

TEKTRONIX

DSA70804

The Tektronix DSA70804 is an 8 GHz Digital Serial Analyzer from the DSA70000 series, designed for high-performance signal integrity analysis, testing, and debugging of advanced digital serial designs.

SPECIFICATIONS

General

Interfaces	USB 2.0, LAN (10/100/1000 Base-T), GPIB (IEEE 488.2), DVI-I, VGA
Display	12.1 in. (307.3 mm) liquid crystal active-matrix color TFT touch screen, 1024 x 768 pixels (XGA)

Physical

Power Supply	<1200 VA
Operating Temperature	5 to 45 °C
Dimensions (W×H×D)	451 mm × 298 mm × 490 mm mm
Weight	20 kg kg

Vertical System

Analog Channels	4
Analog Bandwidth (-3 dB)	8 GHz
Rise Time (10% to 90%)	54 ps
Rise Time (20% to 80%)	38 ps
Input Coupling	DC
Input Impedance	50 Ω ± 1.5%
Input Sensitivity Range	10 mV/div to 1 V/div
Vertical Resolution	8 bits (11 bits with averaging)
Maximum Input Voltage	5 V RMS
DC Gain Accuracy	±2%
Position Range	±5 divisions
Input Connector Type	TekConnect
DSP Bandwidth Enhancement	Standard, user-selectable on/off

Horizontal System

Maximum Real-time Sample Rate (Single Channel)	25 GS/s
Maximum Real-time Sample Rate (Multi-Channel)	25 GS/s (on all 4 channels)
Equivalent Time Sample Rate	Up to 10 TS/s
Maximum Record Length (Standard)	20 MS
Maximum Record Length (Optional Configuration)	200 MS (Option 20XL)
Timebase Range	10 ps/div to 1000 s/div
Timebase Delay Time Range	-5.0 s to 1.0 ks
Channel-to-Channel Deskew Range	± 75 ns
Timebase Accuracy	± 1.5 ppm
Jitter Noise Floor	420 fs RMS (typical)
Channel-to-Channel Deskew Resolution	1 ps

Acquisition System

FastAcq Waveform Capture Rate	>300,000 wfms/s
Maximum Waveform Capture Rate	>300,000 wfms/s

Trigger System

Trigger Sources	Ch 1, Ch 2, Ch 3, Ch 4, Aux In
Trigger Coupling	DC, AC, Low Frequency Reject, High Frequency Reject, Noise Reject
Trigger Level Range (Internal)	± 12 divisions from center of screen
Trigger Level Range (External/Aux)	± 5 V
Trigger Holdoff Range	250 ns to 12 s
Serial Pattern Triggering (Max Baud Rate)	3.125 Gb/s
Serial Pattern Triggering (Bit Length)	Up to 64 bits (NRZ) or 40 bits (8b/10b)
Trigger Jitter (Typical)	100 fs RMS (Enhanced Triggering ON)
Trigger Sensitivity (Edge, Typical)	0.5 div (DC to 50 MHz), 1.5 div (at 8 GHz)
A/B Trigger Sequence Types	A-Event, B-Event (Delayed by Time or Events)

Serial Data Analysis & Compliance

Clock Recovery Frequency Range	1.5 MBaud to 3.125 GBaud
Supported Serial Standards	PCI Express, Serial ATA, FB-DIMM, SAS, Fibre Channel, IEEE1394b, RapidIO, XAUI, HDMI, DVI, Ethernet, USB 2.0
Jitter Analysis	Standard (DPOJET Jitter and Eye Diagram Analysis)
Eye Diagram Analysis	Standard with mask testing and clock recovery

Waveform Measurements & Math

Automatic Measurements	53 automatic measurements including amplitude, timing, and jitter
Measurement Statistics	Mean, Minimum, Maximum, Standard Deviation, Population
Waveform Histograms	Vertical and Horizontal with 2D display
Waveform Math Functions	Algebraic, Calculus, Trigonometric, Frequency Domain (FFT), Custom Equations

Display System

Display Type	Liquid crystal active-matrix color TFT
Display Size	12.1 in. (307.3 mm) diagonal
Display Resolution	1024 × 768 pixels (XGA)
Touch Screen Capability	Standard

Computer System & Interface

Operating System	Microsoft Windows XP Professional
Processor	Intel Pentium 4, 3.4 GHz
System Memory (RAM)	2 GB
Hard Disk Drive Capacity	80 GB (removable)
GPIB Interface	IEEE 488.2 standard
LAN Port (Ethernet)	10/100/1000 Base-T RJ-45
USB Ports (Front/Rear)	5 USB 2.0 (1 front, 4 rear)
Video Output Ports	DVI-I and VGA
LXI Compliance	Class C

Input / Output Connections

Auxiliary Input	BNC connector, front panel
Auxiliary Output	BNC connector, rear panel
External Reference Input	BNC connector, rear panel
Internal Reference Output	BNC connector, rear panel
Trigger Out	BNC connector, rear panel

Power Specifications

Power Source Voltage Range	100 to 240 V AC ±10%
Power Source Frequency	50 to 60 Hz (100 to 240 V), 400 Hz (115 V)
Power Consumption (Maximum)	<1000 VA

Environmental & Safety

Operating Temperature Range	+5 °C to +45 °C
Non-Operating Temperature Range	-30 °C to +60 °C
Operating Humidity Range	8% to 80% RH at +40 °C (non-condensing)
Operating Altitude	Up to 3,000 m (9,843 ft.)
Electromagnetic Compatibility (EMC)	89/336/EEC, EN61326-1

Physical Characteristics

Dimensions (Height)	298 mm
Dimensions (Width)	451 mm
Dimensions (Depth)	490 mm
Net Weight	20 kg
Cooling Clearance Requirements	3 in. (76 mm) on left, right, and rear
Rackmount Height	7U

Environmental

Operating Random Vibration	0.22 GRMS (5 Hz to 500 Hz)
Non-Operating Random Vibration	2.28 GRMS (5 Hz to 500 Hz)
Non-Operating Altitude	12,192 m (40,000 ft.)

Software Support

Standard Analysis Software	DPOJET Jitter and Eye Diagram Analysis (Advanced), OpenChoice Desktop
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Rear Panel Connections

PS/2 Keyboard Port	1 rear-panel PS/2 port
PS/2 Mouse Port	1 rear-panel PS/2 port
Serial Port	1 COM1 port, 9-pin D-sub
Audio Ports	3.5 mm jacks for Line In, Line Out, and Microphone In
Recovered Clock Output	BNC connector, 50 Ohm (rear panel)

Storage & Drives

Optical Drive	CD-R/W and DVD-ROM combo drive
Removable Hard Disk Drive	Standard, 2.5-inch SATA, front-panel accessible

TECHNOLOGY

Digital Phosphor Oscilloscope & Digital Serial Analyzer

APPLICATIONS

High-speed serial design verification, characterization, debugging, and compliance testing

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