TEKTRONIX

MSO73304DX

The Tektronix MSO73304DX is a high-performance 33 GHz Mixed Signal Oscilloscope belonging to the MSO70000DX series. It provides high-speed analog and digital channel capture capabilities, designed for advanced serial data analysis, jitter measurement, and high-speed digital system debugging.

SPECIFICATIONS

General

Interfaces	USB 2.0 (Host & Device), LAN (10/100/1000 Base-T, LXI Class C), GPIB, DVI, DisplayPort, RS-232, PCIe
Display	12.1-inch color TFT-LCD touchscreen, 1024 × 768 resolution (XGA)

Physical

Power Supply	100 to 240 V AC ±10% (50/60 Hz), 115 V AC ±10% (400 Hz), <1200 VA max power consumption
Operating Temperature	5 °C to 45 °C °C
Dimensions (W×H×D)	483 mm × 298 mm × 489 mm mm
Weight	22 kg kg
Rackmount Kit	Optional (Option 1R)

Vertical System (Analog)

Number of Analog Channels	4
Analog Bandwidth (2 Channels)	33 GHz
Analog Bandwidth (4 Channels)	23 GHz
Calculated Rise Time (10% to 90%, typical)	14 ps
Calculated Rise Time (20% to 80%, typical)	9 ps
Input Impedance	50 Ω
Input Coupling	DC
Vertical Resolution	8 bits (up to 11 bits with HiRes)
DC Gain Accuracy	±2%
Position Range	±5 divisions

Horizontal System

Maximum Real-Time Sample Rate (2 Channels)	100 GS/s
Maximum Real-Time Sample Rate (4 Channels)	50 GS/s
Timebase Delay Time Range	-5.0 ks to 1.0 ks
Channel-to-Channel Deskew Range	±75 ns
Timebase Accuracy	±1.5 ppm
Sample Clock Jitter	<100 fs RMS (typical)

Trigger System

Trigger Modes	Auto, Normal, Single
Trigger Coupling	DC, AC, HF Rej, LF Rej, Noise Rej
Trigger Holdoff Range	250 ns to 12 s
Edge Triggering	Rising, Falling, or Either
Trigger Jitter (typical)	<100 fs RMS (with Enhanced Triggering)

Digital Channels (MSO)

Digital Channels	16
Digital Sample Rate (All Channels)	12.5 GS/s
Digital Bandwidth	2.5 GHz
Digital Channel Input Impedance	20 kΩ || 3 pF (with P6717A)
Digital Threshold Grouping	Individual threshold per channel

Acquisition System

Acquisition Modes	Sample, Peak Detect, Envelope, Average, HiRes, Waveform Database, FastAcq
Waveform Capture Rate (FastAcq)	>300,000 wfm/s
FastFrame Segmented Memory	Standard, support for >300,000 frames (dependent on memory option)

Waveform Measurements and Math

Automatic Measurements	53 automatic measurements
Waveform Math Operators	Add, Subtract, Multiply, Divide
Advanced Math Functions	FFT, Integration, Differentiation, Arbitrary Equations
FFT Window Types	Rectangular, Hamming, Hanning, Kaiser-Bessel, Blackman-Harris, Gaussian, Flattop

Input/Output Ports

Auxiliary Input (External Trigger)	50 Ω, BNC
Auxiliary Output (Trigger Out)	BNC, 50 Ω
Reference Clock Input	10 MHz (or 100 MHz)
Reference Clock Output	10 MHz
Probing Interface Standard	TekConnect

Environmental and Safety

Storage Temperature Range	-20 °C to +60 °C
Operating Humidity Range	8% to 80% RH
Operating Altitude	3,000 m
Safety Certifications	UL 61010-1, CSA 61010-1, EN 61010-1, IEC 61010-1
EMC Compliance	EC Council Directive 2004/108/EC

Acquisition & Memory

Standard Record Length	50 M points (4 channels) / 125 M points (2 channels)
Maximum Record Length	Up to 500 M points (4 channels) / 1 G points (2 channels) (Option 50XL)

Vertical System

Maximum Input Voltage	1.5 Vrms
Offset Range	±3.4 V (6.25 mV/div to 100 mV/div), ±6.0 V (101 mV/div to 600 mV/div)

Digital Channels

MagniVu Timing Resolution	80 ps (12.5 GS/s on all channels)
Logic Threshold Range	-2.0 V to +4.5 V
Minimum Detectable Pulse Width	160 ps (with P6780 probe)
Maximum Digital Toggle Rate	2.5 GHz (with P6780 probe)
Digital Channel Threshold Resolution	10 mV
Digital Channel Threshold Accuracy	±(100 mV + 3% of threshold setting)

Horizontal & Trigger System

Timebase Range	1.2 ps/div to 1000 s/div

System & Interface

Operating System	Windows 7 Ultimate (64-bit) / Windows 10 (configuration dependent)
Internal Storage	Removable Solid State Drive (SSD), ≥480 GB
System Memory (RAM)	16 GB
Processor	Intel Core i7 (Host Controller)
Rear Panel I/O Ports	1x Gigabit Ethernet (RJ-45), 4x USB 2.0, 2x USB 3.0, 1x GPIB, 1x DVI-D, 1x DisplayPort

Display

Display Resolution	1024 × 768 pixels (XGA)
Display Size	12.1 inches (307 mm) diagonal

Inputs & Outputs

USB Ports	Front: 2× USB 2.0; Rear: 4× USB 2.0, 2× USB 3.0, 1× USB 2.0 device port
GPIB Interface	IEEE 488.2 compatible
LAN Interface	RJ-45, 10/100/1000 BASE-T
External Video Ports	1× DVI-D, 1× DisplayPort

Software & Control

LXI Compliance	LXI Class C, version 1.3
Programmatic Control	TekVISA, IVI-COM drivers, LabVIEW drivers

Environmental

Operating Shock	15 g, 11 ms, half-sine

TECHNOLOGY

Mixed Signal Oscilloscope (MSO)

APPLICATIONS

High-speed serial bus analysis, jitter and noise characterization, wideband RF diagnostics, and digital system debugging

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