TEKTRONIX

HFS9003

The Tektronix HFS9003 is a high-performance Stimulus System Mainframe designed for generating precise pulse and data patterns for high-speed digital design verification and semiconductor testing. Featuring three module slots, it accommodates various HFS9D-series line cards to deliver up to 12 channels of fully programmable stimulus signals at frequencies up to 630 MHz with 1 ps timing resolution.

SPECIFICATIONS

General

Interfaces	GPIB (IEEE-488.2), RS-232
Display	Backlit Liquid Crystal Display (LCD)
Warm-up Time	20 minutes

Physical

Power Supply	90 to 250 V AC, 48 to 63 Hz
Operating Temperature	0 to +50 °C °C
Dimensions (W×H×D)	429 mm × 178 mm × 574 mm (without feet and handles) mm
Weight	16.3 kg (without modules) kg

System Architecture

Number of Module Slots	3
Maximum Channel Capacity	12 (using three 4-channel modules)
Compatible Modules	Tektronix HFS9D-series (such as HFS9DG1, HFS9DG2, HFS9DB1, HFS9DB2)

System Performance

Frequency Range	50 kHz to 630 MHz (module dependent)
Timing Resolution	1 ps

Triggering & Synchronization

Trigger Modes	Continuous, Triggered, Gated, Burst
External Reference Input	10 MHz

User Interface & Control

Internal Storage Media	3.5-inch Floppy Drive (1.44 MB)

Control & Connectivity

Programming Language	SCPI (Standard Commands for Programmable Instruments)

Physical & Environmental

Cooling	Forced air cooling with internal fans

Clock and Timing

Internal Clock Range	50 kHz to 630 MHz
Delay Resolution	1 ps
System Jitter	<15 ps RMS

External Inputs

External Clock Input Frequency Range	10 MHz to 630 MHz
External Clock Input Impedance	50 Ω
Trigger Input Impedance	50 Ω

Time Base

Time Base Accuracy	±20 ppm
Time Base Stability	±5 ppm (0 °C to 50 °C)
Time Base Aging Rate	< 1 ppm/year

Pulse Parameters

Duty Cycle Range	0% to 100%
Duty Cycle Resolution	0.1% or 10 ps (whichever is greater)
Phase Range	-360° to +360°
Phase Resolution	0.1° or 10 ps (whichever is greater)
Pulse Width Range	800 ps to 20 µs
Pulse Delay Range	0 to 300 ms

Inputs & Outputs

Trigger Output Level	≥ 1.0 V into 50 Ω
Trigger Output Impedance	50 Ω nominal
Sync Output Level	≥ 1.0 V into 50 Ω
Sync Output Impedance	50 Ω nominal

Environmental

Storage Temperature Range	-40 °C to +75 °C
Operating Humidity	20% to 80% RH (non-condensing)
Operating Altitude	Up to 4,570 m (15,000 ft)
Non-Operating Altitude	Up to 15,240 m (50,000 ft)

TECHNOLOGY

Stimulus System / Pulse & Pattern Generator

APPLICATIONS

Digital IC testing, semiconductor characterization, and high-speed digital design verification

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