TEKTRONIX

DSA73304D

The Tektronix DSA73304D is a high-performance Digital Serial Analyzer offering 33 GHz of analog bandwidth, 100 GS/s real-time sample rate on two channels, and up to 100 Mpoints of record length per channel standard. It is designed for ultra-high-speed serial data compliance testing, advanced jitter analysis, and complex signal verification.

SPECIFICATIONS

General

Interfaces	USB 2.0 host ports, USB device port, LAN (10/100/1000 Base-T LXI Class C), GPIB, Auxiliary Trigger Input, Trigger Output, Reference Clock Input, Reference Clock Output, DVI-I, DisplayPort, Audio In/Out

Physical

Power Supply	100 to 240 V AC ±10% (50 to 60 Hz), 115 V AC ±10% (400 Hz), < 1200 VA maximum power consumption
Operating Temperature	5 °C to 45 °C °C
Dimensions (W×H×D)	451 mm × 298 mm × 489 mm mm
Weight	24.0 kg kg
Form Factor	Benchtop (rackmount kit available)

Vertical System

Analog Bandwidth (-3 dB)	33 GHz
Calculated Rise Time (10% to 90%)	14 ps (typical)
Calculated Rise Time (20% to 80%)	9.5 ps (typical)
Number of Input Channels	4 analog
Input Coupling	50 Ω, DC
Input Impedance	50 Ω ± 3%
Input Sensitivity Range	6.25 mV/div to 600 mV/div
Vertical Resolution	8 bits (>11 bits with Hi-Res)
DC Gain Accuracy	±2%
Offset Range	±3.4 V at 100 mV/div to 600 mV/div; ±1.2 V at 6.25 mV/div to 99.5 mV/div
Input Connector Type	2.92 mm female
Maximum Input Voltage	<1.2 V RMS (<100 mV/div), <5.0 V RMS (>=100 mV/div)
Termination Voltage Range	±3.4 V
Channel-to-Channel Isolation	>= 120:1 (<= 10 GHz), >= 80:1 (10 to 20 GHz), >= 50:1 (20 to 33 GHz)
Effective Number of Bits (ENOB)	5.5 bits (typical at 10 GHz)

Acquisition System

Maximum Real-Time Sample Rate	100 GS/s (on 2 channels), 50 GS/s (on 4 channels)
Standard Record Length (Memory Depth)	100 Mpoints per channel
Waveform Capture Rate	>300,000 wfm/s (FastAcq mode)
Acquisition Modes	Sample, Average, Envelope, High Resolution, Waveform Database, FastAcq, FastFrame

Horizontal System

Timebase Range	2.0 ps/div to 1000 s/div
Timebase Accuracy	±1.5 ppm (initial accuracy)
Timebase Delay Time Range	-5.0 s to 250 s
Channel-to-Channel Deskew Range	±75 ns
Jitter Noise Floor	120 fs RMS (typical)

Trigger System

Trigger Sources	Ch 1, Ch 2, Ch 3, Ch 4, Auxiliary Input, Line
Trigger Modes	Auto, Normal, Single
Trigger Coupling	DC, AC, HF Rej, LF Rej, Noise Rej
Trigger Holdoff Range	250 ns to 12 s
Standard Trigger Types	Edge, Glitch, Width, Runt, Window, Timeout, Transition, Pattern, State, Setup/Hold, Sequence (A->B)
Advanced/Protocol Trigger Types	Standard hardware-based serial pattern trigger up to 6.25 Gb/s
Trigger Jitter	100 fs RMS (typical, with Enhanced Triggering ON)

Waveform Measurements and Analysis

Automatic Measurements	53 automatic measurements
Waveform Math Operators	Algebra, Calculus, Advanced Math, Frequency Domain (FFT)
FFT Window Types	Rectangular, Hamming, Hanning, Kaiser-Bessel, Blackman-Harris, Gaussian, Flattop, TekExponential
Jitter and Eye Diagram Analysis	DPOJET Jitter and Eye Diagram Analysis (Standard)
Limit / Mask Testing	Standard

Environmental

Storage Temperature Range	-22 °C to 60 °C
Operating Humidity	8% to 80% RH at up to 32 °C; 5% to 45% RH above 32 °C up to 45 °C
Operating Altitude	Up to 3,000 m (9,843 feet)
Storage Altitude	Up to 12,000 m (39,370 feet)
Operating Vibration	0.22 g RMS (5 to 500 Hz)
Non-operating Vibration	2.28 g RMS (5 to 500 Hz)
Operating Shock	15 g (11 ms, half-sine)
Non-operating Shock	25 g (11 ms, half-sine)
Cooling Clearance	76 mm (3 in.) on top, left side, and rear

Computer System

Operating System	Windows 7 Ultimate (64-bit)
Processor	Intel Core i7 Quad-core (3.1 GHz)
System Memory	8 GB (upgradable to 16 GB)

Connectivity

USB Ports	1x USB 2.0 (front), 4x USB 2.0 (rear)
LXI Compliance	LXI Class C v1.3
GPIB Interface	IEEE-488.2
External Reference Input	10 MHz (1.2 V to 4.8 V p-p)
External Reference Output	10 MHz (>= 1.2 V p-p into 50 Ω)

Triggering

Auxiliary Trigger Input Connector	BNC (front panel)
Auxiliary Trigger Input Impedance	50 Ω
Auxiliary Trigger Maximum Input Voltage	5 V RMS
Hardware Serial Trigger Rate	Up to 6.25 Gbps

Interfaces

External Display Outputs	1x DVI-I, 1x DisplayPort
LAN Interface Speed	10/100/1000 Mbps
PCIe External Interface	PCI Express x4
eSATA Port	1x eSATA
Audio Ports	Line In, Line Out, Microphone

TECHNOLOGY

Digital Serial Analyzer

APPLICATIONS

High-speed serial data bus compliance testing, jitter and noise analysis, ultra-wideband signal characterization

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