





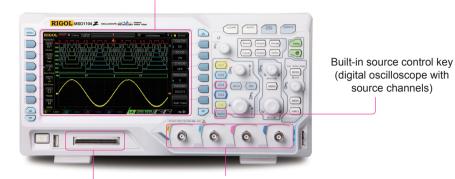
- Analog channel bandwidth: 100 MHz, 70 MHz, 50 MHz
- 4 analog channels, 16 digital channels (for MSO1000Z and MSO upgradable for DS1000Z Plus)
- Real-time sample rate up to 1 GSa/s
- Memory depth up to 12 Mpts (standard)/24 Mpts (optional)
- Up to 30,000 wfms/s waveform capture rate
- Up to 60,000 frames hardware real-time waveform recording and playback functions (optional)
- Innovative "UltraVision" technology
- MSO field upgradable with MSO1000Z upgrade package (MSO upgrade option, only for DS1000Z Plus)
- Various trigger and bus decoding functions
- · Low noise floor, vertical scale range: 1 mV/div to 10 V/div
- Built-in dual-channel 25 MHz function/arbitrary waveform generator (only for digital oscilloscope with source channels)
- Various interfaces: USB Host&Device, LAN (LXI), AUX, USB-GPIB (optional)
- · Compact size, light weight, easy to use
- 7 inch WVGA (800x480) TFT LCD, intensity graded color display

MSO/DS1000Z series is a high-performance and economic digital oscilloscope designed for the designing, debugging and educational requirements of the mainstream digital oscilloscope market. Wherein, the mixed signal digital oscilloscope aimed at the embedded design and test fields is equipped with 16 digital channels and allows users to measure analog and digital signals at the same time.



MSO/DS1000Z Series Digital Oscilloscope

7 inch WVGA (800X480) TFT display, intensity graded color display



16 digital channels (for MSO1000Z and 4 analog channels MSO upgradable for DS1000Z Plus)



Product Dimensions: Width × Height × Depth=313.1 mm × 160.8 mm × 122.4 mm Weight: 3.2 kg \pm 0.2 kg(Without Package)

Innovative UltraVision Technology(Analog Channel)



- Deeper Memory Depth (standard 12 Mpts, optional 24 Mpts)
- Higher Waveform Capture Rate (up to 30,000 wfms/s)
- Real-time Waveform Recording&Playback (up to 60,000 frames, optional)
- Intensity Graded Color Display

Models and Key Specifications

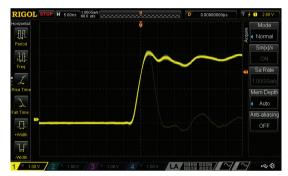
| Model | DS1054Z | DS1074Z Plus | DS1074Z-S Plus | DS1104Z Plus | DS1104Z-S Plus |
|--|---|--------------|----------------|--------------|-----------------|
| Model | DS1054Z | MSO1074Z | MSO1074Z-S | MSO1104Z | MSO1104Z-S |
| Analog BW | 50 MHz | 70 | MHz | 100 | MHz |
| Number of Analog Channels | 4 | | | | |
| Number of Digital Channels | None 16 digital channels for MSO1000Z; MSO upgradable for DS1000Z Plus | | | | or DS1000Z Plus |
| Max. Sample Rate | Analog channel: 1 GSa/s (single-channel), 500 MSa/s (dual-channel), 250 MSa/s (three/four-channel) Digital channel: 1 GSa/s (8-channel), 500 MSa/s (16-channel) | | | | |
| Max. Memory Depth | Analog channel: standard 12 Mpts (single-channel), 6 Mpts (dual-channel), 3 Mpts (3/4-channel); optional 24 Mpts (single-channel), 12 Mpts (dual-channel), 6 Mpts (3/4-channel) Digital channel: standard 12 Mpts (8-channel), 6 Mpts (16-channel); optional 24 Mpts (8-channel), 12 Mpts (16-channel) | | | | |
| Max. Waveform Capture Rate | 30,000 wfms/s | | | | |
| Hardware Real-time Waveform Recording, Playback and Analysis Functions | Up to 60,000 frames (optional) | | | | |
| Standard Probes | RP2200 150 MHz Passive HighZ Probe: 4 sets; 1 set RPL1116 LA Probe for MSO1000Z | | | | |
| | | | | | |

Features and Benefits

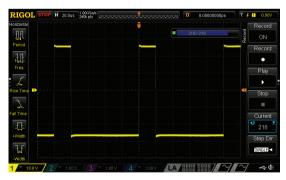
4 analog channels, 16 digital channels (for MSO1000Z and MSO upgradable for DS1000Z Plus)



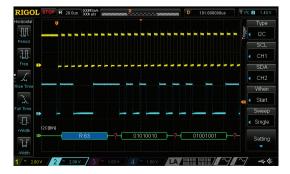
UltraVision: up to 30,000 wfms/s waveform capture rate



UltraVision: waveform recording and playback functions (optional)



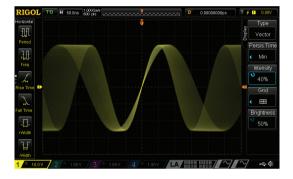
Built-in dual-channel 25 MHz source (MSO1XX4Z-S and DS1XX4Z-S Plus)



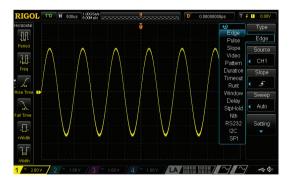
UltraVision: deeper memory (standard 12 Mpts, optional 24 Mpts)



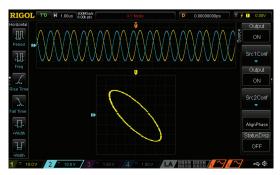
UltraVision: intensity graded color display



A variety of trigger functions

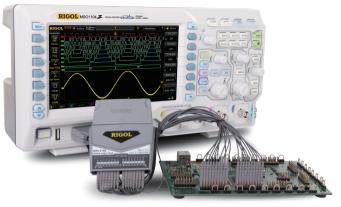


Optional serial bus trigger and decoding functions (RS232/UART, I2C, SPI)



*Do not include the 50 MHz bandwidth model

Mixed Signal Digital Oscilloscope



*Do not include the 50 MHz bandwidth model

The mixed signal digital oscilloscope also provides the following functions:

- 16 digital channels for MSO1000Z and MSO upgradable for DS1000Z Plus
- Sample rate of digital channel up to 1 GSa/s
- · Memory depth of digital channel up to 24 Mpts
- Waveform capture rate of digital channel up to 30,000 wfms/s
- Hardware real-time waveform recording and playback functions, up to 60,000 frames can be recorded
- Trigger and decoding of the analog and digital channels at the same time
- · Easy grouping and group operation of the digital channels
- · Supports a variety of logic levels
- Trigger across the analog and digital channels
- Time correlated display and analysis for both the analog and digital channel waveforms

Mixed signal analysis with analog and digital channels



Same memory depth for the digital channels, serial bus trigger and decoding on digital channels

| RIGO | WATT H 50 | Dus 1.003Sa/s 12.0M pts | ~~~~~ | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | ~~~~~ | D 143.000000us | TI | c 🖬 | 1.53 V |
|------------|-----------|----------------------------|-----------|---|-------|----------------|---------|------------|---------|
| Horizontal | | | | Ŭ. | | | | | Туре |
| ΠŢ | | | | | | | Trigger | • | 12C |
| Period | | | | | | | | | SCL |
| <u>,11</u> | | | | | | | | | D1 |
| Freq | | Zoc | m:50.00us | | | | | | SDA |
| <i></i> | | Ų | | | | | | | D0 |
| Rise Time | 10 | | | | | | | | When |
| 7. | | | | | | | | ∢ A | ddress |
| Fall Time | D | | | | | | | A | ddrBits |
| -11- | | | | | | | | • | 7 bits |
| +Width | 120 [ASC] | | | | | | | A | ddress |
| ÷ | D | R:52 | R - [] | G |)-(• |)-() | | ٩ | 0x52 |
| -Width | | | | | | | | | ₽ |

Innovative UltraVision technology (digital channel)

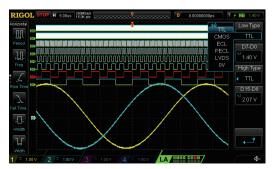
Ultra ision

- Deeper memory depth (up to 24 Mpts)
- Higher waveform capture rate (up to 30,000 wfms/s)
- Real-time waveform recording, playback and analysis functions (up to 60,000 frames)
- · Intensity graded color display

Easy to be grouped and labeled for digital channels



Supports a variety of logic levels



RIGOL Probes and Accessories Supported by MSO/DS1000Z Series

RIGOL Active & Current Probes

RIGOL Passive Probes

| Model Number | Туре | Description | Model Number | Туре | Description |
|--------------|----------------------------|---|---------------|--|--|
| RP2200 | High Z Probe | 1X: DC to 7 MHz 10X: DC to 150 MHz Compatibility: all RIGOL scopes. | RP1001C | Current Probe | BW: DC to 300 kHz Max. Input DC: ±100 A, AC P-P: 200 A, AC RMS: 70 A Compatibility: all RIGOL scopes. |
| | High Z Probe | 10X: DC to 350 MHz Compatibility: all RIGOL scopes. | 63 RP1002C | Current Probe | BW: DC to 1 MHz Max. input DC: ±70 A, AC P-P: 140 A, AC RMS: 50 A Compatibility: all RIGOL scopes. |
| RP3300A | High Z Probe | DC to 500 MHz Compatibility: all RIGOL scopes. | RP1003C | Current Probe | BW: DC to 50 MHz Max. input AC P-P: 50 A (Noncontinuous) AC RMS: 30 A Compatibility: all RIGOL scopes. Must order RP1000P power supply. |
| RP3500A | High Voltage Probe | DC to 300 MHz CAT I 2000 V (DC+AC), CAT II 1500 V (DC+AC) Compatibility: all RIGOL | RP1004C | Current Probe | BW: DC to 100 MHz Max. input AC P-P: 50 A (Noncontinuous) AC RMS: 30 A, Compatibility: all RIGOL scopes. Must order RP1000P power supply. |
| RP1300H | | DC to 40 MHz DC: 0 to 10 kV DC, | RP1005C | Current Probe | BW: DC to 10 MHz, Max. input AC P-P: 300 A (Noncontinuous), 500 A (@pulse width ≤30 us), AC RMS: 150 A Compatibility: all RIGOL scopes. Must order RP1000P power supply. |
| RP1010H | High Voltage Probe | AC: pulse ≤20 kVp-p, AC: sine wave ≤7 kVrms Compatibility: all RIGOL scopes. | RP1000P | Power Supply | Power supply for RP1003C, RP1004C, RP1005C, support 4 channels. |
| RP1018H | High Voltage Probe | DC to 150 MHz DC+AC Peak: 18 kV CAT II AC RMS: 12 kV CAT II Compatibility: all RIGOL scopes. | RP1000P | High Voltage Differential Probe | BW: 25 MHz Max. Voltage ≤1400 Vpp Compatibility: all RIGOL scopes. |
| RPL1116 | Logic Analysis Probe | Logic analysis probe (for mixed signal digital oscilloscope) | RP1050D | High Voltage Differential Probe | BW: 50 MHz Max. Voltage ≤7000 Vpp Compatibility: all RIGOL scopes. |
| RT50J | Adapter | 50 Ω impedance adapter (2 W, 1 GHz) | RP1100D | High Voltage Differential Probe | BW: 100 MHz Max. Voltage ≤7000 Vpp Compatibility: all RIGOL scopes. |

Specifications

All the specifications are guaranteed except parameters marked with "Typical" and the oscilloscope needs to operate for more than 30 minutes under the specified operation temperature.

Sample

| Sample Mode | Real-time sample | | | |
|------------------------|--|--|--|--|
| Real-time Sample Rate | Analog channel: 1 GSa/s (single-channel), 500 MSa/s (dual-channel), 250 MSa/s (three/four-channel) Digital channel: 1 GSa/s (8-channel), 500 MSa/s (16-channel) | | | |
| Peak Detect | Analog channel: 4 ns Digital channel: 4 ns | | | |
| Averaging | After all the channels finish N samples at the same time, N can be 2, 4, 8, 16, 32, 64, 128, 256, 512 or 1024. | | | |
| High Resolution | 12 bit (max) | | | |
| Interpolation | Sin(x)/x (optional) | | | |
| Min Detect Pulse Width | Digital channel: 10 ns | | | |
| Memory Depth | Analog channel: standard 12 Mpts (single-channel), 6 Mpts (dual-channel), 3 Mpts (three/four-channel); optional 24 Mpts (single-channel), 12 Mpts (dual-channel), 6 Mpts (three/four-channel) Digital channel: standard 12 Mpts (8-channel), 6 Mpts (16-channel); optional 24 Mpts (8-channel), 12 Mpts (16-channel) | | | |

| Input | |
|----------------------------------|---|
| Number of Channels | MSO1XX4Z/1XX4Z-S: 4 analog channels, 16 digital channels DS1XX4Z Plus/1XX4Z-S Plus: 4 analog channels, MSO upgradable DS1054Z: 4 analog channels |
| Input Coupling | DC, AC or GND |
| Input Impedance | Analog channel: (1 MΩ±1%) (15 pF±3 pF) Digital channel: (100 kΩ±1%) 8 pF±3 pF) |
| Probe Attenuation Coefficient | Analog channel: 0.01X to 1000X, in 1-2-5 step |
| Max Input Voltage (1MΩ) | Analog channel: CAT I 300 Vrms, CAT II 100 Vrms, transient overvoltage 1000 Vpk With RP2200 10:1 probe: CAT II 300 Vrms Digital channel: CAT I 40 Vrms, transient overvoltage 800 Vpk |

Horizontal

| Timebase Scale | 5 ns/div to 50 s/div | |
|--------------------------------------|---|--|
| Max Record Length | 24 Mpts (optional) | |
| Timebase Accuracy ^[1] | ≤ ± 25 ppm | |
| Clock Drift | ≤±5 ppm/year | |
| Max Delay Range | Negative delay: ≥1/2 screen width Positive delay: 1 s to 500 s | |
| Timebase Mode | YT, XY, Roll | |
| Number of X-Ys | 1 | |
| Waveform Capture Rate ^[2] | 30,000 wfms/s (dots display) | |
| Zero Offset | ±0.5div*minimum time base scale | |
| | | |

Vertical

| Bandwidth (-3dB) | MSO1104Z/1104Z-S and DS1104Z Plus/1104Z-S Plus: DC to 100 MHz MSO1074Z/1074Z-S and DS1074Z Plus/1074Z-S Plus: DC to 70 MHz DS1054Z: DC to 50 MHz |
|------------------|--|
|------------------|--|

| Single-shot Bandwidth | MSO1104Z/1104Z-S and DS1104Z Plus/1104Z-S Plus: DC to 100 MHz MSO1074Z/1074Z-S and DS1074Z Plus/1074Z-S Plus: DC to 70 MHz DS1054Z: DC to 50 MHz | |
|---|--|--|
| Vertical Resolution | Analog channel: 8 bits Digital channel: 1 bit | |
| Vertical Scale (Probe ratio is 1X) | 1 mV/div to 10 V/div | |
| Offset Range (Probe ratio is 1X) | 1 mV/div to 499 mV/div: ± 2 V 500 mV/div to 10 V/div: ± 100 V | |
| Bandwidth Limit ^[1] | 20 MHz | |
| Low Frequency Response (AC coupling, -3dB) | ≤5 Hz (on BNC) | |
| Calculated Rise Time ^[1] | MSO1104Z/1104Z-S and DS1104Z Plus/1104Z-S Plus: 3.5 ns MSO1074Z/1074Z-S and DS1074Z Plus/1074Z-S Plus: 5 ns DS1054Z: 7 ns | |
| DC Gain Accuracy | <10 mV: ±4% full scale ≥10 mV: ±3% full scale | |
| DC Offset Accuracy | ±0.1 div ± 2 mV ± 1% offset | |
| Channel to Channel Isolation | DC to maximum bandwidth: >40 dB | |

Vertical (Digital Channel)(Applicable to MSO1000Z and DS1000Z Plus with MSO Upgrade Option)

| Threshold | Adjustable threshold of 8 channels per group | |
|---------------------|--|--|
| | TTL (1.4 V) | |
| | 5.0 V CMOS (+2.5 V), 3.3 V CMOS (+1.65 V) | |
| | 2.5 V CMOS (+1.25 V), 1.8 V CMOS (+0.9 V) | |
| Threshold | ECL (-1.3 V) | |
| Selection | PECL (+3.7 V) | |
| | LVDS (+1.2 V) | |
| | 0 V | |
| | User | |
| Threshold Range | ±15.0 V, in 10 mV step | |
| Threshold Accuracy | ±(100 mV + 3% of threshold setting) | |
| Dynamic Range | ±10.0 V + threshold | |
| Min Voltage Swing | 500 mVpp | |
| Vertical Resolution | 1 bit | |

Trigger

| Trigger Level Range | ±5 div from the center of the screen | | | |
|---|--|--|--|--|
| Trigger Mode | Auto, Normal, Single | | | |
| Holdoff Range | 16 ns to 10 s | | | |
| High Frequency Rejection ^[1] | 75 kHz | | | |
| Low Frequency Rejection ^[1] | 75 kHz | | | |
| Trigger Sensitivity ^[1] | 1.0 div (below 5 mV or noise rejection is enabled)0.3 div (above 5 mV and noise rejection is disabled) | | | |
| Edge Trigger | | | | |
| Edge Type | Rising, Falling, Rising/Falling | | | |
| Pulse Trigger | | | | |
| Pulse Condition | Positive Pulse Width (greater than, lower than, within specified interval) Negative Pulse Width (greater than, lower than, within specified interval) | | | |
| Pulse Width | 8 ns to 10 s | | | |
| Runt Trigger (Optional) | | | | |
| Pulse Width Condition | None, >, <, <> | | | |
| Polarity | Positive, Negative | | | |
| Pulse Width Range | 8 ns to 10 s | | | |
| Window Trigger (Optional) | | | | |
| Windows Type | Rising, Falling, Rising/Falling | | | |
| | | | | |

| Windows Time & ns to 10 s Whin Edge Trigger (Optional) Rising, Failing Edge Type Rising, Failing If is to 10 s 1 Edge Type Nin Social Stope Condition Positive Stope (greater than, lower than, within specified interval) Negative Stope (greater than, lower than, within specified interval) Negative Stope (greater than, lower than, within specified interval) Stope Condition Positive Stope (greater than, lower than, within specified interval) Negative Stope (greater than, lower than, within specified interval) Negative Stope (greater than, lower than, within specified interval) Stope Condition Positive Stope (greater than, lower than, within specified interval) Wideo Trigger Coption NTSC, PAL/SECAM, 480P, 576P Pattern Trigger NTSC, PAL/SECAM, 480P, 576P Pattern Trigger (Optional) Edge Type Edge Type Rising, Falling Delay Tringe as to 10 s TimeOut Value Delay Trigger Condition S<, <> Duration Trigger Condition S, <<, <> Duration Trigger Condition S, <<, <> Duration Time 8 ns to 1 s Baud Pattern | | | | |
|--|-----------------------------|--|--|--|
| Nith Edge Trigger (Optional) Rising, Failing Edge Type Rising, Failing Edge Number 1 to 55535 Stope Trigger Negative Stope (greater than, lower than, within specified interval) Negative Stope (greater than, lower than, within specified interval) Time Setting 8 ns to 10 s Vitao Trigger Negative Stope (greater than, lower than, within specified interval) Time Setting 8 ns to 10 s Vitao Trigger (Optional) Negative Stope (greater than, lower than, within specified interval) Pattern Trigger (Optional) NitsC, PAL/SECAM, 480P, 576P Pattern Trigger (Optional) Rising, Failing Pattern Trigger (Optional) Rising, Failing Delay Trigger (Optional) Rising, Failing, Rising/Failing Edge Type Rising, Failing, Rising/Failing TimeOut Trigger (Optional) To as to 10 s Duration Tring As to 10 s Duration Tring As to 10 s Setup/Hol Trigger (Optional) Rising, Failing Edge Type Rising, Failing Setup/Hol Trigger (Optional) Rising, Failing Setup/Hol Trigger (Optional) Rising Setup/Setup/Setup/Setup/Setup/Setup/Se | Trigger Position | | | |
| Edge TypeRsing, FallingIdle Time16 ns to 10 sEdge Number 10 eS535Stope TriggerStope ConditionPositive Stope (greater than, lower than, within specified interval) Negative Stope (greater than, lower than, within specified interval) Negative Stope (greater than, lower than, within specified interval) Negative Stope (greater than, lower than, within specified interval)Time SettingPositive Stope (greater than, lower than, within specified interval) | Windows Time | 8 ns to 10 s | | |
| ide 16 ns to 10 s Edge Number 1 to 6535 Stope Trigger Negative Stope (greater than, lower than, within specified interval) Negative Stope (greater than, lower than, within specified interval) Negative Stope (greater than, lower than, within specified interval) Negative Stope (greater than, lower than, within specified interval) B ns to 10 s NTSC, PAL/SECAM, 480P, 578P Pattern Trigger NTSC, PAL/SECAM, 480P, 578P Pattern Stings H. L. X, Rising, Falling Delay Trigger (Optional) Rising, Falling Delay Tringer (Optional) Rising, Falling, Rising/Falling Delay Tringer (Optional) Rising, Falling, Rising/Falling TimeOut Trigger (Optional) Stope 10 s Duration Trigger Rising, Falling, Rising/Falling TimeOut Trigger (Optional) Stope 10 s Edge Type Rising, Falling, Rising/Falling TimeOut Trigger (Optional) Stope 10 s Edge Type Rising, Falling Duration Trigger Condition > < <> Stop 10 s Stope 10 s Edge Type Rising, Falling Duration Trigger (Optional) Stope 10 s Edge Type Rising, Falling <td>Nth Edge Trigger (Optional)</td> <td></td> | Nth Edge Trigger (Optional) | | | |
| Edge Number 1 to 8535 Slope Trigger Slope Condition Positive Slope (greater than, lower than, within specified interval) Negative Slope (greater than, lower than, within specified interval) Negative Slope (greater than, lower than, within specified interval) Negative Slope (greater than, lower than, within specified interval) Singe Condition NTSC, PAL/SECAM, 480P, 576P Pattern Trigger H. L. X, Rising, Falling Delay Trigger (Optional) Edge Type Edge Type Rising, Falling Delay Tringe S ns to 10 s TimeOut Trigger (Optional) 8 ns to 10 s Edge Type Rising, Falling, Rising/Falling TimeOut Value 16 ns to 10 s Duration Trigger Sto 10 s Duration Trigger Condition >, <, <> Pattern H, L, X Stope Tringer (Optional) Stope Tringent (Optional) Edge Type Rising, Falling Duration Time 8 ns to 10 s Stope Tringer (Optional) Stope Tringent (Optional) Edge Type Rising, Falling Data Pattern H, L, X Stope Tringer (Optional) Stope Tringent (Optional) Trigger Condition Stat, Error, Check Error, Data | Edge Type | Rising, Falling | | |
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| Delay Trigger (Optional) Edge Type Rising, Falling Delay Trine 8 ns to 10 s TimeOut Trigger (Optional) Immout Trigger (Optional) Edge Type Rising, Falling, Rising/Falling TimeOut Trigger (Optional) 16 ns to 10 s Duration Trigger H. L, X Pattern H. L, X Trigger Condition >, <, <> Duration Time 8 ns to 10 s Setup/Hold Trigger (Optional) Setup/Hold Trigger (Optional) Edge Type Rising, Falling Data Pattern H. L, X Setup/Hold Trigger (Optional) Setup/Hold Trigger (Optional) Edge Type Rising, Falling Data Pattern H. L, X Setup Time 8 ns to 1 s RS232/UART Trigger (Optional) Setup Time Folarity Normal, Invert Trigger Condition Start, Error, Check Error, Data Baud Rate 2400 bps, 9800 bps, 19200 bps, 38400 bps, 57600 bps, 115200 bps, 330400 bps, 460800 bps, 321600 bps, 12200 bps, 38400 bps, 57600 bps, 115200 bps, 330400 bps, 460800 bps, 321600 bps, 115200 bps, 3160800 bps, 321600 bps, 115200 bps, 3160800 bps, 321600 bps, 115200 bps, 3160800 bps, 36000 bps, 1 | Pattern Trigger | | | |
| Edge Type Rising, Falling Delay Type >, <, <>, < | Pattern Setting | H, L, X, Rising, Falling | | |
| Edge Type Rising, Falling Delay Type >, <, <>, < | Delay Trigger (Optional) | | | |
| Delay Type >, <, <>, < | Edge Type | Rising, Falling | | |
| Delay Time 8 ns to 10 s TimeOut Trigger (Optional) Ising, Falling, Rising/Falling Edge Type Rising, Falling, Rising/Falling TimeOut Value 16 ns to 10 s Duration Trigger I. L, X Pattern H, L, X Duration Time 8 ns to 10 s Setup/Hold Trigger (Optional) <.<>> Edge Type Rising, Falling Duration Time 8 ns to 10 s Setup/Hold Trigger (Optional) Edge Type Rising, Falling Data Pattern H, L, X Setup Time 8 ns to 1 s RS232/UART Trigger (Optional) Polarity Normal, Invert RS322/UART Trigger (Optional) Start, Error, Check Error, Data Baud Rate 2400 bps, 4000 bps, 9000 bps, 19200 bps, 38400 bps, 57600 bps, 115200 bps, 230400 bps, 460800 bps, 52100 bps, 115200 bps, 130400 bps, 460800 bps, 52100 bps, 115200 bps, 115200 bps, 460800 bps, 52100 bps, 115200 bps, 115200 bps, 140800 bps, 52100 bps, 115200 bps, 130400 bps, 5200 bps, 15200 bps, 15200 bps, 140800 bps, 52100 bps, 15200 bps, 15200 bps, 15200 bps, 15200 bps, 140800 bps, 52100 bps, 15200 | | | | |
| TimeOut Trigger (Optional) Edge Type Rising, Falling, Rising/Falling TimeOut Value 16 ns to 10 s Duration Trigger Pattern H, L, X Trigger Condition >, <, <> Duration Time 8 ns to 10 s Setup/Hold Trigger (Optional) Edge Type Rising, Falling Data Pattern H, L, X Setup/Hold Trigger (Optional) Edge Type Rising, Falling Data Pattern H, L, X Setup/Inime 8 ns to 1 s Setup Time 8 ns to 1 s RSS22/UART Trigger (Optional) Polarity Normal, Invert Trigger Condition Start, Error, Check Error, Data Baud Rate 2400 bps, 4600 bps, 19200 bps, 38400 bps, 57600 bps, 115200 bps, 230400 bps, 460800 bps, 921600 bps, 100 bps, 021600 bps, 100 bps, 400800 bps, 921600 bps, 100 bps, 100 bps, 57600 bps, 115200 bps, 230400 bps, 460800 bps, 921600 bps, 100 bps, 100 bps, 20100 bps, 100 bps, 20100 bps, 2010 bps, 2010 bps, 2010 bps, 2010 bps, 2010 bps, 2010 | | | | |
| Edge TypeRising, Falling, Rising/FallingTimeOut Value16 ns to 10 sDuration TriggerPatternH, L, XTrigger Condition>, <, <>Duration Time8 ns to 10 sSetup/Hold Trigger (Optional)Edge TypeRising, FallingData PatternH, L, XSetup/Hold Trigger (Optional)Edge Type8 ns to 1 sSetup/Hold Trigger (Optional)Polarity8 ns to 1 sSetup Time8 ns to 1 sSetup Time8 ns to 1 sRS232/UART Trigger (Optional)PolarityNormal, InvertTrigger ConditionStart, Error, Check Error, DataBaud Rate2400 bps, 4600 bps, 19200 bps, 38400 bps, 57600 bps, 115200 bps, 230400 bps, 460800 bps, 921600 bps, 1000 | - | | | |
| TimeOut Value 16 ns to 10 s Duration Trigger Pattern H, L, X Trigger Condition >, <, <> Duration Time 8 ns to 10 s Setup/Hold Trigger (Optional) Edge Type Rising, Falling Data Pattern H, L, X Setup/Hold Tinger (Optional) 8 ns to 1 s Data Pattern H, L, X Setup Time 8 ns to 1 s RS232/UART Trigger (Optional) 8 ns to 1 s Polarity Normal, Invert Trigger Condition Start, Error, Check Error, Data Baud Rate 2400 bps, 9600 bps, 19200 bps, 38400 bps, 57600 bps, 115200 bps, 230400 bps, 460800 bps, 921600 bps, 10 bps and User Data Bits 5 bits, 6 bits, 7 bits, 8 bits ITrigger Condition Start, Restart, Stop, Missing Ack, Address, Data, A&D Address Bits 7 bits, 8 bits, 10 bits Address Range 0 to 127, 0 to 255, 0 to 1023 Byte Length 1 to 5 SPIT Trigger (Optional) Timeout, CS Timeout Value 16 ns to 10 s Data Bits 4 bit to 32 bit | | Rising, Falling, Rising/Falling | | |
| Duration Trigger Pattern H. L. X Trigger Condition >, <, <> Duration Time 8 ns to 10 s Setup/Hold Trigger (Optional) Edge Type Rising, Falling Data Pattern H. L, X Setup/Hold Trigger (Optional) 8 ns to 1 s Setup Time 8 ns to 1 s Hold Time 8 ns to 1 s RS232/UART Trigger (Optional) Polarity Normal, Invert Trigger Condition Start, Error, Check Error, Data Baud Rate 2400 bps, 4800 bps, 19200 bps, 38400 bps, 57600 bps, 115200 bps, 230400 bps, 460800 bps, 921600 bps, 910 bps and User Data Bits 5 bits, 6 bits, 7 bits, 8 bits I2CC Trigger (Optional) Trigger Condition Start, Restart, Stop, Missing Ack, Address, Data, A&D Address Bits 7 bits, 8 bits, 10 bits Address Range 0 to 127, 0 to 255, 0 to 1023 Byte Length 1 to 5 SPI Trigger (Optional) Timeout, CS | | | | |
| Pattern H, L, X Trigger Condition >, <, <> Duration Time 8 ns to 10 s Setup/Hold Trigger (Optional) Edge Type Rising, Falling Data Pattern H, L, X Setup/Inime 8 ns to 1 s Setup/Inime 8 ns to 1 s Setup Time 8 ns to 1 s RS232/UART Trigger (Optional) Normal, Invert Trigger Condition Start, Error, Check Error, Data Baud Rate 2400 bps, 4800 bps, 9600 bps, 19200 bps, 38400 bps, 57600 bps, 115200 bps, 230400 bps, 460800 bps, 921600 bps, 1 Mbps and User Data Bits 5 bits, 6 bits, 7 bits, 8 bits I2C Trigger (Optional) Trigger Condition Trigger Condition Sart, Restart, Stop, Missing Ack, Address, Data, A&D Address Bits 7 bits, 8 bits, 10 bits Address Range 0 to 127, 0 to 255, 0 to 1023 SPI Trigger (Optional) Trieger Condition Trigger Condition Timeout, CS Tringer Condition Timeout, CS Tringer Condition Timeout, CS Tineout Value 16 ns to 10 s | | | | |
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| Duration Time 8 ns to 10 s Setup/Hold Trigger (Optional) Edge Type Rising, Falling Data Pattern H, L,X Setup Time 8 ns to 1 s Hold Time 8 ns to 1 s RS232/UART Trigger (Optional) Polarity Normal, Invert Trigger Condition Start, Error, Check Error, Data Baud Rate 2400 bps, 4800 bps, 9600 bps, 19200 bps, 38400 bps, 57600 bps, 115200 bps, 230400 bps, 460800 bps, 921600 bps, 115200 bps, 230400 bps, 460800 bps, 921600 bps, 115200 bps, 15200 bps, 230400 bps, 460800 bps, 921600 bps, 115200 bps, 15200 bps, 230400 bps, 460800 bps, 921600 bps, 115200 bps, 1500 bps, 1500 bps, 15200 bps, 230400 bps, 460800 bps, 921600 bps, 115200 bps, 1500 bps, 15200 bps, 230400 bps, 460800 bps, 921600 bps, 115200 bps, 1500 bps, 15200 bps, 230400 bps, 460800 bps, 921600 bps, 115200 bps, 1500 bps, 150 bps, 150 bps, 1500 bps, 150 bps, | | | | |
| Setup/Hold Trigger (Optional) Edge Type Rising, Falling Data Pattern H, L,X Setup Time 8 ns to 1 s Hold Time 8 ns to 1 s RS232/UART Trigger (Optional) Normal, Invert Polarity Normal, Invert Trigger Condition Start, Error, Check Error, Data Baud Rate 2400 bps, 4800 bps, 9600 bps, 19200 bps, 38400 bps, 57600 bps, 115200 bps, 230400 bps, 460800 bps, 921600 bps, 1 Mbps and User Data Bits 5 bits, 6 bits, 7 bits, 8 bits I2C Trigger (Optional) Trigger Condition Start, Restart, Stop, Missing Ack, Address, Data, A&D Address Bits 7 bits, 8 bits, 10 bits Address Range 0 to 127, 0 to 255, 0 to 1023 Byte Length 1 to 5 SPI Trigger (Optional) Timeout, CS Trigger Condition Timeout, CS Timeout Value 16 ns to 10 s Data Bits 4 bit to 32 bit | | | | |
| Edge TypeRising, FallingData PatternH, L,XSetup Time& ns to 1 sSetup Time& ns to 1 sHold Time& ns to 1 sRS232/UART Trigger (Optional)PolarityNormal, InvertTrigger ConditionStart, Error, Check Error, DataBaud Rate2400 bps, 4800 bps, 9600 bps, 19200 bps, 38400 bps, 57600 bps, 115200 bps, 230400 bps, 460800 bps, 921600 bps, 1 Mbps and UserData Bits5 bits, 6 bits, 7 bits, 8 bitsI2C Trigger (Optional)Trigger ConditionStart, Restart, Stop, Missing Ack, Address, Data, A&DAddress Bits7 bits, 8 bits, 10 bitsAddress Range0 to 127, 0 to 255, 0 to 1023Byte Length1 to 5SPI Trigger (Optional)Trigger ConditionTimeout, CSTimeout Value16 ns to 10 sData Bits4 bit to 32 bit | | | | |
| Data PatternH, L,XSetup Time8 ns to 1 sHold Time8 ns to 1 sRS232/UART Trigger (Optional)PolarityNormal, InvertPolarityStart, Error, Check Error, DataBaud Rate2400 bps, 9600 bps, 19200 bps, 38400 bps, 57600 bps, 115200 bps, 230400 bps, 460800 bps, 921600 bps, 1 Mbps and UserData Bits5 bits, 6 bits, 7 bits, 8 bitsI2C Trigger (Optional)Start, Restart, Stop, Missing Ack, Address, Data, A&DAddress Bits7 bits, 8 bits, 10 bitsAddress Range0 to 127, 0 to 255, 0 to 1023Byte Length1 to 5SPI Trigger (Optional)Timeout, CSTinger ConditionTimeout, CSTimeout Value16 ns to 10 sData Bits4 bit to 32 bit | | | | |
| Setup Time8 ns to 1 sHold Time8 ns to 1 sRS232/UART Trigger (Optional)PolarityNormal, InvertPolarityNormal, InvertTrigger ConditionStart, Error, Check Error, DataBaud Rate2400 bps, 4800 bps, 9600 bps, 19200 bps, 38400 bps, 57600 bps, 115200 bps, 230400 bps, 460800 bps, 921600 bps, 1 Mbps and UserData Bits5 bits, 6 bits, 7 bits, 8 bitsI2C Trigger (Optional)Trigger ConditionStart, Restart, Stop, Missing Ack, Address, Data, A&DAddress Bits7 bits, 8 bits, 10 bitsAddress Range0 to 127, 0 to 255, 0 to 1023Byte Length1 to 5SPI Trigger (Optional)Trigger ConditionTimeout, CSTimeout Value16 ns to 10 sData Bits4 bit to 32 bit | | | | |
| Hold Time8 ns to 1 sRS232/UART Trigger (Option/ PolarityNormal, InvertTrigger ConditionStart, Error, Check Error, DataBaud Rate2400 bps, 4800 bps, 9600 bps, 19200 bps, 38400 bps, 57600 bps, 115200 bps, 230400 bps, 460800 bps, 921600 bps, 1 Mbps and UserData Bits5 bits, 6 bits, 7 bits, 8 bitsIZC Trigger (Optional)Start, Restart, Stop, Missing Ack, Address, Data, A&DAddress Bits7 bits, 8 bits, 10 bitsAddress Range0 to 127, 0 to 255, 0 to 1023Byte Length1 to 5SPI Trigger (Optional)Timeout, CSTrigger ConditionTimeout, CSTimeout Value16 ns to 10 sData Bits4 bit to 32 bit | | | | |
| RS232/UART Trigger (Optional) Polarity Normal, Invert Trigger Condition Start, Error, Check Error, Data Baud Rate 2400 bps, 4800 bps, 9600 bps, 19200 bps, 38400 bps, 57600 bps, 115200 bps, 230400 bps, 460800 bps, 921600 bps, 1 Mbps and User Data Bits 5 bits, 6 bits, 7 bits, 8 bits I2C Trigger (Optional) Trigger Condition Start, Restart, Stop, Missing Ack, Address, Data, A&D Address Bits 7 bits, 8 bits, 10 bits Address Range 0 to 127, 0 to 255, 0 to 1023 Byte Length 1 to 5 SPI Trigger (Optional) Timeout, CS Trigger Condition Timeout, CS Timeout Value 16 ns to 10 s Data Bits 4 bit to 32 bit | | | | |
| PolarityNormal, InvertTrigger ConditionStart, Error, Check Error, DataBaud Rate2400 bps, 4800 bps, 9600 bps, 19200 bps, 38400 bps, 57600 bps, 115200 bps, 230400 bps, 460800 bps, 921600 bps, 1 Mbps and UserData Bits5 bits, 6 bits, 7 bits, 8 bitsI2C Trigger (Optional)Trigger ConditionStart, Restart, Stop, Missing Ack, Address, Data, A&DAddress Bits7 bits, 8 bits, 10 bitsAddress Range0 to 127, 0 to 255, 0 to 1023Byte Length1 to 5SPI Trigger (Optional)Trigger ConditionTimeout, CSTimeout Value16 ns to 10 sData Bits4 bit to 32 bit | | | | |
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| Baud Rate2400 bps, 4800 bps, 9600 bps, 19200 bps, 38400 bps, 57600 bps, 115200 bps, 230400 bps, 460800 bps, 921600 bps, 1 Mbps and UserData Bits5 bits, 6 bits, 7 bits, 8 bitsI2C Trigger (Optional)Trigger ConditionStart, Restart, Stop, Missing Ack, Address, Data, A&DAddress Bits7 bits, 8 bits, 10 bitsAddress Range0 to 127, 0 to 255, 0 to 1023Byte Length1 to 5SPI Trigger (Optional)Trigger ConditionTimeout, CSTrigger Condition16 ns to 10 sData Bits4 bit to 32 bit | · | | | |
| Data Bits5 bits, 6 bits, 7 bits, 8 bits12C Trigger (Optional)Trigger ConditionStart, Restart, Stop, Missing Ack, Address, Data, A&DAddress Bits7 bits, 8 bits, 10 bitsAddress Range0 to 127, 0 to 255, 0 to 1023Byte Length1 to 5SPI Trigger (Optional)Trigger ConditionTimeout, CSTimeout Value16 ns to 10 sData Bits4 bit to 32 bit | Baud Rate | 2400 bps, 4800 bps, 9600 bps, 19200 bps, 38400 bps, 57600 bps, 115200 bps, 230400 bps, 460800 bps, | | |
| I2C Trigger (Optional) Trigger Condition Start, Restart, Stop, Missing Ack, Address, Data, A&D Address Bits 7 bits, 8 bits, 10 bits Address Range 0 to 127, 0 to 255, 0 to 1023 Byte Length 1 to 5 SPI Trigger (Optional) Trigger Condition Timeout, CS Timeout Value 16 ns to 10 s Data Bits 4 bit to 32 bit | Data Rite | | | |
| Trigger ConditionStart, Restart, Stop, Missing Ack, Address, Data, A&DAddress Bits7 bits, 8 bits, 10 bitsAddress Range0 to 127, 0 to 255, 0 to 1023Byte Length1 to 5SPI Trigger (Optional)Trigger ConditionTimeout, CSTimeout Value16 ns to 10 sData Bits4 bit to 32 bit | | | | |
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| Trigger Condition Timeout, CS Timeout Value 16 ns to 10 s Data Bits 4 bit to 32 bit | | C 01 I | | |
| Timeout Value 16 ns to 10 s Data Bits 4 bit to 32 bit | | | | |
| Data Bits 4 bit to 32 bit | | | | |
| | | | | |
| Data Line Setting H, L, X | | | | |
| | Data Line Setting | H, L, X | | |

Measure

| Cursor | Manual mode | $\begin{array}{c} Voltage deviation between cursors ($ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ | |
|------------------------|---|---|--|
| | Track mode | Voltage and time values of the waveform point | |
| | Auto mode | Allow to display cursors during auto measurement | |
| Auto Measurement | Analog channel: Period, Frequency, Rise Time, Fall Time, Positive Pulse Width, Negative Pulse Width, Positive Duty Cycle, Negative Duty Cycle, tVmax, tVmin, Positive Rate, Negative Rate, Delay 1→2 , Delay 1→2 , Phase 1→2 , Phase 1→2 , Maximum, Minimum, Peak-Peak Value, Top Value, Bottom Value, Amplitude, Upper Value, Middle Value, Lower Value, Average, Vrms, Overshoot, Pre-shoot, Area, Period Area, Period Vrms, Variance Digital channel: Period, Frequency, Positive Pulse Width, Negative Pulse Width, Positive Duty Cycle, Negative Duty Cycle, Delay 1→2 , Delay 1→2 , Phase 1→2 , Phase 1→2] | | |
| Number of Measurements | Display 5 measurements at the same time | | |
| Measurement Range | Screen or cursor | | |
| Measurement Statistic | Average, Max, Min, Standard Deviation, Number of Measurements | | |
| Counter | Hardware 6 bit counter (channels are selectable) | | |

Math Operation

| Waveform Operation | A+B, A-B, A×B, A/B, FFT, A&&B, A B, A^B, !A, Intg, Diff, Sqrt, Lg, Ln, Exp, Abs |
|---------------------------------|--|
| | A+b, A+b, A+b, A+b, FFT, Addb, A b, A-b, A, IIIg, DIII, 34R, Ey, EI, Exp, Abs |
| FFT Window | Rectangle, Hanning, Blackman, Hamming, Flat Top, Triangle |
| FFT Display | Half, Full |
| FFT Vertical Scale | dB/dBm, Vrms |
| Number of Buses for Decoding | 2 |
| Decoding Type | Parallel (standard), RS232/UART (option), I2C (option), SPI (option) |

Display

| Display Type | 7.0 inch TFT LCD display | |
|--------------------|---|--|
| Display Resolution | 800 horizontal × RGB × 480 vertical pixel | |
| Display Color | 16 million color (24 bit true color) | |
| Persistence Time | Min, 100 ms, 200 ms, 500 ms, 1 s, 5 s, 10 s, Infinite | |
| Display Type | Dots, Vectors | |

I/O

Standard Ports USB Host, USB Device, LAN, Aux Output (TrigOut/PassFail), GPIB (extended via the USB Host interface)

Signal Source ((Applicable to Digital Oscilloscopes with Source Channels))

| Number of Channels | 2 | | |
|---------------------|---|-----------------------------|--|
| Sample Rate | 200 MSa/s | | |
| Vertical Resolution | 14 bits | | |
| Max. Frequency | 25 MHz | | |
| Standard Waveform | Sine, Square, Pulse, Ramp, Noise, DC | | |
| Arbitrary Waveform | Since, Exp.Rise, EXP.Fall, ECG, Gauss, Lorentz, Haversine | | |
| Sine | Frequency Range | 0.1 Hz to 25 MHz | |
| | Flatness | ±0.5 dB (relative to 1 kHz) | |
| | Harmonic Distortion | -40 dBc | |
| | Stray (Non-harmonic) | -40 dBc | |
| | Total Harmonic Distortion | 1% | |
| | S/N Ratio | 40 dB | |

| | Frequency Range | Square: 0.1 Hz to 15 MHz Pulse: 0.1 Hz to 1 MHz |
|----------------------|------------------------|---|
| Square /Pulse | Rise/Fall time | <15 ns |
| | Overshoot | <5% |
| | Duty Cycle | Square: always be 50% Pulse: 10% to 90% adjustable |
| | Duty Cycle Resolution | 1% or 10 ns (the larger of the two) |
| | Min. Pulse Width | 20 ns |
| | Pulse Width Resolution | 10 ns or 5 bits (the larger of the two) |
| | Jitter | 500 ps |
| | Frequency Range | 0.1 Hz to 100 kHz |
| Ramp | Linearity | 1% |
| | Symmetry | 0 to 100% |
| Noise ^[1] | Bandwidth | 25 MHz |
| Built-in Waveform | Frequency Range | 0.1 Hz to 1 MHz |
| A | Frequency Range | 0.1 Hz to 10 MHz |
| Arbitrary Waveform | Waveform Length | 2 to 16k pts |
| | Accuracy | 100 ppm (lower than 10 kHz) 50 ppm (greater than 10 kHz) |
| | Resolution | 0.1 Hz or 4 bit, the larger of the two |
| | Output Range | 20 mVpp to 5 Vpp, High-resistance 10 mVpp to 2.5 Vpp, 50 Ω |
| Amplitude | Resolution | 100 μ V or 3 bit, the greater of the two |
| | Accuracy | 2% (1 kHz) |
| DC Offset | Range | ±2.5 V, HighZ ±1.25 V, 50 Ω |
| | Resolution | 100 μ V or 3 bit, the larger of the two |
| | Accuracy | 2% (1 kHz) |
| Modulation | AM, FM | |

General Specifications

| Probe Compensation Out | put | | | |
|-------------------------------|--------------------------------|---|--|--|
| Output Voltage ^[1] | About 3 V, peak-peak | About 3 V, peak-peak | | |
| Frequency ^[1] | 1 kHz | 1 kHz | | |
| Power | | | | |
| Power Voltage | 100 V to 240 V, 45 Hz to 440 | Hz | | |
| Power | Maximum 50 W | Maximum 50 W | | |
| Fuse | 2 A, T degree, 250 V | 2 A, T degree, 250 V | | |
| Environment | | | | |
| Temperature Range | Operating: 0°C to +50°C | Operating: 0°C to +50°C | | |
| | Non-operating: -40°C to +70°C | Non-operating: -40°C to +70°C | | |
| Cooling Method | Fan cooled | Fan cooled | | |
| Humidity Range | 0°C to +30°C : ≤95°C relative | 0°C to +30°C : ≤95°C relative humidity | | |
| | +35°C to +40°C : ≤75°C relativ | +35°C to +40°C : ≤75°C relative humidity | | |
| | +40°C to +50°C : ≤45°C relativ | +40°C to +50°C : ≤45°C relative humidity | | |
| Altitude | Operating: under 3,000 meter | Operating: under 3,000 meters | | |
| | Non-operating: under 15,000 | Non-operating: under 15,000 meters | | |
| Mechanical | | | | |
| Dimensions ^[3] | Width × Height × Depth = 313 | Width × Height × Depth = 313.1 mm × 160.8 mm × 122.4 mm | | |
| Weight ^[4] | Without package | 3.2 kg ± 0.2 kg | | |
| | With package | 3.8 kg ± 0.5 kg | | |

| Calibration Interval | | |
|-------------------------------|---|--|
| The recommended calibration i | nterval is one year. | |
| Regulation Standards | | |
| Electromagnetic Compatibility | 2004/108/EC Execution standard EN 61326-1:2006 EN 61326-2-1:2006 | |
| Safety | UL 61010-1:2004; CAN/CSA-C22.2 NO. 61010-1-2004; EN 61010-1:2001; IEC 61010-1:2001 | |

Note^[1]: Typical. Note^[2]: Maximum value. 50 ns, single-channel mode, dots display, auto memory depth. Note^[3]: Supporting legs and handle folded, knob height included. Note^[4]: Standard configuration.

Ordering Information

| | Description | Order Number |
|---------------------------------|--|-----------------------------|
| | 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 |
| | 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 |
| Models | 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 |
| | 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 |
| | DS1054Z (50 MHz, 4 analog channels) | DS1054Z |
| | Power Cord conforming to the standard of the country | - |
| | USB Cable | CB-USBA-USBB- FF-150 |
| Standard Accessories | 4 Passive Probes (150 MHz) | RP2200 |
| | 1 Logic Analyzer Probe (only for MSO1000Z) | RPL1116 |
| | Quick Guide | - |
| | Resource CD (include User's Guide and application software) | - |
| MSO Upgrade Option | MSO upgrade package for DS1000Z Plus only, including logic analyzer probe (RPL1116) and model label | MSO1000Z Upgrade Package |
| Optional Accessory | Rack Mount Kit | RM-DS1000Z |
| Memory Depth Option | Analog channel: 24 Mpts (single channel)/12 Mpts (dual-channel)/6 Mpts (three/ four channel) Digital channel: 24 Mpts (8-channel)/12 Mpts (16-channel) | |
| Waveform Record Option | This option provides the waveform recording and playback function. | REC-DS1000Z |
| Advanced Trigger Option | vanced Trigger Option RS232/UART trigger, I2C trigger, SPI trigger, Runt trigger, Window trigger, Nth edge trigger, delay trigger, timeout trigger, Setup/Hold trigger | |
| Serial Protocol Analysis Option | RS232/UART, I2C and SPI trigger and decoding functions | SA-DS1000Z |

Standard Software

Ultra Sigma



- RIGOL general PC software platform
- Multi-instrument and multi-interface resource management
- With SCPI remote command tool

Warranty

Three -year warranty, excluding probes and accessories.

Ultra Scope



- Real-time monitoring of waveform and status; support multi-instrument and multi-window display
- With virtual panel feature
- Supports multi-interface remote control

RIGOL

HEADQUARTER

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