

TEKTRONIX

MSO44B

The Tektronix MSO44B is a 4 Series B Mixed Signal Oscilloscope featuring a 13.3-inch high-definition touch display, 4 FlexChannel inputs, and a 12-bit ADC architecture. It offers versatile multi-channel debug capabilities with up to 1.5 GHz bandwidth configurations and support for up to 32 digital channels.

SPECIFICATIONS

General

Display	13.3-inch (338 mm) color TFT, Full HD (1920 x 1080) capacitive touchscreen
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Physical

Power Supply	100 to 240 V $\pm 10\%$ (50 Hz to 60 Hz), 115 V $\pm 10\%$ (400 Hz), 400 W maximum
Operating Temperature	0 °C to +50 °C °C

Vertical System - Analog Channels

Number of Analog Channels	4 FlexChannel inputs
Analog Bandwidth	200 MHz, 350 MHz, 500 MHz, 1 GHz, or 1.5 GHz (option dependent)
Input Coupling	DC, AC
Input Impedance	1 M Ω $\pm$ 1%, 50 Ω $\pm$ 1%
Input Sensitivity Range (1 M Ω)	500 μ V/div to 10 V/div in 1-2-5 sequence
Input Sensitivity Range (50 Ω)	500 μ V/div to 1 V/div in 1-2-5 sequence
Vertical Resolution	12-bit ADC
High Res Mode Resolution	Up to 16 bits (setting dependent)
Maximum Input Voltage (1 M Ω)	300 VRMS, CAT II
Maximum Input Voltage (50 Ω)	5 VRMS, peak $\leq$ ± 20 V

Vertical System - Digital Channels

Maximum Number of Digital Channels	Up to 32 digital channels (with optional TLP058 probes)
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Horizontal System (Timebase)

Maximum Real-Time Sample Rate	6.25 GS/s on all channels
Standard Record Length	31.25 Mpoints
Optional Record Length	62.5 Mpoints
Timebase Range	200 ps/div to 1,000 s/div
Channel-to-Channel Deskew Range	± 125 ns

Acquisition System

Maximum Waveform Capture Rate	>500,000 waveforms/s (FastAcq mode)
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Trigger System

Trigger Modes	Auto, Normal, Single
Trigger Coupling	DC, AC, HF Reject, LF Reject, Noise Reject

Waveform Measurements and Analysis

Automatic Measurements	36 standard measurements
Waveform Math Operators	Basic arithmetic, FFT, Advanced formula editor

Input / Output Ports

External Display Output	1x HDMI
Probe Compensation Output	2.5 V, 1 kHz

Integrated Instrument Options

Optional Arbitrary / Function Generator Channels	1
AFG Sine Frequency Range	0.1 Hz to 50 MHz
Digital Voltmeter (DVM) Resolution	4-digit AC RMS, DC, and DC+AC RMS
Trigger Frequency Counter Resolution	8-digit

Power and Environmental Specifications

Operating Humidity Range	5% to 90% RH (at/below +40 °C), 5% to 55% RH (+40 °C to +50 °C)
Operating Altitude	Up to 3,000 m (9,843 feet)
Non-Operating Altitude	Up to 12,000 m (39,370 feet)

Physical Characteristics

VESA Mount Interface Pattern	100 mm x 100 mm
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Software, Compliance and Calibration

Recommended Calibration Interval	1 year
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Inputs & Outputs

LAN Port	1x RJ-45, 10/100/1000 Mb/s
FlexChannel Inputs	4
Probe Interface	TekVPI
Front Panel USB Ports	2x USB 2.0 Host, 1x USB 3.0 Host
LAN Port Speed	10/100/1000 Mb/s (Gigabit Ethernet)
GPIB Interface	Optional (via TEK-USB-488 adapter)
Recommended Digital Probe Model	TLP058 (8-channel logic probe)

Clock System

Reference Output Frequency	10 MHz
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Horizontal System

Horizontal Delay Range	-10 divisions to 5000 s
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Vertical System

Vertical Position Range	±5 divisions
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Digital System

Maximum Digital Toggle Rate	500 MHz (with TLP058 probe)
Minimum Digital Pulse Width	1 ns (with TLP058 probe)

Arbitrary/Function Generator

AFG Arbitrary Waveform Length	1 to 128 k points
AFG Arbitrary Sample Rate	250 MS/s
AFG Amplitude Range (50 Ω)	10 mV to 2.5 V p-p
AFG Amplitude Range (High Impedance)	20 mV to 5 V p-p

Digital Voltmeter

DVM Measurements	DC, AC RMS + DC, AC RMS
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Environmental

Non-Operating Temperature	-30 °C to +70 °C
Operating Vibration	0.31 GRMS, 5 Hz to 500 Hz, 10 minutes per axis, 3 axes
Non-Operating Vibration	2.46 GRMS, 5 Hz to 500 Hz, 10 minutes per axis, 3 axes
Operating Shock	50 G, 11 ms, half-sine, 3 shocks per direction, 3 axes
Cooling Clearance	50.8 mm (2.0 in) required on left, right, and rear of instrument

Power

Source Voltage	100 V to 240 V AC ($\pm 10\%$), 50 Hz to 60 Hz; 115 V AC ($\pm 10\%$), 400 Hz
Power Consumption	400 W maximum

Connectivity & Control

Web-based Control	LXI-compliant e*Scope
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Display

Display Size	13.3 in (338 mm)
Display Resolution	1920 × 1080 pixels (Full HD)
Display Type	Capacitive touch screen with multi-touch support

Signal Generator (Optional)

AFG Waveform Types	Sine, Square, Pulse, Ramp, Triangle, DC, Noise, Sin(x)/x, Exponential Rise, Exponential Fall, Gaussian, Lorentz, Haversine, Cardiac, Arbitrary
AFG Square/Pulse Frequency Range	0.1 Hz to 25 MHz
AFG Ramp/Triangle Frequency Range	0.1 Hz to 500 kHz
AFG Noise Bandwidth	25 MHz
AFG Sin(x)/x Frequency Range	0.1 Hz to 2 MHz
AFG Gaussian Frequency Range	0.1 Hz to 5 MHz
AFG Exponential Rise/Fall Frequency Range	0.1 Hz to 5 MHz

TECHNOLOGY

Mixed Signal Oscilloscope (MSO)

APPLICATIONS

Embedded Systems Debug, Power Electronics, Automotive Design, Signal Integrity Analysis

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