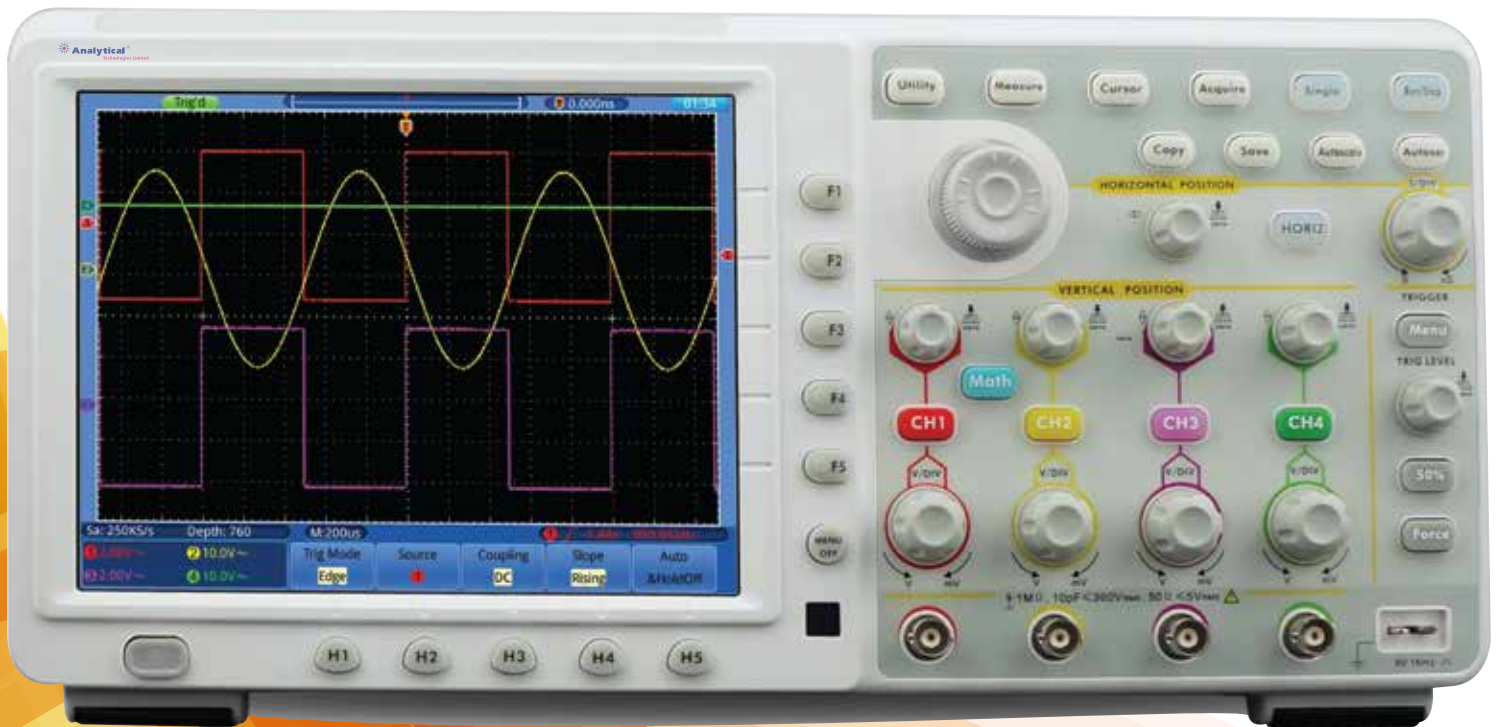


DIGITAL OSCILLOSCOPE

OS 3000 series

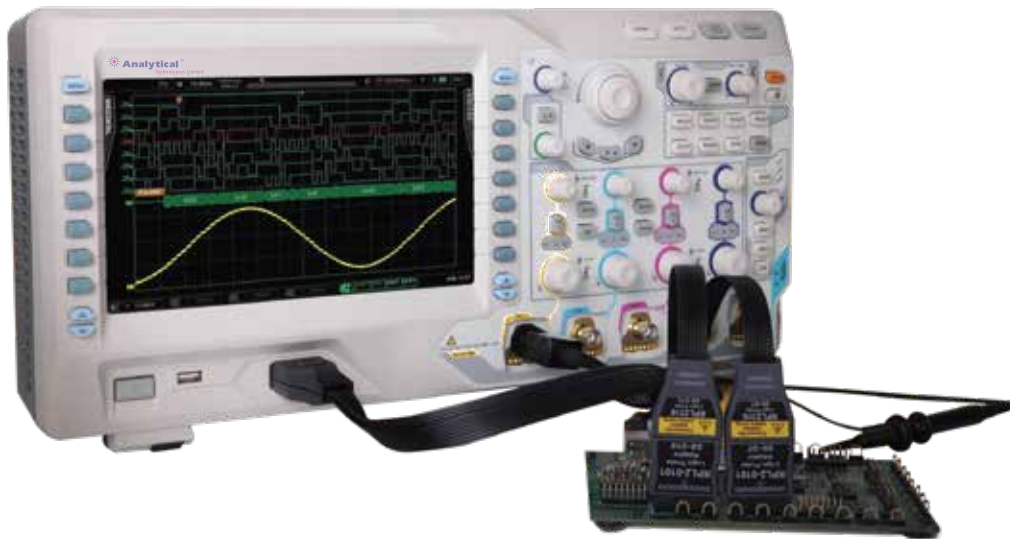


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Analytical Technologies Limited

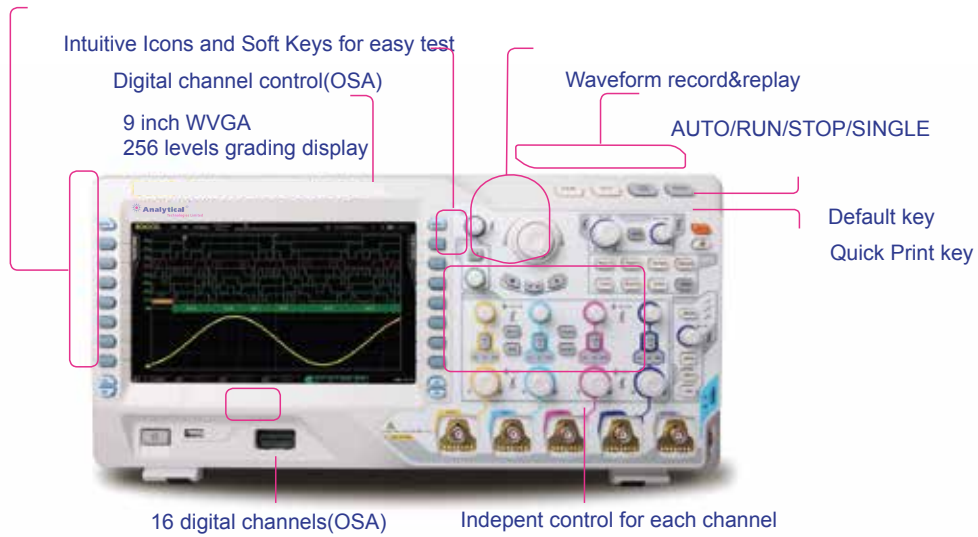
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- Bandwidth 500MHz, 350MHz,200MHz,100MHz
- Sample Rate: Analog channel up to 4 GSa/s, Digital channel up to 1 GSa/s(OSA)
- Standard Memory depth: Analog channel up to 140 Mpts,Digital channel up to 28 Mpts(OSA)
- 2 or 4 Analog channels, 16 Digital channels(OSA)
- Waveform capture rate Up to 110,000 waveforms per second,
- Real Time Waveform Record, Replay & Analysis (Std. up to 200,000 frames)
- Lower noise floor, the Min. vertical sensitivity is 1mV/div
- Innovative “UltraVision” technology
- A variety of Trigger functions
- Support serial bus trigger(Std.) and decoding(Opt.) for both analog and digital channels
- Complete Connectivity: USB Host& Device, LAN(LXI-C), VGA, AUX,USB-GPIB(Opt.)
- 9 inch WVGA(800X480), 256 level intensity grading display

OSA/OS3000 Series Digital Oscilloscope



Product Dimensions: Width X Height X Depth = 440.0mm X 218.0 mm X 130.0 mm Weight: 4.8 kg ± 0.2 kg (Without Package)

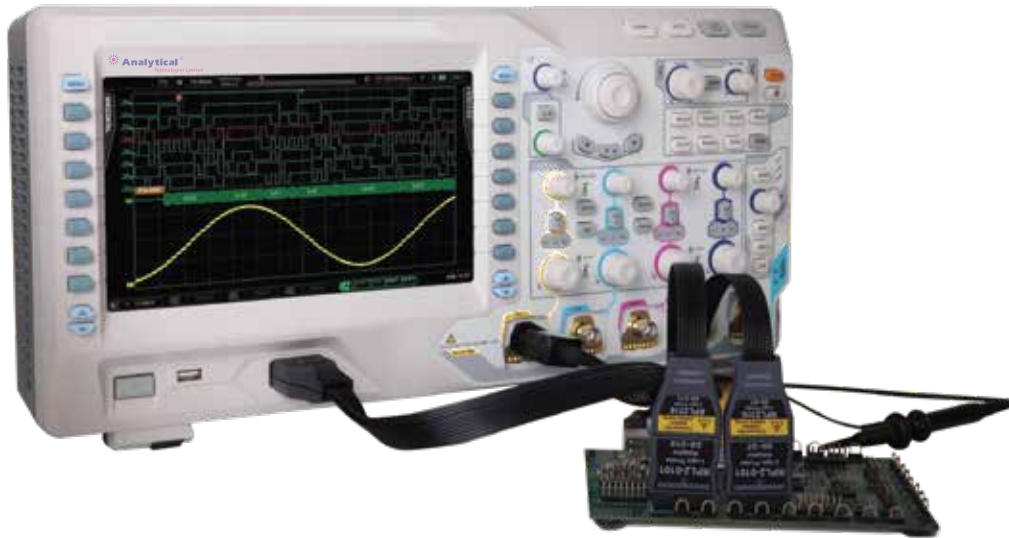
Innovative UltraVision technology(Analog Channel)

- Deeper Memory Depth(Std.140M pts)
- Higher Waveform capture rate (Up to 110,000wfms/s)
- Real Time waveform record & replay(Up to 200,000 frames)
- Multi-level intensity grading display(Up to 256 levels)

Models and key Specs

Model Number	OS3054	OS3052	OS3034	OS3032	OS3024	OS3022	OS3014	OS3012
	OSA3054	OSA3052	OSA3034	OSA3032	OSA3024	OSA3022	OSA3014	OSA3012
Analog BW	500 MHz		350 MHz		200 MHz		100 MHz	
Analog Channels	4	2	4	2	4	2	4	2
Digital Channels(OSA)	16							
Max. Sample rate	Analog Channel: Max. 4 GSa/s single channel, 2GSa/s dual channel Digital Channel: Max. 1 GSa/s per channel							
Max. Memory Depth	Analog Channel: Std. up to 140 Mpts single channel,70 Mpts dual channel Digital Channel: Std. up to 28 Mpts per channel							
Waveform Capture rate	Up to 110,000 wfms/s(Digital channel Closed); 85,000 wfms/s(Digital channel Opened)							
Real Time waveform Record, Replay and Analysis function	Analog channel:Up to 200,000 frames(Std.) Digital channel:Up to 64,000 frames(Std.)							
Std. Probes	2 or 4 sets RP3500A 500MHz BW Passive Probe ; 1 set RPL2316 LA Probe(OSA only)							

OSA3000 Series Mixed Signal Oscilloscope



Besides the powerful functions of OS3000, you could get more from OSA3000 with:

- 16 Digital channels
- Sample rate of Digital channel up to 1 GSa/s
- Memory depth of Digital channel up to 28Mpts per channel
- Waveform capture rate of Digital channel up to 85,000wfms/s
- Real Time Waveform Record, Replay and analysis functions, up to 64,000 frames
- Triggering and Decoding across Analog and Digital channels
- Easy to be grouped for digital channels
- Support a variety of logic levels
- Time correlation display for both analog and digital signals

Innovative UltraVision technology(Digital Channel)

- Deeper Memory Depth(Std.28M pts per channel)
- Higher Waveform capture rate (Up to 85,000wfms/s)
- Real Time waveform record & replay(Up to 64,000 frames)
- Multi-level intensity grading display

Mixed Signal Analysis with analog and digital channels



Easy to be grouped and labeled for digital channels



Serial bus triggering and decoding on digital channels











Support a variety of logic levels




ATL Digital Scope Probes

ATL Passive Probes

Model Number	
 RP2200	High Z Probe 1X: DC~7MHz 10X:DC~150MHz Compatibility : All ATL Scopes.
 RP3300A	High Z Probe 1X: DC~8MHz 10X:DC~350MHz Compatibility : All ATL Scopes.
 RP3500A	High Z Probe DC~500MHz Compatibility : All ATL Scopes.
 RP5600A	High Z Probe DC~600MHz Compatibility : OS3000,6000 Series.
 RP6150A	Low Z Probe DC~1.5GHz Compatibility : OS3000,6000 Series.
 RP1300H	High Voltage Probe DC~300MHz CATI 2000V(DC+AC), CATII 1500 V(DC+AC) Compatibility : All ATL Scopes.
 RP1050H	High Voltage Probe DC~50MHz DC:0~15KV DC,AC:pulse <=30KVp-p, AC:sine wave <=10KVrms Compatibility : All ATL Scopes.
 RPL2316	Logic analysis Probe(For OSA3000 only)

ATL Active & Current Probes

Model Number	
 RP7150	Differential /Single ended Probe BW:DC~1.5GHz,30V Peak, CAT I Compatibility : OS3000, 6000 series.
 RP1001C	Current Probe BW:DC~300kHz, Max.DC:±100A, AC P-P:200A,AC RMS:70A Compatibility : All ATL Scopes.
 RP1002C	Current Probe BW:DC~1MHz, Max.DC:±70A, AC P-P:140A,AC RMS:50A Compatibility : All ATL Scopes.
 RP1003C	Current Probe BW:DC~50MHz, Max.AC RMS:30A AC Peak:50A(Noncontinuous) Compatibility : All ATL Scopes. Must order RP1000P Power supply.
 RP1004C	Current Probe BW:DC~100MHz, Max. AC RMS:30A, AC Peak:50A(Noncontinuous) Compatibility : All ATL Scopes. Must order RP1000P Power supply.
 RP1005C	Current Probe BW:DC~10MHz, Max.150 A rms, 300 A peak (Noncontinuous), 500 A peak (@pulse width <=30 ms) Compatibility : All ATL Scopes. Must order RP1000P Power supply.
 RP1000P	Power Supply Power supply for RP1003C,RP1004C,RP1005C, support 4 channels.
 RP1025D	High Voltage Differential Probe BW:25MHz; Max. Voltage ≤ 1400Vpp Compatibility : All ATL Scopes.
 RP1050D	High Voltage Differential Probe BW:50MHz; Max. Voltage ≤ 7000Vpp Compatibility : All ATL Scopes.
 RP1100D	High Voltage Differential Probe BW:100MHz; Max. Voltage ≤ 7000Vpp Compatibility: All ATL scopes

Specifications

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

Sample

Sample Mode	Real-time sample
Real-time Sample Rate	Analog channel: 4.0 Gsa/s (single-channel); 2.0 Gsa/s (dual-channel) Digital channel: 1.0 Gsa/s
Peak Detect	Analog channel: 250 ps (single-channel); 500 ps (dual-channel) Digital channel: 1 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, 1024, 2048, 4096 or 8192.
High Resolution	12 bit of resolution When $\geq 5 \mu\text{s}/\text{div}$ @ 4 Gsa/s (or $\geq 10 \mu\text{s}/\text{div}$ @ 2 Gsa/s).
Memory Depth	Analog channel: Single-channel: Auto, 14k pts, 140k pts, 1.4M pts, 14M pts and 140M pts are available Dual-channel: Auto, 7k pts, 70k pts, 700k pts, 7M pts and 70M pts are available Digital channel: maximum 28 M pts

Input

Number of Channels	OSA40X4: four-analog-channel + 16-digital-channel OSA40X2: dual-analog-channel + 16-digital-channel OS40X4: four-channel OS40x2: dual-channel
Input Coupling	DC, AC or GND
Input Impedance	Analog channel: $(1\text{M}\Omega \pm 1\%) \parallel (14 \text{ pF} \pm 3 \text{ pF})$ or $50 \Omega \pm 1.5\%$ Digital channel: $(101 \text{ k}\Omega \pm 1\%) \parallel (9 \text{ pF} \pm 1 \text{ pF})$
Probe Attenuation Coefficient	Analog channel: 0.01X-1000X 1-2-5 step
Max Input Voltage (1M Ω)	Maximum input voltage of the analog channel CAT I 300 Vrms, CAT II 100 Vrms, transient overvoltage 1000 Vpk With RP2200 10:1 probe: CAT II 300 Vrms With RP3300 10:1 probe: CAT II 300 Vrms With RP3500 10:1 probe: CAT II 300 Vrms With RP5600 10:1 probe: CAT II 300 Vrms Digital channel: CAT I 40Vrms, transient overvoltage 800 Vpk

Horizontal

Time Base Scale	OSA405X/OS405X: 1 ns/div to 1000 s/div OSA403X/OS403X: 2 ns/div to 1000 s/div OSA402X/OS402X: 2 ns/div to 1000 s/div OSA401X/OS401X: 5 ns/div to 1000 s/div
Time Base Accuracy	$\leq \pm 4 \text{ ppm} / \pm 25 \text{ ppm}$
Time Base Drift	$\leq \pm 2 \text{ ppm}/\text{Year}$
Delay Range	Pre-trigger (negative delay): ≥ 1 screen width Post-trigger (positive delay): 1 s to 1000 s
Time Base Mode	Y-T, X-Y, Roll, Delayed
Number of X-Ys	2 paths at the same time (four-channel model)
Waveform Capture Rate ¹	110,000 wfms/s(Dots display, Digital channel Closed); 85,000 wfms/s(Digital channel Opened)
Horizontal Resolution	2.5 ps

Vertical(Analog Channel)

Bandwidth (-3dB)	OSA405X/OS405X: DC to 500 MHz OSA403X/OS403X: DC to 350 MHz OSA402X/OS402X: DC to 200 MHz OSA401X/OS401X: DC to 100 MHz
Single Bandwidth	OSA405X/OS405X: DC to 500 MHz OSA403X/OS403X: DC to 350 MHz OSA402X/OS402X: DC to 200 MHz OSA401X/OS401X: DC to 100 MHz
Vertical Resolution	Analog channel: 8 bit, two channels sample at the same time Digital channel: 1bit

Vertical Scale	1 mV/div to 5 V/div (1 M Ω) 1 mV/div to 1 V/div (50 Ω)
Offset Range	1 mV/div to 124 mV/div: ± 1.2 V (50 Ω) 126 mV/div to 1 V/div: ± 12 V (50 Ω) 1 mV/div to 225 mV/div: ± 2 V (1M Ω) 230 mV/div to 5 V/div: ± 40 V (1M Ω)
Bandwidth Limit ²	OSA405X/OSA403X/OS405X/OS403X: 20 MHz/100 MHz/200 MHz OSA402X/OS402X: 20 MHz/100 MHz OSA401X/OS401X: 20 MHz
Low Frequency Response (AC coupling, -3dB)	≤ 5 Hz (on BNC)
Rise Time ²	OSA405X/OS405X: 700 ps OSA403X/OS403X: 1 ns OSA402X/OS402X: 1.8 ns OSA401X/OS401X: 3.5 ns
DC Gain Accuracy	$\pm 2\%$ full scale
DC Offset Accuracy	200 mV/div to 5 V/div: 0.1 div ± 2 mV $\pm 0.5\%$ offset 1 mV/div to 195 mV/div: 0.1 div ± 2 mV $\pm 1.5\%$ offset
ESD Tolerance	± 2 kV
Channel to Channel Isolation	DC to maximum bandwidth: >40 dB

Vertical (Digital Channel)

Threshold	1 group with 8 channels adjustable threshold
Threshold selected	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) ECL (-1.3 V) PECL (+3.7 V) LVOS (+1.2 V) 0 V User
Threshold range	± 20.0 V, with 10 mV step
Threshold accuracy	± 100 mV+3% of threshold setting
Dynamic range	± 10 V + threshold
Min Voltage Swing	500 mVpp
Vertical resolution	1 bit

Trigger

Trigger Level Range	Internal	± 6 div from the center of the screen
	EXT	± 0.8 V
Trigger Mode	Auto, Normal, Single	
Holdoff Range	100 ns to 10 s	
High Frequency Rejection ²	50 kHz	
Low Frequency Rejection ²	5 kHz	
Edge Type	Rising, Falling, Rising&Falling	
Pulse Condition	Positive Pulse Width (greater than, lower than, within specified interval) Negative Pulse Width (greater than, lower than, within specified interval)	
Pulse Width Range	4 ns to 4 s	
Pulse Condition	None, > (greater than), < (lower than), <> (within the specified interval)	
Polarity	Positive, Negative	
Pulse Width Range	4 ns to 4 s	
Edge Type	Rising, Falling	
Idle Time	40 ns to 1 s	
Number of Edges	1 to 65535	
Slope Condition	Positive Slope (greater than, lower than, within specified interval) Negative Slope (greater than, lower than, within specified interval)	
Time Setting	10 ns to 1 s	

Display

Display Type	9 inches (229 mm) TFT LCD display
Display Resolution	800 horizontal×RGB×480 vertical pixel
Display Color	160,000 color
Persistence Time	Min, 50 ms, 100 ms, 200 ms, 500 ms, 1 s, 2 s, 5 s, 10 s, 20 s, Infinite
Display Type	Dots, Vectors
Real-time Clock	Time and Date (user adjustable)

I/O

Standard Ports	Dual USB HOST, USB DEVICE, LAN, VGA output, 10MHz input/output, Aux output (TrigOut, Fast, GND, PassFail, Calibration)
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General Specifications

Output Voltage ²	About 3 V, peak-peak	
Frequency ²	1 kHz	
Power Voltage	100-120 V/50Hz/60Hz/400Hz 100-240 V/50 Hz/60Hz	
Power	Maximum 120 W	
Fuse	3 A, T degree, 250 V	
Temperature Range	In operation: 0°C to +50°C Out of operation: -40°C to +70°C	
Cooling Method	Fan	
Humidity Range	0°C to 30°C : ≤95°C relative humidity +30°C to +40°C : ≤75°C relative humidity +40°C to +50°C : ≤45°C relative humidity	
Altitude	In operation: under 3,000 meters Out of operation: under 15,000 meters	
Dimensions ³	Width×Hight×Depth =440.0 mm× 218.0 mm×130.0 mm	
Weight ⁴	Without package	4.8 kg ± 0.2 kg
	With package	7.1 kg ± 1.0kg
The recommended calibration interval is one year.		
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	

1. Maximum value. In single-channel mode, sine signal with 10 ns horizontal scale, 4 div input amplitude and 10 MHz frequency, edge trigger.

2. Typical.

3. Tilt tabs and handle folded, knob height included, front panel cover excluded.

4. Standard configuration.

▶▶ Regulatory compliances



▶▶ Corporate Social Responsibility

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