YOKOGAWA

# DLM2054

The Yokogawa DLM2054 is a 500 MHz Mixed Signal Oscilloscope (MSO) from the DLM2000 series. Featuring 4 analog channels (or 3 analog channels plus 8-bit digital logic via its flexible MSO input), it offers up to 2.5 GS/s real-time sampling and a rich suite of integrated analysis features, packaged in a compact, portrait-format bench-top design.

## SPECIFICATIONS

### General

| | |
|---|---|
| Interfaces | USB Host (Front & Rear), USB Device, Ethernet/LAN (Optional / C10), GP-IB (Optional /C1 or /C11) |
| Display | 8.4-inch TFT color LCD, WVGA resolution (800 × 480 pixels) |

### Physical

| | |
|---|---|
| Power Supply | 100 to 240 VAC, 50/60 Hz, maximum power consumption 170 VA |
| Operating Temperature | 5 to 40 °C °C |
| Dimensions (W×H×D) | 226 mm × 293 mm × 193 mm mm |
| Weight | 4.2 kg (approx. 9.3 lbs, excluding options and accessories) kg |

### Analog Vertical System

| | |
|---|---|
| Analog Input Channels | 4 (or 3 analog channels plus 8-bit logic input) |
| Analog Bandwidth (-3 dB) | 500 MHz |
| Calculated Rise Time (10% to 90%) | 700 ps |
| Input Coupling | AC, DC, GND |
| Input Impedance | 1 MΩ ±1.0% (approx 20 pF) or 50 Ω ±1.5% |
| Input Sensitivity Range (1 MΩ) | 2 mV/div to 10 V/div |
| Input Sensitivity Range (50 Ω) | 2 mV/div to 500 mV/div |
| Vertical Resolution | 8 bits (up to 12 bits in High Resolution mode) |
| Max Input Voltage (1 MΩ) | 150 Vrms (CAT I) |
| Max Input Voltage (50 Ω) | 5 Vrms or less, Peak 10 V or less |
| DC Gain Accuracy | ±1.5% of full scale |

### Digital Vertical System

| | |
|---|---|
| Digital Channels | 8 bits (enabled by converting Analog Channel 4) |

### Horizontal System

| | |
|---|---|
| Maximum Real-time Sample Rate (Analog) | 2.5 GS/s (interleaved mode), 1.25 GS/s (all channels) |
| Maximum Sample Rate (Digital) | 1.25 GS/s |
| Maximum Record Length (Standard) | 1.25 Mpoints/ch (all channels), 12.5 Mpoints (interleaved) |
| Maximum Record Length (with /M1 option) | 6.25 Mpoints/ch (all channels), 62.5 Mpoints (interleaved) |
| Maximum Record Length (with /M2 option) | 12.5 Mpoints/ch (all channels), 125 Mpoints (interleaved) |
| Time Base Range | 1 ns/div to 500 s/div |
| Time Base Accuracy | ±0.0025% |

### Trigger System

| | |
|---|---|
| Trigger Modes | Auto, Auto Level, Normal, Single, N-Single |
| Trigger Coupling | AC, DC, HF Reject, LF Reject |
| Trigger Holdoff Range | 10 ns to 10 s |
| Edge Triggering | Rise, Fall, Both |
| Trigger Sensitivity | DC to 100 MHz: 1.0 div or less, 100 MHz to 500 MHz: 2.0 div or less |

### Waveform Analysis & Measurements

| | |
|---|---|
| Automatic Voltage Measurements | Max, Min, P-P, High, Low, Amplitude, Mean, RectMean, RMS, CycleRMS, +Over, -Over |
| Automatic Time/Frequency Measurements | Frequency, Period, +Width, -Width, Duty, Rise, Fall, Delay |
| Math Functions | Addition, subtraction, multiplication, FFT, phase, binary, user-defined math (optional) |

### Connectivity and Interfaces

| | |
|---|---|
| USB Host Ports | 2 (1 Front / 1 Rear) |
| USB Device Port | 1 (Rear panel) |
| External Reference Input | 10 MHz ±10 Hz |

### Environmental & Compliance

| | |
|---|---|
| Operating Humidity Range | 20% to 80% RH (no condensation) |
| Operating Altitude | 2000 m or less |

### Display & Visualization

| | |
|---|---|
| Screen Size | 8.4-inch |
| Screen Resolution | 1024 × 768 (XGA) |
| Screen Type | Color TFT LCD |

### Memory & Storage

| | |
|---|---|
| Internal Storage Capacity | Approx. 300 MB |

### Signal Outputs

| | |
|---|---|
| Calibration Signal Output | 1 kHz, 1 Vp-p |

### Options & Extensions

| | |
|---|---|
| Built-in Printer Option | /B5 (thermal paper, 112 mm width) |
| GPIB Interface Option | /C1 |
| User-Defined Math Option | /G2 |
| Power Supply Analysis Option | /G4 |
| Compatible Logic Probes | Yokogawa 701980 (8-bit, 250 MHz) / 701981 (8-bit, 100 MHz) |

### Acquisition System

| | |
|---|---|
| Acquisition Modes | Normal, Envelope, Average |
| Maximum History Waveforms | Up to 20,000 (Standard) / 50,000 (-M1 option) / 100,000 (-M2 option) |

### Vertical System

| | |
|---|---|
| Bandwidth Limit Filters | Full, 200 MHz, 100 MHz, 20 MHz, 10 MHz, 5 MHz, 2 MHz, 1 MHz, 500 kHz, 250 kHz |
| Offset Range (1 MΩ) | ±0.5 V (2 mV to 50 mV/div), ±5 V (100 mV to 500 mV/div), ±50 V (1 V to 5 V/div), ±500 V (10 V to 50 V/div) |
| Offset Range (50 Ω) | ±0.5 V (2 mV to 50 mV/div), ±5 V (100 mV to 1 V/div) |

### External Trigger Input

| | |
|---|---|
| External Trigger Input Impedance | 1 MΩ ±1%, approx. 20 pF |
| External Trigger Max Input Voltage | 150 Vrms (CAT I) |
| External Trigger Level Range | ±2 V |

### Logic Inputs

| | |
|---|---|
| Logic Input Threshold Resolution | 100 mV |
| Logic Input Maximum Input Voltage | ±40 V (DC + ACpeak) |

### General Specifications

| | |
|---|---|
| Warm-up Time | 30 minutes |

## TECHNOLOGY

Mixed Signal Oscilloscope

## APPLICATIONS

Electronic hardware design, debugging embedded systems, automotive bus analysis, and power electronics troubleshooting.

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