0.020 | 0.05 + 0.01 |
| Period/Frequency | 3Hz-1MHz (200mV ~750V) | 0.007 | 0.01+ 0.003 |
| Capacitance | 2.000nF ~ 100.0mF[2] | 1 + 0.3 | 1+0.5 |
| Max. Reading Speed | | 10000 rdgs /s | 123 rdgs /s |
| Volatile Memory | | 512k readings of history records | 2000 readings of history records |
| Remote Command | | RIGOL, Agilent, FLUKE | |

[1] DM3058/E ACI range: 20mA to 10A
[2] DM3058/E Cap range: 2nF to 10uF

## Ordering Information

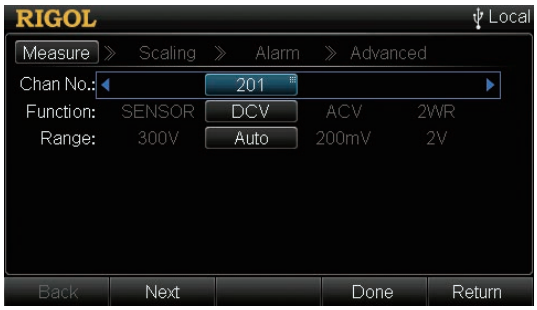
| | Description | Order Number |
|---|---|---|
| Model | DM3068: 6½ digits; standard interfaces: GPIB, LAN, USB, RS232 | DM3068 |
| | DM3058: 5½ digits; standard interfaces: GPIB, LAN, USB, RS232 | DM3058 |
| | DM3058E: 5½ digits; standard interfaces: USB, RS232 | DM3058E |
| Standard Accessories | Two Test Leads (black and red) | LD-DM |
| | Two Alligator Clips (black and red) | ALLIGATORCLIP - DMM |
| | USB Cable | CB-USBA-USBB-FF-150 |
| | Spare Fuses（DM3068: four; DM3058/E: two) | - |
| | Power Cord | - |
| | Quick Guide | - |
| Optional Accessories | Kelvin Test Clips | KELVINTESTCLIP - DMM |
| | RS232 cable | - |
| | Rack Mount Kit | RM-DM3000 |

# Data Acquisition/ Switch System

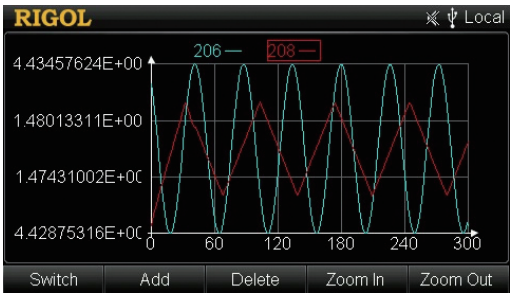

M300 Series Data Acquisition/Switch System with modular structure, which combines precision measurement capability with flexible signal connections, can provide versatile solutions for the applications with multiple points or signals to be tested in product performance test during R&D phase as well as automatic test during production process.

- 4.3' TFT LCD, easy for operation
- 6½ digit DMM can be inserted into any slot. supporting multiple measurement functions, including DCV,DCI, ACV, ACI, 2WR, 4WR, PERIOD, FREQ, TEMP and any sensor
- Up to 320 switch channels per mainframe, save on cost of ownership
- 8 kinds of Modules supported
- Full Interfaces supported: USB Device, USB Host, GPIB, LAN(LXI-C), RS232
- Powerful PC software

### Measurement Configuration

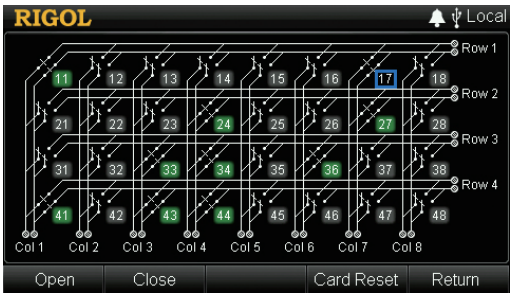



### Draw realtime scan data curves

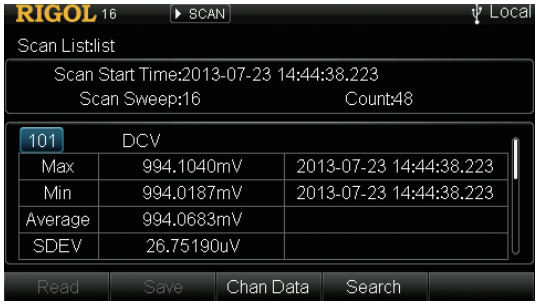



### Single Channel Monitor

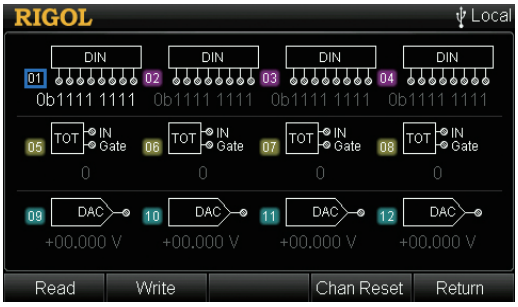

### MC3648 Control Interface




### Display real–time scan information and all the measurement data




### MC3534 Control Interface



## Key Specifications

| Module | Terminal Box | Channels | | | | Description |
|---|---|---|---|---|---|---|
| | | 20 | 24 | 32 | 64 | |
| MC3065 | - | | | | | DMM module, 6½ digits, support functions: DCV, ACV, DCI, ACI, 2WR, 4WR, FREQ, PERIOD, TEMP and any sensor |
| MC3120 | TB20 | ● | | | | 20-channel HI/LO (differential) input, Support 4-wire measurement |
| MC3132 | TB32 | | | ● | | 32-channel HI/LO (differential) input, Support 4-wire measurement |
| MC3164 | TB64 | | | | ● | 64-channel (single-ended), switch HI input only |
| MC3324 | TB24 | | ● | | | Mix multiplexer with 20 voltage channels and 4 current channels |
| MC3416 | TB16 | | | | | 16-channel actuator that can connect signal to the device under test or enable external device |
| MC3534 | TB34 | | | | | Multifunction module.<br>·DIO: four 8-bit digital input/output ports<br>·TOT: four totalizer input terminals<br>·DAC: four analog output terminals |
| MC3648 | TB48 | | | | | 4×8 two-wire matrix switch |

## Ordering Information

| | Description | Order Number |
|---|---|---|
| Mainframe | M300: Data Acquisition/Switch System | M300 |
| | M301: Data Acquisition/Switch System + DMM Module | M301 |
| | M302: Data Acquisition/Switch System + DMM Module+MC3120+M3TB20 | M302 |
| Module | DMM Module (6½ digits) | MC3065 |
| | 20-channel Multiplexer | MC3120 |
| | 32-channel Multiplexer | MC3132 |
| | 64-channel Single-ended Multiplexer | MC3164 |
| | 20-voltage-channel+4-current-channel Mixed Multiplexer | MC3324 |
| | 16-channel Actuator | MC3416 |
| | Multifunction Module | MC3534 |
| | 4×8 Matrix Switch | MC3648 |
| Terminal Box | MC3120 Terminal Box | M3TB20 |
| | MC3324 Terminal Box | M3TB24 |
| | MC3648 Terminal Box | M3TB48 |
| | MC3534 Terminal Box | M3TB34 |
| | MC3416 Terminal Box | M3TB16 |
| | MC3132 Terminal Box | M3TB32 |
| | MC3164 Terminal Box | M3TB64 |
| Standard Accessories | USB Cable | CB-USBA-USBB-FF-150 |
| | Mixed-interface Separator Line | MIX-SEPARATOR |
| | Power Cord, Quick Guide | - |
| | Spare Fuses | - |
| Optional Accessories | RS232 Cable | CB-DB9-DB9-FF-150 |
| | GPIB Reverse Entry for M300 | M3GPIB |
| | External Port for Analog Bus Interface | M3A2B |
| | Rack Mount Kit | RM-1-M300 |
| | Rack Mount Kit for Two Instruments | RM-2-M300 |
| | M300 Series control and advanced data analysis PC Software | UltraAquire Pro |

# Programmable DC Power Supply

DP800 and DP700 Series are high-performance programmable linear DC power supply. All models of DP800 series have excellent features including standard timing outputs, extremely low ripple and noise, comprehensive over-voltage, over current, over-temperature protection, a large and clear user interface, super performance and specifications. DP800A models provide standard high resolution mode (1mV/1mA) , fully remote control interfaces, On-line Monitoring and analysis functions; those functions are the options for DP800 models.

DP700 series power supply is a type of affordable programmable linear DC power supply with high performance. DP700 series also supports timing output and trigger function, and provides a remote control interface, the clear and simple user interface make it easy to use for the customers.

DP800 Series and DP700 Series have broad range of applications such as:

- Power supply for the R&D labs
- System integration
- Provide clean power for RF products
- Verification and characterisation for the device or circuit
- Teaching labs

| Model | Outputs | Output Range | Max. Power | Ripple & Noise | Std.Programming resolution | High resolution option | Monitor | Analyzer | Timing Output | Digital IO | Synchronized Output | RS232 | LAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DP711 | 1 | 30V/5A | 150W | <500 μVrms | 10mV | ○ | | | ○ | | ○ | ● | |
| DP712 | 1 | 50V/3A | 150W | <500 μVrms | 10mV | ○ | | | ○ | | ○ | ● | |
| DP811 | 1 | 20V/10A or 40V/5A | 200W | <350 μVrms | 10mV | ○ | ○ | ○ | ● | ○ | | ○ | ○ |
| DP821 | 2 | 8V/10A \|\| 60V/1A | 140W | <350 μVrms | 10mV/10mV | ○ | ○ | ○ | ● | ○ | | ○ | ○ |
| DP832 | 3 | 30V/3A \|\| 30V/3A,5V/3A | 195W | <350 μVrms | 10mV/10mV/10mV | ○ | ○ | ○ | ● | ○ | | ○ | ○ |
| DP831 | 3 | 8V/5A \|\| 30V/2A,-30V/2A | 160W | <350 μVrms | 1mV/10mV/10mV | ○ | ○ | ○ | ● | ○ | | ○ | ○ |
| DP811A | 1 | 20V/10A or 40V/5A | 200W | <350 μVrms | 1mV | ● | ● | ● | ● | ● | | ● | ● |
| DP821A | 2 | 8V/10A \|\| 60V/1A | 140W | <350 μVrms | 1mV/1mV | ● | ● | ● | ● | ● | | ● | ● |
| DP832A | 3 | 30V/3A \|\| 30V/3A,5V/3A | 195W | <350 μVrms | 1mV/1mV/1mV | ● | ● | ● | ● | ● | | ● | ● |
| DP831A | 3 | 8V/5A \|\| 30V/2A,-30V/2A | 160W | <350 μVrms | 1mV/1mV/1mV | ● | ● | ● | ● | ● | | ● | ● |

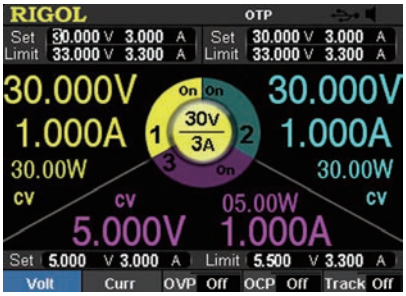
● Standard ○ Optional

# DP800 Series Programmable Linear DC Power Supply

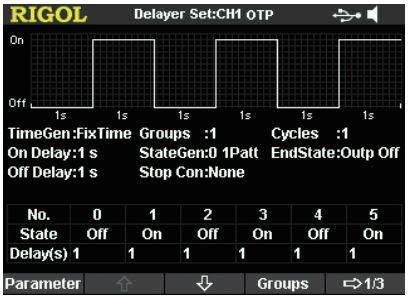
DP800 Series is the high-performance programmable linear DC power supply. All models have excellent features including standard timing outputs, extremely low ripple and noise, comprehensive over-voltage, over current, over-temperature protection, a large and clear user interface, super performance and specifications. DP800A models provide standard high resolution mode (1mV/1mA) , fully remote control interfaces, on-line Monitoring and analysis functions; those functions are the options for DP800 models.

- 1, 2 or 3 outputs, the maximum power is up to 195W
- Low Ripple and Noise: <350uVrms/2mVpp
- Fast Transient Response Time: < 50us
- 0.01% Linear Regulation Rate and Load Regulation Rate
- Standard Timing output; Built-in V,A,W measurements and
- waveform display
- 3.5 inch TFT display, easy for operation

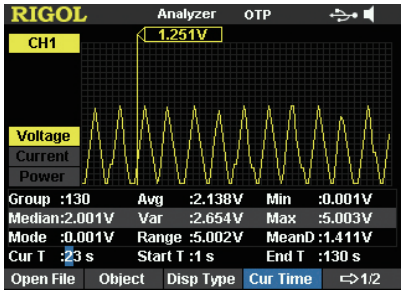
### Intuitive User Interface



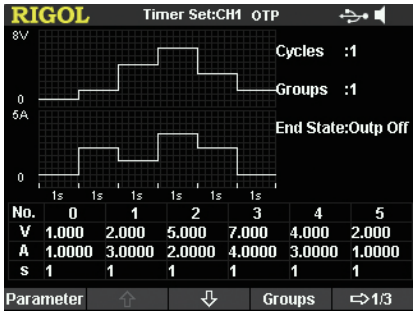

### Output On/Off Delay



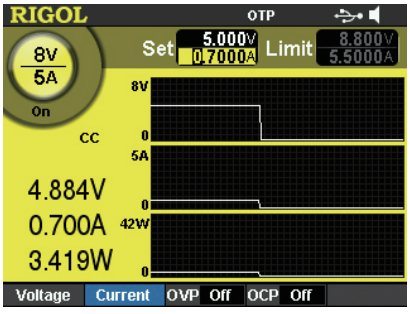

### Output Analysis



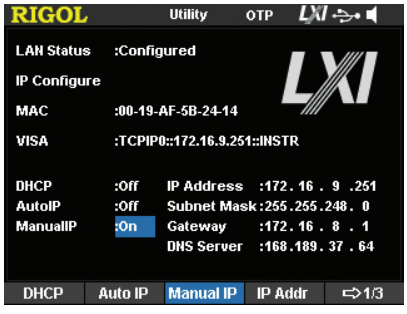

### Timing Output Setting




### V/A/W Waveform Display




### LAN Setting




## Key Specifications

| Model | DP832A | DP832 | DP831A | DP831 | DP821A | DP821 | DP811A | DP811 |
|---|---|---|---|---|---|---|---|---|
| Channels | 3 | | | | 2 | | 1 | |
| DC Output | 30V/3A \|\| 30V/3A, 5V/3A | | 8V/5A \|\| 30V/2A, -30V/2A | | 8V/10A\|\|60V/1A | | 20V/10A or 40V/5A | |
| Load Regulation Rate | Voltage：< 0.01% + 2mV; Current：< 0.01% + 250uA | | | | | | | |
| Linear Regulation Rate | Voltage：< 0.01% + 2mV; Current：< 0.01% + 250uA | | | | | | | |
| Ripples and Noise(20Hz-20MHz) | Normal Mode Voltage：<350μVrms/2mVpp; Normal Mode Current：<2mArmss | | | | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Programming Annual Accuracy | Voltage | CH1 | 0.05% + 20mV | | 0.1%+5mV | | 0.1%+25mV | | 0.05%+10mV | |
| | | CH2 | 0.05% + 20mV | | 0.05%+20mV | | 0.05%+10mV | | – | |
| | | CH3 | 0.1% + 5mV | | 0.05%+20mV | | – | | – | |
| | Current | CH1 | 0.2% + 5mA | | 0.2%+10mA | | 0.2%+10mA | | 0.1%+10mA | |
| | | CH2 | 0.2% + 5mA | | 0.2%+5mA | | 0.2%+10mA | | – | |
| | | CH3 | 0.2% + 5mA | | 0.2%+5mA | | – | | – | |
| Readback Annual Accuracy | Voltage | CH1 | 0.05% + 20mV | | 0.1%+5mV | | 0.1%+25mV | | 0.05%+10mV | |
| | | CH2 | 0.05% + 20mV | | 0.05%+20mV | | 0.05%+10mV | | – | |
| | | CH3 | 0.1% + 5mV | | 0.05%+20mV | | – | | – | |
| | Current | CH1 | 0.15% + 5mA | | 0.2%+10mA | | 0.15%+10mA | | 0.1%+10mA | |
| | | CH2 | 0.15% + 5mA | | 0.1%+5mA | | 0.15%+10mA | | – | |
| | | CH3 | 0.15% + 5mA | | 0.1%+5mA | | – | | – | |
| Programming Resolution | Voltage | | 1mV | 10mV | 1mV<br>1mV<br>1mV | 1mV<br>10mV<br>10mV | 10mV<br>1mV | 10mV<br>10mV | 1mV | 10mV |
| | Current | | 1mA | 1mA | 0.3mA<br>0,1mA<br>0,1mA | 1mA<br>1mA<br>1mA | 0.1mA<br>1mA | 1mA<br>10mA | 0.5mA | 10mA |
| Readback Resolution | Voltage | | 0.1mV | 10mV | 0.1mV | 1mV | 1mV<br>1mV | 10mV<br>10mV | 0.1mV | 1mV |
| | Current | | 0.1mA | 1mA | 0.1mA | 1mA | 0.1mA<br>1mA | 1mA<br>10mA | 0.1mA | 1mA |
| Display Resolution | Voltage | | 1mV | 10mV | 1mV | 10mV | 1mV<br>1mV | 10mV<br>10mV | 1mV | 10mV |
| | Current | | 1mA | 10mA | 1mA | 10mA | 0.1mA<br>1mA | 1mA<br>10mA | 1mA | 10mA |
| Interface | USB Device | | ● | ● | ● | ● | ● | ● | ● | ● |
| | USB Host | | ● | ● | ● | ● | ● | ● | ● | ● |
| | LAN | | ● | ○ | ● | ○ | ● | ○ | ● | ○ |
| | RS232 | | ● | ○ | ● | ○ | ● | ○ | ● | ○ |
| | Digital IO | | ● | ○ | ● | ○ | ● | ○ | ● | ○ |
| | USB-GPIB | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

## Ordering Information

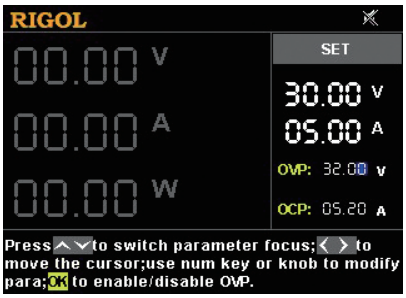
| | Description | Order Number |
|---|---|---|
| Models | Three channel, high resolution, Programmable Linear DC Power Supply | DP832A |
| | Three channel, Programmable Linear DC Power Supply | DP832 |
| | Three channel, two polarity ,high resolution, Programmable Linear DC Power Supply | DP831A |
| | Three channel, two polarity ,Programmable Linear DC Power Supply | DP831 |
| | Two channel, high resolution, Programmable Linear DC Power Supply | DP821A |
| | Two channel, Programmable Linear DC Power Supply | DP821 |
| | One channel, dual ranges, high resolution, Programmable Linear DC Power Supply | DP811A |
| | One channel, dual ranges, Programmable Linear DC Power Supply | DP811 |
| Standard Accessories | USB cable | CB-USBA-USBB-FF-150 |
| | One fuse (50T-025H 250V 2.5A) | - |
| | One shorted device | - |
| | Power cord, Quick Guide | - |
| Optional Accessories | 1mV & 1mA High resolution option(DP8xx models) | HIRES-DP800 |
| | 4 Lines Trigger In&Out (DP8xx models) | DIGITALIO-DP800 |
| | On-line Monitoring and analysis (DP8xx models) | AFK-DP800 |
| | RS232 and LAN interface (DP8xx models) | INTERFACE-DP800 |
| | USB-GPIB Converter | USB-GPIB |
| | Rack Mount Kit (one instrument) | RM-1-DP800 |
| | Rack Mount Kit (two instruments) | RM-2-DP800 |

# DP700 Series Programmable Linear DC Power Supply

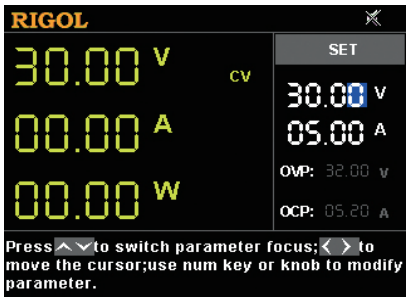
DP700 series power supply is a type of affordable programmable linear DC power supply with high performance. DP700 series supports timing output and trigger function, and provides a remote control interface, the clear and simple user interface make it easy to use for the customers.

- Two Models, Single Output，Max. Output Power up to 150 W
- Low ripple and noise：<500uVrms/3mVpp or 4mVpp
- 0.01% Excellent load and line regulation rate
- Support 1 mV/1 mA high resolution mode
- Complete OV,OT,OC protection function
- Synchronous output for multiple units
- Timing output
- 3.5-inch TFT-LCD; compact size, easy to use

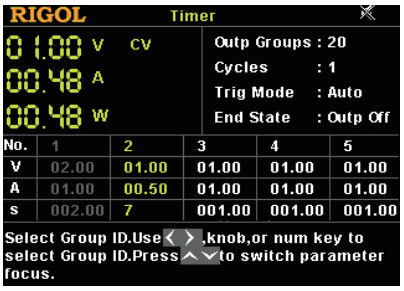
Complete overvoltage/overcurrent protection (OVP/OCP)



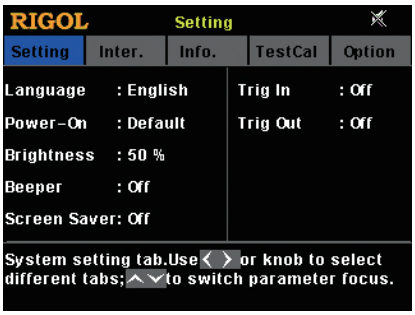

Clear and intuitive user interface, easy to use



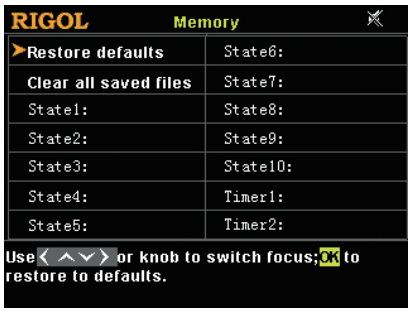

Powerful timing output function



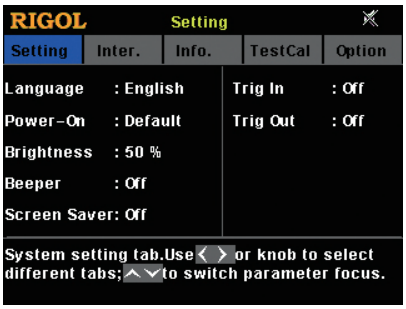

Convenient trigger function




Easy-to-use function of file storage and recallin




Abundant system setting function




## Key Specifications

| Model | Voltage/Current Rating | OVP/OCP |
|---|---|---|
| DP711 | 0 V to 30 V/0 A to 5 A | 0.01 V to 33 V/0.01 A to 5.5 A |
| DP712 | 0 V to 50 V/0 A to 3 A | 0.01 V to 55 V/0.01 A to 3.3 A |
| **Load Regulation, ±(% of Output + Offset)** | | |
| Voltage | <0.01% + 2 mV | |
| Current | <0.01% + 2 mA | |
| **Line Regulation, ±(% of Output + Offset)** | | |
| Voltage | <0.01% + 2 mV | |
| Current | <0.01% + 2 mA | |

| | | | |
|---|---|---|---|
| **Ripple and Noise (20 Hz to 20 MHz)** | | | |
| Model | | Normal Mode Voltage | Normal Mode Current |
| DP711 | | <500 μVrms/3 mVpp | <2 mArms |
| DP712 | | <500 μVrms/4 mVpp | |
| **Annual Accuracy[1] (25°C ± 5°C), ±(% of Output + Offset)** | | | |
| Programming | Voltage | 0.05% + 20 mV | |
| | Current | 0.2% + 10 mA | |
| Readback | Voltage | 0.05% + 20 mV | |
| | Current | 0.2% + 20 mA | |
| **Resolution** | | | |
| Programming | Voltage | Standard: 10 mV<br>High resolution option installed: 1 mV | |
| | Current | Standard: 10 mA<br>High resolution option installed: 1 mA | |
| Readback | Voltage | Standard: 10 mV<br>High resolution option installed: 1 mV | |
| | Current | Standard: 10 mA<br>High resolution option installed: 1 mA | |
| Display | Voltage | Standard: 10 mV<br>High resolution option installed: 1 mV | |
| | Current | Standard: 10 mA<br>High resolution option installed: 1 mA | |
| **Transient Response Time** | | | |
| Less than 50 μs for output voltage to recover to within 15 mV following a change in output current from full load to half load (or from half load to full load). | | | |
| **Mechanical** | | | |
| Dimensions | | 140 mm (W) x 202mm (H) x 332 mm (D) | |
| Weight | | Net weight: 6.9 kg | |
| **Interface** | | | |
| RS232 | | 1 | |

## Ordering Information

| | Description | Order No. |
|---|---|---|
| Model | Programmable Linear DC Power Supply (single channel, 30V/5A) | DP711 |
| | Programmable Linear DC Power Supply (single channel, 50V/3A) | DP712 |
| Standard Accessories | Power Cord | - |
| | Either one of the following specified fuses:<br>● Fuse 50T-050H 250V 5A (AC Selector: 100 Vac or 120 Vac)<br>● Fuse 50T-025H 250V 2.5A (AC Selector: 220 Vac or 240 Vac) | - |
| | Quick Guide (hard copy) | - |
| Optional Accessories | High Resolution | HIRES-DP700 |
| | Trigger (external synchronous trigger input and output) | TRIGGER-DP700 |
| | Timer | TIMER-DP700 |
| | 9-Pin RS232 Cable (female-to-female, straight) | CB-DB9-DB9-F-F-150 |
| | DP700 Series Rack Mount Kit (for a single instrument) | RM-1-DP700 |
| | DP700 Series Rack Mount Kit (for two instruments) | RM-2-DP700 |
| | DP700 Series Rack Mount Kit (for three instruments) | RM-3-DP700 |

RIGOL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